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VITTORIO STORARO: HOW TO MAINTAIN THE ARTISTIC STYLE IN DIGITAL

CINEMATOGRAPHY?

By

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ABSTRACT (ENG)

This thesis explores how a cinematographer can reflect his/her own style in the era of digital cinematography on the example of Vittorio Storaro, A.S.C, A.I.C. The study starts by providing a brief look into the history of digital cinematography and gives an insight to what digital cinematography means, what kind of changes it brought to filmmaking both in the sense of aesthetics and way of working.

In order to narrow down the subject, this thesis focuses on a specific cinematographer: Vittorio Storaro. The study points out the key characteristics of Vittorio Storaro's style by focusing some of his selected works and tries to understand who Storaro is as an artist and what we can learn from him. After a description of the style of this legendary cinematographer, the thesis analyzes his recent and very first digitally shot feature length film *Café Society* (2016) in order to find out how he kept his style and what methods he used to maintain his artistic voice.

The thesis also provides space to Storaro's thoughts on digital cinematography. Finally, in the conclusion, it aims to give the readers an understanding of digital imagery and its possibilities in the artistic expression of a cinematographer.

ABSTRAKT (CZ)

Tato diplomová práce zkoumá způsob, jakým si v éře digitální kinematografie kameraman uchovává a přizpůsobuje svůj styl, a to konkrétně na práci Vittorio Storara, A.S.C., A.I.C. Úvodní část poskytuje stručný vhled do dějin digitální kinematografie, vysvětluje její význam pro filmovou produkci a změny, které do ní přinesla jak z estetického hlediska, tak z hlediska způsobu práce.

Protože je tato oblast bezedným zdrojem témat, následná analýza se věnuje dílu konkrétního kameramana, a totiž Vittorio Storara. Popisuje klíčové aspekty jeho stylu a soustředí na několik děl z jeho filmografie, aby na jejich základě popsala Storarovo umění a jeho umělecký odkaz. Po analýze stylu legendárního kameramana následuje rozbor jeho nedávné a první digitálně snímané práce, celovečerního filmu *Café Society* (2016), který má za účel ukázat, jak si Storaro udržel svůj styl a jakých metod využil pro zachování svého uměleckého postoje.

Práce také prezentuje Storarovy úvahy o kameramanské práci v éře digitální kinematografie. V závěru se pokouší o uchopení digitálního obrazu a jeho možností v uměleckém vyjádření kameramana obecně.

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1   INTRODUCTION

I'm a member of the Italian Film Academy, European Film Academy and American Film Academy. I receive many screeners. Most of the time I am just watching ridiculous images. They don't have anything to do with the story, the period, or the magical world of visual art. With cameras being so sensitive today, you can record in almost any location, with any kind of light. But artful cinema is not about recording the image as reality. Cinema is interpretation. The great sensitivity of digital cameras can be helpful in specific cases, but it can destroy the majority of films. Today, many cinematographers just arrive on set, turn on a table light, or a light coming through the window, and that's all they're doing. So, every movie looks alike. And usually the look is very mediocre.[1]

Vittorio Storaro

Source: *Film and Digital Times*
"Digital Cinematography on Café Society
by Vittorio Storaro" [Still] © Vittorio Storaro

Source: *Café Society* (2016)
[Video]. USA: Woody Allen

1.1   The Brief History of Digital Cameras

In 1969, 49 years before present day, a new technology, that will change the future of filmmaking, was invented. This technology was the first CCD (charged-couple device) invented by Willard Boyle and George E. Smith at Bell Labs[2] [3]. Later on, in 1975, an Eastman Kodak engineer, Steven Sasson came with the first digital camera[4]. But it was not until early 80's, when Sony adapted this new technology to the consumer

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[1] Jon Fauer. "Passage from Film to Digital." *Film and Digital Times*. April 2016, vol. 75, p. 6.
[2] James R. Janesick. *Scientific Charge-coupled Devices.* 1st ed. Bellingham-Washington-USA, SPIE Press, 2001, p. 3.
[3] See also U.S. Patent 3,792,322 and U.S. Patent 3,796,927.
[4] "At Kodak, Some Old Things Are New Again." Claudia. H. Deutsch. *The New York Times*, May 2, 2008 [online]. Istanbul: [cit. 2016-25-08]. Accessed from: http://www.rit.edu/news/utilities/pdf/2008/2008_05_02_NYTimes_Kodak_New_Again_Ward.pdf

market[5], that people's habit of shooting moving images slowly started to change. Although, some enthusiastic filmmakers, whom I like to call as visionaries, started to experiment and found ways to adapt this technology to the professional filmmaking environment, the usage area of this technology was still merely limited to the scientific and military purposes.

Even though, digital cameras of the time were lacking in terms of the cinematic image quality, there were still some small examples shot with video systems in the late 80's. Peter Del Monte's *Julia and Julia* (1987) shot by Giuseppe Rotunno, A.S.C, A.I.C., is one of those examples as one of the earliest digitally shot feature film.

However, at the turn of the 21st century, more filmmakers started to utilize these cameras in the professional film industry. Anthony Dod Mantle, D.F.F., A.S.C., B.S.C., and Thomas Vinterberg with *The Celebration* (1998), Lars Von Trier with *The Idiots* (1998), Harmony Korine with *Julien Donkey-Boy* (1999), Steven Soderbergh with *Full Frontal* (2002), Robert Rodriguez with *Once Upon A Time In Mexico* (2003), Danny Boyle with *28 Days Later* (2002), George Lucas with *Star Wars II Attack of the Clones* (2002), and Aleksandr Sokurov with *Russian Ark* (2002) can be listed as among the very first serious adapters of this technology to the filmmaking environment. The reasons were differing why these filmmakers chose to work with this medium. The practicality, lightness and the function of having longer recording times these cameras have provided those filmmakers an opportunity to develop and freshen their cinematic language. In one hand there were some filmmakers like Anthony Dod Mantle, Harmony Korine, Lars Von Trier, Danny Boyle and Aleksandr Sokurov who were using these cameras in order to find new ways of telling stories, by using unconventional visual language. On the other hand, there were some others like George Lucas, Steven Soderbergh and Robert Rodriquez who believed that digital cinematography is the

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[5] "History." Sony Corporate [online]. Istanbul: [cit. 2018-25-08]. Accessed from: http://www.sony.net/SonyInfo/CorporateInfo/History/history.html

medium of the future, and they wanted to be pioneers of it in the major film industry. This fairly new medium in motion pictures enabled them to realize their own vision much closer to how they perceive it, such as *Sin City* (2005) by Rodriguez, would be impossible to realize the way that Rodriquez was able to do, without digital capturing tools. Without any doubt, the democratization that these cameras brought to filmmaking widened the opportunities for newcomers and the digital capturing started to become an essential, inalienable medium for independent filmmakers.

Even though cameras like Sony F900R, F23, Panavision Genesis, Thomson Viper, took the attention of more filmmakers and increased the usage of digital capturing technologies in professional film industry during the first decade of 21st century, the amount of films shot on emulsion was incomparably higher than the ones recorded on sensor. Nevertheless, the popularity of digital cameras was increasing. In 2007, Red One, a 4K resolution camera, which is believed to be the resolution of a modern 35mm answer print[6], that is able to record raw images with high bit depth, brought more popularity towards digital capturing. But it was not until 2010, when the very first Alexa is introduced by Arri, that the digital cameras started to take over traditional film capturing. Such that, in 2011, Robert Richardson's, A.S.C., winning of Best Achievement in Cinematography in Academy Awards with *Hugo* (2011), which is captured on Arri Alexa, digital cameras started to prove their capability of producing high level cinematic images comparable to film, even though *Hugo* was not the first digitally captured film that got this award. Since then, digital cinematography started to overshadow traditional film capturing, made it start to be seen as a "romantic privilege", replaced the object of need with "artistic choice".

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[6] ITU (2001). 35mm Cinema Film Resolution Test Report. ITU-R Doc. 6-9/3

1.2   The Brief History of Digital Post-Production

The world of post-production consists many levels and complexities. There are endless numbers of departments involved in it, even before moving to the world of digital. But for the purpose of this thesis we need to limit our numbers of choices within this hugely important department. In this study, the digital post-production will involve only the department of color grading aka digital intermediate. Even though the visual effects, matte paintings, replacements etc. plays a huge influence in modern cinematography, color grading is still maybe the most common and hugely effective part of every film without an exception, from a major worldwide blockbuster to a local arthouse production.

Digital Intermediate or DI is simply a motion picture finishing process which classically involves digitizing a motion picture, manipulating the color and other image characteristics typically with color grading and digital special effects. For Digital Intermediate, the film would be scanned and files would be sent to editorial and to VFX departments. Once post-production is completed, materials would be conformed and output once again to film. The "intermediate" stage was not only for editing and effects but was a place where color correction could be applied digitally too. In the beginning Digital Intermediate used mainly in animations for restoration purposes. In 1993, *Snow White and Seven Dwarfs* became the first film to be entirely scanned digitally, manipulated and recorded back to film at 4K resolution.[7] The restoration of the project was done entirely at 4K resolution and 10-bit color depth using the Cineon system to digitally remove dirt, scratches and restore faded colors. Even today this is still a very important and widely used process not just for animations, also for live-actions. Today we witness many classic films being scanned, remastered and distributed to movie

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[7] John Holusha. "'Snow White' is made over frame by frame and byte by byte.". *The New York Times*, p. 5, June 30, 1993

theaters for digital projection or to Blu-rays for our home screenings, and even to digital platforms like iTunes, or Netflix.

In 1998, *Pleasantville* became the first film which employed the digital intermediate for its majority. Its filmed on color film, scanned to digital, and turned into black-and-white by selective desaturation and contrast. It is done by utilizing Spirit DataCine for scanning at 2K resolution.[8]

Source: *Pleasantville* (1998)
[Video]. USA: Gary Ross

The adaptation in the industry towards Digital Intermediate was fast. The reason for it was simple. Filmmakers could get the looks they want in a much more controlled and sophisticated way compare to traditional methods that were very limiting. In the traditional timing you could only have three primary colors. You can balance between red, green, and blue. Other than the timing process there were also other techniques like bleach-bypass[9], which is basically a process where you leave the unused silver in the negative or the print which simply kind of creates a black and white layer within the emulsion. Or you could flash the negative by exposing the film to a certain overall light level which softens the look, fills in the shadows. Many filmmakers used these techniques or combined them to get a unique look. For instance, Darius Khondji, A.S.C., was known by flashing the negative and then applying a silver-retention, or so-

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[8] Bob Fisher. "Black-and-White in Color." *American Cinematographer*, November 1998.
[9] Eastman Kodak Company Technical Information [online]. Istanbul: [cit: 2018-08-07]. Accessed from: https://www.kodak.com/motion/Support/Technical_Information/Processing_Information/Process_Tech niques/default.htm

called ENR process.[10] But the problem with all these methods is that they were very limiting and not sophisticated enough compare to what one can achieve today with digital tools. It required series of testing which was not available to everyone. Plus, you could cause the quality of the film to degrade or have unwanted effects. For instance, even the solution that develops the film itself can cause film to drift towards magenta or yellow. Moving into digital intermediate was inevitable.

Finally, some of the major filmmakers of our time took this great opportunity that is given to them and used it to their advantage for the first time for the entirety of a major film. In 2000, Coen Brothers and cinematographer Roger Deakins, A.S.C., B.S.C., employed digital grading for *O Brother, Where Art Thou?* (2000). [11] Coen Brothers and Deakins turned to Digital Intermediate process in order to make their unique vision possible for the look and color palette of the film. But before turning into digital grading, Mr. Deakins ran various tests for 3 weeks in a film lab by testing various types of photochemical processes. In the end the filmmakers decided to move to digital intermediate, which gave them much more control and sophistication to achieve the look they were after.[12]

Source: *O Brother Where Art Thou?* (2000). [Video] USA: Joel Coen, Ethan Coen

The biggest challenge for digital grading in the beginning was to get a true transmission of what the colorist and cinematographer was seeing on a digital display

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[10] "Flashback: Seven." David E. Williams. *American Cinematographer*, June 01, 2017 [online]. Istanbul: [cit. 2018-07-29]. Accessed from: https://ascmag.com/articles/flashback-seven-1995
[11] Bob Fisher. "Escaping from chains." *American Cinematographer*, October 2000
[12] Chris Francis (2010). *Painting with Pixels (O Brother, Where Art Though).* [video file]. Istanbul: [cit. 2018-08-05]. Accessed from: https://www.youtube.com/watch?v=pla_pd1uatg

in the grading suite to what they see in a theatrical environment, since the only way to distribute the films that time was on film. The process simply follows, the film negative which is conformed, in other words after all the shots cut together in the right order, would be scanned to digital format with what's called a data cine. Then the technician or colorist would color grade every shot in the film by using a color corrector. Once that's done the footage would be taken into a computer workstation in order to do all the fades and dissolves. When the whole film assembled on the digital workstation, the graded footage would be recorded back to film using a laser film recorder. After that the traditional process would be applied again. Films goes to the lab, it's developed, a print is made, and if the cinematographer and director is happy with the result, multiple copies would go to the film theaters around the world.

Around the same time, Texas Instruments publicly demonstrate their Emmy Awarded DLP (Digital Light Processing), Cinema Technology[13], first in 1998 in USA, and then in 2000 in Europe. In 2005, the very first version of the system specification called Digital Cinema Initiatives (DCI) released[14]. They declared that their main objective is to "present a theatrical experience that is better than what one could achieve now with a traditional 35mm Answer Print". Very soon, the film projectors started to be replaced by digital projectors. By the end of 2012, according to Screen Digest, 91.4% of UK screens had been converted to digital. By 2013, 75% of the theaters became digital worldwide[15]. And today, it is nearly impossible to find a film theater that is using traditional movie projector to screen films.

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[13] "History." *Texas Instruments* [online]. Istanbul: [cit. 2018-08-06]. http://www.ti.com/dlp-technology/about/history.html

[14] Digital Cinema Initiatives, LLC [online]. Istanbul: [cit. 2018-07-25]. Accessed from: http://www.dcimovies.com/archives/spec_v1/

[15] Carolyn Glardina, Adrian Pennington. "NAB: 75 Percent of Theaters Are Digital Worldwide; Final Quarter Face Challenges." *The Hollywood Reporter*, April 06, 2013 [online]. Istanbul: [cit. 2018-08-06]. Accessed from: https://www.hollywoodreporter.com/behind-screen/nab-75-percent-theaters-are-434290

Now, with the combination of digital intermediate and digital projection, cinematographers and filmmakers finally are able to get very accurate results according to what they intended in the grading suite, or even in the very early on stage, the pre-production. Without a doubt, the complete digitalization of post-production and projection technologies gave a great level of accuracy and consistency to the filmmakers all around the world.

1.3   The Meaning and Impacts of Digital Cinematography

The Definition:

When we look into the meaning of digital cinematography, we often face with definitions like, digital cinematography is the process of capturing a motion picture using digital image sensors. Although this explains one process of it, it is not able to give the full definition. In order to have a film that employs digital cinematography, the whole process should be digital, and all these steps should carefully be taken into consideration. This includes capturing the negative digitally, debayering the linear data recorded, storing, transcoding, grading, finishing, and distributing digitally. All these steps are very crucial and effects the quality of the image. Even a very simple and straightforward process that is not taken into the account that much like debayering can have a huge effect on the texture of the image. Same goes with all the other steps. They can cause shifts, degradations on the look of the images compare to the way they are intended to look.

On the right, you can see an example of an undebayered, raw image. For the purpose of this demonstration the generic still image in ARRIRAW Converter is used.
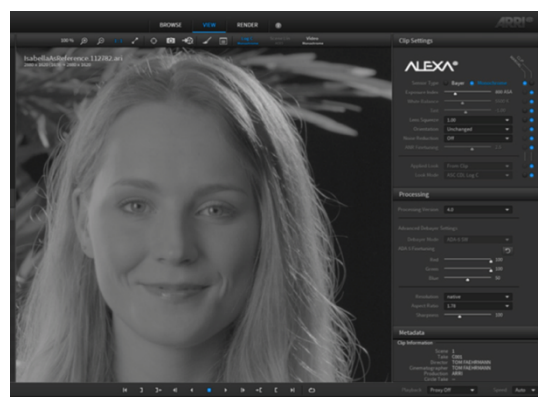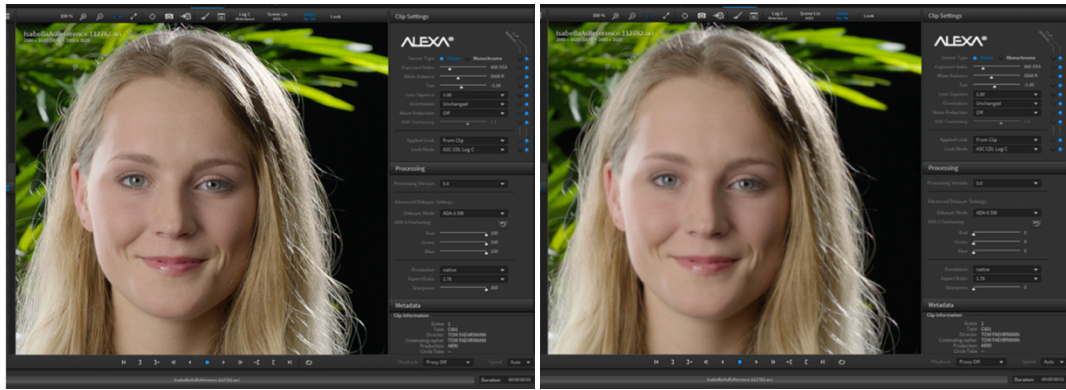
Above you can see the same image debayered in two different ways. On the left, the fine-tuning option in all color channels are maximized, as well as the sharpness. On the right, the fine-tuning on all color channels are minimized, as well as the sharpness. This might be a simple example, but just with this basic test we can see how much even a process like debayering that most of us don't take into consideration effects the texture of the image and deals with the sharpening and detailing aspect of the digital image, which is a feature of digital images many cinematographers are unhappy with.

Another important example can be the color management. The poor color management can cause differences over the image. Even different ways of doing color management, for instance, using ACES[16] versus DaVinci Resolve Color Management, or using effective gammas instead of pure power gammas. In the digital world we have endless versions of deliveries, and the way we transform them, and making sure about the consistency of them makes a huge difference.

These are just very few examples of many mores. Since this study's purpose is not providing a guide about digital images and how to deal with them I will not discuss these issues in details. The only reason for providing the above information is to provide a very brief understanding on how critical and important every step is, even

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[16] http://www.oscars.org/science-technology/sci-tech-projects/aces

the smallest one. Once we take all these steps into consideration, then we can fulfill the definition of digital cinematography.

The Impacts:

As it is discussed in the introduction chapter, "The Brief History of Digital Cameras", there are many different reasons why digital cinematography became the preferred way of creating and delivering images. Digital cameras and tools are embraced because of two very common reasons that can be expanded: practicality and accessibility.

For certain, digital cameras brought kind of a democratization to the filmmaking community. In this new age anyone could own or access to a digital camera that is able to produce fairly decent images. They could shoot at nights without any additional lights. They could work faster, with less crew. Filmmakers could shoot endless of hours of footage which might help them to get better performances from actors, also might give them more options later on during the editorial. Post-production became extremely affordable. Today, one can easily access to a software that gives them the possibility to do editing, grading, sound post-production and mastering in a very decent quality all in one. One can discuss as it is not being ideal, but the important thing is that it is possible. So, the line between expensive productions and small ones were getting blurry. Today, many times a small short film production and a major Hollywood production employs the same camera, software and finishing methods, which was unthinkable just until very recently. Filmmakers start to get a quality and do things they couldn't achieve with traditional methods. Even simple things like doing a camera test or post-lab processing tests to find the look of the film was something that was not available to many people, since only buying the film stock and developing was a really costly process. But today almost anyone who has some sort of simple understanding of the technology and tools can do it.

Although the journey of the transition to digital cinematography was perceived with great optimism, of course every innovation comes with its own inevitable downside. Many cinematographers started to believe that movies started to look the same, and they blamed it on digital cameras. The lowlight capabilities of the cameras as well as their other features were causing filmmakers to work in a different way than they were used to. Cinematographers who are forced to work faster, simpler and more "superficially" started to see that, the most important weapons they have started to get weakened and taken away from them. They started to lose their power, and since it was looking simpler to produce images digitally, cinematographers started to have less time to create their images, and their works started to be criticized openly.

Because of the capability of low-light performance of these cameras, more and more filmmakers started to think that there is not much need to light anymore, since for many decision makers the idea of lighting is only for managing the exposure and the range that is right according what the sensor or emulsion requires instead of understanding the light as part of dramatic tool in the art of storytelling. People started to give less attention on getting things in camera or having a certain set design on locations according to the look of the film since the idea of anything can be done in post was becoming dominant. "Fixing it in post" became a regular statement. Soon enough, cinematographers found themselves at a point that their images can be manipulated endlessly.

Maybe most importantly, technology started to be more important than craftsmanship. The idea that the technology and tools make filmmakers to achieve better results was a spreading idea. Less people were trying to learn the craftmanship, understanding of light, exposure, psychology of colors and maybe most importantly, the language of camera.

All these brought big discussions in the industry and started the debate about the superiority of film, and how the traditional medium helps filmmakers to concentrate better to get it right, and how film is better than digital in terms of quality. Even though all these discussions are valuable, I deeply believe there is a very core problem in the departure point of these arguments. There is not a real constructive value of arguing the superiority of a medium, and certainly not at the time digital sensors are no longer inferior to film stocks, or maybe even more advanced in many ways. The valuable discussion should be why we can't make it work? Before complaining about cinematographers losing control over their images and these images being manipulated endlessly, first we need to ask if there is a certain vision involved, a certain look that is based on the understanding of art, philosophy and psychology. The images that are created for the film are really the images of cinematographers or the result of a collaboration which is there for a greater cause? How much do we really understand the light other than the technical aspect of it, and how much we are willing to discuss things for a better collaboration? Do cinematographers really losing power, or instead does digital cinematography and the immediacy of it can actually help to create better communication between a cinematographer, director and production designer which makes the resulting work more powerful? Do movies looks the same really because of the digital cameras or because of filmmaker's approach? And are the digital capturing tools changing the approaches of filmmakers?

1.4   Storaro as an Artist

Instead of analyzing these issues broadly, examining a certain cinematographer's style who has a distinct role in the history of cinematography is certainly much more appealing in terms of narrowing down the subject for the sake of providing basis for a clear understanding. This person should be someone who has an

important technical knowledge, artistic approach and who contributed to the art of cinematography with his/her intellectualness as well as his/her own body of work. This person should also be someone who spent most of his/her career with photochemical filmmaking but at the same time has a vast knowledge about digital technologies, and even tried to find ways to adapt these technologies to his/her filmmaking style from its earliest days. Finally, analyzing the style of a cinematographer, who is one of the great masters, in order to understand how he/she maintained that style in digital medium would be a great contribution to the subject.

As an artist who always mentions that we need to focus on the future, on reality, and how to use it to our benefit, and who deeply cares about new innovations, Vittorio Storaro, A.S.C., A.I.C., utilized the new digital capturing system of the time in its earliest days. In 1982 he captured a short film, *Arlecchino* (1982) with the very first Sony HD Video System[17], when nearly nobody was using the medium in the narrative world. When it is announced that Vittorio Storaro will be capturing a feature length theatrical film digitally for the first time in his career, it became a very popular and exciting topic in the world of cinematography. This film, which would be captured by this great artist who became an authority in the world of cinematography both with his artistic and technical contributions, would also be Woody Allen's first digitally captured film, *Cafe Society* (2016). Much before the film released in theaters, Storaro started to openly share his ideas about the techniques he used and choices he made in *Cafe Society* both artistically and technically in various platforms. He also offered many ideas, and insights about digital cinematography through his own experience in order to provide a basis to open a discussion for the sake of developing this technology further for the requirements of cinematographers, and filmmakers.

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[17] Jon Fauer. "Passage from Film to Digital." *Film and Digital Times*, April 2016, vol. 75, p. 6

Over the course of time that I was developing the idea of this thesis, Vittorio Storaro digitally captured two other Woody Allen films, one waiting to be released: *Wonder Wheel* (2017), and A Rainy Day in New York (2018).

But before analyzing his first digitally captured feature length film *Café Society* and the methods he used during the process of making it, we need to understand who Vittorio Storaro and his style is. Since I deeply believe the link between an artist's personal life and his creations, I will first provide information about his life and career. It is really important to understand how his life; personal studies of art and career affected his style. Then the study will continue with the analyzation of his films prior to digital in order to understand what is his style.

I deeply believe that the analysis of this great master's body of work, and his vision, will give us an opportunity to find ways of how to use digital capturing technologies to our benefit, and not to take it for granted.

2   VITTORIO STORARO AND HIS STYLE

> *Seeing comes before words. This child looks and recognizes before it can speak. But there is also another sense in which seeing comes before words. It is seeing which establishes our place in the surrounding world; we explain that world with words, but words can never undo the fact that we are surrounded by it. The relation between what we see and what we know is never settled.*
>
> John Berger [18]

2.1   Storaro's Life and Influences

Vittorio Storaro was born in 24 June 1940. His father was a film projectionist at Lux Film. He always dreamed of what it would be like to be a cinematographer and

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[18] John Berger. *Ways of Seeing*. Penguin, 1972

puts that dream into Storaro's heart. Storaro spent a lot of time in the projector booth at the movie theater his father was working. He was watching all the films that his father was projecting, without hearing the sound because of being inside the booth. This helped Storaro to develop a strong sense of visual language at a very young age. When the studio bought a new projector, his father brought the old one home. Storaro recalls those memories as *"My brothers and I painted a wall white and set up little benches in the garden. My father showed us Charlie Chaplin films, which, of course, were silent."[19]*

In 1951, at the age of 11, he started studying photography at *l'Istituto Tecnico Fotografico "Duca D'Aosta"*. He graduated in 1956 with the diploma of 'Maestro Fotografico'*.* Later on, he enrolled at *Centro Italiano Addestramento Cinematografico* where he studied for two years before *Centro Sperimentale di Cinematografia*, Rome, where he later on studied between 1958-1960. The reason why Storaro went to *Centro Italiano Addestramento Cinematografico* before *Centro Sperimentale di Cinematografia* was because he was too young to get into the famous state cinematography school. He recalls that experience as:

> It was a very small school, but it gave me the feeling that I was still a student, and that was very important. I have always kept that feeling. I am still a student in the sense that there is always something to learn (Guiding Light – Vittorio Storaro. p.1).

Storaro worked in a photography shop part time, developed films, made and retouched prints. When he was 18, he reapplied to *Centro Sperimentale di Cinematografia,* but told that the rules had changed; he should wait until he was 20. Storaro convinced the authorities to allow him to apply but have been told that the chance he has is really low because of the number of applicants they get every year.

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[19] Bob Fisher. *American Cinematographer*, February 2001. [online]. Istanbul [cit. 2018-08-06]. Accessed from: https://theasc.com/magazine/feb01/storaro/pg1.htm

Storaro asked to submit a portfolio of still photos, and after the first evaluation he got accepted among 30 finalists who will get interviewed. He was one of the lasts they interviewed, but in the end, he was the first of the three applicants selected that year.

By the time he was 20, he already completed his studies and was employed as an assistant cameraman, working with cinematographers Aldo Scavarda and Marco Scarpelli. He was promoted to camera operating within a year. The very first film he worked as an operator was *Il Mantenuto* (1961) directed by Ugo Tognazzi.

After his third film as an operator, the film industry in Italy went into crisis and the number of films produced in a year came down to 10 from 300. Storaro was out of work for a while, but this small break turned into his favor. He realized that he learned everything about technology at school, but nobody taught him the interpretation of stories and understanding of art. He came into a realization that we should use technology to express ideas. That is why Storaro decided to dedicate his time to study music, literature, painting and philosophy. He studied Mozart, Rembrandt, Faulkner, Vermeer, Caravaggio, and many other important artists.

In 1963, he went back to work, and met with his future long-time collaborator Bernardo Bertolucci for the first time. It was Bertolucci's second feature film *Before the Revolution* (1964). Storaro worked as first assistant camera in this film. Storaro was really impressed how Bertolucci was 'writing with the camera', and how everything was perfectly structured.

Storaro continued his career as a camera operator until 1965, but along these years he started to get some work as cinematographer in some short films. Some of these were government funded, which he collaborated with Camillo and Luigi Bazzoni. Finally, Storaro was able to direct his journey from only focusing on composition and rhythm of camera angles to the mature expression of the light. Although he was professionally still making his living as a camera operator, with the short films he made,

he was able to experience what he called "writing with light", the relationship between light and shadow.

Short films not only helped him to make an introduction to the world of light and shadow, but also opened the door of becoming a feature film cinematographer. Franco Rossi, an important filmmaker of the time offered Storaro his first job as cinematographer, after seeing his short film *Rapporto segreto* aka *Secret Report* (1966). With this offer, Vittorio Storaro got his first credit as cinematographer in a feature film, a black and white drama, *Giovinezza Giovinezza* aka *Youthful, Youthful* (1969). This film was particularly important for Storaro because it was the "first emotion", like a first love, and it was the revelation of the loss of innocence. He recalls these moments in his own words as*;*

> It was a complete journey using all the language of light, darkness and contrast. It was like your first love. I cried for two days before the movie was over because I knew it was going to finish, and I would never experience that emotion again, even if I photograph a million other films that were 100,000 times bigger (Guiding Light – Vittorio Storaro. p.2).

In 1969, when he was working on great Giallo director Dario Argento's film *L'Uccello Dalle Piume de Cristallo* aka *The Bird with the Crystal Plumage* (1970), he got a call from Bernardo Bertolucci about his next project. Storaro remembers those moments as "I had dreamed about getting a call like that from Bernardo…" Their first collaboration was *La Strategia del Ragno* aka *The Spider's Stratagem* (1970), which was a film made for Italian television. But very soon Bertolucci called him again for his next project, which is the one that affected most of the cinematographers all around the world and became one of the most memorable films because of its revolutionary approach, and exquisite cinematic language, *Il Conformista* aka *The Conformist*. Storaro was 30 and Bertolucci was 29 when they collaborated on *The Conformist* in 1970. The film's impact was profound and opened a new page in the art of cinematography. Many people who was confused and unsecure about which path to

follow in their filmmaking journey decided what they should do after seeing the film. It is possible today to hear many cinematographers saying they decided to become cinematographer because of *The Conformist*. The film is known as the first real example of contemporary cinematography. Kenneth Zunder, A.S.C. says:

> His influence is pervasive. Years ago, when I was shooting thirtysomething (at the beginning of my own career), the producers told me it was okay to play people in the shadows and to let actors off the edge of the frame. They said, 'Let the images tell as much of the story as the script and actor (Guiding Light – Vittorio Storaro. p.2).

The influence of Storaro and Bertolucci continued with *Last Tango in Paris* (1972), which was one of the most controversial films of the time, and maybe their most famous film among the audience worldwide to date. Its content-based controversy was so powerful that even today it is possible to see new claims and stories about the film. But the controversy around the film was not powerful enough to overshadow the power of its cinematography, or in other words the relationship between light and darkness. The emotional impact of colors, the language of camera was so powerful that it was inevitable for *Last Tango in Paris* to be a shining star in the history of cinematography.

It was only 1972 and Storaro collaborated already on three films with Bertolucci. This long collaboration – which followed by more later on – gave him a chance to expand the concepts which became his unique style as a filmmaker. With *The Spider's Stratagem* and *The Conformist*, a love of the color blue was born, however the quality of light was always the center of his thought as *The Conformist* proves. With *Last Tango in Paris* (1972), he found the hue of life, the color of passion; orange. Which he developed further in another Bertolucci film *Novecento* aka *1900* (1976) and later on in the biggest production he photographed at that time, *Apocalypse Now* (1979).[20]

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[20] Vittorio Storaro Official Website. *Extended Biography* [online]. Istanbul [cit. 2018-08-07] Accessed from: http://www.storarovittorio.com/eng/extended_biography.html

Apocalypse Now is Storaro's first Hollywood film and the start of a collaboration with the great American director Francis Ford Coppola. For Storaro, *Apocalypse Now* was not only a film, it was a 'fundamental experience of life' as he recalls. Storaro's collaboration continued with Coppola in *One from the Heart* (1981). Coppola wanted to shoot the film on digital. Storaro ran various tests but decided that the quality was not there yet. Even though film didn't get to be shot digitally it was still a revolutionary work in the history of cinematography. For *One From the Heart*, Storaro used theater lighting techniques, or in other words the stage-lighting. He worked with the principles of theater lighting, utilized a lighting board, and employed a Lighting Board Operator. With this new way of working, Storaro was able to perfect the lighting levels, make changes in the densities and colors in the shot, and really use the language of light and color in a unique and precise way. Since then this working method became an indivisible part of his style. This technique that is now widely accepted made cinematography similar to choreography.

Another significant film in Storaro's filmography that the same technique of stage-lighting is used is a comic strip adaptation, *Dick Tracy* (1990), directed by Warren Beatty. Collaboration between Storaro and Beatty started with their 1981 made film *Reds,* continued with *Dick Tracy*, and then evolved to *Bulworth* (1998). In the film *Reds*, Storaro pioneered the ENR process. ENR is a silver-retention process developed by Ernesto Novelli-Raimond, Storaro's longtime collaborator at Technicolor Labs in Rome.[21] ENR technique is very briefly mentioned in the "The Brief History of Digital Post-Production" chapter. It is a process that is used later on by many famous cinematographers, including Janusz Kaminski A.S.C., Darius Khondji, A.S.C., A.F.C., Harris Savides. But until 90s, Storaro was almost the only cinematographer who was

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[21] Stephen Burum, A.S.C., Stephen Pizzello. "Flashback: Apocalypse Now, A Clash of Two Cultures." *American Cinematographer M,* August 24, 2017 [online]. Istanbul: [cit. 2018-08-12]. Accessed from: https://ascmag.com/articles/flashback-apocalypse-now

employing this technique regularly which was allowing him to get deeper, more saturated blacks by retaining more silver during the processing of the prints.

Storaro pioneered many other technical innovations or styles of working in the world of cinematography. In a 1997 made film, *Tango* directed by Carlos Saura, another of his frequent collaborator, he came up with two-way TransLite system which he used later on in his other works *Goya in Bordeaux* (1999), and TV miniseries *Dune* (2000). By employing TransLites with the help of Rosco and his son Fabrizio, Storaro managed to film on a single stage in Buenos Aires for the ninety percent of the film. It is a technique that is widely used now. Similar approaches and use of the technique can be found even in very recently shot major films like *Spectre* (2015), shot by Hoyte van Hoytema, A.S.C., F.S.F, N.S.C., directed by Sam Mendes.

Another important innovation he brought to filmmaking was inventing a universal format called Univisium. The format uses a standard 35mm 3-perf frame for production. Images are composed in 2.00:1 aspect ratio. Storaro proposed this system by believing that it is a universal standard both for TV and cinema screens, since he was foreseeing that in the very near future, movies were going to be watched mainly on home screens, and the life of them in movie theaters would be only for couple of weeks or a month. For Univisium, Storaro said: "I believe it is very important for audiences to see films exactly the way they were composed by the director and cinematographer. This is a solution."[22]

For a long time, this aspect ratio used only by Storaro. But in the last 10 years the format started to be used more commonly. It became popular in the second period of 2000's when Red Digital Cinema started to have this aspect ratio in their cameras. Many TV Series such as *House of Cards* (2013-), *Stranger Things* (2016-), *Fargo* (2014-) shot by using this aspect ratio. It even started to be seen in mobile devices. LG

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[22] Bob Fisher. "Guiding Light." *American Cinematographer,* February 2011, pp. 72-83

introduced a phone LG G6 using 2:1 ratio, as well as Samsung with S8.[23] Mr. Storaro even re-released some of his films in 2.00:1, such as *Apocalypse Now*, *Reds*, *The Last Emperor*.

In 2000, on a TV Miniseries called *Dune* (2000), Storaro used all these technologies he has pioneered over the years. He shot Dune on a soundstage by using the Univisium format, TransLites, and computer controlled lightboard. Even today Storaro uses the aspect ratio of Univisium, 2.00:1, with his digital work, e.g. *Café Society* and *Wonder Wheel*, and uses light control consoles at all times.

Along with these technical achievements, his career was also outreaching. The number of films and TV Series he shot that became milestones in the history of cinema was increasing. After 49 years of career as a feature film cinematographer, in 2018, he is still working on projects with an incredible pace. By the time of the writing of these sentences, in the summer of 2018, he already has five projects waiting, two of them very recently completed and three in pre-production. Among these there is another collaboration with Woody Allen, *A Rainy Day in New York* (2018), which he used the same capturing technology, post processing methods, and the same key members of his crew from *Café Society* and *Wonder Wheel.*

By now, Vittorio Storaro won three Academy Awards, a Prime-Time Emmy Award, a Bafta Award, a Technical Grand Prize at Cannes Film Festival, and many Lifetime Achievement Awards, including American Society of Cinematographers Lifetime Achievement Award, for his works.[24]

Without a doubt Storaro is one of the greatest and most influential cinematographers in the history of cinematography, and it wouldn't be wrong to say he

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[23]Vashi Nedomansky. *The Aspect Ratio of 2.00:1 is Everywhere* [online]. Istanbul [cit. 2018-08-06]. Accessed from: http://vashivisuals.com/the-hot-new-filmmaking-aspect-ratio/
[24]IMDB Database [online]. Istanbul [cit. 2018-08-08]. Accessed from: https://www.imdb.com/name/nm0005886/awards?ref_=nm_awd

is the one contributed the most to the art of modern cinematography both in terms of artistry and technique.

2.1 A Brief Look at Storaro's Artistic Style

Although Storaro pioneered many technological advances and styles of working in filmmaking, as an artist all of his focus was the balance between art and technology. He was always aware of the fact that for the artistic achievement one should have the knowledge of technology, but without the understanding of art and philosophy, the technology has no importance on its own. That is why balancing the art and technology was really important for him. All the technological advances he came up with was for the artistic and creative purposes. The invention of Univisium format was for preserving the original composition of his films through its distribution in different formats. Even the very first idea for Univisium came from an artistic stand-point; Storaro's discovery of Leonardo da Vinci's *The Last Supper* having a 2:1 aspect ratio.[25] His reason to work with lighting consoles was to be able to have more control over his lighting and to be able to play with the light levels and colors in a way he couldn't before. Also, working with a lighting console with all the lights being on dimmers helped him to be able to create a choreography and rhythm with the changes of light according to the emotion of the scene, which is an important aspect of his cinematography.

Very early on in his career he found out he learned everything about technology in the school, but he was missing the understanding of art. He understood that we should use technology to express ideas. That's why he dedicated himself to study art, music, literature, painting and philosophy. If there were only three words to describe Storaro's style. That would be 'Act with Purpose'.

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[25] Jon Fauer. "Passage from Film to Digital." *Film and Digital Times*, April 2016, vol. 75, p. 6

Even though Storaro employed all the different aspects of filmmaking powerfully, the main aspect comes into all of our mind is his use of colors. He always mentions the importance of composition, the language of camera, the way the architecture is used, but still Storaro is known the most by being the master of use of color as a psychological tool by benefiting from the relationship between light and shadow. We can even analyze his career as a journey of the discovery of light, shadow, and color.

Storaro believes colors have universal meanings, emotions they bring and psychological effect, even though it can show changes in different cultures.

> There is no doubt that every color is a specific wavelength of energy that can represent or symbolize a specific time of life," he explains. "The meanings of colors are universal, even if they have different meanings in different cultures. Even if the audience doesn't see the meanings of different colors, they can feel them.[26]

For him, our journey of life from beginning to end can be represented with the journey of light within the color spectrum. For him colors should have certain meanings that summarizes a journey. In the 1992 documentary *Writing with Light*, by David Thompson, while talking about his experience in *Apocalypse Now,* Storaro shares his foundation of the ability to use the journey of light within the color spectrum in a certain way to describe the journey of our life. For him, in the context of *Apocalypse Now*, black is the color that represents the earth of darkness, it is the color of unconscious. Red is the color of the blood. Orange is the color of the warm feeling of the family. Yellow is the conscious. Green is the color of knowledge. Blue is our intelligence as human beings. Violet is the last stage in the human life. And in the end, all these colors come together in white, which is the balance, the equilibrium. This concept of equilibrium is very important in Storaro's cinematography which results in his use of

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[26] Bob Fisher. *American Cinematographer*, February 2001. [online]. Istanbul [cit. 2018-08-06]. Accessed from: https://theasc.com/magazine/feb01/storaro/pg2.htm

golden hour, which is a repetitive motif in many of his films, such as *The Sheltering Sky* being one of them.

Every film of Storaro employs a certain color or scheme of colors that support the story. His choices are so powerful and grounded that these choices become more than just merely supporting the narrative and adds another level which can be called as the dramaturgy of color. His explorations of colors became a journey in his career.

His use of colors became so influential and distinctive that a gel manufacturer, Rosco, released a series under his name, Storaro Selection. This selection includes 10 different colors: Storaro Yellow, Storaro Orange, Storaro Red, Storaro Magenta, Storaro Violet, Storaro Indigo, Storaro Green, Storaro Cyan, Storaro Azure and Storaro Blue. Even the selection of these colors in the series is enough to give a sense of how bold Storaro is with his use of color. He always uses very strong colors and doesn't afraid of taking critical decisions as long as it serves the story.

Nestor Almendros, great cinematographer who is behind the lenses of films like *Days of Heaven* (1987), *Sophie's Choice* (1982), and *Kramer vs. Kramer* (1979) mentions Storaro in a documentary with these words: "At the time colors were used with more cautious way, in American movies especially. Everything was pretty and well-balanced. He had these extreme reds and blues."[27] This proves the power of Storaro's use of colors even on other great artists of the time.

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[27] David Thompson. *Writing with Light: Vittorio Storaro* (1992)

In Storaro's works, colors don't even necessarily need to evolve only throughout the film. It can change very drastically even in a scene according to the emotions of the character. In the famous train travelling scene from *The Conformist*, Vittorio Storaro changes the color of light from orange to blue, not only to visually emphasize that it was a 10-hour long travel -which is already very innovative idea for the time-, also to represent the change in the emotions of the character in this love-making scene.

Source: *The Conformist* (1970) [Video].
Italy: Bernardo Bertolucci

Storaro is influenced by painters throughout his career. In each of his films he found a painter or series of painters that influences his decisions and helps him to build the visual idea of the film. But among all these painters the one that influenced him the most was Michelangelo Merisi da Caravaggio. Before shooting *The Conformist*, Storaro met with Caravaggio's famous painting *The Calling of Saint Matthew* aka *La Vocazione di San Metteo*. [28]

Caravaggio, *The Calling of St. Matthew*, San Luigi dei Francesi, 1599/1600

[28] Jon Fauer. "The Calling of Vittorio Storaro." *Film and Digital Times*, 12/7/15. [online]. Istanbul [cit. 2018-08-10]. Accessed from: http://www.fdtimes.com/2015/12/07/the-calling-of-vittorio-storaro/

Storaro's encounter with the great separation between light and shadow in Caravaggio's painting defined his definite style: low-key, chiaroscuro lighting.
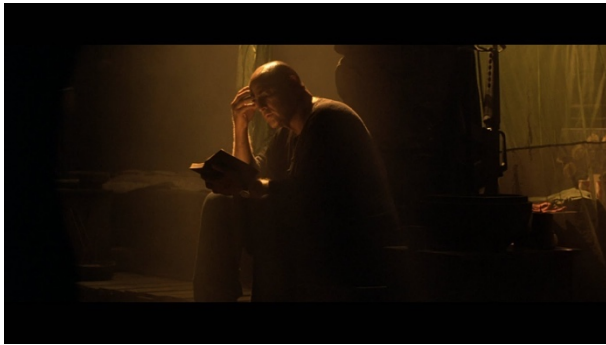
Source: *Apocalypse Now* (1976) [Video]. USA: Francis Ford Coppola.

Source: *The Conformist* (1970) [Video]. Italy: Bernardo Bertolucci

The symbology of *The Conformist* is, the light is the conscious, and darkness is the unconscious, which is a visual symbology he used throughout his career in most of his films. This intellectualization not only helped Storaro to create a unique style in the film, but also to reflect the structure of the character with the use of light. Throughout the film he uses darkness to symbolize 'the hidden things'. The main character of *The Conformist*, Marcello Clerici is a man who has things to hide, things that shouldn't be known or seen, things in darkness. But at the same time there are things that is represented in front of him as reality. Things that he has to confront, which is the conscious. Storaro took this idea from Caravaggio's painting and employed it throughout the film, which is another important artistic merit of his. Once he gets an idea about the color tonality and the relationship between light and shadow for a film, he rarely changes it. In *Apocalypse Now* once they established the helicopters and all the chaos even in the simplest shots, like a single shot or a close-up, there was no turning back, no matter how complicated it was to have them again and again. Throughout the film there is always something in the background. A helicopter, a colorful smoke, an explosion. Anything which was giving the chaotic feeling of the war.

Source: *The Conformist* (1970) [Video]. Italy: Bernardo Bertolucci

Above are the examples from *The Conformist* where he uses stripes of light to create a distinctive separation between light and darkness. The still on the first-row left is taken from a shot in which Marcello Clerici is walking towards minister's office. Here Storaro creates a great separation between light and shadow through the use of windows. This creates an unconscious effect on the audience's mind. Same lighting style can be seen in all the examples. Notice how strong and harsh the quality of light is. The still on the second-row right, the close-up, is taken from a scene in which Marcello witnesses a private moment of the minister that he shouldn't witness. That's why he hides himself behind the curtains and slowly pulled into shadows, to the hidden secrets. Storaro uses the light to create the claustrophobic feeling of the period under the fascist regime in Italy. But once the story moves to France, the shadows start to disappear, the separation starts to get lessen. We start to see more colors, since the character is also changing. The still on the first-row right grabbed from a well-known bedroom scene, in which Storaro famously moves the lights that are behind the vanishing blinds. In this scene the movement of lights has no realistic motivation at all.

It is there merely for the purpose of reflecting the emotion of the scene. This similar approach he also has in his use of colors gives us an example of how bold Storaro's cinematography is, and how he puts the emotion of a scene over the realistic logic of it. This I would like to call "the magical quality" of cinema was missing since the era of black-and-white silent films and was brought back in 70's by the filmmakers like Storaro.

Storaro uses strong shafts of light, hard key light coming through windows, and almost no fill light, because as he calls "Full light is almost no light".
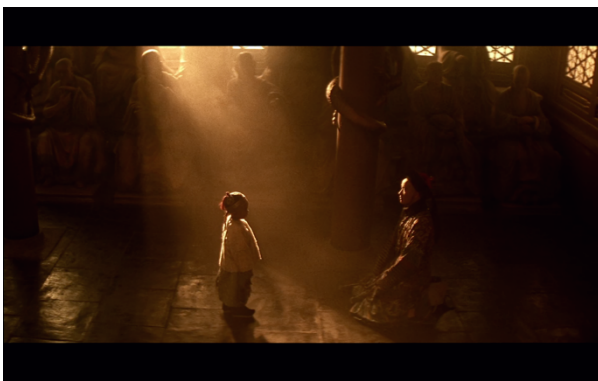
Source: *The Last Emperor* (1987) [Video]
Italy: Bernardo Bertolucci

Source: *One From The Heart* (1981) [Video]
USA: Francis Ford Coppola

When it comes to filmmakers, his inspirations are Gregg Toland, A.S.C., Gianni Di Venanzo and Aldo Graziati. For him, he took the surrealistic lighting of Gregg Toland, the revolutionary vision of Gianni Di Venanzo, the painterly quality of Aldo Graziati, and added the dedication to tell the story visually.[29] This belief towards the importance of telling the story was not only about helping the narrative through the use of camera, and light as a dramatic tool, it was also there to have a narrative that colors and light creates that is in line with the story. In other words, to add some sort an extra layer to the story. For him the meaning of cinematography was 'Writing with Light'. He was very much aware of the fact that what separates cinematography from

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[29] Global Cinematography Institute (2015). *Technology and the Future of Cinematography.* [video file]. Istanbul: [cit. 2018-08-11]. Accessed from: https://www.youtube.com/watch?v=pla_pd1uatg

photography was the movement. That is why he needed the knowledge of literature to create a sense of continuity, the music to understand the rhythm, the philosophy to be able to feed his art with a knowledge and understanding.

For Storaro it is really important to understand what story really means. He needs to create his own visual journey within the story in order to express it visually, to add an emotional level through the use of light and color. Bernardo Bertolucci recalls his collaboration with Storaro with these words;

> At a certain moment in the beginning of our relationship I understood, like some artists need inspiration through a bottle of beaujolais, through a huge joint of a grass, or any type of stimulating factor, Vittorio needs his own elaboration of the film. If you take away from him this freedom he loses his inspiration. So, I respect that even if I don't agree all the time… He was thinking the blue of the night, kind of luna feeling of the woman and the red which is the active feeling of the man and so on. Sometimes I think it is the opposite. Man is blue and passive, woman is red and active. But he needs it, let him have it.[30]

In *Apocalypse Now*, he was not sure how to relate and approach to the world of the film. After reading the novel by Joseph Conrad, *The Heart of Darkness*, he understood that the story was about the conflict between two cultures. Visually he translated this idea he got from the novel as the conflict between the natural energy and artificial energy. Visually, *Apocalypse Now* became the story of the conflict between the natural light of Vietnam and the artificial light/energy brought by Americans. The conflict between two different nation and culture is translated into the conflict of light. Film starts right away with the image of the nature, the green trees and clear blue sky, soon to be polluted with artificial smoke, followed by an explosion. Storaro uses these kinds of imageries throughout the film very excessively to support the idea of the war between natural and artificial energy. He uses purple, yellow, pink smokes. These kind of extreme stylistics choices reveals an important power of

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[30] David Thompson. *Writing with Light: Vittorio Storaro* (1992)

Storaro's cinematography. Whenever a cinematographer employs extreme use of colors there is a high risk that it will create some sort of alienation on the audience by drawing too much attention on the stylistic choices and overshadow the story. But in *Apocalypse Now*, Storaro manages to take these stylistic decisions and use them so masterfully that it becomes the second nature of the film. In the context of *Apocalypse Now,* the exaggeration of colors helps to draw more attention to the destructive nature of the war and increase its physiological effect on the audience. It becomes so powerful that after a point it is even more effective than the images of explosion. This visual representation of the superimposition of one culture on top of another through the artificial energy taking over the natural one can be found throughout the film. Another example can be the Playboy Bunnies scene. Storaro asked production designer, Dean Tavoularis, to design a set that would have lots of Photofloods in it. From the technical stand-point this was in order to be able to get the exposure, since it was impossible to light up that huge area any other way, but artistically Storaro wanted to create the intrusion of artificial light in the jungle. [31]

Source: *Apocalypse Now* (1976) [Video]. USA: Francis Ford Coppola

It is really hard to point out a single theme for *Apocalypse Now* since it is one of the most complex films of the history of cinema and involves many themes to explore. Like we can read the film as a conflict between the natural and artificial energy we can

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[31] Stephen Burum, A.S.C., Stephen Pizzello. "Flashback: Apocalypse Now, A Clash of Two Cultures." *American Cinematographer*, August 24, 2017 [online]. Istanbul: [cit. 2018-08-12]. Accessed from: https://ascmag.com/articles/flashback-apocalypse-now

also read it as a metaphor for descent into madness, or as the title of the original source material suggests, a journey to 'the heart of darkness'. The concept explained very clearly in a video analysis on a YouTube channel called "Channel Criswell"[32]. The analysis points out that the journey that leads Willard to the descent into madness can be analyzed in three parts under the theme of dehumanization. Parts follow as; Love of War: Dehumanization of the Enemy, Loss of Morality: Dehumanization of the Innocent, Madness: Dehumanization of the Mind. Just like all these steps are evolving into the core theme of the film, the madness, Storaro's cinematography is also slowly progressing towards the visual representation of madness, the darkness. Storaro masters his use of light and shadow in *Apocalypse Now*. In *Apocalypse Now*, Storaro's use of the separation of light and shadow as being the symbology of conscious and unconscious, started with *The Conformist*, through the influence of *The Calling of St. Matthew*, comes to its peak. *Do Long Bridge* can be seen as the first sequence that the Madness: Dehumanization of the Mind part starts. In this sequence we can clearly see how Storaro used darkness to visually represent the idea of madness, through the use of the searching lights as being the motivated light sources. Throughout the sequence the use of darkness is orchestrated in a way that the character Willard is gradually getting brighter and darker, with the constant change in the light levels. On one hand the use of light and darkness in a harmony increases the effect of the horror and madness on the audience, on the other hand it also says something about the subject matter: without the light the heart of darkness cannot function.

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[32] Channel Criswell (2015). *Apocalypse Now | ANALYSIS.* [video file]. Istanbul: [cit. 2018-08-12]. Accessed from: https://www.youtube.com/watch?v=r23wOiCHK5E&pbjreload=10

The separation of the light and the shadow is used even more extreme in the last sequence of the film, in which Willard faces Kurtz. Kurtz is almost in total darkness, getting splits of light from time to time. Kurtz always going in and out of darkness, and soon Willard as well. By keeping Kurtz mostly in the shadows, and playing with the darkness, Storaro manages to reflect the unconscious of the character, where the true heart of the darkness lies.

Source: *Apocalypse Now* (1976) [Video]. USA: Francis Ford Coppola

In *Dick Tracy*, Warren Beatty wanted to employ only the primary colors since he was believing that the film is about primary feelings. Storaro benefits from the use of primary colors throughout *Dick Tracy*, in the set design, in the lighting of the streets. He used the color green as the color that connects the innocence of our youth with our later awareness, the color red as the color of our conscious, the symbol of vital energy, color blue as the color that introspects of all our thoughts and intuitions. But Storaro also carried the concept further. The basic emotions of the film could be structured through the use of only primary colors, but he believed that a further exploration of colors is needed. So, he used colors specifically according to the structures of the characters. He used the color red for the Kid, who is symbolizing the youth, and the innocent vitality of life, orange for Tess who is symbolizing the warmth of family, and yellow for Tracy as him being the one illuminating the darkness, representing the sun. For the mafia he used the colors blue-indigo and violet which was representing our unconscious, what we call 'the evil'. Instead of simply creating the color scheme of the

film out of primary colors he used more of a mixed palette and added a level to the story, since for him, *Dick Tracy* was the confrontation of two worlds, the conscious and unconscious, and the story of the impossible love between two sides.

Storaro also used colors not only to support the dramaturgy but also to give hints about the plot, which maybe doesn't affect it directly but adds it another layer that makes *Dick Tracy* a film which deserves a multiple watch. Throughout the film the character Breathless, who later on turned out to be 'No Face', is represented through achromatic colors to avoid any further identification of the character. Breathless always wears either a black or white dress. Her hair that is already very lightly colored and bright kept even brighter with the help of exposure. For Breathless, Storaro avoids any characterization of colors, and that way he gives the audience a hint that Breathless and No Face, a man without identity, can be the same person.

Source: *Dick Tracy* (1990) [Video]. USA: Warren Beatty

The still on the left is taken from the scene that Breathless is introduced for the first time. Among the colorful lights of the club she wears a dark dress, and her hair is almost white. The still on the right is from a scene towards the end of the film in which the true identity of Breathless is revealed. For the first time we see a chromatic color on her. She is wearing a purple scarf, the same hue with a darker shade which was in the background when Breathless is first introduced in Club Ritz.

Storaro knew that the light is a visual energy which creates a reaction on our body, a certain behavior and emotion. The bigger the increase in the light levels, and

separation of the light within the spectrum, the greater the impact it creates on us. He didn't only stick to this idea in his lighting that he influenced by Caravaggio, also utilized it greatly in his use of color. The greater the separation between the colors the more defined the relationship between the characters. When Coppola offered Storaro to work on *One From The Heart*, Storaro knew that it was a great chance to experiment with the colors, to understand the physiology of it, since the film sets in Las Vegas, which is a city filled with neon lights, a city that turns daylight into neon, conflicts with the nature and employs the effect of light and color on the human body. He took advantage of the color contrast he could take even further to explain the characters. Hank is identified with the color green, and Frannie with red.

Source: *One From The Heart* (1981) [Video]. USA: Francis Ford Coppola

The reason of this choice can be understood with a simple interpretation of the characters. Frannie is kind of an extroversive character. She is dynamic, active. She needs a fun weekend, needs to go out, do stuff. Hank is more of an introversive character. He needs to rest, have some peace. He wants to settle. In the very early stage of the film the differences between characters are revealed through the camera blocking, editing and dialogues. But Storaro added another layer to it by defining the characters through two primary colors that are on the opposite sides of the spectrum: red and green.

Storaro used the symbology of colors in a repetitive pattern throughout the film, and since the background of the film was Vegas, it gave him an opportunity to be more expressive. When Frannie was talking about her dreams, and her disappointments, the scene is dominantly red.

Source: *One From The Heart* (1981) [Video]. USA: Francis Ford Coppola

The colors also change during the scenes from green to red or vice versa according to the power balance between the characters. The color characteristics are kept even when they are with other people. The moments Hank is alone with Leila, a circus girl he met, is mainly green, and the moments Frannie is alone with Ray, a waiter and part-time piano player, the color of the scenes are dominantly red. This pattern repeats throughout. When Leila is looking through a red glass to tell Hank's fortune for Frannie, or when Hank is at rock bottom, left alone in the green colored corridor. When he is left by her, driving back home in the thunderstorm color palette is really muted and close to being neutral, but still there is a green tint throughout. In the end of the film, when Frannie turns back to Hank, for the first time a very neutral tone used. Once she is back, the lighting of the living room turns to warm white, visually underlying that both are changed and they left their differences to be together, to be in synch.

Source: *One From The Heart* (1981) [Video]. USA: Francis Ford Coppola

As mentioned previously, for *One From The Heart*, Storaro came with a very innovative approach by using a lighting console, suggested to him by Coppola. That way Storaro was able to turn his lighting into choreography. He didn't use the colors red and green only to underline the characters, he made changes in these colors during the scenes when they are together, according to the emotion of the moment, such as the love-making scene in the beginning of the film.

Source: *One From The Heart* (1981) [Video]. USA: Francis Ford Coppola

For Storaro, *The Sheltering Sky* was the journey of sun and moon. In other words, a journey from orange to blue. Storaro uses the sun as an image the character Port identifies himself with. *The Sheltering Sky* starts with the black-and-white images of New York during the credits. The credits sequence is followed by the two shots indicating the characters' travel to Tangier, Morocco, the city their travel to North Africa starts. The first shot of the travelling sequence is very monochromatic, which is followed by the close-up of Port that is really monochromatic as well. This close-up of Port that starts with very faded colors suddenly starts to get saturated with the extreme

orange of the harsh sunlight. Right from the beginning, Storaro identifies Port with the sun. The journey of the sun is the journey of his life. And of course, sun's journey is always followed by the moon. Sun reaches its maturity in the afternoon and arrives to equilibrium during the golden hour of sunset. The setting of the sun, the time the sun dies is the time Port's life ends. Storaro went even further and picked the location where Port is dying according to the point where the sun is setting. Port even mentions his identification with the sun, by saying that the sun is protecting them from what's behind, which is for him the nothingness, and he says it with these words "It's nothing. Just night.". It is inevitable that once he dies all the warm hues die as well and the blue part, the lunar journey of the film starts.

After Port's death, Kit goes out to the incredible blue sky. Vittorio Storaro explains that moment with these words:

> Just as the sun sets, and Port dies, Kit is lost to this incredible blue sky. Because she too had lived in the sunlight, she had never seen a blue so intense. There is only one thing she can do; she must follow Port's dream, just as the moon follows the sun's path. This begins the lunar part of the film, which is concerned with the color blue.[33]

In the end Kit is the one who achieves true isolation, because she is the one who stops to hiding behind the safe image of the sun and let herself go completely. For Storaro this means Kit experiencing another part of the spectrum, the full richness of it, in order to be complete.
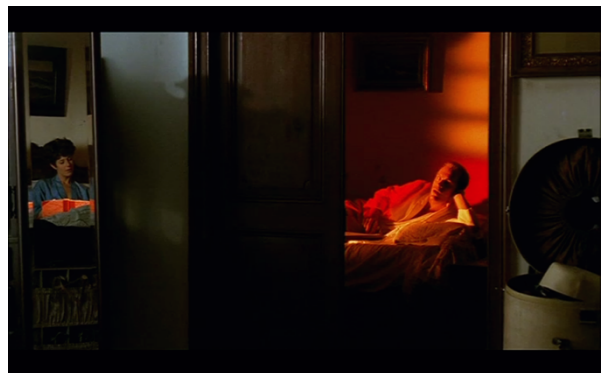
Source: *The Sheltering Sky* (1990) [Video].
UK, Italy: Bernardo Bertolucci

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[33] David Thompson. *Writing with Light: Vittorio Storaro* (1992)

As I mentioned above very briefly, Storaro inspired by painters quite often in his films. He took Francis Bacon as a reference for *Last Tango in Paris*. Storaro and Bertolucci went even further and put the paintings of Bacon in the beginning of the film, throughout the credits scene. This shows how Storaro is not only getting influenced by paintings that fits to the world of the film in terms of color tonality and light, but his references also add to the theme of the film. Since *Last Tango in Paris* is a psychological or even a psychoanalytical study of the protagonist Paul, Francis Bacon's paintings were perfect fit to underline the theme of the film.

Francis Bacon, *Double portrait of Lucian Freud and Frank Auerbach*, Moderna Museet, 1964

In *Dick Tracy*, Storaro inspired by German Expressionistic painters, Otto Dix, Conrad Felixmüller, George Grotz. Throughout the film the similarities between the paintings of these German Expressionists' and the look of *Dick Tracy* with its use of colors, set design, light, architecture, composition is undeniable.

Conrad Felixmüller, *Autumn Evening*, Klotzche, 1921

Source: *Dick Tracy* (1990) [Video]
USA: Warren Beatty

All these examples can be diversified even further. His long and impressive career gives us an enormous study of light and color. But in the end, it all comes down to the same conclusion, whichever film he made, Storaro's core approach was always the same: be true to the material, understand the structure, the true meaning of the story and the character, and turn it into a journey of light and color through the philosophy of life in order create an emotional journey. But how he achieved that? His method was simple but yet extremely hard to achieve that requires a true dedication and study: Find the true inspiration that drives you as an artist and stick to that no matter what. In other words, stick to your guns.

My fear is that some no longer feel the need to know about the technology, the past history of cinema or the visual arts. Perhaps they are even not interested in the future of cinematography. However, people have always expressed themselves through the visual arts. They painted on the walls of caves, on wood, on canvas, with photo-chemical emulsions, in color, in panoramas, in 3D, in both analog and digital formats. The medium wasn't and isn't important; it changed throughout different periods of history. The important thing always has been, and will continue to be, the idea — the main concern of the human mind.
I do not believe that there is a great difference between analog and digital cinema. It is true that I hear more and more people saying that we have lost the magic of cinema in the passage from film to digital. Personally, I do not think so, especially if we maintain the history, the knowledge, and the love for the arts that is integral to human creativity."[34]

Vittorio Storaro

1.1   The Analysis of *Café Society*'s Cinematography

Café Society is a 2016 film directed by Woody Allen. It is the first collaboration between Allen and Storaro, which is followed by *Wonder Wheel* (2017) and *A Rainy Day in New York* (2018).

Long before the film released, Storaro openly invested and shared his ideas about the techniques he used and artistic choices he made for *Café Society* in various platforms. He also offered many ideas and insights about digital cinematography through his own experience in order to provide a basis to open a discussion for the sake of developing this technology further for the requirements of cinematographers and filmmakers.

Café Society sets in the 30's Hollywood. The story follows a young Bronx native man Bobby, who moves to Hollywood and falls in love with a young beautiful woman,

[34] Jan Fauer. *Film and Digital Times*, Special Online Report. "Digital Cinematography on "Cafe Society" by Vittorio Storaro ASC, AIC." Dec 2016, p.2.

Vonnie, who is working as an assistant of a powerful talent agent, Phil Stern, Bobby's uncle, and Vonnie's secret lover.

For the cinematography of *Café Society*, Storaro inspired by many painters in order to create the look and color scheme of the film according to the story. For *Café Society* his influences were mainly Otto Dix, Edward Hopper, Tamara de Lempicka and Georgia O'Keefe[35], although he referenced many other paintings from various artists for the specific moments or characters of the film. For the powerful Hollywood talent agent Phil Stern, he influenced by Heinrich Maria Davringhausen's *The Profiteer*.
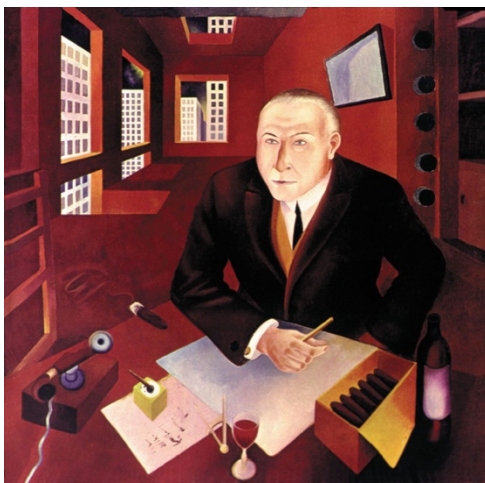
Henrich Maria Davrinhausen
The Profiteer, 1920-1921

Source: *Café Society* (2016) [Video]
USA: Woody Allen

For the Bronx part Storaro inspired mainly by the works of Georgia O'Keeffe and Ben Shahn, especially Shahn's *Sing Sorrow* because of its low chromaticity, contrast and limited color palette. For the world of Bronx, Storaro didn't want to use a very intense visual language that creates a greater reaction on our body and mind. Specifically, for the Bronx apartments he influenced by Felix Vellotton's *"Dinner by the Lamplight"*[36], and also works of Georges de La Tour since La Tour's style was a perfect

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[35] Jon Fauer. "Passage from Film to Digital." *Film and Digital Times*, April 2016, vol. 75, p. 6.
[36] "Secrets of The Master". *British Cinematographer* [online]. Istanbul: [cit. 2018-08-14]. Accessed from: https://britishcinematographer.co.uk/secrets-of-the-master-part-1/

fit because its dimmed, low luminous and limited tonality look that embodies limited hues with lower saturation levels.

For Bobby's nightclub he influenced by the works of later expressionist painter Otto Dix and mainly by the Art Deco paintings of the polish painter Tamara de Lempicka. The reason for the choice of Tamara de Lempicka's paintings for the nightclub scenes can be found in Lempicka's own words:

> I was the first woman to make clear painting, and that was the origin of my success. Among a hundred canvases, mine were always recognizable. The galleries tended to show my pictures in the best rooms, because they attracted people. My work was clear and finished. I looked around me and could only see the total destruction of painting. The banality in which art had sunk have me a feeling of disgust. I was searching for a craft that no longer existed; I worked quickly with a delicate brush. I was in search of technique, craft, simplicity and good taste. My goal: never copy. Create a new style, with luminous and brilliant colors, rediscover elegance of my models."[37]

Tamara de Lempicka
Portrait of Madame Boucard, 1931

This clean, elegant and glamorous look of Art Deco was a great reference to reflect the soul of the high-class, fancy nightclub of New York in the film, which is the place of glamour, beauty, modernity and fame. This new face of New York with rich people wearing tuxedos, opening expensive bottles of wine and champagne is very much different from the New York that is presented in the beginning through Bronx, where Bobby's roots are. The luminosity of light in the nightclub is much higher compare to Bronx and it has a much more sophisticated color

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[37] Lempicka-Foxhall, Kizette (1987). Philips, Charles, ed. *Passion by Design: The Art and Times of Tamara de Lempicka.* New York: Abbeville Press, p.52.

palette benefiting from the contrast of hues, by selecting of greater saturation levels and luminosity. It can be said that the look of the nightclub is a balance between Bronx and Hollywood, since the later New York is the place that Bobby brought something from his sunny days in Los Angeles. It has similar brightness and luminosity to the Hollywood with a fresh and clean look, but still it is a little subtler.

For the look of the 30's Hollywood Storaro influenced a lot from Otto Dix[38], the German-Expressionistic painter. German-Expressionism has a big influence on Storaro's career. Above it is also mentioned very briefly how Storaro influenced by this art movement in *Dick Tracy*. In Café Society, the main reason why Storaro looked at the works of Otto Dix is because of the period of the film. 30's Hollywood was under a great influence of post-expressionism like any other branches of arts from theater, to photography, to comic strips. Throughout the film the influence of German-Expressionism can be seen in the set design, even in the small hotel room of Bobby, and in the small bar he spends time with Vonnie. The influence of German-Expressionism on the Hollywood of 30's can be also seen on the posters that appear in the film. Although German-Expressionism and specifically Otto Dix's influence can be seen very clearly on the architecture of the film, it is also possible to see its influence in small details.

Beside from the influence of Otto Dix, regarding the set design and architecture, Storaro also influenced by Edward Hopper's paintings in terms of lighting, especially for the sunlit world of Hollywood. For the look of Los Angeles, Storaro benefits highly from Hopper's cinematic compositions and dramatic use of light and shadow. When we look at the works of Edward Hopper it is possible to see common aesthetic characteristics throughout. Hopper always uses light as a dramatic storytelling tool. He mainly benefits from the sunlight and goes for artificial sources very rarely. His

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[38] Jon Fauer. "Passage from Film to Digital." *Film and Digital Times*, April 2016, vol. 75, p. 9.

paintings mostly have warmer tones, both in terms of the hue and light. Even though he uses the hard sunlight as the main light source, Hopper's paintings employ a very soft quality throughout. This expressive, hard use of light and defined shadows combined with a soft look fits perfectly to the look Storaro wanted for 30's Hollywood in *Café Society*. Storaro wanted Hollywood to have a very expressive look through the use of light but still with a soft, diffused quality since Hollywood represented in the film as the land of dreams. Another reason why Storaro looked into the work of Hopper for *Café Society* can be due to the influence Hopper had on the American Cinema throughout the 20th century. It is possible to see the influence of Hopper on many filmmakers like Douglas Sirk, Alfred Hitchcock, Todd Haynes, Terence Mallick, David Lynch, and Sam Mendes.

Edward Hopper, *Summertime*, 1943

Café Society's plot can be divided into four parts. It starts in Bronx, moves to Hollywood, then comes back to New York with Bobby moving back, and then goes back to L.A. with Bobby visiting the city in order to check the possibility of opening another chain of his nightclub, but in fact to see Vonnie.

Among all these parts there are two major locations that needed two distinctive visual style. Storaro based his main idea for the visual approach of the film according to these two locations: the Jewish cultural world of Bronx in New York, and the

Hollywood star system of Los Angeles.[39] Storaro mainly created a color scheme for the two contrasting worlds of the film and then 'spread' it amongst the four parts by changing the chromaticity levels and tonality according to the context of the scenes. For the Bronx part, Storaro uses a low chromatic range, less saturated, dull tonality, mainly accompanied with the beige tones. For Los Angeles, the sunlit, warm world of Hollywood, he uses a high chromatic range and warm hues, by taking the hard, strong sunlight to its center. Storaro's use of two contrasting colors to underline the two contrasting world is an ever-recurring visual theme in his films. As mentioned in the chapter 'A Brief Look at Storaro's Artistic Style', Storaro is very much aware that the visual energy creates a reaction on our body, a certain behavior and emotion. The bigger the increase in the light levels, and separation of the light within the spectrum, the greater the impact it creates on us. Just like in *One From The Heart*, Storaro benefits again from the contrasting colors to underline the two contrasting world of the film. During the *Café Society* seminar held in Camerimage Film Festival at 2016, Storaro states:

> We need to know how the body reacts to color. Humans have always lived according to the sun's journey, becoming active where it rises, then pausing, reflecting and exploring consciousness as it fades at the end of the day.

Source: *Café Society* (2016) [Video] USA: Woody Allen

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[39] Jon Fauer. "Passage from Film to Digital." *Film and Digital Times*, April 2016, vol. 75, p. 4.

The warm, sunlit characteristic of Hollywood is not only due to its charm as it is being the world of dreams, big houses with swimming pools, the movie stars and all the glamour. Hollywood had always been an object of desire, especially in 30's, but for Bobby the main one is not really the Hollywood, it is Vonnie. Bobby soon sees the real Hollywood, the world of disillusion, as he calls, a "boring, nasty, doggy-dog industry". But still the warm, charming look of Hollywood doesn't change because the main reason for Hollywood part having a high chromatic, warm look is because of Bobby's encounter with the love of his life, the woman he will never forget, Vonnie. She is the sun in Bobby's life, the one that represents the warmth of family, and innocence. For him she is the one he wants to go back to New York with and marry. In other words, Bobby wants to bring the warm sunlight to the dull world of Bronx. So, visually we can see *Café Society* as Bobby's journey of trying to find the sun.

Source: *Café Society* (2016) [Video] USA: Woody Allen

Above is the shot that introduces Vonnie for the first time in the film. She is the brightest and warmest thing in the room with the sunlight hitting directly on her. She glooms like an angel, unlike all the other characters of the film that always have some kind of rough sharpness. Even when Phil Stern recalls his first-time meeting with Vonnie, she appears in Stern's office like an angel, getting a direct sunlight, glooming in her white dress. She is certainly a figure representing the sun, and innocence. Throughout the New York part Vonnie is always the one who is under the spotlights,

she always has the warmest and softest light in the room, even at times shifting towards to the red end of the spectrum.

When Bobby returns to Bronx after his adventure in Hollywood, Storaro again comes back to the dull look associated with it, but still the dinner scene where we see Bobby together with the family has slightly warmer hue and harsher quality of light, such as the top light on Bobby, because of Bobby bringing back some part of him from Hollywood. But still the overall tonality falls under the previous Bronx scenes with a subtle difference. After Dorfman Family's dinner scene, *Café Society* continues in the nightclub which has its own glamorous Art Deco look. But when New York is shown again, suddenly it is lit with the strong sunlight, not as warm as the world of Hollywood, but still noticeably warmer and brighter compare to previous New York scenes. Now we can see a higher chromaticity value and more separation between the tonalities, compare to the look identified with New York before mainly by Bronx having kind of monochromatic look with very minimal gradation and separation between tonalities. Soon, the moment we see Veronica, Bobby's wife, whom he met in New York in his club, the reason for this fresh look gets clarification. It is important to point out that in fact Vonnie is the short version of the full name Veronica. Bobby sees a reflection of Vonnie in Veronica. Soon we witness the moment of how they met. In their first encounter Bobby asks Veronica if she is ever called as Vonnie. In fact, Bobby starts to call Veronica as Vonnie right after she announces about the pregnancy. Even the hair of Veronica has almost same style as Vonnie's. Soon, we understand that the reason for New York getting suddenly a sunnier, warmer look is due to the mirror image, the double identification Bobby creates on Veronica through Vonnie. Kind of a famous Hitchcockian situation famously known in *Vertigo* (1958). Veronica is lit the same way Vonnie was in the Hollywood part.

When Bobby and Veronica are in a jazz bar for their first meeting, there is a very warm, soft light on her. She looks like an angel just like Vonnie was in the Los Angeles part. The effect may not be that high, due to Vonnie still being the one Bobby loves, but it's still noticeable enough to create an underlining effect on the unconscious of the audience.

After the jazz club, while Bobby is dropping Veronica to her home, and giving her a kiss goodbye, the elevator door opens, and suddenly Veronica is lit with an extreme warm light that has exactly the same light tonality identified with Vonnie.

Source: *Café Society* (2016) [Video] USA: Woody Allen

Storaro also follows his style of using color according to the structure of the characters*.* Ben, the mafia like figure of the film is identified with the color blue. Even though the Bronx scenes always have very muted, low chromaticity, beige tones, the scenes we see Ben always have a blue tone, especially in the shadows. Throughout his career, Storaro used the achromatic color black as the color that represents the unconscious, the evil. Most noticeably in *The Conformist*, and *Apocalypse Now*. It is not a surprise when Storaro decided to tone the blacks with a blue hue for the scenes that Ben is the central character.

Source: *Café Society* (2016) [Video] USA: Woody Allen

Even in the scenes that he is involved but not the central character, there is still a blue light somewhere in the background. When he is in the families' house that has a very monochromatic beige look, because of his existence there is a blue light in the background coming through the window, just like the house of Hank and Frannie in *One From the Heart* having a red light in the background during in the breakfast scene while Frannie is confronting her emotions, which is identified with the color red for that particular film. This color characterization is kept throughout, even in the parts Bronx got a slightly sunnier, warmer look after Bobby meets with Veronica, Ben still have some blue light on him in all the scenes.

Source: *Café Society* (2016) [Video]. USA: Woody Allen

Source: *One From The Heart* (1981) [Video]. USA: Francis Ford Coppola

In *Café Society* Storaro also employs another of his artistic merit, which is the changes in the light levels and chromaticity during the scenes. Just like in *The Conformist*'s train scene, Storaro plays with the colors and light levels during some scenes in *Café Society* according to the emotional context. When Bobby's sister was sitting in a diner and reading the letter she got from Bobby that he is mentioning the life in Hollywood, suddenly a very noticeable warm light, that is identified with the world of Hollywood appears on her face, and warms up the low chromatic, dull world of Bronx. The important thing to point out here is the exact moment that this light appears on Rose. While she is reading the letter, camera slowly pushes in on her, which is a visual language of the camera movement Storaro used whenever there is a narrator

or a voice-over. Suddenly at the very moment Bobby mentions about Vonnie, camera stops pushing in, and the warm light slowly appears. There is a subtle smile on Rose's face. Again, Storaro turns cinematography into choreography. The appearance of the sunlight is kept even when its cut to another location right after Rose finishes reading the letter, while she is writing back to Bobby.

Source: *Café Society* (2016) [Video] USA: Woody Allen

Storaro uses the same idea when Vonnie and Bobby are in the hotel room. Vonnie comes over to Bobby's, crying because of her very recent break-up with Phil Stern. When she arrives to Bobby's place there is already a semi-romantic atmosphere in the room, accompanied with candle lights and white wine. Suddenly the lights in the room goes off, motivated with a cut in the electricity. The half-neutral, warmly lit atmosphere of the hotel room motivated by the practicals suddenly turns into a very romantic, magical warm one. With this light change, not only the overall light level is affected, but also the overall color temperature of the scene changes, since now the scene is lit by the warm light of the candles. This change carries the scene towards to a tonality that creates the feeling of romanticism on the audience for first semi-serious romantic encounter of Vonnie and Bobby.
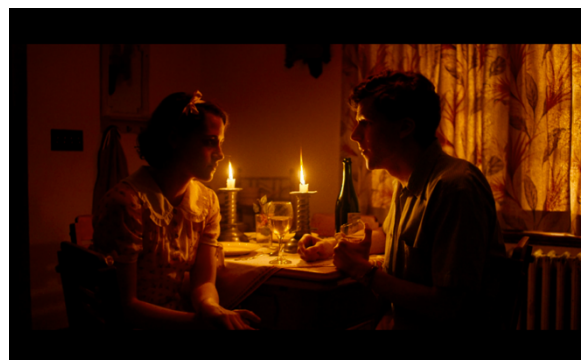
Source: *Café Society* (2016)
[Video] USA: Woody Allen

Storaro employed many tools of filmmaking in *Café Society*, from static shots, to dolly shots, but the most prominent element of the camera language of the film is the use of Steadicam. In the beginning Woody Allen was a bit skeptical about the use of the Steadicam but once Storaro explained his idea, Allen internalized it and the movement of the Steadicam became an inherent aspect of *Café Society*. During the press conference of the film in 69th Cannes Film Festival, 2016, Woody Allen explains that he wanted the film to have the structure of a novel, since it takes place over period of time, and contains various different incidents in it instead of a single one.[40] Since he wanted to structure the movie like a novel, he also wanted to include a narrator, himself. Storaro translated this verbal idea into a visual one. Whenever the narrator narrates a scene, back story of a character, or basically in any situation that the narrator's voice-over is involved, there had to be a distinct camera language and movement that separates the narration part from the rest. With the help of Will Arnot, the Steadicam and Camera Operator of the film, Storaro moved the camera according to the harmony and the emotion of the voice-over narration. As he did throughout his career, Mr. Storaro established this visual idea from the very beginning of the film in order to reveal the style particular to the movie and followed that all long. Just like Woody Allen starts the film right away with the voice-over in the house party hosted by Phil Stern, Storaro also starts it right away with the moving shot of the Steadicam that is almost seamless, and fluid, in a perfect synch with Woody Allen's narration.

Another important aspect of the cinematography of *Café Society*, regarding the use of the camera language is the choice of wide-angles. Throughout the film, Storaro mostly used 18 and 21mm. The choice of going with a wider focal length was in order to show the scope of the world. The wide-angle lens shows the world based on the star system. It helps the audience to get the sense of the environment. As Will Arnot

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[40] Festival de Cannes (Officiel). *Cafe Society - Press Conferece - EV - Cannes 2016.* [video file]. Istanbul: [cit. 2018-08-14]. Accessed from: https://www.youtube.com/watch?v=cHS6WcRnFIM

mentions, the wide lens invites audience's eye on a journey around the frame, where depth, lighting, and background action require a strong composition and diligent blocking. It also gives a real life to the writing and acting. On the other hand, a longer lens compresses and flatten the depth and makes the focus more selective. It limits the point of focus, not allowing eye to travel.[41] That's why Storaro almost never goes to a close-up unless there is a romantic, emotional exchange between the main characters. By limiting his choices, Storaro manages to increase the effect of those emotions on the audience. He picks a longer focal length only when there is an important emotional moment between Vonnie and Bobby, and also between Vonnie and Phil Stern. By going to a close-up, and doing it so with a long lens, Storaro forces the audience to relate to the moment, to focus on the characters' eyes, where the truth lies. Storaro creates a masterful harmony between the long and wide lenses, and when he switches between them. He gives the audience a space to immerse the surrounding and the characters' relation in it, and goes to a longer lens at the right moment when he needs the audience to focus on an emotion that will complete the journey of the characters for that scene, and with the power of montage, for the whole film. Sticking to few focal lengths is a method that helps filmmakers to create a more unified visual language in a film. It is a technique used by many great masters. David Fincher uses this technique by limiting his lens choices mostly to three lenses. 27 and 40mm, and sometimes to 75 only when it is really needed. Many others use the same technique, some in a very extreme way by only picking one focal length almost for the whole film and some even for their whole career. Steven Spielberg mainly uses 21mm, David Cronenberg almost only 27mm, Alfred Hitchcock almost only 50mm, Jasujiro Ozu only 40mm. The list goes on.

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[41] Jon Fauer. "Passage from Film to Digital." *Film and Digital Times*, April 2016, vol. 75, p. 13.

In *Café Society*, Storaro also picks really carefully not only when to go to a close-up with a longer focal length, but also how to do that in order to visually express the emotional dynamics between the characters. Whenever there is a close-up between Vonnie and Bobby, Storaro chooses to go over the shoulder. When there is a close-up between Vonnie and Phil Stern, he chooses to go with singles. In other words, he keeps the spatial relationship when he is going for the close-ups between Vonnie and Bobby, but with Phil Stern he breaks it. This way he underlines that Vonnie feels more in the same place with Bobby but feels a bit distant and alone with Phil Stern. Phil and Vonnie belong to different worlds. This masterful visual motif he adds to the film creates a bigger meaning in the picture by underlining that Vonnie chooses to be with Phil Stern not because her heart was belonging to him, but simply because of rational reasons. She will never feel that much love to Phil Stern, and her heart will always belong to Bobby.

Examples of how the close-ups with longer lens is used in the context of the relationship dynamics between Vonnie-Stern and Vonnie-Bobby:
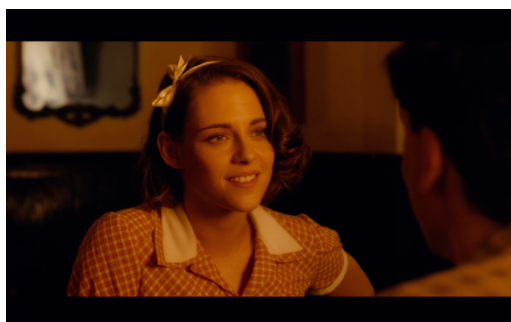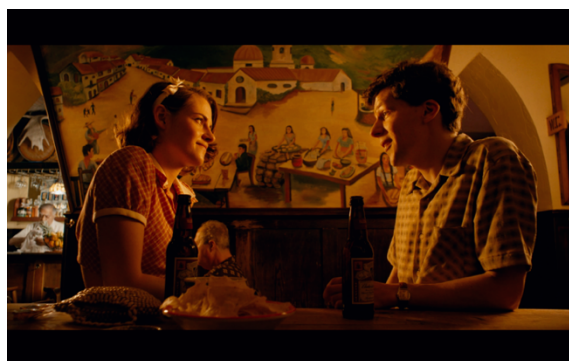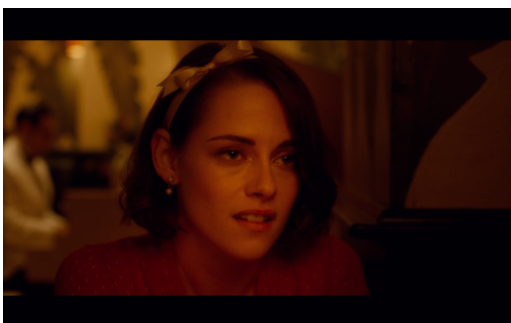
Source: *Café Society* (2016) [Video] USA: Woody Allen

1.2   The Technical and Methodical Aspects of *Café Society*

For *Café Society*, Storaro combined all of his artistic and technical knowledge, along with the methodology he developed over the years.

For Storaro, his crew are not only professionals who come together to do their parts. He works closely with them and turns filmmaking into a journey. Storaro still works with the exact same core team he had in *Café Society*, for both of the two later films he photographed for Woody Allen. Just like he was working closely and exclusively with Ernesto Novelli-Raimond, he also works closely with his colorist Anthony Raffaele. As famously known, during the production of *Apocalypse Now*, Gray Frederickson, the co-producer, wanted to develop the negatives in Technicolor Los Angeles, since the flights were not that frequent from Philippines to Rome. Storaro threatened the production to leave the picture if he cannot work with Ernesto Novelli, and that's how he managed to get the film developed in Technicolor Rome.[42] The reason behind this persistence is Storaro's belief to the importance of building a history, knowledge and experience with a person. He insisted right from the beginning that he wanted the same colorist to do both the dailies and the DI,[43] which is not something that is very frequently seen in today's Hollywood. For him it is really important to share the true meaning of a story, and to provide a certain understanding of art and ways of seeing. Many times, cinematographers approach colorists only as technicians who operates the color corrector. But Storaro discussed all his visual influences and decisions with his colorist. He also insisted on the same person to operate the camera and the Steadicam, Will Arnott. For Storaro, Café Society has three writers: Woody Allen who is writing with words, Vittorio Storaro with light, and

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[42] Stephen Burum, A.S.C., Stephen Pizzello. "Flashback: Apocalypse Now, A Clash of Two Cultures." *American Cinematographer*, August 24, 2017 [online]. Istanbul: [cit. 2018-08-12]. Accessed from: https://ascmag.com/articles/flashback-apocalypse-now
[43] Jon Fauer. "Passage from Film to Digital." *Film and Digital Times*, April 2016, vol. 75, p. 10.

Will Arnott with the camera.[44] His DIT, Simone D'Arcengelo, who was Storaro's student in *Academy of Image* in L'Aquila, and later on his assistant, was also always with him throughout the process. He knew that the Digital Image Technician is not just a technical person who keeps track of the technical quality of the image and the handling of the data, but an important figure who help cinematographers to express their ideas in a better way by increasing their technical awareness towards digital. Storaro even watched the dailies together with his core team, Will Arnott, Simone D'Arcengelo, and Anthony Raffaele, every Saturday in his hotel room and discussed about the work[45]. Today we encounter with endless number of interviews, discussions with cinematographers about their works as if cinematography is not a collaborative art form. It is very frequent that we see all the core crew discussing about their work in a film. In all the discussions they have attended, and all of the interviews they gave, Storaro's crew always mentions *Café Society* as a journey, and Storaro as a great and influential team leader.

Anthony Raffaele states:

> Working with Vittorio is like getting a degree in art history and cinematography. We discussed technical color science, black levels, density, red to orange, warmth, coolness. We also discussed the emotional aspects, with Vittorio's art references. If I did not know the works of art, Vittorio would virtually take me to the museum.[46]

For *Café Society*, Storaro picked Sony F65 as the A-Cam and F55 for Steadicam work. When choosing the sensor Storaro had certain parameters. Since he could scan the film to 4K, 6K or even to 8K, the camera he is going to shoot should at least have 4K resolution. It should have a 16-bit color depth, 2:1 aspect ratio and wider color gamut than print film. He found these parameters only in Sony F65 that satisfied

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[44] Jon Fauer. "Passage from Film to Digital." *Film and Digital Times*, April 2016, vol. 75, p. 13
[45] Jon Fauer. "Digital Cinematography on "Cafe Society" by Vittorio Storaro." Film and Digital Times, Special Online Report, Dec 2016, p.10.
[46] Ibid. p. 15.

him enough. F65's gate is almost 2:1. It is an 8K sensor outputting an almost uncompressed RAW, 4K output with 16-bit linear color. For the exteriors he rated the sensor at 640 ISO and for interiors 500 ISO.[47] He recorded the images at 4K 16-bit RAW onto Sony SR Memory Cards with S-Log3.Cine gamma curve. He used LUTs prepared before hands. Storaro had a calibrated 17-inch Sony PVM OLED monitor on set with the correct Show LUT applied to judge the look. His DIT, Simone D'Arcangelo, would control the LUT in Livegrade, do local adjustments in DaVinci Resolve if necessary and takes framegrab stills. These framegrab stills and also CDLs would go back to Anthony Raffaele, along with notes by Storaro and Simone. Raffaele would apply the LUTs and do adjustments according to the notes, and once it is done, he would write the dailies on a Blu-ray copy to be sent to Storaro to watch on his calibrated Sony monitor. Storaro shot the entire movie in 2:1 aspect ratio, named "Univisium" by him. This format he invented and exclusively used in all of his projects since 1998 gives him an ability to be able to control the original framing throughout the whole chain of distribution. For the working color space, Storaro and Raffaele used ACES, since it was giving the best possible deep blacks and vibrant colors Storaro wanted for *Café Society*. ACES also helped them to keep control over the image throughout the pipeline.

Storaro, along with his DIT, Simone D'Arcangelo and first AC, Ethan Borsuk did various tests to understand the capabilities and limits of the system in order to achieve his creative ideas. He learned the range and possibility of the system in order to go beyond the limits. He tested the depth of field, resolution, low-light capabilities, dynamic range, and every other aspect that is important in the realization of the image, so that he knows what the technology is giving to him, in order to realize his vision and push its boundaries. Throughout the film, Storaro used really strong highlights, and

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[47] Jon Fauer. "Passage from Film to Digital." *Film and Digital Times*, April 2016, vol. 75, p. 10

deep shadows. He used the medium very fearlessly. In fact, as Storaro recalls, his DIT Simone was many times pointing out the bright and dark areas and letting Storaro know that he was losing information.[48] But since he learned the limits and possibilities that the system brings, he could go beyond it with the awareness, instead of compromising his ideas and artistry.
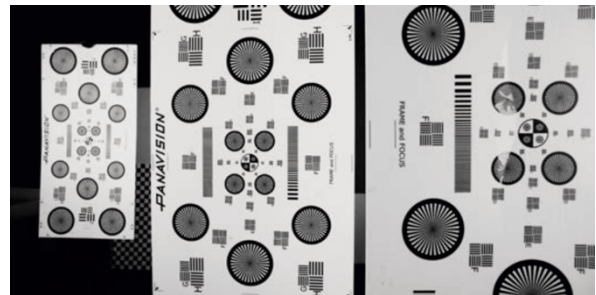

Source: *Café Society* (2016) [Video]
USA: Woody Allen

Source: *Film and Digital Times*
"Passage from Film to Digital"
[Still] © Vittorio Storaro

Source: *Film and Digital Times* "Digital Cinematography on Café Society
by Vittorio Storaro" [Still] © Vittorio Storaro

For Storaro maybe the biggest advantage of digital was its immediacy. The fact that what Storaro was seeing on set is what he was getting foreshadowed his biggest nightmare. When working with film he was never sure what he was getting no matter how experienced, and technically capable he was, there could be always something unexpected. But with digital he was able to directly see what was happening and make immediate changes. For Storaro, the immediacy of digital was not a downside, in fact it was quite the opposite. This ability helped Storaro to be able to have a clearer

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[48] Jon Fauer. "Passage from Film to Digital." *Film and Digital Times*, April 2016, vol. 75, p. 8.

communication on set with all the departments. After years of struggle trying to explain a visual idea to his collaborators by using verbal methods, for the first time Storaro was able to have a very clear visual communication. In fact, during the first make-up and wardrobe test with actors, Storaro noticed a problem about the color of a costume in terms of its relation with the background. Even though up until that moment Woody Allen didn't use his monitor not even once, after Storaro played back the scene to show him the problem, Woody Allen became really happy about the fact that he could see a clear picture that was very close to the end result, and he could communicate based on that.[49] At the press conference in 69th Cannes Film Festival, 2016, when Allen gets asked about the process, he mentions that nothing changed for him after moving to digital. He expresses himself with these exact words:

> To me it was exactly the same. There is a camera, it has to be lit. It's an identical thing. Instead of celluloid you work digitally, but process is the same. It has to be composed, and it goes through exact same motions as if you shooting on celluloid. And if anything, you have a few more options later because you are working digitally. But if you working with a master photographer the effect can be very, very beautiful as you see in the movie. To me it is the exact same thing.[50]

But it was not only the convivence of communication Storaro was happy about seeing the image on the monitor. As mentioned in previous chapters, Storaro always employed a "cinematography lightboard" in all of the films he shot since *One From the Heart*. With the convenience of digital he carried the control and precision he was achieving through the use of lightboards to a next level. Throughout the film Storaro

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[49] Jon Fauer. "Passage from Film to Digital." *Film and Digital Times*, April 2016, vol. 75, p. 5
[50] Festival de Cannes (Officiel). *Cafe Society - Press Conferece - EV - Cannes 2016.* [video file]. Istanbul: [cit. 2018-08-14]. Accessed from: https://www.youtube.com/watch?v=cHS6WcRnFIM

always had his calibrated OLED monitor in front of him with the lighting board, and a wireless control system that allows him to control the aperture.

Source: *Film and Digital Times*
"Digital Cinematography on Café Society by Vittorio Storaro" [Still] © Vittorio Storaro

This way, Storaro was able to work like a conductor. He could make sudden changes and see it right away without any hesitation. Most importantly he could have a precise control in order to get the exact look he was after, by having the LUTs prepared for certain looks of the film on his monitor. In the end Storaro achieved 80 to 90 percent of the look during the shoot and did DI only to refine things which took only 6 days for the first pass, and another day or two to finish.[51]

Although Storaro has the power to reach whatever fancy technology and working method there is in the industry, he still kept his method fairly simple. He didn't want a video village. He made the crew put both his and Woody Allen's monitor close to the actor's. He didn't get lost by doing sophisticated on-set grading. He sticked to the LUTs he already had. And instead of manipulating the image from a video-village he just stayed with his monitor, equipped with a lighting board and Preston wireless hand unit.

1.2   Stick to Your Guns: Maintaining the Artistic Style

Although Storaro shared his opinions about the art of cinematography throughout his career in order to help to the progress of it, and to create an understanding which he found missing, sometimes things we can learn from him are

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[51] Jon Fauer. "Passage from Film to Digital." *Film and Digital Times*, April 2016, vol. 75, p. 5, 10, 11.

in between the lines. Among all the interviews he gave about *Café Society* and his passage to digital, the thing Storaro never mentions is how much moving to digital changed his filmmaking. The reason for the absence of this statement is because it simply doesn't exist. Moving to digital didn't change anything essential for Storaro, other than bringing some of its advantages, and I believe that is the whole point he was making in between the lines. We can even enlarge the context and ask ourselves how much does the filmmaking actually changed since the beginning? Not in terms of the form, but the principle desire of making it. Or how much does the need of creating art or telling stories changed after all the different branches and forms of art we created throughout the history. All the developments are there to bring a value and sophistication to our ways. It helps us to find different ways to express ourselves along our journey as human beings. In the end as Storaro says in Camerimage 2016, "progress is something we can slow down, or speed up, but cannot stop.", and we shouldn't as long as our main desire and need don't change: to express ourselves within a journey. The art of cinema gives us human beings a unique opportunity to be able to communicate with each other purely, without any barriers of language and codes of the political culture.

These interpretations I am trying to humbly make from what Storaro left in between the lines finds voice in his style. The desire to tell stories with the thing that matters the most: the idea. All the working methods Storaro developed throughout his career was to be able represent his ideas visually through a medium, and the purpose behind the ones in *Café Society* is no different. There was this core desire behind all the use of lightboards and wireless controls by looking at a monitor, behind all the technical tests, the grading process, the preparation of the LUTs. In the end what Storaro managed to do with *Café Society* was finding the best way to tell a beautiful humanly story by "writing with light", and he used the opportunities the technology

brings him in order to achieve his goal in consistency. He did from my understanding what he does the best. He first imagined, then found the right idea by benefiting from his knowledge and understanding of arts and philosophy, and used the best possible technology and techniques he could access in order to express his ideas in an absolute way. He again followed his style that I tried to explain before by limiting myself into three words: He 'acted with purpose'.

4   CONCLUSION

1.1   Bias vs Dedication

Any artist should be free to employ the technology and methodology that he/she feels comfortable with. A cinematographer or a director can decide to work with a 16, 35, or 65mm film, an Arri Alexa or a Sony PD150 MiniDVCAM. The greatest aspect of today's technology is that it gives the creators enormous possibilities and range to choose from. Every technology has its own characteristics, but it doesn't mean that these characteristics should define a certain look, instead it should liberate. But a true liberation cannot be achieved with biases.

There have been some great studies over the last couple of years regarding the texture of the digital imagery. *The texture of digital image through the control of sharpness. A real artistic issu*e by Philippe Ros, AFC., *Display Prep* by Steve Yedlin, *Quality in Digital Times* by Rolf Coulanges, BVK, can be named one of the few strong studies.

In his study, Philippe Ros gives a true insight about the control over the texture. He gives examples from various tests he did. In his research he gives a huge space to debayering process. He points out that it is possible to get different textures by controlling the issue of sharpness through the debayering. He also gives examples

from internal debayering methods. Even though one prefers not to shoot RAW, or not able to due to budgetary reasons, he/she can control the amount of detailing, sharpening and noise reduction inside the camera. Many cameras include these options in them, and it's up to us to stick to what the manufacturer decides for us, or really test the technology and use it according to our aesthetic choices and the requirements of the project. Ros also shows the potential of up-scaling techniques, the importance of photosites, differences between glass diffusion and digital diffusion techniques, and the use of OLPFs. He also points out an advantage that digital gives us, especially combined with a camera that has the most amount of photosites. Today one can easily apply digital diffusion techniques, instead of trying to understand from a small monitor or a viewfinder how the chosen diffusion affects the overall image, the choice can be done later on in post, or in a mixed fashion. He shows the potential of getting different textures and degrees of details by mixing all these techniques according to the needs. In his test, Philippe Ros also mentions that we should separate resolution from sharpness and points out the fact that the perception of sharpness is not due to the resolution of the system, but the acutance. To put in simple terms, resolution is the system's capability of how much spatial detail it can resolve, but on the other hand acutance is about the transition between those spatial frequencies in an already given resolving power. After the research it gets also clearer why Storaro was insisting on a camera that is giving him the most amount of photosites possible. He did that so that he could bring the sharpening down, in other words could make the acutance smoother, but still have a clean image that is able to differentiate the subtle differences in the skin tones by having just enough detail due to its resolving power.

In his video study, *Display Prep*, Steve Yedlin compares Kodak 500T Vision3 5219 film stock to Arri Alexa. For the purpose of the test, Yedlin rates Arri Alexa at 400 ISO, in order to have it closer to film in terms of sensitivity. He processes the images

coming from Alexa in a way that it looks identical to the images of 500T. In order to do that he replicates the characteristic of film, like the color response, the tone curve and grain structure by using a mathematical transformation he developed. While doing that he doesn't even do a side by side matching for each shot, instead he just applies the transformation throughout, in a one light processing fashion. Yedlin doesn't match the look of Alexa to Kodak stock in order to show that it can be matched, even though he honestly admits that he likes the look associated with printed film more because of its tonality complexities and approach to contrast. The reason for the demonstration Yedlin is making is to show that a camera is merely a data collection device and the so-called the look only comes from how the data is processed for viewing purposes, instead of believing that every camera has its own inherent look and texture. He mentions that if a camera is capable of recording enough information, and he says, "information of the right kind", then we can prepare it for viewing anyway we want. He points out that the differences between cameras are technical, not aesthetic, effected by the things like the sensor size, noise, sensitivity, color gamut, gamma curve, color science. He also claims that our belief towards the capture format giving an inherent look comes from the pre-digital days, since there was only one available method to prep the film to be viewed, which was simply processing the negative and print it. Of course, cinematographers throughout the history of filmmaking did more than just processing and printing, but the flexibility was not even close to what we have today. In the digital era, the data collected by the device can be prepared for the display anyway we want.

Quality in Digital Times by Rolf Coulanges is also another very interesting study. His study maybe focuses on the aesthetics in a purer form by making almost no technical analysis. He asks questions like: "Does the digital image in its own form of

existence creates a new appearance in the way we create our images, one that will lead to a changed aesthetic in cinematography? Has the digitalization of the image created new styles, or will we see new signatures from cinematographers?"[52]

Coulanges points out the fact that digital cinematography has a tendency towards producing realistic images and eliminate the artifacts due to how advanced the capturing and processing technology is today, compare to for example traditional color photography. He mentions that this feature of digital capturing tools may reflect the perceived reality but not the certain abstraction which is an aspect that cinematographers need in their creations.

Coulanges talks specially about the resolution. He mentions that the increase in the picture quality can be a huge benefit with the right aims, and it is certainly not a negative development. But the main problem regarding the issue is the fact that the increase in the resolution is being perceived as the most important improvement. In order to prove that is not, he gives examples from different paintings of different eras. Throughout his examples he shows that, in fact the painters used many methods to soften the overall look, and created a look that we now call as painterly quality. But this is not the most interesting part of the study. During his writing he also points out another important fact, which is, in all these paintings, the painters chose to have a part in the image that is very rich in detail. For instance, *The Astronomer* by Jan Vermeer. Coulanges mentions how Vermeer kept the detail on the earth globe and diffused the rest, in order focus the viewer's attention to the most important element in the painting. It is a method we can now call as the selective focus. He mentions that in order to have this technique in a film, we need the highest resolution possible combined with a big enough sensor size like Super35 or as I claim maybe even more, in order to have the out of focus capability. I would like to go ahead and suggest that we also today have

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[52] Rolf Coulanges. *Quality in digital times – short version*. 2016, p.1.

another method to achieve this result as getting the highest resolution image and do selective defocusing later on in post or do it in a mixed fashion. We can benefit from the high resolution combined with bigger sensors, which is something emerging more and more, in order to get the desired focus of attention we want and enhance it even more in post according to our needs. The most important think we have to remember is as Coulanges said, the increase in quality can be a huge benefit with the right aims.

1.2   The Solution

The common agenda in all these studies is that as creators of images it is up to us to get whatever we want from the technology or from the given system. None of these studies try to glorify the digital capturing and processing tools. Instead, all of them points out the problematics we have towards the structure of digital, and provide examples of how to deal with it, or as Steve Yedlin did, how to deal with our biases. The very fact that digital gives us more resolution, detail and sharpness doesn't mean that we have to use it all. This issue of sharpness and resolution is only one example of many issues that digital brings and many artist fights against. We have to understand the medium by studying and testing in order to get the desired look we are after for the particular project and also for our taste. The thing we have to learn from Storaro is that we should never stop imagining, getting inspired by the works of art, and philosophy, and employ all the techniques with the understanding we gather in order to achieve the artistic results we are after. Without any doubt, one can argue that he/she doesn't have the means cinematographers like Storaro has. I would like to go ahead and insist on the idea that we have. Maybe we don't have the latest and fanciest camera around, the best professionals working for us, and all the on-set technologies the masters of cinematography have, but still, the gap between an achieved cinematographer versus a young, breaking in cinematographer in terms of the tools they have is getting smaller

and smaller every other day. Today it is possible to get a great quality from a mid-range camera that almost anyone can access and process in almost any mid to high level computer and get a quality which was unthinkable just couple of years ago with limited resources. In order to do that we need to dedicate ourselves to learn, and instead of falling into the trap of romanticism and fill ourselves with biases we should study for the progress. For many years, the great artists of this medium achieved the looks they wanted from any system. Many filmmakers forced the traditional film in different ways in order to get the look that is identified with digital right now, and as well many master filmmakers are doing the opposite today by forcing the digital to have the characteristics that are associated with film. Aesthetics has no limits, and our desire of getting the certain aesthetic we want shouldn't be limited by the medium.

Digital tools don't restrict us or make us fall behind in maintaining our artistic voice. On the opposite, now we have a chance to focus on our creativity and find our artistic voice more than ever, and I believe the digital technologies helps us to do that by making it possible to overcome the technical difficulties much easier. We just need to stick to our guns, find our artistic inspirations, use the knowledge of art and philosophy and be courageous as much as we can.

Ultimately, the question of understanding where this ever-growing medium heading towards and our role in it may be hidden in these truthful words, said by George Lucas and Robert Rodriquez in a 2012 documentary, *Side by Side*, which are giving me ambivalent emotions of modest sadness and huge excitement:

> Film is a 19th century invention. We are at the top of photochemical process. This is about as far as it's ever gonna go (George Lucas). Digital is here now, but it's gonna keep going, and you got to be a part of that. Who's going to be a part of that, dictating where that goes? (Robert Rodriquez).

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