Contents

Chapter I

Introduction: Darkness

What is black? Black is the non-color. The Entity that absorbs all the wavelength of the visible spectrum. It is darkness, fear and unknown: but luckily, we do know something more precise about it. One may think there is just one kind of black, but that is wrong. If we take a look at our everyday clothes we suddenly realize that. Black has many shades. Not by chance, one of the most famous brand of colour correction softwares is called Black Magic. Black is the colour from which we start to calibrate monitors, together with contrast. In the collective imagery, black is closely connected with shadows. They can be grey, or bluish but always darker than the subject itself. If we think about shadows projected on the ground and on the walls, becoming concrete: we picture them in black. We can see in them the outlines of our souls, of our inner feelings, of our fears. Our dark side, our second personality.

 The purpose of this thesis is driving readers towards lighting techniques (comparisons between night illumination modus operandi), colour palettes and some design, styles and other means to bring night to life in cinema. How did the cinematographers (contemporary or past) light a night scene? What are the conventions which we are used to? What is the relation between light and shadows, or the exposure ratio? Since one of the genres that is connected to night (and, therefore, to the darkness) is film *noir*, a significant part of this thesis is devoted to the analysis of 4 film *noirs* and hints to films that inspired the genre, or, vice versa, that were inspired by it. Why is the night so important that it almost becomes a character in *noir* films? How does it differ from film classic *noir* predecessors and its followers?

 For instance: shadows give three-dimensionality to life, otherwise flat greyish and boring; but shadows are there also in the day of course. So, is there any dramatizing use of shadows in lighting? Is it related to a specific genre? The answer is: 'yes'. Even more, shadows can be analysed and used to understand which is one movie's genre, without knowing anything about plot, director or actors involved. Generally speaking, in some genres the night and shadows are prominent elements (for instance, in horrors). In other genres, it is rather scarce, as in comedies.

 Night by its own makes everything look more scary, because if our eyes cannot see, our minds start to fill those 'gaps of information' with something indefinite. And it can be anything, perhaps something fearful... If we add a small sound of an object falling on the ground, it is done: a character can be scared by something heard in the night. However, that very night can also protect

him or her. He/she can turn out being scary to somebody hidden in the darkness. Night also increases his/her power, because whichever illusion can be bigger and more magical at night-time. Can somebody imagine a magic show in plain day? It would not have the same effect... When it is night and dark, also sound has a major role in filling those brackets of fantasy which vision can not recreate.

 Also, shadows and night are very important tools to enhance the feeling and perception of depth. More specifically, *chiaroscuro* marks a thick line between arts in a two-dimensional space; helping figures to spring from (or peep over) stones, metals and wax and actually bringing them to their soulless life. If light gives and spreads life, shadow makes it possible and concrete. If we stop for a moment and wonder: the whole universe is a globe of darkness, that means darkness is stronger than light, it is overcoming it. The illusion of depth in a two-dimensional screen of a two-dimensional media like cinema is pretty much helped from chiaroscuro shades but of course also by color contrast, tonal separation, depth of field, geometrical compositions etc. It is not infrequent that people prefer the three-dimensional effect in images when seeing a 2D movie, rather than a 3D one (stereoscopic movie), thanks to this tools. Lighting and shadows enclose the power of the three-dimensional illusion.

 Taking in consideration a majority of black and white movie but also some color ones, we will break down sequences of *noir* movies, after which we will be able to spot meanings behind camera and light work. Before that, we will take you to a brief journey into evolution of night's representation from the origins to modern times. How figurative arts and cinema differ in that, how our visual perception drove painters and film authors to show us different aspects of night types. We will see how all this is related to the human eyes' perception in darkness and how blue colour started to be seen as a night convention. Which are the most typical devices in North American movies in simulating a night scene. A parallel chapter will follow about 'American night effect' also known as day for night techniques. We will 'zoom in' in some cinematographers' first hand comments on *noir* movies they shoot, to deeply understand the creation process of it, on how they seize night and interpret shadows.

 It should be pointed out that the availability of certain equipment is, of course, crucial, for capturing the night. Obviously, highly sensitive cameras, available nowadays could make the shooting at night quite different. Black is so important to retain pure and nice, or otherwise it can be filled by unwanted grain or noise, if we are not very careful in exposing. Some differences in capturing blacks between digital and analogue era will be pointed out at the end of the paper.

Chapter II

The difference between Day and Night

It is easy to discern day from night for a human eye, primarily in the passage from one to the other. It is indeed, for one who walks down a street, say in the city centre. Light level starts slowly to decrease. While doing so, colors are changing. Sun rays from white to gold, to the multiple colours cast by sunset's scattered light from the sky, degrading into dark blue. Meanwhile, some orange lights start to flicker and sparkle from the top of the street poles. They become stronger, the sky becomes darker. Windows start to light up from the inside: yellow tints of light bulbs shine through the curtains, one by one in some building facade. Then, sky turns black. Night.

The main differences are two from this description: 1. colour shifting (given and shared by nature and artificial lights) and 2. light decreasing, drastically if we are out of a town. Fine and enough for reality, but what about cinema? We can affirm that cinema is the biggest 'illusion device' of all eras. It is made to encapsulate time, stretch it and modulate it, for recreating and convey sensations and emotions to an audience. How can we, as filmmakers, express the 'feeling of night'? The challenge could be even harder if we aim to do it in black and white. In B&W we have only one out of the two parameters we explained before, since we can not distinguish colours: light is decreasing. Indeed, some differences may occur in contrast.

Contrast, in photography and cinematography is: a ratio (a difference) between brightest (whites and highlights) and darkest (shadows and blacks) parts of an image. The more contrasty is an image, the less shades of grey there will be and a strong division from white to black, possibly generating harsher shadows and highlights and augmented contours of people and objects' lines. . The less contrasty, the more shades of grey will be there or rather a greyish veil all over the image.

It could be helpful to focus briefly on cinema right after his birth, in his origins. Technically speaking, film stocks were way less sensitive (or less fast) than today; so the amount of light needed to expose them was enormous. This is why many of these movies of the early years of XX century were shot in exteriors, where the cheapest, more natural and stronger light source ever available on earth is: the sun. There was a backlot (background) opposite to camera, looking like a stage with the shape of a living room, a kitchen or whatsoever environment. Light had to be shaped by rotating this backlots for filming. The technique of shooting in plain day, and moving the so called

'primitive studios' according to sunlight was very effective for daytime scenes, but what is supposed to happen with night scenes, when such a big amount of light is needed?
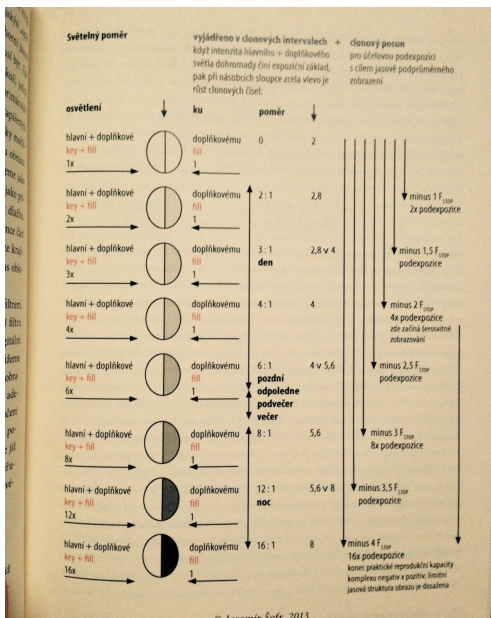

Image 1: contrast ratios in day and night.

Professor and cinematographer Jaromir Šofr (known among others for *Closely Watched Trains*, 1966, directed by Jiři Menzel), has invented a simple chart which includes an explanation marking the difference from day to night, which we discussed in our classes *Cinematographers Workshop,* led by professor and cinematographer Klaus Fuxjäger (known for *Wingless,* 2009, among others, directed by Ivo Trajkov). The main point about the chart is that contrast in terms of lighting ratios, observed here in an oval shape (that resembles a face) is precisely one huge difference between day and night atmospheres. This concept is related to contrast, but more into specific, it is related with *key light* and *fill light* ratio, mostly concerning people's faces. Nevertheless we must not forget other fundamental ratios in a cinematic image: foreground vs background face vs background and more. Returning to the chart: it is based on mathematics: the higher the ratio, the higher the contrast. The ratio is determined in relation between f-stops and is expressed like this 1:2 (1 f-stop difference from key to fill light), 1:4 (2 f-stops difference), 1:8, 1:16... A ratio of 1:2, means that there is double amount of light less than on the other side of the surface measured. In order to find out how many stops of difference there are, it is necessary to find out how many times 2 is elevated to the power of itself. Usually, we measure this ratio in some actors' faces, because most of the times, director of photography has to light faces. A face anyway is a good starting point, because it is a very basic and almost universal shape (an oval, rather an ellipse, the same shape profesor Šofr chose to represent a face in the illustration) and as well because we have some protruding elements on it (like the nose, the eyes' socket etc.), on which we can see and appreciate the quality and quantity of shadows.

Taking into consideration B&W photography, this chart is illuminating. Profesor Šofr explained in a very simple way that what actually makes us feel the night atmosphere is the relation between how strong bright parts are if compared to shadows. In other words between *key light* (the source that gives the general illumination and atmosphere; the source on which a director of photography bases the general mood and exposure of the scene) and *fill light* (a light source which should not be recognisable as another source; its function is to soften shadows and/or decreasing the contrast

level). Which means: during the day evolution towards its end, we expect that there will be a big difference between what we can clearly and properly see and what is left unlit from a direct light source. Say, when the sunlight getting lower in the horizon, and casting deeper and longer shadows (as natural source), or a single lamp post (as artificial source). Or for example, if we are standing in a big house's room with one big window, in the countryside (no city lights reaching) and sun is about to set, we will just see what is next to the window. The rest of the environment (if we are facing the window) which is far apart from the window, will partly be in darkness and arduous to

Image 2: a dark room with a big window, we see details only close to it.

recognize what it is, because of the counter light effect. The darker it becomes outside, the more obvious become this effect. It is both a matter of light quality (if the light will be soft or harsh, direct or indirect) and light quantity (diminishing). As was already said, the key points are: general contrast of the ambience and light ratios. How to reproduce this ratios, especially in the case in which we are shooting outside in the sun, in old-fashioned outdoor stage of the origin's era, for creating a night atmosphere? Sun is a powerful light source, the goal is to to keep it under the director of photography's control: the audience is not supposed to recognize it as 'the sun shining in the night'. The first basic expedient to do is: expose lower than 'normally'. It means, closing the iris, by increasing the *diaphragm* or *t-stop* number (or by filtering the lens with NDs, Neutral Density filters), letting in the camera less light which is supposed to be there for a 'average-exposure'. Why? Because the sense of 'brilliance' will be less, the black will be slightly shrunk and darker and more likely into 'deeper black'. We do not have to be 'correct' here: we are 'cheating' on the day, and cinema is exactly about this: it is creating an illusion by fooling all ages' public. Furthermore the average spectator would expect to see somebody with a darker skin brilliance or in semi silhouette, when we might portrait a scene at dusk. It is preferable to use back-light sources or kickers or side light illumination, if we want to deliver the feeling of 'reality' in a dark hour of the day, in which we barely distinguish a face's detail. More noteworthy to play with shadows, it would be better to *turn* the whole outdoor stage in such a way that the sun can hit it (and, of course, hit the actors on stage) from the side so we can actually set and even exaggerate, if needed, the dusk-effect. We should just be careful to *diffuse* the light somehow, unless we are recreating *moonlight*. With only these two features (turning the open stage sideish or backlit with respect to the sun and expose lower than we should if shooting a daylight scene), we can have a basic illusion of night, everybody will more or less understand it. In addition, a great help is to turn

on some *practical lamps* and spread them through the set decorations. Lights on, make sense only if there is night outside, therefore they help the illusion. The audience began to be more demanding, though so, something else shall be added.

Some old movies had got scenes dyed in a specific tint. Punctiliously it is called: *tinting*. The effect it gives, is still seeing a monochromatic picture but a coloured overlay is spread over all the film. Night is portrayed most of the times in *blue*. The question is: how come? Why, who made this 'international standard' or convention and when? We can give an answer, as follows. Human eyes function in two main ways when recognising colours. There are two kind of *views*, one for the daytime, one for night time. *Photopic* view and *scotopic* view[1]. Photopic view is that kind of vision that allows us to see colours properly. It is mediated by *cone cells*, which are activated under well-lit conditions. Visual acuity works at the best when activated. Under low light conditions, the scotopic vision is activated. Cone cells stop to work properly so the *rod cells* replace them, in helping us to see. It is a fact that under this poor lit conditions we can not detect colours properly (the eye is working under effort). Rods are more sensitive to the blue/violet part of the spectrum.

 The *dark adaptation* or *Purkyně effect* (named after the Czech scientist, Jan Evangelista Purkyně, who theorized it) indeed states that: at low illumination levels, the peak luminance and tonal sensitivity of the human eye shifts towards the blue end of the colour spectrum with following consequences on our perception: 1. In colour contrast perception. We start to see the red colour shifted to a dark one or even black, while green and blue are supposed to be seen a bit brighter. 2. When Purkyně effect takes over, essentially, our perception is in B&W, with some bluish shades or as a general cast. This is the most scientific explanation I have of why we consider as an acceptable convention to see an overall blue tint in night scenes that I have. There is a second less scientific, but more romantic explanation, easier to give. When we take a look at the sky at twilight we indeed see[2] a darker blue light scattered and reflected from it. Blue gives colour to shades and shadows all around, which are more evident with orange's city lights contrast. Blue is the last colour that our brain remembers before it gets dark.

 Another interesting case for a filmmaker may be shooting a moonlight mood. We have a perception about that colour in a range from blue to white, with a touch of green and with a sparkle of 'grey' also included. The sky all around, will be between black or blue or violet. Also the clouds will be influenced by this mysterious-ghostly colour. It is like a giant brush which gently paints everything

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[1] A third kind of view is called *mesopic* which is an intriguing scientific topic, but for the sake of simplicity, we will skip it in this paper.
[2] This is not an illusion, we can actually measure skies' colour with a thermo-color meter, to be precise, and it is actually colder (higher temperature measured).

around with a gentle layer. Below I attached a chart of colour temperatures during a 24 hours span.

As we have seen, there are variety of approaches how to shot darkness or shadows that differs during the time and highly depends on the techniques available and on the personal tastes of the main people involved in a production.
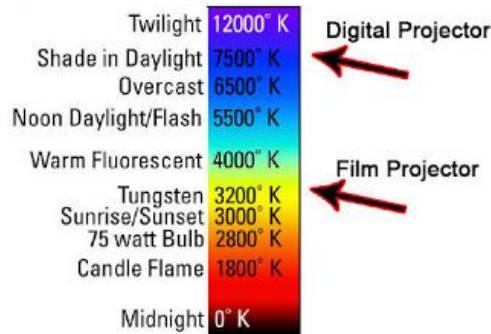
Image 3: color temperature chart in a day's span.

Chapter III

Black and White vs Colour

Image 4: Greek statue archeological find. Its possible original colours on the right.

We would like to introduce here our point of view about the use of black and white and colors in cinema craft (from the origins and on), especially related in depicting *night*[3]. We will try to point out the differences between artistic choices and technical limits in preferring a technique rather than another. At first, we would invite the reader to picture himself or herself a B&W piece of figurative art. For sure, there are some references, but probably is a minority comparing to the multitude of colorful pieces of art seen in museums. Mankind likes to see colours. For instance, I never dreamed in black and white, I am quite sure is possible to state the same for most of the readers. We love colours because we are surrounded by them. Nature is colourful: it is an intrinsic quality of light and living beings or objects which reflect

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[3] The following chapter is a result of professor Michele Canosa's lessons in Bologna's University, together with the reading of the book: Cherchi Usai, Paolo. *Una Passione Infiammabile: guida allo studio del cinema muto.*UTET Libreria 1991. It has been developed in autonomy and integrated with further themes and knowledge according to this thesis' needs.

it. Why should we enjoy a B&W representation of reality or fantasy? Why would one buy a B&W comic book, if there is available a coloured version (except for a higher cost)?

We will propose a short journey in time to have a look to the ancient Greek art, our answer lies there. Imagine those big and beautiful temples, those huge statues and small sculptures in front of archaic houses for propitiate gods of fertility. We suddenly picture in our minds, something white made of some stone perhaps (sandstone, travertine, marble…) or maybe brownish or greenish, made of bronze or copper, but just in one colour: i.e. monochromatic. There are some exception only if we think about Greek vases: those are black and ochre. It is time to leave all those preconceptions behind, we have made very interesting discoveries. Ultraviolet rays and other chemical-physical tests allowed us to dig into the past and deeply watch into the stone-skin or temples between those archaeological finds. All leads us to a conclusion: actually, Greek statues were (and always have been) polychromatic! And, even more surprising, statues were coloured with bright and vivid colours[4]. There are materials which are more resistant through time, others which tend to dissolve under specific atmospheric phenomena, such as varnishes made from natural pigments. Their heritage was just bleached-out or faded, but indeed not monochrome. Mostly, varieties of blue, ochre, red and green. Since they were sacred places and objects they *needed* to be different from the surrounding panorama. To pop out from the city, to directly strike our eye.

Paolo Liverani, inspector of the Classical Antiquities in Vatican Museums, defines the mistaken belief that Greek art was B&W only: "*one of the most colossal misunderstanding which History of Art has faced*"[5].

We can trace here a certain parallel between Greek culture and the early stages of the cinema (end of XIX and beginning of XX century). Except some colour-blind people or some animals, humanity see the world in colours. Already in 1886 Maxim Gorky (a russian writer known for *The Mother,* 1906, among others) was complaining about the lack of colours in early Lumieres' films: "*The world was cruelly punished because it has been stolen of all colours of life. […] This is not life is just its shadow*"[6]. This clarifies how old was this *need of colours,* as a kind of horror vacui. Not even a year after the 'official birth' of cinema, there were already famous artists lamenting it. Film stock can resist for many years if well preserved (the estimation of scientists is actually about centuries, but only one century and some years have passed after cinema was invented). In those

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[4] **Image 4** shows a Greek statue of an archer as found (on the left in white) and the scientific reconstruction made by the archaeologist Vinzenz Brinkmann on how it would have possibly looked like the original at the time it was made (on the right in colors).

[5] Carafa,Valentina. *La policromia della scultura greca antica.* http://www.arkeomania.com/coloriscolturagreca.html. Accessed June 2017.

[6] Ganning, Tom. http://box.dar.unibo.it/muspe/wwcat/period/fotogen/num01/numero1b.html. Accessed May 2017.

times though, it did not yet exist a good archive organization or not even the spirit of preserving those great operas for the future. It was not considered 'an important art', to most of them just a fleeting hobby. This is the premise.

It is not necessarily true that what we see today (the majority of the films) was surely the original version with that non-coloured-pattern. We had an issue of material's transmissions in time. Because of their chemical components, colours were the first part to be washed out and destroyed by time. Indeed, there were a lot of techniques used to colour the movies. Also, any of the cinema's owner had power to decide if the film would be coloured or not, depending on the money he had or on his subjective taste. Let's have a quick look through them.

- **Hand made** technique.

Every single frame was painted with a small tiny brush under a magnifying glass. The colours were melting a bit after each projection. Another disadvantage is that drops of colours were sometimes dripping out of the borders. Disadvantage number three: the big amount of time required in doing it.

Image 5: Hand made coloured film.

- **Pochoir** or **stencil** technique.

"*Stencil colouring required the manual cutting, frame by frame, of the area which was to be tinted onto another identical print, one for each colour. […]Stencil coloured films can be identified by the sharp outlines that define the coloured areas*".[7] A big advantage of this technique was: once made for one copy of one movie, it could be used for dozens copies for the same film. None of the other techniques had this feature. In those cases, every copy was almost unique and had their own quirks.

Image 6: stencil coloured film night, possibly shot in day for night, with cloudy sky.

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[7] Flueckiger, Barbara. *Timelline of Historical Film Colors: Stencil coloring.* http://zauberklang.ch/filmcolors/timeline-entry/1218/ . Accessed April 2017.

- Tinting.

Image 7: Tinting technique of night, possibly shot in day for night in a studio.

The colouring was intended to be applied scene by scene. The positive print was immersed in dye baths. The brightest parts of an image are dyed, the blacks remain blacks. This technique is recognisable because the dye attaches also to the perforation area. It was the cheapest, easiest and fastest method to use. Although results were never as down-to-earth as the other techniques.

-Toning.

Image 8: night in toning technique, possibly shot in day for night.

It starts from a chemical reaction. The principle is substituting the silver halides with other coloured chemical elements. For instance, for obtaining blue: iron ferrocyanide.

In this case, the darker areas are coloured in a a hue, brightest areas are slightly affected, but tend to stay white. We can discern this technique from tinting because perforations aren't influenced, they remain the same color of the support. It is easy to understand why: no silver halides are there on the perforation side, so this chemical process doesn't affect them[8].

It is important to notice that not all the blue looking films were destined to be *nights*. We believe that is so for the majority, but some movies seem coloured for the sake of being just coloured, or for visually separate the scenes or chapters. At the end of this excursion, the question remains: why are the movies that we see today in B&W, while the majority of them were coloured? The answer is: transience of colours, namely because there was no available technology that would enable to make stable colour prints, enough to resist also to wrong storage of the films.

Just later on time people started to discover the actual hidden power that lays beneath B&W films. Directors and directors of photography started to use it more consciously, i.e. adducing a motivated reason to photograph their movies in B&W, when there was an available and stable colored alternative. Gordon Willis said in an interview: "[...]*when you work in color, it's a burden. It can be*

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[8] All the images of old coloured films were found at http://zauberklang.ch/filmcolors/ .

a burden to an audience if you don't use it properly, and it's burden to the people that are working with it[...]"[9]. We can give a few examples of these insiders, whom in most cases are considered true artists. Some of them simply did not welcome the invention of colour films. There was a lot of skepticism, when, in the late 20's/beginning of 30's the apogee of new colour systems was taking place and was slowly becoming to be more accessible to production in a higher scale. Nevertheless, colour film stocks and developing was still the most expensive. Also the cameras and technologies involved in the color cinematography were a lot more expensive (as much as the professionals working on set).

 Various cinematographers said colours were a distraction for the audience and misleading the story. One of the most famous duo that loved B&W film stock and kept using it even during the time when the standard was more likely to be colour was Ingmar Bergman and his cinematographer Sven Nykvist. He once said about the topic: "*I love black and white. I think is more artistic and you can help screenwriter and director to render the film more dramatic and underline what's more important in the frame. I think that colour can be cause of distraction*"[10].

 We must also say that, when a technological innovation comes, the filmmakers' community needs time to get used to it. They are not suddenly mastering the new technique, a bit of puzzlement is logical. We can call it: the passage era, the evolution era or the transition period. It happened with sound movies, coloured movies, with 3D movies, with digital cameras. In modern times, we have some rare cases of B&W revived. The multiple Oscar winning movie *The Artist* (2011) by Michel Hazanavicius (director of photography Guillaume Schiffman) is an example of B&W movie shot in modern times. In this case his purpose was immediately clear: the director wanted to recall those 'silent movies' times that, for a collective memory, were in B&W. It was not only a brave choice, but also a very good commercial one. People were attracted by something antique and fashionable, regarding the past (given also by the 1:1,33 aspect ratio and soundtrack without dialogues, except for some brief speech in the end). Even more recently a B&W movie, *Ida* (2013) directed by Pawel Pawlikowski won the Oscar for best foreign movie in 2015. In the same year the director of photography Ryszard Lenczewski received the nomination for best cinematography. From an extract of his interview, we understand the reasons why it was shot in B&W: "*Given that the film takes place in the 60s, during a time when everything in Poland felt black and white, it was natural for the movie's look to fit the era. [...]By watching old movies together, from many different*

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[9] Transcription of an interview: *Cinematographer Gordon Willis, setting the Scene.* 13 November 2009. http://www.npr.org/templates/transcript/transcript.php?storyId=120386781&ft=nprml&f=120388528. Accessed June 2017.
[10] Nykvist, Sven. *Nel Rispetto della luce. Cinema e Uomini.* [Reverence for the Light]. Lindau, 2000.

countries, we began to formulate a vision of how Ida would be shot. [...] I found loneliness, sadness, nostalgia — in other words, I found the aesthetic and feel for the whole movie"[11].

As we have seen, the colour was always present in the cinema, in some form. On the other hand, even nowadays (in very few cases) the directors are still choosing to shoot B&W for various purposes. It still holds its charm and fascination and we relate most of the *noir*'s milestones to the monochrome colour pattern. B&W is not dead, and shooting nights in B&W can be as fashionable as colours. I would like to end the chapter with a quotation from the cinematographer Carlo Di Palma: "*This is what I've always been thinking. In my opinion B&W is colour. Everything depends on the kind of light and composition that one has. But, anyways, B&W does not exist. B&W retains in itself all the colours. [...] And, anyway, there are thousands of whites, blacks and silvers, and that makes it already a speech about colours*"[12].

Chapter IV
Day For Night

In this chapter I will deal with the technique called 'day for night', also known as 'American night'. As it is widely known, this is a name for the practice of shooting night scenes during the day by adjusting the image through different means, here below mentioned. We can now concentrate on styles and applications of one of the most ancient 'special effect' in cinema history which has become so popular that François Truffaut made an entire movie about it: *Day For Night* (1973, director of photography Pierre-William Glenn).

What is it? As many other set of ideas, this one was invented to save money and, even more important: time. In addition, many actors and crew members feel more comfortable working in day shifts. Day For Night (DFN) is a range of tips and solutions on how to make a day look like night, or at least late evening, dusk, twilight or even dawn atmospheres (since all of these parts of the day do not last long in many places of the world).

It is employed when conditions would be rather difficult or expensive or almost impossible to actually be shot in night time. The 'naive' explication of this process is simple: film (and digital camera sensors) need light to work and to create an image. According to a scientist interested in

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[11]Strecker, Alexander. Interview: *Cinematography: From Still to Movie*
https://www.lensculture.com/articles/ryszard-lenczewski-cinematography-from-still-to-movie. Accessed July 2017.
[12] Millioni, Stefano. *Interview with Carlo Di Palma, 1994*. Storie, Rivista Internazionale di Cultura.
http://www.storie.it/fotografia/woody-allen-e-carlo-di-palma-mi-disse-adesso-carlo-facciamo-un-film-con-il-tuo-colore-lintervista-del-1994/. 30 November 2015.

photographic colour theory, Hunt : *"[...] it is usually more convenient to shoot night scenes in normal high levels of illumination, and then to make prints that look as though the picture had been shot at a low level of illumination*"[13]. Natural moonlight is not enough in the majority of cases, although our eyes have very few problems in detecting and recognising people and objects under that lighting. In recent digital era, sensor sensitivities are incredibly and quickly increasing. Only time will tell us if day for night will become obsolete, but it has been a major technique still in use, it surely deserves a small chapter after all.

The brief manual for the technique, or the recipe of it, is made up of the following ingredients:

1.1 First ingredient, and main one (we have already anticipated it) which gives the name to the whole process is: shooting in daytime rather than at night. Here are some tactiques recommended. Shooting with a quite harsh side/kicker or contra sun light. A fully lit face at night-time, will not look much conform to natural. The perfect part of the day to film is up to a director of photography's taste. Late evening times can be exploited because of low sun in the horizon casting long shadows all over the scene, likewise harsh moonlight; but there are just few hours to catch those moments. Moon is seldom low in the horizon, few times it can cast the same shadows of late evening sun. Plain daylight, around noon[14], is discouraged because of the hard shadows cast under eyes and nose; unless the location is a dense forest, in which branches could break this unpleasant pattern. As we explained before, a major difference between night and day is the contrast ratio. Choosing a solution in which the sun is quite low, would be, according to the previous assumption, a good one to reveal and photograph high contrast ratios.

1.2 Second advisable method of the same 'first ingredient' is quite in opposition with it, in planning and thinking the scene. It would be advisable for example to shoot during an overcast day, when the sun is right at the top of people's heads, at the azimut. For instance, in my homeland, south of Italy, that would mean starting at about 12 'o clock, during the autumn season. In this case, the effect would be more similar to an 'after sun down' atmosphere or before dawn but chiefly a cloudy night, rather than direct full moonlight. The colour is naturally colder (the colour temperature raises, ranging from 6.000K to 9.000K and more in some cases), and helps already to feel the colour pattern shifting into nightish blue, if we are shooting with daytime colour balanced stock or sensors. Contrast is very low, almost undiscerneable. Light is scattered and diffused, with a soft quality. It could be useful for framing wide areas with a uniform cast of 'soft moonlight'. For instance in *Robin Hood* (2010, directed by Ridley Scott, cinematography by John Mathieson) they show the

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[13] Hunt, R. W. G. *The Reproduction of Colour* (6th edition). Wiley, 2004.
[14] Talking about central Europe geolocation.

first picture with the moon, in order to establish the night-time of the storyline and then cut to the next shot, seemingly shot in overcast day for night, with ease.

Image 9, 10: *Robin Hood*, establishing day for night.

Image 11: day for night in *Mad Max*, as rendered and as captured.

2. Second ingredient. It is required to expose lower than 'average'. Two choices here can be made as well as with the first ingredient. Underexposure can be done in camera or in post-production, and the result, of course, differs. It depends again on style and taste of a cinematographer. Nevertheless, we have to report a completely opposite approach to the subject 'underexposure', depending on the new technologies raising. For the movie *Mad Max: Fury Road* (2015, directed by George Miller and photographed by John Seale) the exposure was actually *raised* by two stops and more for day for night scenes. Seale developed an innovative method with the colourist, and especially with the VFX supervisor, A. Jackson[15]. They had increased the sensitivity of the camera, to be able to retain details in the strong highlights and keep also details into shadows. Then a heavy 'non-realistic' grading was developed in post-production. Prominent blue tint was added, but we can recognize sun shining everywhere if we carefully pay attention. Details in shadows are still apparent, they are not just a black stain which would have appeared instead, if it would have been underexposed till 'crashing the blacks'. The illusion works though. The movie is set in a post-apocalyptic world anyway, so we do not expect it to be 100% faithful to reality. The sky looks like 'a foggy mist' due to the sand moved by the wind.

 That is what happened when dealing with new kind of digital cameras, trying to exploit every inch of their high dynamic range. They used it thinking about the final input and the overall style of the

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[15] For further informations about the topic, refer to: Failes, Ian. *A graphic tale: the visual effects of Mad Max: Fury Road*. 29 May 2015.
https://www.fxguide.com/featured/a-graphic-tale-the-visual-effects-of-mad-max-fury-road/ . Accessed June 2017.

movie. It was a very conscious use: some may like it or not, but it certainly serves the purpose, the illusion worked.

3. Third ingredient: filters. This is a delicate ingredient, one has to be an expert chef to utilize them without permanently altering or even damaging the footage. Three kinds of filters are often chosen. We are talking about physical glass filters, i.e. optical manipulation of the image. It goes by itself that, filters or not, if shooting day for night it is preferred to not frame the sky or to avoid something which would reflect it (water ponds, lakes, large shiny surfaces).

 - **ND filters.** Just to cut out light (diminishing exposure), darkening the picture without altering the colours of it. When shooting digital a purplish cast can be caused by addiction of powerful NDs (already starting from 1,2 or 1,5 up), because of infra-red (IR) wavelengths reaching the sensor. The phenomenon is known as 'IR pollution', and it is noticeable prominently in the greens or blacks, which look more brownish/reddish/magentish. Compensation may be necessary with a IR filter, which are rented separately or included within the ND (IRND filters). By using NDs for day for night, we manage to expose lower (cut out light) than 'average exposure' with keeping the wanted depth of field (DOF), i.e. without necessarily stopping down the lens by closing the aperture (iris).

 - **ND grad filters or Shaded ND.** They look like clear glass at the bottom and darker at the top with a blended section in the middle. They have the same function of the NDs but only affect the half of the image. It comes in handy when, in some selected camera angle, the sky enters the frame. With those filters one can darken it, till the desired extent, till it turns very dim or till is almost gone.

 - **Blue filters.** There is a great variety among these filters among which is possible to choose. Blue filters absorbs much light usually, so it can be a clever choice not only color-wise but also for cutting the light off. Blue tint is achieved prior to getting into colour-grading, therefore it could save time and money. The director of photography has the power to chose between deeper blue filters which absorb more light, or lighter blue filters: so to have more room to play in post-production, both with colour and brightness. To name some: the CC40B, 80A, 82A.

- **Day-for-night (DFN) filters.** The name says it all. It is a filter designed to get this effect, ideally without retouching at all the image in post production, or very minimally. This filter will: decrease the exposure, giving a blue-violet-lavender overall tone to the image. It is the most delicate one to use, because is having an heavy visible impact on the image.

Images 12, 13, 14, 15: from the left, normal exposure without filter; DFN 1, same exposure; DFN 1, -1 stop, closing iris; DFN 1, -2 stops, closing iris.

Chapter V

Film *Noir* influences, genesis and developing

We are now introducing a huge cinema phenomenon related to night and black. In fact its name origin is straight related with night shootings and dark environment setting, together to the gloomy themes debated: revenge, deception, infidelity, murder, robbery among others. Some circumstances which seem to disappear from time to time but just for punctually reborn, stronger than before, like a phoenix from its ashes, regenerating in new cycles. A matter of interest is how popular and fascinating it is for new generations getting in contact with it. It has got an immortal charme, quite innate. Not only mainstream but closely related to a niche of cinemagoers and cinemalovers. According to Paul Schrader, scriptwriter of *Taxi Driver* (1976, Martin Scorsese) and director himself who dedicated a small but noteworthy pamphlet on *noirs*: "*Film noir is not a genre.* [...] *It is* [...] *defined* [...] *rather by the more subtle qualities of tone and mood*"[16]. What is it then? How we can read this beautiful cinema's history books which unfold in front of us?

Film *noir* occurred in U.S.A. between a span ranging from early 40's till late 50's, according to critics, more specifically between 1941 and 1958 it is considered the golden classic era of film *noir*. A 'genre' characterized by the presence of darkness by its definition in itself. It was quite a glitch in Hollywood industry, inverting in some cases its logic and formulas from its guts. While World Word II was imperversing in Europe, U.S.A. decided to intervene only in 1941. There film history splinters, with a 'before' and an 'after'. According to some critics, *Stranger on the third floor* (1940, directed by Boris Ingster, photographed by Nicholas Musuraca) is declared to be as the the first of a kind of *noir* movie: "[...] *Ingster and company were doing something that had never been done before—they were making the first example of what we now call noir*"[17]. Although, the majority of critics agree, and most commonly they address *The Maltese Falcon* (1941, directed by John Huston and photographed by Arthur Edeson) as the first *noir,* which conforms to all the parameters of the various descriptions. But strangely enough, it does not inaugurate the real production's 'glory days' which become to happen later on from 1946-1958. The last movie of the 'golden age' of film *noir* is considered to be *Touch of Evil* by Orson Welles, 1958, director of photography Russell Metty. It has been written about it: "[...] *it brought all noir themes to such a*

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[16] Schrader, Paul. *Notes on film Noir*. Film Comment, Spring 1972. P. 8.
[17] Nighthawke. *Stranger on the Third Floor (1940).*
http://www.noiroftheweek.com/2013/01/stranger-on-third-floor-1940.html, 24 January 2013. Accessed June 2017.

fever peak, and took noir visual style to such a self-referential decadent climax, that nothing could be built on the ashes of noir after it scorched the earth"[18].

The literal translation from the French term consists in 'black (or dark) movie'. The French origin is given by the critic Nino Frank (Italian born, but raised in France) who in 1946 saddled this 'phenomenon' which was not recognised by most of the workers and professionals of the industry involved in that creative progress, nor by his colleagues critics. The reason is simple: during WWII in France it was forbidden to show U.S. films but suddenly after the end of the war, all of those films were shown at once, so critics recognized certain similarities that were not that apparent to the northern American critics. Therefore the sudden comparison of these movies at once, in a short time lapse greatly helped to spot similarities. The '*noir*' definition was commonly adopted later on, in the 1970s and widely spread retrospectively for film that once were called only 'black dramas' or 'hard boiled/detective fiction'. It is still a matter of controversy whether this term effectively describes a detached and unique 'genre'. Meaning that is difficult to define exactly what is representing, its thresholds and confines, or which are the themes involved unequivocally. There are doubts about its wideness of topics. Whether is not just a crime story, or a love story, or a dark comedy. Two critics Raymond Borde and Etienne Chaumeton wrote an entire book about it, in 1955: *A Panorama of American Film Noir*. "*They wanted to find a common denominator for a set of highly diverse thrillers and melodramas, beginning with John Huston's Maltese Falcon* [...]"[19].

At first they were not 'block-busters'. The public who took benefit from them was not massive, but they started to sell better and better after major actors starred in them. "[F]*ilm noir is oddly both one of Hollywood's best periods and least known*"[20], said Paul Schrader. It was not as mainstream as musicals and comedies, nonetheless, it was making converge both American and European taste and interest. Therefore their entertaining purpose started to grow. More movies were shot under the *noir* movie's flag thus left a lasting indelible trace in generations to come and held a strong influence in lots of modern movies, especially on cinematography side.

Influences for *noir* are to search and dig in multiple sources and of course they never come by one and only wellspring. Artists and authors are sensitive people, looking around and taking inspirations from the surroundings, being aware of society's present and past. We will focus in historical context, literature, figurative arts and previous films inspiration.

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[18] Meyer, David N. *Touch of Evil (1958)*. http://www.noiroftheweek.com/2010/05/touch-of-evil-1958.html, 24 May 2010. Accessed July 2017.
[19] Donfer, Elisabeth & Brenner, David. *Night Passages*. Columbia University Press, 2013. P. 14.
[20] Schrader, Paul. *Notes on film Noir*. Film Comment, Spring 1972. P. 8.

Before 1941, films produced in US were optimistic ones, as an artistic answer to the depression era post-1929 which had obvious repercussions all over the the first part of the next decade. *Noir* is considered as a counterbalance to the optimistic views of musicals and comedies. In 1941 dread was once more awakening: both for the certainty to be soon involved in a big war and also for the criminal escalation spreading like an oil stain since the 1920s, slowly but inexorable, of the American mafia organizations.

When in a war emergency, it is known that most cinema industry efforts goes to support the government in the battle: a large number of people must answer the army's call (including filmmakers of course) and the government financed propaganda movies or documentaries to foster the suspect and hate towards a new enemy.

Things changed in 1945, after WWII ended and soldiers began to come back home. On the one hand, USA were never attacked inside their own boundaries, therefore studios, equipment etc. did not suffer any damage compared to Europe, which made it an enormous advantage in respect of all their 'European competitors'. On the other hand, people had to face the postwar state of mind (when not Post Traumatic Stress Disease), the disenchantment of those who came back after such terrible events and of those who welcomed them in the homeland: wives, relatives, children... While economy was healthy, the community was less prone to watch optimistic depictions of reality. *Noir* was like an unconventional flower in the beautiful conventional garden of Hollywood. As a style, it was considered unusual and a bit revolutionary in comparison with the classical Hollywood dramas or comedy standards. A few examples: in *noir* movies the bad guy is the most charismatic one and anti-heroes are leading the game, even though they are certainly not to be followed as an archetype. The *Hayes Code* was strict on that: "[*T*]*he sympathy of the audience should never be thrown to the side of crime, wrong-doing, evil or sin*"[21]. The main character cannot find inner peace, nor love. Detectives and policemen are either corrupted, or suffering a long live interior trauma: they sometimes cross the line between justice and evil. Women are personified by the most complex examples of *femme fatale*. A woman who is wonderful, but awfully dangerous: she may lead the hero to a jungle of hazard and then perhaps betray him in any moment. Subjects are mystery and crime. Love and *vendetta*. Passion and resolution. A great percentage of them were shot in B&W only a few were not, in the glorious days.

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[21]Hays, Will H. *The Motion Picture Production Code of 1930*. http://www.artsreformation.com/a001/hays-code.html. Accessed 29 August 2017.

There were more roots to follow for *noir* movies, besides the specific historical situation. Influences and spiritual paternity can be found in French Poetic Realism (two movies above all: *Pépé le Moko*, 1937, directed by Julien Duvivier, cinematography Marc Fossard and Jules Kruger; *Port of Shadows*, 1938 directed by Marcel Carné, director of photography Eugen Schüfftan) which brought a thematic contribution; and also in German Expressionism, which brought a stylistic contribution mostly. If we have to pick one between the two genres, we can read a sentence in Borde and Chaumeton's book: "*The most marked and persistent influence, however, is surely that of German Expressionism*"[22]. Since in this thesis we are more interested in images, we will write a bit more about it, therefore we have to dig a little in European and Northern America's history. Due to the Nazist enstablishement in Germany and Austria many intellectuals, especially of Jewish origins, attempted to leave the country and migrate towards safer rims. United States of America seemed the most cordial host and there was a significant number of expatriates reaching that land. In between them, perhaps the most relevant pillar of German Expressionism: Fritz Lang. Not to mention all those less famous technicians and filmmakers which were trained for years to the art and style of expressionist cinema. At first sight, some similarities popped out. There is certainly a propensity to crooked and oblique lines, in comparison to straight and horizontal ones. Unconventional angles, from low or top as well as *dutch-angles* were adopted as an intrinsic narrative featured film grammar. The marked lighting seems like the most natural heritage of the 'genre' presenting scary shadows, and silhouettes. Long outlined shadows on the walls, physical and metaphysical at the same time, dead or alive: the menacing side of some character doubling himself on the concrete's partitions[23].

Image 16: German expressionist shadow in *Nosferatu*.

Instead, the main visual difference between film *noir* and German Expressionism consist probably in the in scenographic setups and non-conventional architecture in the set design. Expressionist movies were chiefly set in a distorted fantasy world, dealing with legendary creatures, criminals or widespread believes. This distortion and hallucinatory state was reflected by backgrounds and foregrounds. Crooked balconies, corners, claustrophobic perspective and houses facades were 'baked in' the scenography, obtaining weird lines without the need of physically inclining the camera, which of course would have inclined also the people.

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[22] Borde, Raymond & Chaumeton, Etienne. *A Panorama of American Film Noir 1941-1953. City Lights Books, San Francisco, 2002.*
[23] See **Image 16** from: *Nosferatu, eine Symphonie des Grauens*, directed by Friedrich W. Murnau, director of photography Fritz Arno Wagner & Günther Krampf, 1922.

Against it, one of the *noir* revolutions was to bring some of the film sets outside the studios, to favour the real outdoor sceneries. It was more attached to reality than Expressionism and in some cases filmmakers tried to involve some documentary feeling: drawing from true chronicles, adding some narrator's voice or taglines which would explain the facts. "*There is nothing which moves today's spectator more than the imprint of life, of the 'lived experience' and, why not, atrocities which actually exist and which there has never been any point in concealing*[...]"[24], wrote Nino Frank about it. Germans were more metaphorical and horror orientated, *noir* is anchored to stories which could, theoretically, happen for real.

Literature was indeed one of the primary roots of this class of movies. Novels and other short stories like Raymond Chandler's whose writings were not only inspiring, but directly translated into *noir* movies (e.g. *The Big Sleep*, 1939). The same happened to Cornell Woolrich (e.g. *It had to Be Murder*, 1942) of whom thirteen movies become traditionals *noirs*. Dashiell Hammett (e.g *The Maltese Falcon*, 1930), James M. Cain (e.g. *Double Indemnity*, 1933), and William R. Burnett (e.g. *The Asphalt jungle*, 1949) who was hired directly from the Warner Brothers company for writing screenplays, considered his ability in writing books already. Burnett, among a dozen more, wrote the script of *This Gun for Hire* (Frank Tuttle, 1942) a *noir* evergreen. Popular pulp magazines such as "Black Mask" by various authors, were vital lymph and impulse to *noir*'s cause.
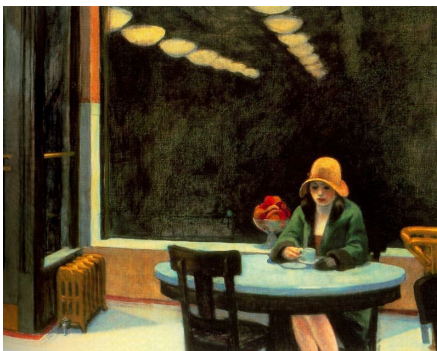

Image 17: Edward Hopper, *Automat*, 1927.

Among figurative arts, Edward Hopper's paintings and moody atmospheres undoubtedly were Muse for ambitious cinematographers.

Although film *noir* has a stealthy nature, we can encapsulate some of its typical features. As a start, its definition for me has his origin from the visual point of view. Plainly, *noir* is a colour; or rather the sum or the subtraction (depending on which colour system we are based on: additive or subtractive) of all the available wavelengths that we are able to see. That does not affect how we perceive it: for us it is situated in the same set of other solid hues, like yellow, red etc… Nevertheless there is a major distinctive trait: when our mind lacks visual informations, e.g. when there is not enough light to see, what we are not able to see assumes the 'colour' of black. When darkness comes, black cannibalizes all the colours. During night-time, black becomes the king, and all the colours his servants; every

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[24] Frank, Nino. *Un nouveau genre "policier": L'aventure criminelle*. L'Ecran français, no.61, 28 August 1946. P. 14.

colour become just one if there is not enough enlightenment. It is a paramount visual information of a cinematographer's approach in manipulating themes aforementioned.

 Most *noir* features were in countertrend to 'Hollywood's must', the two more relevant: low-key and high contrast lighting and not classical compositions, infrequently following the composition's bible: the rule of thirds. New settings are also determining the 'genre': empty metropolis' periphery, suburbs, open roads, creepy pubs and harbours. A psychological approach was widely used to the visuals and light creation, to give exaltation to the character's feeling using low angle lighting, side and backlight in a dark and oppressive way.

 The storytelling is frequently based on some twisted structures and tales[25]. There are mazes in which one is supposed to be lost. Voice overs, inner feelings and expectations of a character are often disregarded. *Noir* movies are not relaxing. We can not watch them in the evening while cooking dinner for our family, as we can with some soap operas or the news. They require concentration and awareness. The director can give clues which one could be able to catch during the whole path of the movie. According to my experience, if one misses them, the whole story could be misleading. The ambiguities of the story twists are capturing, provided we commit to the movie. On the other hand of the medal, none of them is particularly long: the average length was approximately ninety minutes.

 Following those thoughts, there is an important annotation to make. Film *noirs* appeared in the period of highest control and censorship in the U.S.A.. From 1930 till 1968, it was activated the Motion Picture Production Code, popularly known as *Hays Code*, after Will H. Hays who was the president in charge of the Motion Picture Producers and Distributors of America. It was a fistful of moral guidelines which all the movies had to undergo if they wanted to be screened. Eventually, film *noirs* were essentially about the two main restricted and haunted topics: crime and sex. Therefore, the complexity of some stories may derived by the fact that they were heavily re-touched prior to screening.

 In the editing elliptic cuts are frequent and flashbacks are the spinal column of some movies. The voice over can lay among some fake documentary task, or allows the audience to get in the protagonist's mind and brain. It was anyway common that some of the movies (or the novels on which they were based) were inspired by raw reality. On the other hand, the voice over can have a completely different function. See the extreme case *Sunset Boulevard* (1950, directed by Billy

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[25] For more informations about plot's complexity refer to: Frost, Adam. *Darkness Visible.* http://www.bfi.org.uk/news-opinion/news-bfi/features/infographic-what-makes-film-noir. 4 November 2016. Accessed July 2017.

Wilder, photographed by John F. Seitz) in which the story is narrated by a dead character! He knows of course all that happened, he is the omniscient narrator of the storyline. It could have been shot as a short movie of 5 minutes, revealing everything straight away. But it was not! This device keep us anchored to the screen, trying to discover what this corpse can remember about the story of himself passing away. In fact, at the very base of a *noir* movie there is always some sort of crime, or a murder or an investigation made by the most hard-boiled police detective in town. Bribery is another relevant element. The double twist or double-crossers people, frequent characters: who is willing to betray, and who is incorruptible. The dramatic turn of events is behind the corner every minute. Sarcasm and black humor in the dialogue's lines, written with Carthusian-Monks-like precision enrich this extremely fascinating and deep panorama.

A *noir* is time-proof and can be shoot regardless the period. Usually, historical film periods such as Italian Neorealismo or French Nouvelle Vague are set in a rather precise time span, and just in extremely rare cases their features are repeated after their original period. They have a starting point and ending point, which obviously have some fickle borders, depending on critics, but more or less are fixed. *Noirs* may have been created from some sort of alchemist, because since they were born they never really 'died'. Those who were producing such films, were not even conscious of the fact that they would have been called film *noirs*. They were shooting following their instincts of the moment. It is a 'genre' which spills out of the subconscious: of a single man and the collective one of the entire country, being sensitive about the historical surroundings. Film *noirs'* titles sometimes explain it all. They convey dark feelings even before we can sit down and watch them, as for instance *Murder, My Sweet* (1944, Edward Dmytryk).

They are considered very 'fresh' kind of movies, a source of inspiration for young filmmakers and new generations, as well as for old school professionals. One has the feeling that these movies are aging slower, like Dorian Grey. Of course there must have been shot also bad film *noirs*, but all the ones I saw are great movies. As everybody knows: History is written by the Winners, so it is also possible that some of the bad ones simply did not reach my screen and therefore I am not aware of what they are.

At the beginning some of them were marked as low budget movies, just like B-movies. Not all of them were B: of course in some were great 'stars' of the period were starring, but also thanks to those movies some actor got the fame, and just later they become 'stars'. There is a close connection though between B-movies in general and those lower budget *noirs*, with some advantages and some disadvantages.

1. Fill light was very dim, in comparison with the low contrast of the other styles. Which means less lights used (and less intense ones).

2. Dim lights mean less powerful ones: also here, electricity bills are lower.

3. Shooting in night-shifts, meant having less working hours on set.

4. Real locations were chosen as opposite to the studio shooting to convey more that pseudo-documentary feeling, implicitly claiming that those facts could be happening for real in a city.

5. A smaller crew was needed and involved.

Image 18: fog in *The Big Combo*.

Fog and smoke machines were intensively used to fill and give depth to the background. It is a device to render the atmosphere more creepy and intense. At the same time, it helps in not showing all the details in the background (which means: money can be saved in art department) and by so, a cinematographer does not have to light kilometers of road necessarily. Fog and smoke, if backlit, shine up immediately.

Many of the main ladies or men in a *noir* movie are smokers and that is also an excuse to justify such an intense presence of smokey\foggy interiors. Also steamy manholes, gloomy harbours or simply the condensed humidity of a sun-dusk after sunsets were all amazing excuses of that kind.

Visuals constitutes a core topic for the whole thesis. Gathering the reasons and pointing them out is easily done. *Noir* is perhaps the only movie style/genre which is not only defined by its setting (like westerns), by telling the story of single man or woman (biopics), by the narration of a historical event (war movies) by a type of feeling (romantic, comedy). This seems to me a 'genre' described mainly by its *visual mood.* As a cinematographer, I am asked to give the director a mood or an atmosphere in which our actors can move and perform. Before to do a shot breakdown with whichever director, I am used to start the discussion with: which kind of mood, which kind of angles, which kind of camera, which kind of camera movements, colour palette etc should we use to help the script to come in the shape that writer, director and producers want? So if the entire 'genre', and therefore the style, comes out from that, we have already some of the work done. It is a big help to project all our minds in a common direction. The process to create a *noir* environment, is already giving us feelings and sensations from which to start with the invention.

Image 19: wandering in the night with my camera, trying to capture a *noir* picture.

What we are trying to demonstrate is that it is a profoundly inspiring category in itself. Even if the 'golden era' passed many years ago, today there is plenty of video tutorials on YouTube and plenty of publications of genre's fanatics, developing and enriching the legend of *noirs*. My theory is that the spontaneous attraction to this topic is not only the reason why it is so popular. What I mean, is that often *noir* specialist cinematographers are using: 1. few lights 2. not very big ones 3. they are seldom, if ever, using fill lights: which is one of the most difficult lighting techniques; to do it properly one has to master it 4. they care less about casting shadows and sometimes multiple shadows, often they do it on purpose, upon request. They spend less time on making feel the lighting as more naturalistic. As far as I am concerned, that is another connection with the Expressionism[26], not only the cinema's one, but in figurative arts: when the painters intensified the emotional side of reality rather than portrait the objective side.

My point of view is that *noir* style could be a really good starting point to teach a method in lighting. It is a principal point for beginners to understand various kind of lights, the quality and quantity produced and the variety of shadows they make. Alumni can start lighting, accompanied by teachers, by placing one strong direct *par light*, or a *red head* light behind jalousies (venetian blinds). On the wall will be immediately stamped the unmistakable pattern of thin lines close together, alternated by light stripes. The actor's face will be getting the same lines, while, say, he is intensively looking out of the window, smoking a cigarette (of course...). The base lighting for a close up is easily reached, with one light, no fill, and so on and so forth.

Low key lighting is paired to high contrast ratios. According to my experience, we can find the highest contrast ratios in between all genres in *noir* together with horror movies and some thrillers. *Noirs* contributed to create a deepness of the image not often reached before and after in cinema. In figurative arts, the reference is *chiaroscuro* technique.

Chiaroscuro was born principally for painters' common necessity to step out of the frame, to be closer to viewers and drag them into his canvas. Painters were eager to share three-dimensionality, starting from a bi-dimensional pictorial board: so it began art's copernican revolution supported in first person by Leon Battista Alberti in his treatise De Pictura (1435-36). Scientific perspective

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[26] In figurative arts, a period which spreads for ca.20 years (1905-1925). Edvard Munch, to cite one for all, is considered an expressionist painter.

opened the gates of a new world, in which art embraces the illusion of re-creating an artificial visual space alike the one perceived in reality by the human eye itself. Compared to sculpture, they could not avail themselves of the abundance of matter, but since they had to deal with flat surfaces, they had to resort to 'perspectiva artificialis', that is the science of representation, mould on 'perspectiva naturalis', the science of vision. Therefore the artists shifted to the triple 'wedding' in the perspective colour's alternation, the alternation of chiaroscural shadows and the new conception of geometrical division of pictorial space towards a perspective vanishing point. Encyclopedia Treccani gave a very precise and concise definition of chiaroscuro, which I would like to share in this paper: "*Chiaroscuro in reality results in different position of one body's parts in respect of the light source, that is to say, it is determined by the contrasts of light and shadow in the passage of midtones, but it had been adopted in fine arts as an illusory medium for representing depth and protrusion of masses and also to reproduce the tints' natural shades. In other words, it constitutes the representational's mean of the third dimension in figurative arts, reproducing illusively in a plane the internal obliqueness of curved and fragmented surfaces, thus as linear perspective, of which is complementary. It reproduces the obliqueness in the contours of space*"[27]. Connected with it, studies of optics and visual perception got positively more advanced, step by step, in centuries till the invention of the first photograph, dating back to 1826, by Joseph Nicephore Niepce.

In conclusion, I would liket to invite the reader to have a look to a true masterpiece of chiaroscural

painting, "illuminated" by a single light source: a candle in the night.
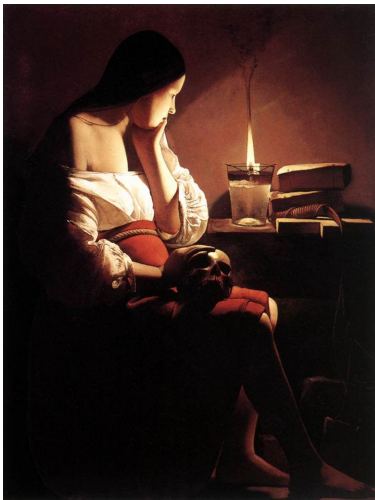
Image 20: Georges de La Tour, *Penitent Magdalene, 1630-35.*

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[27] Treccani, online Encyclopedia. http://www.treccani.it/enciclopedia/chiaroscuro_(Enciclopedia-Italiana)/ . Accessed August 2017.

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Chapter VI

Case studies: *Noirs* under the magnifier

- ***The Big Combo****,* 1955, directed by Joseph H. Lewis, director of photography John Alton.

From our point of view, *The Big Combo* is the 'A' in the ABC of *noir*'s cinematography. Many frames of this film had been used in cinema dictionaries or textbooks about film *noir* together with some definition, as an aesthetic example of this 'genre'. It is a public open manual on which watch and learn direction of photography directly from one of the true masters, John Alton. There are incredible personal stories to be told about him and his career, unfortunately we cannot concentrate about it in this paper, but is important to highlight that he wrote a book which is considered a milestone for cinematographers and, as time goes by, also for film historians: *Painting with light*[28]. Alton was creating such a peculiar atmosphere and mood with his beautiful chiaroscuro that he deserves the status of an artist in this field, equally compared with figurative artists and painters. We can read a few lines about *The Big Combo* in Slant-magazine: "*Shadows and lies are the stars of* The Big Combo*, a spellbinding black-and-white chiaroscuro with the segmented texture of a spider's web*. *John Alton's lush camerawork is so dominant here you wouldn't know Joseph H. Lewis was also behind the camera.*[...] *one of noir's great unheralded triumphs*"[29]. From the film critic's comment, we can understand that visuals are predominant. In the same short article, Ed Gonzalez takes it even further, suggesting that the director of photography had a superior influence in the movie, even greater than the director himself. It is partially true, but I do not completely agree with it. Lewis's presence is absolutely evident for the storytelling, for really interesting proposals, some of which borderline to breaking the Hays' code. Sometimes restrictions forces an author to encounter alternative solutions which final result could be even more 'orginal' that it would have been with total freedom of choice. In short, an obstacle can become an occasion for creativity. For instance at about the minute 30, the main antagonist, Mr. Brown (played by Richard Conte) and his fianceé, miss Susan Lowell (Jean Wallace) have an argument. At the end of it, the gangster starts to kiss her, possessively, like a vampire with his prey and he slowly disappears out of frame, while we still see Susan's face (camera tracks in till Extreme Close Up), suggesting they are starting a sexual intercourse. We understand Susan's interior drama: she is afraid of her partner, but inevitably

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[28] I will refer to it many times, as it is a golden mine of informations about lighting techniques used in the past, but some of them, still valid until today.

[29] Gonzalez, Ed. *B Noir.* http://www.slantmagazine.com/features/article/b-noir. 5 May 2006. Accessed August 2017.

attracted by her gaoler: per extension, a representation of Stockholm syndrome. From my point of view, this is pure and effective cinema's grammar, well orchestrated by the film's main author, the director.

We should not forget that a director of photography should never overcome the director's authority on set, but help him to narrate the script at his best and eventually enhance it by his visuals. I find interesting though (and this is one of the reasons why I decided to write about this topic), that cinematographers in most of *noir* movies, have possibly a major role in comparison to other genres. I have the impression that in some moments, the photography dominates the film's plot. I think this is 'allowed' or more widely accepted in film *noir* because *noir* is closely related to aesthetics more than many other genres. Perhaps we could interpret Ed Gonzalez's article in this way, more softly than it seems.

As most *film noir*, this one is in B&W. It is common in film schools (included FAMU) to teach cinematography and or photography in B&W in the beginning of the career and to assign exercises based on monochromatic material. It is important for a beginner to understand luminance values, contrast separation, foreground-background ratios, tridimensional illusion on a bidimensional media and similars. For a director of photography, shooting in B&W could lead to some advantages. Perhaps the biggest is: he/she does not have to balance the colour temperature (CT correction) nor the green/magenta cast (CC correction) of the light sources, i.e. potentially saving a lot of time in putting gels on each lamp, or filters on camera, absorbing light... On the pre-production end the Gaffer could pick up light equipment with more ease at the rental house: there is no need to check each lamp with a thermo-colormeter for B&W stock.

John Alton is revolutionary about B&W: "*'Black and White are colours', John Alton has stated, and no cinematographer in film history has more deeply explored the values of those colours, or the nature of the violent contrast between them,* [...] *there can be no doubt that John Alton pushed film noir to its most exciting visual extremes. In the definitive noir period* [...] *no one's black were blacker, shadows longer, contrasts stronger or focus deeper*"[30]. Alton dares a lot in *The Big Combo*, playing with the extremes of the characteristic curve[31] of the negative. In some images we only see car lights, or neon signs lit, and the rest is enshrouded by pitch black. On the other side, in some

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[30] McCarthy, Todd. 'Through a lens darkly: The life and films of John Alton', in *Painting with Light*'s introduction. University of California Press, 2013. First published in 1949. P. xix.
[31] The relationship between film density and exposure logarithm presented as a graph.

frames we just see a bright headlight pointed directly in camera or a wall of grey fog, thick like clouds[32].

In my opinion the fog in the last scene symbolizes a virtual point of no return, but with a double nature. When the criminal Mr. Brown gets arrested, he is taken away by two policemen. The fog swallows him: he will face his destiny in jail. The same fog, right afterwards, embraces the two silhouettes of Lieutenant Diamond (played by Cornel Wilde) and Susan , which are coming close together. We do not see their expressions, but the fog seems to welcome them like a happy cloud of tenderness. The shots are made with exactly the same camera angle, without cuts. These shots testify once again, that there are a great director and a great cinematographer behind this movie.

Shooting fog might be tricky and only an experienced DP is able to do it properly. John Alton offers few tips, that, as we can see, are still precious, even if they were written in 1949. That is an answer to whom considers Alton's book just good for old time's cinematography. "*Fog has a tendency to flatten out the light, to reduce highlights. [...] We light on a higher key and with greater contrast than we would under normal conditions and measure the light through the fog. A strong frontlight has a tendency to thin out the fog. [...] To get depth we use a wide-angle lens; out-of-focus fog is very unpleasant to look at. Fog photographs lighter than it looks to the eye. Actors are dressed in dark wardrobe so that they stand out against the back haze. In the foreground where the action takes place, the fog should be thinner. This makes the figures stand out with remarkable third-dimensional feeling. [...] Backlight should be carefully employed, because the rays of lamps pick up easily*"[33]. These suggestions, or rules can still be relevant for centuries. Of course techniques may evolve or improve, but the *concept* is valid as it is, no matter the country.

If I may express my opinion, I would add two steps more, according to my experience in lighting haze. Special care must be paid to the background. If its colour is light, fog will not stand enough, even if there is plenty of it. The background should be 'the darker, the better' (in B&W we can easily choose black, it matters less the hue provided it is a dark colour, it will not catch the viewer's attention). With a dark background, the smoke looks more like 'tridimensional cotton', popping-out from it and 'coming to life'. Another tip I would add, is that the fog should be back-lit. Alton says that backlight it should be used carefully, that is correct of course, because we will immediately see where the light's ray are coming from, therefore "killing" the illusion for the audience. On the other hand, it is the best way to make the fog look consistent and bright. A good method is to light it

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[32] Refer to **Image 17**.
[33] Alton, John. *Painting with Light.* University of California Press, 2013. First published in 1949. P .61.

through the so called "butterflies" (big diffusion frames built up with silks or other textiles) to scatter the light source, widening its illumination cone. By enlarging the light's beam, the source: 1. diffuses 2. spreads in a wider area 3. looses intensity, depending on which silk has been used. In this way, having a less 'punchy' light source covering a bigger area, helps to hide the light source's direction in order not to be spotted easily, enhancing the power of the ghostly fog. Together with the fog we can find many more typical *noir* visual features in *The Big Combo*. I will focus on two of them: lighting actors from below and black telephones.

Alton gives us a couple of examples of lighting from below in this movie, but he is consistent throughout his filmography (see for instance, *T-Men*, 1947 directed by Anthony Mann). Round the minute 70, Joe McLure (Brian Donlevy) an associate of Mr. Brown which is eager to take the

What would you suggest?
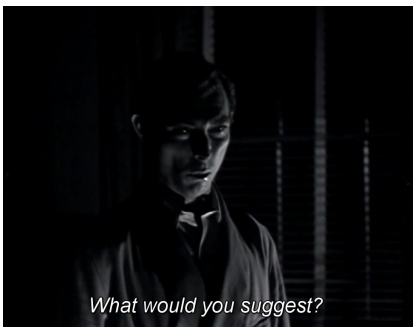
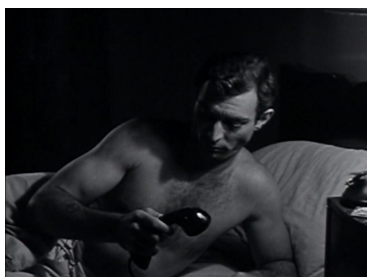**Image 21:** criminal lighting in *The Big Combo*.

organization's leadership from him, tries to convince Mr. Brown's most faithful contract killers, Fante and Mingo, to join him in his intent. Fante (played by Lee Van Cleef), pretends to listen to him, but he is meditating to actually betray McLure. We can anticipate this fact, by looking at his face, lit from below at a very steep angle. His wolf's eye and his lineaments together with this kind of illumination, are clear enough. John Alton describes this kind of technique in his book *Painitng with Light*, discussing a film, in which Jimmy Valentine, the character in the film, cracks the safe: "*To create an authentic effect, the cameraman lit the character from a low light which illuminated the face from an unusual angle. It distorted the countenance, threw shadows seldom seen in everyday life across the face. This light, which exaggerates features, became so popular that even in our films of today, when we want to call the attention of the audience to a criminal character, we use this type of illumination*"[34].

We must also add that 'movie stars' did not wanted to be illuminated from below, especially with ladies it was almost forbidden. The face gets distorted when lit from below and in most of the cases it looks scarier. We can think about a bunch of guys sitting in the moonlight on a field in the summer, telling each others horror stories and holding a flashlight pointed towards their chin to enhance the scary effect of the tale. It looks dreadful to us because, as Alton points out, it is a lighting situation which in everyday's life does not often happen. Indeed it looks different and therefore, scary.

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[34]Alton, John. *Painting with Light.* University of California Press, 2013. First published in 1949. P. 54.

Even if black telephones do not relate that much to shooting of night, their use still should be discussed here, as they bring *darkness* as a character into the shots. As the cigarettes, the smoke, the blonde femme fatale and more, it is a cyclic symbol in *noir*'s history and in *The Big Combo*, it is used in a very efficient way. This object is presented in many takes: in the background, in the foreground or just the sound of it coming from somewhere off screen. The director makes us understand, that the *black telephone* is linked with the voice of evil, with criminal activities, especially with torture and murder. We see Fante right before Lt. Diamond's torture, trying to communicate with his boss Mr. Brown. We see the telephone again in close up, ringing in Nils Dreyer's (one of Mr. Brown's associates) store. Dryer answers the phone. He says "hello?" three

Image 22: the black phone rings before the kill.

times, but nobody answers on the other end. Just after that, he is shot dead by Mr. Brown's sicarios: the phone ringing was a silent warning.
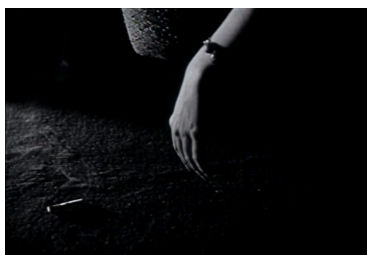
A third time we can see Fante picking up the black phone. He receives the order to murder Lt. Diamond, even though he does not succeed in it. Black phones are clearly at mob's service. In fact, when Sam (Lt. Diamond's colleague at the police, played by Jay Adler) tries to use the black phone, he fails twice. The first time, Lt. Diamond asks him to phone the police to arrest Mr. Brown, so Sam dials the number. Soon enough, they realize they do not have enough charges against the mob's boss, so Diamond asks Sam to hang up the telephone

Image 23: Rita is dead.

in the middle of the conversation. There is a second time in which Sam tries to use a black telephone, this object that does not want to cooperate with the police. Rita (Helene Stanton), Lt. Diamond's lover, has been killed instead of him, because in the *darkness* the killers could not tell the difference between her and Diamond. Sam wants to call the reinforcements in order to discover who was the instigator. Lt. Diamonds already knows that it was Brown, so he angrily takes the phone receiver off of Sam's hand. Furthermore, at the police station, there is plenty of black telephones all over the spot. We can interpret them like criminal insiders, living side by side with the police in their headquarters, but not collaborating with good people.

It seems that in this movie, the black telephone has been given a small supporting role, with possibly a bit of 'personality', not bad for an object! Once again, this was a really good expedient from the director, useful to raise the film level.

In this subchapter we have discussed about *The Big Combo*, a is milestone in the history of cinema *noir*, particularly because of the fog scenes and the outstanding *chiaroscuro* lighting. John Alton was not just a director of photography, but also a scholar who has taught cinematography in his book *Painting with Light* and the techniques he himself used during his career. Alton has been an inspiration for many cinematographers whether in the 1950s or nowadays and some of them explicitly mentioned him as an inspiration source.

- **Sin City**, 2005, directed by Robert Rodriguez and Frank Miller, director of photography Robert Rodriguez.

Sin City is the only movie of the chapter entirely shot in digital, the most modern so far. Inspired by a namesake comic series (or rather graphic novel) by Frank Miller, which is defined by critics as 'neo-*noir* genre', first time published in 1991 by Dark Horse Comics. In the comic we could see *noir* undertones as well as in the movie since Rodriguez himself has claimed that: "Sin City *is a film noir, about the darkness. Not just the look, but an inner darkness of the characters*"[35]. Miller, the co-director, has echoed: "*I was raised with* noirs *and crime stories, therefore it is difficult for me to give a precise reference other than that*"[36]. It was one of the first movies entirely shot with the *chroma keying*[37] technique together with *Able Edwards*, 2004 directed by Graham Robertson, cinematography Ricardo Palavecino (rendered as well in B&W) and *Sky Captain and the World of Tomorrow*, 2004, directed by Kerry Conran, photographed by Eric Adkins. In the last one they used the same *chroma keying* technique but with *blue screen* instead of *green screen* as a backlot. *Sin City* was praised also because of its really faithful transposition from the comic book to the film, respecting the creator's style and original concept. As a matter of fact, Rodriguez wanted Miller to join his crew, making out of him a co-director, to supervise their work, and Miller has declared: "*It was staged exactly the way I drew it, so there was nothing to do there*"[38]. Nonetheless, Rodriguez insisted to have him on set, to make Frank Miller's version of the movie, since he was particularly important for dealing with actors to make them understand the movie's tone and character's backstories. As to this collaboration Rodriguez has said: "*It was very complementary. I wanted him*

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[35] Rodriguez, Robert. Press conference on the movie for Cannes Film Festival: http://www.festival-cannes.com/en/films/sin-city#vid=9956. Accessed August 2017.

[36] Papaleo, Marco Lucio. *Frank Miller and Robert Rodriguez: interview on Sin City.* http://cinema.everyeye.it/articoli/intervista-sin-city-frank-miller-robert-rodriguez-23762.html. 1 October 2014. Accessed August 2017.

[37] It is part of the VFX's techniques used for compositing or layering in post-production two or more video signals (or photographic materials) by substituting the background or foreground after selecting and isolating them using specific color hues.

[38] Watercutter, Angela. *5 things you didn't know about Frank Miller and* Sin City. https://www.wired.com/2014/08/frank-miller-sin-city/. 19 August 2014. Accessed August 2017.

to be a director rather that just there as a writer [...] *He was really there working with the actors, knowing the characters so well. I didn't know anything about the characters cause it's not all in the book, a lot of it's in his head"*.[39]

 The success of the movie has much to do with the visuals. Many movies were inspired by comics, but this one was really trying to *transpose* the boards to the cinema screen being as faithful as possible to the original comic's style.
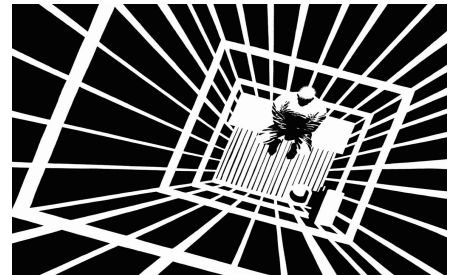
Image 24, 25: *Sin City* the film being faithful with *Sin City* the comic.

This high contrast chiaroscuro closely resembles the effect of a deep black ink into paper. The stylization of it, this representative unrealistic feeling, helped the film not to be heavily censored by the supervisory units of the U.S. and worldwide as it was frequently happening with the classical *noirs* due to the Hays code. Although the movie is extremely violent, it got permission to be shown. It was rated R, "*for sustained strong stylized violence, nudity and sexual content including dialogue*", according to the Motion Picture Association of America[40]. I remember when I was 15 years old and *Sin City* was released in Italy. It looked very violent to me, but somehow acceptable because of the comic's style, borderline with abstraction. That was the only reason why this movie was not heavily modified before its release, but obviously it was on the edge since the beginning. Robert Rodriguez knew it, and he took the risk, but the risk paid off, giving to the audience a remarkable movie to enjoy.

 Being the visuals so stunning, there was the legitimate concern that they would steal the audience's attention from the story or from the actors' performance. In the final product the elements are so well balanced (plot, editing etc) that we can follow the movie and at the same time enjoy its aspect without one overwhelming the other. This quality makes me think about the strong relationship this movie has with *noir*'s tradition. Sometimes blacks are more present than whites and darkness is a constant surrounding presence. In my opinion a lot of classical *noir movies* share this distinctive

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[39] Blunt, Emily. *Bluntly Speaking | Robert Rodriguez.* http://www.bluntreview.com/reviews/rodriguez.html. Accessed July 2017.
[40] Internet Movie Database, *Parents Guide.* http://www.imdb.com/title/tt0401792/parentalguide#certification. Acessed July 2017.

trait between each other and *Sin City,* among them, as a major example: they largely rely on the visual aspect, in some cases as their most peculiar accessory. That could be the strongest bond which keeps them under the same 'flag' of this 'genre'. For instance at the Cannes Film Festival 2005, *Sin City* was nominated for the Palme d'Or price, but instead it won the Technical Grand Prize to Robert Rodriguez for the *visual shaping.*

 Sin City is in B&W, but it pushes this color pattern to a new frontier: the selective colour. One of the most famous examples of selective colour technique had already been before, in 1993 for *Schindler's List* directed by Steven Spielberg, director of photography Janusz Kaminski. It is a technique used with the purpose of selecting a colour in postproduction and make it pop-out from the rest of the image, in terms of saturation, luminance or hue. It is obtained classically by shooting in colours and then through post-production processes, select one and modify it upon needs. It is recommended for the colour part which would be selected, to use a colour which is not so present in the whole scene, for the colourist to be able to select it with chroma-keying tools without interfering with other objects in the shot and also to do not create many masks[41], to speed it up and make their work easier. In *Sin City* we believe that selective colour was used to underline some particular character's states of mind or to draw the spectator's attention to some detail, or to give an implication to a character.

 Blood for instance was used in three different colours: 1. white, the standard colour for blood in the movie; 2. red for the main characters when portrayed in painful situations, or in impossibility to react (especially when they're tied or imprisoned); we can see it when Marv (played by Mickey Rourke) or John Hartigan (Bruce Willis) are captured and tortured and asked to confess something neither of them has committed; 3. yellow, just for the character Roark Junior, who has got a yellow skin. In the movie he suffers terrible injuries, and they justify its skin tint as some 'side effects' of the therapy to keep him alive. He will give the name to one of the movie's chapter: "That Yellow Bastard". Rodriguez shot the blood with 3 specific techniques, one per each colour.

 For render the blood in that bright spotless white, it was used a fluorescent orange varnish, stimulated with a *blacklight.* We also refer to this light as the *Wood's Lamp,* named after the scientist who invented it. It is a special lamp which due to filters and/or paint coating, allows through mostly only UV light blocking almost all the others visible light's spills. It is used for scientific purposes in forensic investigations or medicine, but also for more recreational purposes (in the discotheques it is often used to create a moody atmosphere of shining whites clothes or

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[41]A tool to isolate selected parts of an image in post-production, to separate them from the rest.

teeth). It is a very curious lamp, some of its kind we can barely tell if it is on or not by our eyes, but just after confronting it with a fluorescent object (if that glows... it is on). It is the darkest of the lamps that has the power to make objects shine very brightly in the obscurity. By using this tool on *Sin City*'s set, the varnish could have been easily selected in post-production softwares[42]. Blood is usually a complicated item to render in movies (as effectively similar to real blood) both in film stock (because of the weak sensitivity to the red spectrum, given by the last position of the red sensitive layer in the film strip) and in digital (for the electronic sensors the most difficult colour to capture with fidelity). In B&W movies the use of chocolate syrup was popular in special effects' department to recreate blood. In colour movies there is a long history of different varnishes or syrups or whatever methods or recipes (literally, food colorants or groceries' combinations) developed during the years to make it look realistic. In *Sin City* the purpose is not to make it look realistic, but to make it noticeable within the B&W pattern and in a night environment.

Image 26, 27: white blood in *Sin City*. How was rendered and how was shot.

 The first method worked pretty well, let's examine the others. The method number 2 (red blood's color selection) was shot without *blacklight* but with normal 'fake-blood' on set, which was selected later on in post-production in order to tweak its hue, because according to Rodriguez, the characters were looking just "dirty" if he would have kept the image in B&W, and not really bleeding.

Image 27, 28: red blood in *Sin City*. How was rendered and how was shot.

 The third method regards the use of *blacklight*. In order to achieve the saturated yolk's yellow colour of Roark Junior's blood, they shot a glowing blue paint stimulated with *Wood's Lamp* and then selected that hue and shifted it to yellow. Blue was chosen both for the creature's make up and

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[42] The mainly used softwares being: Discreet Logic's Inferno and Flame. See: Di Lullo, Tara. *Sin City: Bringing the Graphic Novel to the Screen - Literally.*
https://www.awn.com/vfxworld/sin-city-bringing-graphic-novel-screen-literally. 1 April 2005. Accessed August 2017.

his blood, because: firstly, they could not choose green, because that colour had already been used for the backlots so by chroma keying the background the computer would have 'recognize' the green substance on the actors as well, and perhaps substitute their skin with the CG's architecture. Secondly they could not choose yellow, because the human skin has some yellow pigments in it and there was the risk of selecting also unwanted parts of other actors' skins in the post-production process. They chose blue and then simply did not put any other object of a blue color in the same set. I believe that the actor that played Junior (Nick Stahl) wore coloured contact lenses, because his eyes are blue, although in the movie they look dark brown.

Image 29, 30: yellow blood in *Sin City*. How was rendered and how was shot.

Coloured or white blood in the night makes a tremendous effect, because the blood stands out as a key object, without being horrific. It is something dark in deep shadows which otherwise couldn't be seen. Bright blood surrounded by dark night, which attracts attention to itself: that was a top invention. Robert Rodriguez said about the difference between colour and B&W, and about the choice of selective colour for *Sin City*: "*When you shoot in color, color helps to separate images through each other, but in b&w people tend to blend into the backgrounds or into each other*".[43]

 Another device aligned with the *noir* tradition but also with an outstanding new visual impact that is used in *Sin City,* is what I call: the 'reverse silhouette' or 'negative silhouette'. The prompt of this visual device comes straight from Frank Miller's comics. Creating a silhouette has been done many times throughout the history of cinema, its formula is not a mystery, is pretty well known. On the contrary a white silhouette with black background, is something impossible to happen in real life and seldom, if ever, has appeared in cinema's screens before *Sin City.* To create a traditional silhouette we either have a bright background (or for whom it may concern, considerably brighter than the foreground figure) and some shape or character with very little, or no, light in the foreground. In everyday's life it could happen when we look at another person, while we are facing a window in a dark room or corridor. Another method to create silhouettes, which has the effect of a cut out outline from some piece of paper or carton, is to light a person strongly (with a direct light's

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[43] Rodriguez, Robert interviewed. *Sin City - 15 Minutes Flic School.*
https://www.youtube.com/watch?v=90mBo7xkLEM .4 April 2017. Accessed August 2017.

beam, with a narrow illumination cone) and cast its shadow onto a background (it could be the floor or some wall) which receives light as well, except from that part of the light's cone which is being blocked from this non-transparent subject between the lamp and the surface. The surface should be likely flat, or regular, to discern the shape of our silhouette. Obviously, the silhouette's color is black or deep dark grey, and the tridimensionality of the figure gets lost in favour of a flat black outline.

In the real life the event in which a silhouette can be portrayed or photographed as white, could never subsist. Unless the subject would be entirely painted white (but if lit, it would look tridimensional) or unless they invent a sort of negative light, selectively absorbing light rays (they should be called 'black holes', but their characteristics are still on the process to be scientifically accurate...). An X-ray photograph can give us an idea of how it could be like, but it is not exactly a silhouette, because we can discern detail inside the shape, not only in its outline.

The closest things that I know which could create a negative silhouette effect, similar to *Sin City'*s ones are: the so called *photogenic drawings* (the first samples were made by William Henry Fox Talbot) or the *rayographs,* based on the same technique, but spread years after Talbot's and they became popular thanks to Man Ray and the *dada* artists. They were photographs made by leaving some objects in direct contact with the sensitized photographic paper and then hit by a light. The objects blocked those rays of light, leaving their 'silhouette' underexposed and the rest of the film emulsion heavily overexposed. The result was a white silhouette and a black background. The subjects of Talbot were mostly plants, for Ray random objects like scissors or film strips, in pure *dada.*

When drawing a comic book there are very few limits to what fantasy can beget with the aid of inks, colours and pencils. In reality, that is how they obtained this 'negative silhouette' effect. They first shoot the actors in front of the green screen, with a standard illumination, high hedge, likewise the rest of the movie. Then, they substituted the green background with the city's landscape; afterwards they rendered the image in monochromatic shades, and probably crash the exposure down, to make it look black and bidimensional. After that, reversing the colors to finish it like the original drawings of the graphic novel. These are the results:
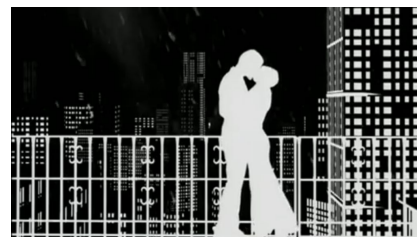
Image 31, 32, 33: white silhouettes. In the comic, how they shot it, in the movie.

Moving onwards, the whole movie has incorporated most of the distinctive traits of a *noir* classic. Black and long shadows (typical of the German Expressionism as well); venetian blinds' light effects; high or unusual angles including *dutch angles* (some of them literally quoted from the comic); heavy rain. For instance, to make the rain shine in the dark, they added it completely in post-production. We know from John Alton, the legend of film *noir*'s cinematography, how to light the rain. The principles are similar to those used for lighting up the smoke: "*In order to make rain register on the screen it must be lighted in a special way-backlighted. This light is reflected by the millions of the rain drops, and we have a curtain of rain.*[...] *If possible, we shoot rain scenes against a black background*"[44]. In this movie, they simply skipped the problem by adding it in post. In order to have the stylized effect of long rain drops, well lit and uniform for the whole environment, they preferred to just make the actors wet, by spraying their clothes and hair and just let them drip under a fake storm. Nonetheless, in the special effects departments they are used to shoot some real objects or situations (rain in this case) to blend and then composite with other elements or with the so called plates. I believe the rain we see in the movie was achieved by a mixed technique of filmed real rain (separately from the principal photography's set) and some 'shaping' added to the drops in a stylized form to suite the comic book's tables, most probably by stretching the video's input. The thunder's effect (done with powerful flash-lights, or turning mirrors on set) and the sound of raindrops will make the illusion believable for our brains. Overall, the choice of shooting this movie in B&W is a no-loser choice: it keeps it faithful to the original comic book, to the *noir*'s tradition, and last but not least, to the integral digital reconstruction of the entire fictional city. Details could be less evident in the background so they could afford to be a little less precise in the CGI, therefore, that was easier to falsify.

- **Klute**, 1971, directed by Alan Jay Pakula, director of photography Gordon Willis.

Between the late 1960s and late 1970s there was a considerable rebirth of the 'genre' *noir*. Not many movies were shot with those features, but all of them are generally considered worth to watch, if not rare gems scattered in the movies' panorama. To cite a few, *The French Connection* (1971, by William Friedkin, photographed by Owen Roizman), *Chinatown* (1974, by Roman Polanski, cinematography John A. Alonzo), *Taxi Driver* (1976, by Martin Scorsese, director of photography Michael Chapman): all debtors of a dazzling past. Most of these moveis go under the flag *neo-noir*, as *Klute.* The cinematographer, Gordon Willis**,** was one of the ten most important and influential of

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[44] Alton, John. *Painting with Light.* University of California Press, 2013. First published in 1949. P. 60.

all time, according to International Cinematographers Guild (ICG)[45] and Oscar winner in 2009: the Academy Honorary Award for his life's work: "*for unsurpassed mastery of light, shadow, color and motion*"[46]. *Klute* is a movie about a prostitute (Bree Daniels, played by Jane Fonda) who helps a private detective (John Klute, Donald Sutherland) to catch a sexual predator who is probably responsible for the disappearance of Klute's best friend and who keeps frightening and killing her colleagues.

This movie had been chosen for this chapter as an example of neo-*noir* movie shot in colour, to have a comparison with the others in B&W. At first sight there is a significant difference between this and the other three movies discussed. There are major parts of the movie shot at daytime, not the scariest ones, of course those are set in the midst of night. Nevertheless, some of the daylight scenes are visualized as high contrasted, or with dark silhouettes. As to say they are treating

Image 34: daytime as nighttime, silhouettes in *Klute*.

daytime as if it was nighttime. In B&W it would have been probably less noticeable as a stylistic impact, as we believe Willis would have adopted the same approach as cinematographic style (indeed, he loved B&W more than colours, although his masterpieces had been shot with both technologies). We believe the reason for these somber daytime's shots are to convey the idea that one is never safe in New York, while the killer is still free. Generally speaking, the movie has a dark mood overall. Bree Daniels willingly destroys her first real love story with Klute; Klute's best friend Tom (played by Robert Milli), the one who moves the story from the beginning, is discovered to be murdered; the murderer was a personal friend of Tom's family and when he is caught, he jumps out of the window committing suicide. It is a hopeless world for everybody, so at daytime there is no "shiny sun" happy atmosphere. To show that gloomy mood, I will analyze the opening scene and the following at Tom's family lunch.

The fourth shot is a wide shot of a nicely decorated long lunch table, with guests all around enjoying some colourful food, in a seemingly happy mood. The cinematography however tells us

[45] cpn_admin. *ICG announces Top 10 influential Cinematographers*. http://www.creativeplanetnetwork.com/news/news-articles/icg-announces-top-10-influential-cinematographers/415189. 14 February 2012. Accessed August 2017.
[46] http://awardsdatabase.oscars.org/Search/Nominations?nominationId=9953&view=1-Nominee-Alpha. Accessed 28 July 2017.

something different from the acting and the set design. The character who will be killed, is the only one left in darkness (on the left of the image).
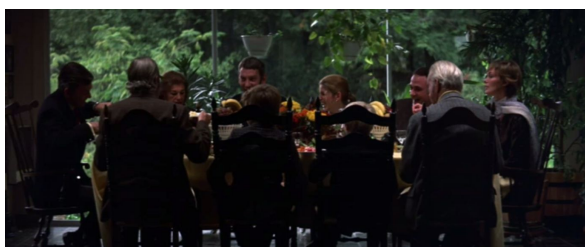
Image 35, 36: lunch before the murder, investigations after the murder, in *Klute.*

Moreover, the foreground is very dark, no fill light is added. There is a contrast between the atmosphere and the lighting, which makes the audience feel that there is something wrong going on. In this case the foreground is darker than the background, yet not a silhouette mood is established. In the subsequent scene, almost the same camera angle is used (and I believe the same lens), but it is night. Now the background is completely swallowed by the night, not even a tiny light shining on the plants' leaves outside. The cinematography is completely inverted: the foreground is much brighter than the background. The good mood has disappeared, as well as Tom is vanished and will never come back.

Image 37: Willis' favourite lighting rig.

Willis was fond of a particular lighting system, his sort of trademark: an overhead rig made to diffuse the top light, which I believe was used for these shots. Willis preferences for this kind of lighting scheme were so evident, that even the journalist Ronald Bergan from The Guardian did not forget to mention it in his Gordon Willis Obituary, coinciding with his death in 2014. He claims "[...]*Willis developed his style of lighting from above, leaving dark patches, but avoiding a muddy look, distinguishing black from even the darkest brown. Yet, Willis insisted that his cinematography was always dictated by the story*"[47]. The lighting device was built using a metal skeleton, hanging from the roof, surrounded by black 'skirts' to block all the light spills to the surrounding so as to concentrate the light towards a restricted area perpendicular to the light beams. Inside the structure, he placed diffusion frames (or he sticked diffusion gels). It was made in different lengths depending on how wide the area had to be covered. For instance, longer for a dining room's table while shorter for some single character sitting beside an abat-jour. The lamps inside were more if longer and less if shorter and in both cases pointed towards below. He used this device indifferently for night or day. Indeed the 'interiors day' scenes, look less bright than in other movies: distinct directors of photography may decide to

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[47] Bergan, Roland. *Gordon Willis obituary.* https://www.theguardian.com/film/2014/may/19/gordon-willis. 19 May 2014. Accessed August 2017.

use some sort of fill light coming from the window's opposite, or sideways if the construction (or the studio) makes it possible.

 Gordon Willis was known as "*The Prince of Darkness*"[48], a nickname which was given to him by another legend in the cinematography's field, Conrad Lafcadio Hall (known, among others, for *American Beauty*, 1999, directed by Sam Mendes). We could see from Willis' images he felt pretty comfortable in night and darkness, till the extent that probably it was the shadowy effects of *Klute*, this film *noir* in muted colours, which set Willis on the walk of fame, and prompted Francis Ford Coppola to hire him for *The Godfather* (1972) one of the movies that changed cinematography's history. *Klute* was probably the best gym for him to practice his concepts and styles, now famous all over the world. Many critics argued that, most of the times, he deals with underexposures, that sometimes it is barely impossible to distinguish some details in people's eyes etc. He has always answered that it is 'correct exposure' what he does. Now, we can either write another thesis on this topic, or simply focus on our movie; but before starting with the shadows' part of the review, it is worth giving an explanation of what this argument is about, also because it will help to elucidate a concept on how the approach to expose the night could be. I will start from some images

Image 38, 39: underexposure or correct exposure?

It is true, they are a bit unconventional. For instance in Image 37, Jane Fonda (undoubtedly the real star of the movie; she won the Academy Award for best performing actress for her role) has her face half covered. The surrounding 70% or more of the screen is occupied by a big black piece of
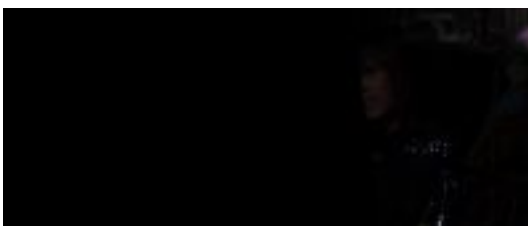
Image 40: Bree, 3 stops underexposed.

cloak, which obstructs the rest of the view. We can see just black on it, no further details. Now, people may say that the image is underexposed, because the most of it, is pitch black. We can answer to that. There is a part of it which is indeed underexposed: the cloak. There is a point though in which exposure esulates from mathematics and

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[48] Piepenbring, Dan. *Prince of Darkness.* https://www.theparisreview.org/blog/2014/05/19/prince-of-darkness/, 19 May 2014. Accessed August 2017.

moves to a world which is connected to personal taste and fantasy. An underexposed image would rather look like the one we can see on **Image 40**.

It is the same image, pulled three stops and a half down, and still there can be somebody arguing that this was exactly the exposure they were looking for, severely underexposed. In my opinion there is a limit in between taste and some shared rules of common sense and technical factors. Provided that light provokes a chemical reaction of the silver halides on the film's emulsion (or photons hitting the digital sensor causing an electronic computational output resulting in the formation of an image, same concept different mean) the negative is technically exposed. Nevertheless, it could be so low exposed that the human eye won't be able to discern details.

The exposure is the most important tool solely in the cinematographer's hands. It has an algebraic formula, but to a certain extent it is a matter of taste and conventions. A director of photography has the right and the duty to expose according to his/her personal feelings (if the director agrees with him, obviously). There are of course some technical parameters to respect, but a D.o.P. is considerably free to judge his/her wanted exposure, as 'correct exposure' and few people can argue with that. Once the movie's style is established, and the mood proposed and approved from the production's board, the director of photography has to take care just of keeping it nice and constant. In the aforementioned **Image 38**, I really do not feel the necessity of 'looking' into the cloak's details. Conversely I think our attention is dragged right where the authors want it to be dragged. The exposure and the composition guides us in the frames' guts. In that very moment, Bree Daniels was forced to recall her past: she has been living in a luxury apartment, having many clients… Then, a guy beats her up almost to death, and the police starts to inquiry on her. Her life changes into a worse scenario, and she is likely to have suicidal tendencies. Therefore there is a big black mountain in front of her (in front of her future) to climb, so no wonder there is almost 70% of the frame blocked. I interpret this framing in this way, and I consider the cloak's underexposure made on purpose: because it is narratively motivated and not because Willis does not know how to light clothings or to open the lens' iris.

The same I would state for the **Image 39**, which is even more ingenious. We only see on the screen: a) Klute coming from downstairs with a torch and a gun; b) the hand of the man who he is chasing, Peter Cable (played by Charles Cioffi) which confirms Klute's sixth sense. "There is someone on the roof!", he says before leaving the room. c) The dirty light well. Right below it, there is Bree's room. With the lights still on, we can understand that she is safe, no harm will occur to her. She says to Klute during the interrogation, before the night's chasing, at the minute 38: "I'm

sure you'll find this amusing, but I'm afraid of the dark. Sometimes I get spooked. I think I see people and hear things". Lights on, mean safety for her. They might have used three shots instead of this one: 1) Klute's close up 2) the criminal's hand close up 3) a wide shot of the three elements together. In the way they shot it, they have it all in one. Even though most of the frame is underexposed, the light 'guides us' to the important elements of the story telling. With all the non influential details of the stage or panorama distracting us (because they are left in black) the light helps us to focus on key points, the essential informations we need. Brightness alway catches our eyes attention. That shot introduces one of the best scenes in the movie and is also considered among the best sequences of Willis' career. Shortly after he died, the organizational committee did a commemorative class and projection at Camerimage Film Festival in Poland. I attended this class and they chose this sequence among others to honor his memory. It is a chasing sequence, but rather a dance between overexposures and shadows (which sometimes coexist in a single shot), evil and bad. The soundtrack reminds us Dario Argento's horror movies and the Goblin band, who composed the music for most of his famous films. A piano in crescendo and some ghostly chorus

Image 41: silhouette in the chasing.

from the distance... It is not an actual "police chasing": no frenzied runnings, no screaming, not even one bullet is fired (indeed, Klute believes that the man could be Tom, his friend missing). Just silhouettes and a torch, being the key light for many shots, surrounded by deep blacks and only few details are visible to our sight. But those which are visible, are essential to the storytelling. Willis and Pakula's approach here was not to give an audience a comprehensible overview of the film's world, but to distinguish between things seen from things unseen. This is a world that exists in shadows, a world of deep meaning, a world in which very few are allowed on the inside. "*There are movies that change the whole way in which films are made, like Klute, where Gordon Willis's photography on the film is so textured, and, they said, too dark*"[49], says Martin Scorsese about Pakula's movie, and he is definitely right.

 The film is enormously dark, but all of the darkness has its clear meaning. Willis himself stressed that it was the visual contrast between light and darkness, not darkness itself, that can produce such memorable imagery. He was never afraid of using inventive and new techniques to create the right tone for the films he worked on. For instance, during the film, Willis makes use of long shots and

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[49] Cinefilia and Filmmaking. http://cinearchive.org/post/80468458422/there-are-movies-that-change-the-whole-way-in. Accessed June 2017.

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non-conventional zooms and angles. One of the reasons could be to shock the audience by creating a creepy mood through his vision. Willis developed a constant sense of insecurity throughout the movie, by placing the camera in positions that suggests the camera as a character itself, hiding in the shadows and stalking the victims. He bends our perception, by often framing through objects in the foreground: bars, grills, windows… That gives us the sensation of being *voyeurs* as the criminal that is spying Bree and Klute. In some occasions, we can see parts of the criminal, as he is watching them or listening. Sometimes we just see Bree or Klute or the two together framed behind these fences, giving us the impression of claustrophobia, that they are chased by someone; or simply that their future is doomed, no way to escape from Bree's deleterious instinct. Indeed, the couple will split, because of her, but no reasonable topic is brought by her as an excuse.

All the shots in the movie are carefully set up to tell us more about the main characters and their world than just depict the action happening on screen. I would like to close the chapter with two comments, both about the night and darkness of this movie and also about Willis' mark. One is from a film critic Tim Bryton, about the bond that *Klute* has not only with *noir* films but also with German Expressionism: "*The film is rich with deep dark scenes, so shadowy that I'm half-tempted to trot out that over-used comparison, it's like a German Expressionist film; except that German Expressionism was hardly a common touchstone by 1971*"[50].

The second comment comes from Francis Coppola, speaking mainly about *The Godfather*, but after all, what he said is likely applicable to the whole Willis methodology, perhaps starting from *Klute* onwards: "*We talked about the contrast between good and evil, light and dark. How we'd really use darkness, how we'd start out with a black sheet of paper and paint in the light*"[51]. Clearly, the darkness of Willis's films is so prominent that it is his hallmark. Indeed, he is the Prince of Darkness.

- ***Shadows and Fog,*** 1991, directed by Woody Allen, director of photography Carlo Di Palma.

For the 1990 decade I have chosen a non conventional movie. It was shot as a *noir* one, but the contents and tones are shifted evidently towards black-comedy till the extent that we accept it like a parody of the genre rather than a continuation of the genre itself. Nevertheless, to make parody about something there necessarily need to be two main parameters: 1. Filmmakers have to know deeply the subject of which they are making fun of. Only in this case they can shape it to their will

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[50]Bryton, Tim. *Alan J. Pakula: Klute (1971).* http://www.alternateending.com/2009/09/alan-j-pakula-klute-1971.html. 15 September 2009. Accessed July 2017.
[51] Bergan, Roland. *Gordon Willis obituary.* https://www.theguardian.com/film/2014/may/19/gordon-willis.19 May 2014. Accessed August 2017.

and make it actually funny. The risk otherwise is to make up something ridiculous or grotesque.

2. The audience should be aware of the original topic by which the parody is inspired. This subject should be a commonly known topic, so that it can cause amusement and laughter to a broader public. On the contrary, as a bad result, the parody could be stated as sterile and just in rare cases we can fully enjoy a caricatural movie with all those double meanings behind.

 The key rules of parody may be defined as: "*Burlesque disguise of a work of art satirical, humorous or even critical. [...] It is a deliberated imitation, with a more or less caricatural intent, of the distinguishing style of a writer, a musician, a director or similars, keeping it intact or with small variations of the motiv, obtained by integrating some excerpts in the new composition that recall immediately its manner;*[...] *it is made with the intent of raising cheerfulness*"[52]. In other words, people should enjoy what is under the public lens, passing from mouth to mouth, and from what is considered as culturally relevant.

 Through this introduction it is important to demonstrate that despite his humble origins, *noir* spread its popularity in a major scale between cinemagoers. Over the years, the genre has gained a further increase in value. It spread across multiple platforms of medias: books, comics, tv films. It became a stereotype of itself. Its schemes and symbolism where widely recognised and accepted as a specific visual grammar which had been instituted by the years. Both Woody Allen and Carlo di Palma kept that in mind and *Shadows and Fog* follows those premises.

 The movie begins with some kind of 'circus music' mixed with some dark and flat tones of a typical *noir*'s soundtrack music. That is the first diegetic hint that we are dealing with a product which will pertain to a double nature of comedy and mystery. If we have a glimpse of Woody Allen's filmography you can notice there is a strong tendency to farce tones and scents of dark humor (*Zelig*, 1983, as an example). Nevertheless some of them are about serious topics and oriented to rather to thriller genre (*Match Point*, 2005). *Shadows and Fog* embodies the double nature of parodistic and anguished. One can read the title and feel gloomy, or actually have a laughter, thinking about how such a big stereotypical name could have been effectively chosen for a movie. It looks like Allen wants to show his cards from the beginning of the game. Straightaway, Carlo Di Palma (awarded with the Nastro d'Argento price for this movie) includes us in an abstract world of silhouettes wrapped in an outrageous layer of fog. This patina will be an unvaried presence through the whole show, indifferently from exteriors and interiors. I have the feeling there was used the 'flashing' technique for film stock's treatment. It consists, briefly, in exposing all the negative stocks

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[52] Treccani, online vocabulary. http://www.treccani.it/vocabolario/parodia/ . Accessed May 2017.

to a minimum level of light by small flashes in the printing machine, in order to cast a *veil* on the emulsion, lowering the general contrast, and helping to reveal more details in darker areas. Technically speaking, it increases the film's base fog level. The other option is that Di Palma used some fog filter in front of lenses. This filter mimics *"the effect of natural fog, creating a soft glow and flare. […] Contrast is generally lower and sharpness will be affected as well"[53]*. I can not rely on a scientific evidence even though I made some research, but the tone of contrast and the visuals of the movie gives me that feeling. Logically, it would make sense because of the title, to utilize some expedients to add further visual connection and meaning to the whole opera.

Image 42: opening shot in *Shadows and Fog* establishing the tone.

In some areas of the movie fog is a 'justified presence'. There are some bonfires close to the Circus area where Irmy (Mia Farrow) and Paul (John Malkovich) live (circus appears, as promised by the music, in the commencement at about minute 7). In interiors, somebody may be smoking... In the rest of the movie though, fog is just there. It does not need a justification, it is in the title, it is a co-protagonist as far as we are concerned. Of course in the exteriors it is more prominent than in the interiors, it is often tarnishing our view, but in interiors one can still perceive a foggy environment.

The other main ingredient of the title is, without any doubt, the shadow. When we happen to see the first assassination, after the introducing shots, we see the scene split in two visual parts: the real killing going on the right side, and the two huge shadows projected on a wall on the left side. The nearer the killer is approaching to the victim, the taller his shadow will be in comparison to the man about to die. Visually the big shadow covers the small one and therefore the weak one is 'swollen' by the violent one. Quoting the German Expressionism is an obliged choice considering how clearly it is stated. Allen and Di Palma are of course aware of the *noir's* roots gleaning from the German ancestor genre.

The killer is a shadow, a mysterious identity and with reasons that we will never discover; indeed for the movie's sake, it does not matter at all… He "always strikes in the fog!", quoting from one of Kleinman's (Woody Allen) friend in the movie. Everytime the killer is about to appear, we see his shadow first. Even though in the early outset he is introduced to us as a silhouette and only slightly

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[53] Filter's description by one of the industry's manufacturers available at: https://tiffen.com/special-fx /. Accessed July 2017.

afterwards like a shadow, there is a distinction to make. Perhaps the title "Silhouettes and Fog" would have sound less powerful, so it was decided to keep a less documentary approach, and go for a higher grandeur.

As we can read in the book *Culture of Light* "[...]*shadows cannot exist on their own: they are always dependent on, although not necessarily attached to, the solidity of the object that obstructs a ray of light.*" On the other hand, in comparison, the profiles "*They are the figures themselves. This image depicts the actual bodies of the characters reduced to two- dimensional outlines through their placement before a hard background key light and the absence of fill light. They are silhouettes created through the use of harsh backlighting.* [...] *And yet, unlike a projected or attached shadow, the silhouette is substantive. It exists in its own right*"[54].

The killer has a vague role in the picture and we can see it through his representation. As a device common in the *noir* movies, the director gives us the complete image of the killer, even before the half of the movie is reached. In a regular *noir* movie, we as an audience (in parallel with the film's hero), would probably discover little by little of his psychology, his motivations for commit the misdeeds, his refuge etc (e.g. *He Walked by Night,* directed by Alfred L. Werker, 1948, cinematography by John Alton). In *Shadows and Fog* the killer is the one who starts and ends the movie; he is the reason for Kleinman to wake up and change life at the end; to meet Irmy and protect her, while the citizens will erroneously blame him for the crimes. He is like the catalyst of the entire novel, but as a paradox: we do not know anything about the assassin. Indeed, we do not fear him, we do not even care much about him, because he is a shadow.

That is perhaps another difference between this and a classic *noir* movie. The whole product rotates about gags and absurd situations which spread all through the only night in which the story is set. The killing and the atmosphere it is only the pretext to alienate the typical serious and tangled themes of a *noir* in order to make the audience just sit, relax and enjoy it, rather than staying concentrated and thrilled during the whole movie. As a matter of fact, *noir* had been taken as a source of inspiration and to camouflage a movie which is just the shadow of a *noir,* a 'mockufiction' metamovie, which is wearing somebody else's clothes.

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[54] Guerin, Frances. *Culture of Light. Legends of Light and Shadow.* University of Minnesota Press, 2005. P. 95.

Conclusion

At the beginning of our journey we discussed the difference between night and day, how night was portrayed in colours or in B&W, the contrast ratios, techniques for lighting the night, *noir* as a 'genre' that seems to be dedicated entirely to night, and we mentioned some typical features of its narrative. In current year 2017, many things have changed, and some of them radically since cinema was born. As we tried to point out in the first part, technologies have a strong influence on the creational process and the fulfillment of a movie. In general they affect the equipment's list, camera's movements, rigging the lights and maybe something else, but it should not affect how we approach the creation of a movie. Tools are becoming more 'portable' and smaller: for instance, we can mount high end cameras on flying drones, on suction mounts in a car, in body mounts or in the classical steadi-cam, with the difference that the operator's back will be less exhausted from the weight. Even micro cameras like GoPro can be mounted on helmets, bicycles, in some corners which were barely imaginable only 20 years ago.

Furthermore, nowadays I can see that many women are approaching the profession of director of photography, possibly also because cameras and lenses are getting lighter and more compact. But who knows what is the cause and what is the effect: more women are becoming cinematographers because the equipment is getting lighter, or the equipment is getting lighter because more women are approaching this position? The major change anyway in terms of cameras' technology is the transition between analog and digital. Gordon Willis, who shot in film stock most of his career (i.e. he did not shot any feature film in digital) was asked about shooting films digitally, and he replied: "*The organics aren't the same. The interpretive levels suffer. Digital is another form of recording an image, but it won't replace thinking*"[55]. As we saw at the previous pages, the 'illusion of night' is often more important than capture the night light in itself, as if in a documentary point of view. We will develop this idea further, especially we will spot the new technologies available for image capturing (digital cameras and their new extreme sensitivity), and analyze how they influence the artistic process.

In the past, film stocks had extremely low sensitivities compared to today's standards. For instance Kodak currently manufactures 500 EI[56] tungsten balanced film stock and 250 EI daylight balanced stock, those two being the highest sensitivity available for color negative film stock on the market. We must not forget that we have available lenses with much bigger iris's aperture than it once was,

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[55] *Willis, Gordon quotes*. http://m.imdb.com/name/nm0932336/quotes. Accessed August 2017.
[56] Exposure Index: how the manufacturer recommends to expose their product, by selecting the correspondent sensitivity in the light meter used (in this case, 500 ASA/28DIN).

allowing more light through the lens till the film's plane or the sensor. Film and lenses are progressing and digital sensors with them. Panasonic has released a camera Varicam 35[57] with two native ISO, the highest of the two is rated 5000 EI, that means 3⅓ stops more of the most sensitive film stock on the market. I heard some people stating on set "that camera is so bright, it can see more than my naked eye!" Scientifically it is a hard question to answer, even though somebody has tried: "*In a study published* [...] *by Rockefeller University[58], there has been experimental proof that human beings are capable of seeing a single individual photon of light.*[...] *It's so tiny that you can't really give it an ISO equivalent. If you did, it would be in the billions, far outside what the system was intended to measure, or so high that it doesn't really have any conventional meaning.* [...]*it means camera makers have a long way to go to catch up"[59]*. As a matter of fact, some cameras are starting to 'see in the dark' or rather in really low light conditions. On the contrary of how it can look like, this is not only an advantage: there are some pros and some cons to consider related to the new capabilities of camcorders.

There is something called *video noise* or simply *noise*, which appears a digital artifact due to the effort made by the sensor when it is working in stressful conditions (very low light available, heat,high humidity level etc.).
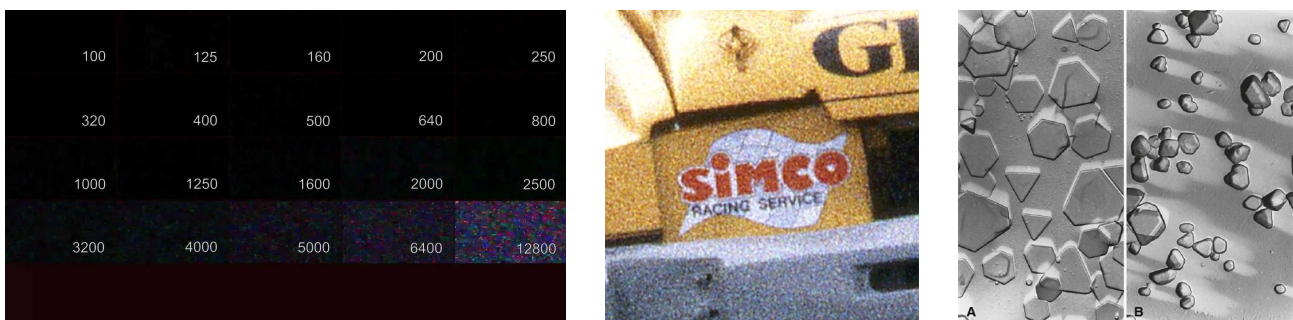
Image 43, 44, 45: video noise, film grain, and faster silver halides vs slower.

Noise's intensification can occur also in post production, not only in capture. It augments when we try to render an image brighter in color correction, or by altering a bunch of parameters of the so called 'secondary corrections'. In film stock, we rather speak about *film grain* or simply *grain*. The concept is the same: it is an optical pattern which occurs to the image. The faster the film stock and more enlarged the image, the more we notice it.In order to be more sensitive, film stock needs bigger silver halides in the emulsion, because with a wider diameter or perimeter (not all the silver

[57] Panasonic Corporation, *VariCam 35 Specifications.* http://pro-av.panasonic.net/en/varicam/35/spec.html. Accessed August 2017. Accessed August 2017.

[58] Tinsley, J. N. *et al. Direct detection of a single photon by humans.*https://www.nature.com/articles/ncomms12172. 19 July 2016. Accessed August 2017.

[59] Haine, Charles. *What's the ISO of Your Eye?* http://nofilmschool.com/2016/07/whats-iso-your-eye. 26 July 2016. Accessed August 2017.

halides have a planar shape) they have more chances to capture light. Due to underexposure and if in addition there are wide black areas in the image, both noise and grain are more visible. Many efforts have been made by the software houses to limit this noise/grain output. Indeed it can be very annoying to our eyes and could lead to distractions from following the story or to enjoy an image. Generally speaking , movements attracts our eyes and brain's attention: it is an heritage from the past when the prehistoric men were living in caves and forests or on riversides. The danger of some predator was absolutely necessary to avoid, therefore every suspicious movement attracted our senses in terms of warning us that a danger could have been hidden in that motion. This instinct is something we can not 'switch off'. The noise or grain will attract our view inevitably, in some cases more, in some cases less, depending on what is there in the rest of the frame. The software houses have been focusing their energy on such tools like noise reduction or grain reduction. It is a very common problem, especially if you effectuate prominent grading. On the contrary, some are merchandising softwares to ADD film grain, to make the digital footage look similar to film stock, while captured in digital. Till a certain magnitude, the grain can be pleasant. Film grain anyway, looks more appealing than digital noise. The silver halides are put into the film strips randomly mixed, we can not give them a precise order, thus, in every frame their structure is different and unsystematic. In the digital sensors, the pixels do not move, their array is constant throughout the capture, thus, the video grain maintains a rather persistent pattern. The result is more bothersome to the human eye.

Blacks in digital and film are already quite different. The capacity of camcorders to 'see' where film can not, bring them to 'read' the black as "muddier or milky" compared to film stocks. Many cinematographers mainly complain about the blacks in the digital being one of the principal issues why for some of them the analogic medium is still preferred. Probably the greatest difference on set concerns the fill light. As discussed in FAMU's classes with professor and cinematographer Vladimír Smutný (known, among others, for *Kolja*, 1996, directed by Jan Svěrák), film often requires fill light, digital often requires *negative fill light*. A negative fill is not a light source, it is a method to increase the contrast ratio on the subject or an object by means of black materials such as black cloth (velvet or similar) or cine foil. The goal is to arrange this non-reflective-surfaces in places in which they either prevent light to bounce from other surfaces (say, bright walls, window's glass or clear floors) or block light that is directing hitting the subject (very often used in cloudy days, when the contrast is very flat, by building small 'black roofs' and or 'black walls' beside or above the actors' head, for instance for a close-up, to give the illusion of a more directional light

source, thus shaping a face's contour). This efforts are made commonly to counter-balance the intrinsic properties of digital cameras.

The sensation is that it has been happening under our eyes the same what happened with vinyl records and CD-ROM. The old analogic medium, vinyl, ceased to be the best seller, being replaced by CDs, because of volume occupied and production's prices. However, the majority of eminent artists insist on releasing their albums in vinyl. For many music lovers, vinyls have yet that touch of magic, and a warmer sound: more alive. I myself collect vinyls and I have got a working player, even though I have bought a lot of CDs as well following from the late 90's because yes, they say it in the their name already: Compact Discs are indeed smaller. In a school backpack we can fit twenty and more of them, but zero vinyls instead. Not talking about today's mp3 readers, in which it is possible to fit one own life's discography. Older mediums physically occupy more space, the same goes for the film stock and cameras. That can be true, but not always accurate if talking about cinema. We need computers, many harddisks to back-up, or servers in which to store datas. We need physical space for processing, archiving and distribute digital movies as well. It is not only about the capturing media, that is of course smaller (SxS cards, hard-drives etc).

It is still not 100% true that the digital surpassed the analog in all the aspects, although most of today's production are shot in digital. There is still an ongoing dispute (which I have followed and I agree with) that in term of costs, in the end of the pipeline, they are almost equally comparable. The money we have to spend to treat the digital datas is roughly the same as using film stock. In some part of the production chain we save money in digital, in some other part of the production chain we save in film, in the result is roughly the same expenditure. We have to consider too that there are many hybrid systems going on: the Digital Intermediate (DI) i.e., shooting in film, scanning the film negative, color grading it and then mastering in a Digital Cinema Package (DCP). Or the opposite: capturing in digital and then printing in a positive print film. In the film industry it is happening the same dynamic of vinyl vs CD. There are many film lovers out there (me amongst them) and indeed Hollywood still produces big movies shot on stock[60], so despite the growing popularity and use of the digital, film is not dead yet.

We were writing about differences in blacks. Let us remember that black is the main color if shooting nights: we are not strictly talking about props or costumes, but about shadows, silhouettes, part of the image which are left very dark or even underexposed. It is likely to have more blacks'
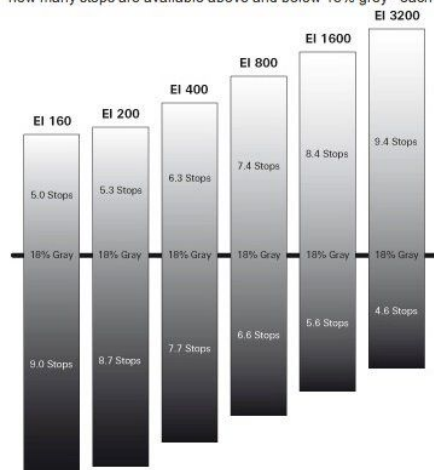
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[60] Informations about which movies are being shot in film, are available in the Kodak's website: http://www.kodak.com/US/en/motion/customers/productions/default.htm . Accessed August 2017.

presence in a night scene rather than in whichever situation, with some exceptions, as we saw before in *Klute*. In that acceptation blacks in the digital cameras are a bit 'weaker'. In post production they are getting closer and closer to film's black. Directors of photography can rely on the relatively new figure of the D.I.T. (Digital Imaging Technician), a useful colleague with whom they can discuss about how to take the best out of the cameras. Surprisingly enough, the solution is not to boost the ISO (or the 'gain') of a camera to have richer blacks; as a matter of fact, it is the

other way around. As an example, I would choose one of the most used digital cameras in the Industry: the Arri Alexa. What we state for this camera is applicable with the due distinctions to Red cameras and to BlackMagic and I am positive that we can apply the same reasoning to many other models or brands. They may differ in technology for capturing the image, in colour science etc, but here it is important the concept behind it. Looking at the graph we can see what it means 'Native EI' or 'base sensitivity' is an important concept for

Image 46: Alexa's Exposure Index graph.

further explanations. For saying it with Arri's words, a quote from Alexa's manual "*This means that the dynamic range is almost evenly distributed above and below neutral gray with low noise in the shadows and clean, smooth clipping behavior in the highlights*"[61]. It is the sensitivity on which the camera's sensor had been calibrated to retain roughly the same amount of informations in the highlights and in the shadows (how many stops it can record above and below the middle grey). An ideal setup for most of the shooting conditions. Moreover it should be the setup that shows a decent amount of noise below and above the 18% grey, the setup that is the most adaptive to such. Nevertheless, after some test have been made, we discovered it quite works like a film stock, at least in the principle. They tried to build cameras in a familiar way for the cinematographers used to to work with film. By talking to my first mentor of direction of photography, Rosario Neri, we

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[61]Arri's ALEXA User Manual, available on the internet at http://www.arri.com/camera/alexa/downloads/ . Accessed January 2017.

came to some conclusions. He was born and raised in the analogical era, so he has forged his experience in that medium, the opposite to what I have done. The topic of the discussion is: how to have richer blacks, with less noise or grain. According to the Arri's diagram, by lowering the ISO, there will be more retaining capability in the blacks and less in the highlights. Again it is helpful an extract from the camera's handbook: "*At low exposure indexes, such as 160 ASA, the dynamic range below neutral gray increases, reducing noise even further. At the same time, the dynamic range above neutral gray is slightly reduced. [...] At high exposure indexes, such as 1600 ASA, the images behave in the opposite way. Noise is increased, which makes it important to judge shadow detail, while there will be even more headroom in the highlights*"[62]. It is not solely about details, but when details starts to be lost they get lost smoothly, more gently in that part of the greyscale, by sacrificing the other end in the highlights. It appears that this diagram is telling us exactly the opposite to what we may think by instinct. It is not about exposing better the blacks, i.e. adding light to them in order to see the object or the silhouette in its shadows. In order to retain the blacks 'cleaner' with less noise, it is actually better to decrease the camera's exposure index. Likewise Rosario Neri said that: if he would have a scene full of blacks and shadows, in the darkest of the nights, with only some light glimmering in the distance or reflected by some water on the road, he will go for a slower film stock. Why? Because the silver halides would be smaller in a slow film's structure; therefore there the grain is less apparent, hence the blacks looks less 'polluted', even if we can see nothing inside them.

The same holds for this digital camera and many more models. It seems that the camera renders the black as a more smooth and more uniform texture by lowering ISO setups. That is what we have learnt from this graph. It is noteworthy to consider that if we go less sensitive there is a chance we will have to increase the light levels consequently. The sensor needs light to work, so there should be some parts of the image which are exposed properly. One of the most important secrets in cinematography is to balance our exposure. Because creativity is important, but also the technical part deserves special care. It is the beauty of this job, from my point of view: it is one of the few heads of department in a cinema crew which embodies creative and technical features of one craft, equally balanced; sometimes one is predominant over the other and viceversa, they alternate.

One of the problematics in shooting night, is when we are not suppose to see anything because there is no justified light source in the scene; but of course we have to show something to the audience, they do not want to see nothing in screen for too long (unless you are Derek Jarman: he

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[62] Arri's ALEXA User Manual, available on the internet at http://www.arri.com/camera/alexa/downloads/ . Accessed October 2016.

directed a movie called *Blue* in 1993, in which we stare at a plain blue screen for 79 minutes, with just voice-over and music).

In present times, it is possible to shoot without renting trucks full of lights and the question is: is that really an advantage? In 2015, Sam Shapson (director) and Barry Elmore (cinematographer) made a sci-fi thriller short movie entirely lit with moonlight, called *Refuge*[63]. The camera was a Sony Alpha 7s, which they pushed up to the settings of 51.200 ISO to be able to expose just by the

moonlight's help. The short movie has a relevant purpose as an experiment on how far we can push our tools and what we can take out of them under extreme conditions. Even though I fully appreciate the validity of the test, I personally think that it does not look very 'nightish'. It looks to me as if it was shot in under daylight and graded in an alternative way. Moreover, the footage shows heavy noise because of the stressful conditions of the camera. They used severe color correction and denoising softwares, as themselves show in the making-of[64]. It looks better than the original footage, but still the noise is noticeable. They state that they did three months of test, two days of shooting and three months in post-production, a great effort. There a question came to my mind: wouldn't it have been easier in terms of production and results to shoot it in day for night technique, to have a

Image 47, 48, 49: *Refuge's original footage; after noise reduction; final grading.*

[63] Available at: https://vimeo.com/131567877. Accessed August 2017.
[64] Available at: https://vimeo.com/132389368 . Accessed August 2017.

cleaner image (plus avoiding all the logistical problems which comes while shooting at nighttime)? Given that moon is casting the light by reflecting the direct sunlight and the sunlight bounced from the earth, the light casted looks really similar to the direct sunlight, not in terms of colour of course but in terms of harshness or directionality. The moonlight spreads sharp direct light casting edgy shadows and creating a very contrasty look. The answer is probably 'yes', it would have been nicer with other expedients, but that would not have given birth to the nice experiment they did.

Said so, we know that cinema is an enchanting art. Therefore it is of utmost importance when shooting a night scene to give the audience an *illusion* of what the night feeling is, and not just record what night really is. We should keep in our mind that the illusion of night is crucial, not necessarily the night itself. Cinema and cinematography become more attractive if imagination and creativity comes into the game. While sometimes shooting in night may help to create the night atmosphere (as in some *noir* film that were often shoot 'night for night'), in some cases it is rather a disadvantage, as, for instance, in *Refuge*, mentioned above. Night atmosphere is about contrast, lighting ratios and/or colour not merely about which technology we use. Technology should be at the service of creativity, and not viceversa. Night should not be just in front of the camera, but also in the spectator's minds. We must think about an atmosphere to create, and then choose the best technology to give birth to *a night's portrait*.

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