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ANALYSING JANUSZ KAMINSKI'S
CINEMATOGRAPHY BASED ON SELECTED MOVIES

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Thesis Abstract

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<p>The aim of this thesis was to analyse the artistic and technical points of the work of Polish cinematographer Janusz Kaminski.</p> <p>Three movies were selected from his filmography, all of them were directed by Steven Spielberg. The movies were analysed with the intention to find the trademarks that Kaminski used during his career.</p> <p>In addition, the technical details of making movies, what does a crew do and what equipment they use, were studied.</p>		
Key words Camera, cinematography, equipment, filmmaking, trademarks.		

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1. INTRODUCTION

I was seven years old, when a movie that changed my life came out. My father took me to the local cinema in my hometown and it was one of those rare times, when the cinema was absolutely full, no empty seats available at all. This movie was called Jurassic Park. I immediately fell in love with movies, and ever since the love has continued. In that time I decided that I will make movies when I will grow up. (Well, for a while I also wanted to be a palaeontologist, but that went away fast)

First I wanted to be a director, but later I realised that I am more into the technical and visual part of the films, so it was obvious to choose cinematography. I got to know that Jurassic Park was directed by Steven Spielberg, who since then has inspired me. I have seen every single movie of his. Ironically, the first Spielberg movie what I saw, where Janusz Kaminski was the cinematographer was the sequel to the Jurassic Park, The Lost World.

Since then, I have found Mr. Kaminski's work amazing and breathtaking. I have been studying his style extensively. That is the reason, why I decided that the best topic for my final thesis would be cinematography in general and Janusz Kaminski's work.

After going through the basics of cinematography, I will analyse three movies of the Spielberg/ Kaminski collaboration. I have chosen the three most acclaimed, dearest and in my opinion best of their works, The Schindler's List (1993), Saving Private Ryan (1998) and A.I. – Artificial Intelligence (2001).

2. CINEMATOGRAPHY

2.1. Cinematography as the language of the movies

In cinematography, a person has to consider picture more as information. With the composition of a picture, it is shown to the audience where to look, in which order and what to look for. If we took pictures of everything just as it is, there would not be necessary to have cinematographers.

An image should have a meaning and tell a story without the help of any other explanation such as voice-over, audio and text. The best examples for these were the silent-movies from the beginning of the golden age of the cinema.

A good composition helps the brain to process the information. It selects and points out parts such as size, resonance, order, shape and hierarchy. (Brown 2012, 38.)

2.2. Who is the cinematographer, and what does he or she do

A cinematographer (also known as director of photography, D.O.P., D.P.) is an artist in movie-making business, who is the head of the camera and lighting crew. He/she is responsible for the general look of a movie, so he/she is working closely with the director. The director has the final say on the decisions; however there are some directors, who let their cinematographer to do their jobs more freely. With this, D.O.P. has the same level of recognition in the business as the directors. Since their jobs are so close to each other, many cinematographers decide to direct some movie (Janusz Kaminski himself directed a movie called *Lost Souls*).

On the movie set, a D.P. decides which angle and which support (tripod or any camera moving device) to use to capture the scene with how many and which type of cameras. About five to ten years ago, when the 35mm was still widely used, they also choose which film stock will be used and how much they should order. A D.P. rarely operates the camera him/herself, but there are examples when that has happened during the history. He/she also discusses with the director, which lens and which filters they should choose for the scene. In addition, he/she is handling the lightning parts, which means telling which lights to put and where to put them.

Usually a cinematographer asks for a specific camera operator (if they work together earlier or by recommendation) and later a camera crew is built up. The next step is to find the first assistant camera (1st A.C. or focus puller) that takes care of the focus of the camera and the assembly of the camera itself. The next person is the second assistant camera (2nd A.C. or clapper/ loader) a person who operates the clapperboard and feeds the media into the camera (the film stock or memory cards). In addition, he/she is responsible for the paperwork. Last, but not least, there is a camera production assistant (camera PA, intern or camera trainee) who helps around the camera and learns about the cinematography, the camera operator or the assistant work.

2.3. Available movie cameras

Movie cameras can be divided into two categories. One of them is the traditional movie camera, which uses film as the recording media. The second category is the digital movie camera, which uses memory card to store the recorded material. Up until the early 2000s, the traditional cameras were dominating the business. Nowadays the digital cameras are wide-spread and have largely taken over in the market. Digital cinematography is considered cheaper and faster, however traditional cinematography is still used as cinematographers prefer 35mm over digital. The reason for that is still the 35mm gives the closer colours to reality and it is easier to light the scene compared to digital. There are still directors, who choose to work with traditional cinematography, such as Steven Spielberg and Christopher Nolan.

Traditional movie cameras:

The best and most widely used cameras are manufactured by Panavision, a company which was established in 1953 in Los Angeles, USA. An interesting fact is that Panavision does not sell their products, only rents them, so private persons cannot have their own camera produced by this company. With this business model, they can track down their equipment and they always know where and in what state their products are. Their currently available products are the Panaflex Millennium (with 400 and 1000 feet magazines), the Panaflex Platinum camera (with 500 and 1000 feet magazines), the Golden Panaflex GII camera (with also 500 and 1000 feet magazines) and the Panaflex Lightweight Camera System (This camera can accept only 500 feet magazine which is only rear-mounted on the camera and perfect for Steadicam and remote crane use.). All these cameras above are 35mm cameras. Panavision has also two 65mm camera systems, the 65MM Panaflex System 65 Studio Camera and the 65MM HR Spinning Mirror Reflex Camera System (both with 400 and 1000 feet magazines). (Panavision 2015.)

The second most well known company producing film cameras is a German company called ARRI. Their currently available analogue cameras are the ARRICAM Studio (with 400 and 1000 feet magazines) for general shooting, the ARRICAM Lite (the same magazine size as the studio, the light version of the magazine can fit only maximum of 400 feet material and can has a shape which fits the shoulders, so not for Steadicam use) which

is used for hand-held operation. Their older still available cameras are the ARRIFLEX 535B (with only 400 feet magazine), the ARRIFLEX 435 and its variations and the ARRIFLEX 235 (which is their smallest available camera, with 200 feet magazine). They also have 16mm cameras like the ARRIFLEX 416 and the ARRIFLEX 16 SR3. Their only 65mm camera is the ARRIFLEX 765 (with 500 and 1000 feet magazines). (ARRIrental UK 2015.)

The third available manufacturer is a French company called Aaton. They have only three analogue cameras available nowadays, a 16mm camera called Xtera, a small sized 16mm camera the A-Minima and the only 35mm camera of theirs, the Penelope. (Aaton 2015.)

Last, but not least there is a small company from Austria called Moviecam. They produced only 35mm cameras, the Moviecam Compact, the Moviecam SL (the lightweight version of the Compact) and the Moviecam Compact MK2 (the upgraded version of the Compact). (Moviecam 2015.)

All these companies mentioned above have stopped manufacturing the analogue cameras, and nowadays produce only digital ones. Crews can only use the currently existing analogue cameras if they want to shoot on film.

Digital cameras:

There is a wide variety of digital cameras and all the above mentioned companies except Moviecam have their own version. Even though Panavision was ruling the analogue market, ARRI took over the digital one. In most of the movies and television series which are shot digitally, ARRI-made cameras are used.

ARRI's most widely used camera is the ARRI Alexa (and their variations, the XT, XT Plus, XT M and the XT Studio). All these cameras can reach a maximum of 120 frame/sec. The other digital camera product is the ARRI Amira, which is designed for digital documentaries. (ARRI 2015.)

Panavision's own digital camera is the Panavision Genesis. It was introduced earlier than ARRI's Alexa, however it still could not reach as wide usage as the Alexa. Panavision also

has two cameras, which are produced in a co-operation with Sony and they are called the Sony F23 and the Sony F35. (Panavision 2015.)

Last, but not least there is an American company called Red Digital Cinema Camera Company. Their products are mostly high-resolution cameras. Currently available products are the 5K resolution Red Epic Mysterium X and Scarlet Mysterium-X. The 6K resolution cameras are called the Red Scarlet Dragon and the Epic Dragon. (Red 2015.)

As these examples show, there are many possibilities to choose from, if somebody wanted to use professional equipment. It is advisable to rent these equipment (as it is mentioned earlier, with Panavision that is the only choice), because buying such a camera can be really expensive. The current price for an ARRI Alexa starts at 44 900 euro.

2.4. Lenses

There are multiple types of lenses available for moviemakers. The most commonly used ones are the:

- Prime lenses, which are lenses with fixed focal lengths. Most of the moviemakers prefer to use these lenses, and if needed, just move the camera to get closer to the object. These lenses are defined by their focal length and the maximum wide open aperture. (Brown 2012.)
- Zoom lenses are with variable focal lengths. Since nowadays zoom lenses are used widely in consumer level cameras, professionals do not prefer to use them, unless they want to achieve some special effect. For example the effect, which was used first in Alfred Hitchcock's *Vertigo* and an important shot in Spielberg's *Jaws* can be achieved with zoom lens only. While the camera is pulled backwards, the same time zooming in happens and the picture creates a distorted reality.
- Telephoto lenses have long focal lengths. Long lenses compress space and make far away objects seem close. A binocular is practically a telephoto lens. (Brown 2012, 6-7.)
- Wide angle lenses are the opposite of telephoto lenses. A wide lens expands and distorts space and they are used for wide shots with long depth of fields. (Brown 2012, 6-7.)
- Macro lenses are usually specially designed optimized for close-up work. (Brown 2012, 284.)
- Normal lenses are the lenses, which mimic the human eye and can produce the closest image to what a human being can see. (Brown 2012, 54.)

Camera lenses are manufactured by multiple companies. The most widely used are produced by Panavision, ARRI, Angenieux, Cook, Leica and Zeiss lenses. They are all available for rental use and some for purchasing.

2.5. Lighting

There is a large number of possibilities and variables when we are talking about lighting. Factors can be the quality of light (which can be soft or hard), the direction of the light, the altitude, the colour and the intensity. (Brown 2012, 110.)

The subject of lighting is wide and includes the electrical issues, grips, exposure theory and so on, we just go through the available lighting sources for use briefly.

- Fresnel lights were designed in the 19th century originally for lighthouses. Nowadays mostly those lights which have a lens in them use the Fresnel design. The Fresnel lights are designated by their size of bulbs and come in two sizes, the studio size and the baby sizes. The strongest available lights are the 10K and 20K versions, then the 5K, then the Juniors, which have 2K bulbs. Even smaller lights are the 650, Betweenie and InBetweenie lamps and they are known for their compact sizes. The smallest available Fresnel is the Inkie, which has either 200 or 250 watts bulbs. (Brown 2008, 10-12.)
- The next category is the HMI units. They produce very sharp lights, thanks to their small gas arc light source. They are available in 18K, 12K, 6K, 8K, 4K and 2,5K. The smallest available HMI unit is the 1,2K lamp, with different wattages. (Brown 2008, 12-15.)
- Xenon lights are related to the HMI ones, as they are also a gas arc with ballast. They are currently available in four sizes, 1K, 2K, 4K and 7K. (Brown 2008, 15-16.)
- The Brute Arc lights are not so widely used since the HMIs are available. (Brown 2008, 16-17.)
- Open-Face Lights are better, when just raw power lights are necessary. Their varieties are called the Skypan, 2K Open Face, the PAR 64 and 600-650-1000 Watt Open Face. (Brown 2008, 17-20.)

- PAR groups are used in large areas during night outdoors or generally in big interior locations. Their varieties are the Wendy, Dino and Moleeno. MaxiBrute contains 9 bulbs in a rack. FAYs also contain 5 to 12 bulbs. Ruby 7 is the only PAR light, which is focusable. (Brown 2008, 20-21.)
- HMI PARs are relatively new ones and available in 575 watts, 1,2K, 2,5K, 4K, 6k and 12K versions. (Brown 2008, 21-22.)
- Soft lights are usually multiple small bulbs in a circular shape. They are called the Studio Softs and they are in 1K, 2K, 4K and 8K version. (Brown 2008, 22-24.)
- Fluorescent rigs are with color-correct fluorescent bulbs. They are widely used, as they are easy to use and fast to set them up. (Brown 2008, 24-28.)
- The last category is the other leftover lights, which can be crane-mounted lights and so on. (Brown 2008, 29-34.)

ARRI is one of the biggest companies to produce movie lights, but of course there are other companies as well, such as the KinoFlo (which manufactures fluorescent rigs).

2.6. Camera moving devices

There is a large variety of moving the cameras, and the following are the most widely used ones:

- Handheld shots are one of the earliest ways to move the camera around. It is done with either a shoulder or a handheld rig. The shots made with this technique are documentary like and add realism to the scene. However overuse can cause back problems for the camera operator due to the heavy weight of cameras and the audience can get nauseous when watching those scenes. (Brown 2012, 216.)
- A dolly is a device, which moves the camera and the operator on tracks along a plane. The tracks can be straight or circular. The people taking care of the dolly and the operations are called the dolly grips. It requires much preparation, as the tracks have to be built in advance and on locations it might take a long time. Moreover, the grip has to make sure that the tracks are clean, because I personally saw a ruined shot by only a single piece of grass. (Brown 2012, 218.)
- Jibs and cranes are practically dollies, but the added extra of the possibility to move the camera upwards as well. Jibs are the smaller versions; the camera can go up a little higher than a person. Cranes are the bigger versions, and they have two types. The first type is where the operator is on the crane with the camera and the other one is with remote-controllable camera. The most advanced cranes are the Technocranes. Their arms are also telescopic, and can make very smooth movements. The biggest Technocrane is the SuperTechno 100 and it can go up to 30 meters. (Brown 2012, 221.)
- SteadiCam revolutionized cinematography. It was invented by Garrett Brown in the mid 1970's. It gives the freedom of the handheld camera with the smoothness of the dolly. The SteadiCam can go anywhere a person can go with two legs. Since its invention, most of movies contain shots with this device, as it can save money and time. For example in the television series E.R. ten pages long sequences were shot in one take with this equipment. Since then there has been one Russian movie

called The Russian Ark, which was entirely shot in one take with the Steadicam. (Brown 2012, 225.)

- The next category is the one with the devices which can make aerial shots. The oldest version is the simple helicopter, where the operator just sat with the camera on a helicopter. Later a stabilizer system called the Wescam System was installed on the helicopter, which eliminated the vibration of the helicopter. Nowadays the drones are taking their places. Another commonly used device is the Skycam system, which was invented by Garrett Brown, the same person, who created the SteadiCam. It covers large areas, and uses suspension cables between four poles and the movement can be done with computers. In the movie Lord Of The Rings this device was used extensively, and nowadays it is used in many sport events. (Brown 2012, 224.)

- The last device worth mentioning is the motion control rig. It is used exclusively for special effect shots (such as putting a certain moving background into a shot). The movement is computer controlled and can be repeated infinite times with millimeter accuracy. It is extremely expensive rig though and it is used only when it is really necessary. (Brown 2012, 226.)

3. STEVEN SPIELBERG

Steven Allan Spielberg was born in Cincinnati, Ohio on 18. December 1946. As a child he loved to watch television and he started to make short movies with his family members using his father's 8mm camera. Later he made a short movie called Amblin' in 1968, and he named his production company after this film.

Spielberg managed to secure a job for himself in the television, where he directed a few episodes of TV series (for example he directed the pilot episode of Columbo in 1971). His first bigger project was a TV movie called the Duel in 1971, where a businessman is chased by an unknown truck driver. The movie was a low-budget film with 450 000 USD and was shot in 13 days all on location. Spielberg's first movie released in cinemas was called the Sugarland Express and it was released in 1974. This was the first movie, where he worked with composer John Williams.

His next project was made in 1975 and it was called Jaws. This movie made him immediately a superstar in the business, and he is still considered as one after so many years. Jaws was one of the first big summer blockbusters in the movie history. After this, many highly acclaimed movies followed, such as E.T. – The Extra Terrestrial, Indiana Jones trilogy (now quadrology), Jurassic Park, Schindler's List and A.I. – Artificial Intelligence.

Spielberg is highly active as a producer as well. He was the producer of such movies as Deep Impact, M.I.B- Men in Black, Back to the future 3 and so on. He was also the creator of such TV shows as the Animaniacs and computer games like Medal of Honor. So far he has won three Academy Awards, two for Schindler's List (Best Picture and Best Director award) and one for Saving Private Ryan (Best Director). (The Internet Movie Database 2015.)

4. JANUSZ KAMINSKI

Janusz Zygmunt Kamiński was born on 27. June 1959 in Ziebice, Poland. He immigrated to the United States at the age of 21. In 1982 he started the Columbia College Chicago and he earned his Bachelor of Arts degree of cinematography in 1987. He continued studying in The American Film Institute, where he earned his Master's degree in cinematography.

Kaminski started his career with low-budget horror movies with Roger Corman. After this, he managed to get his first theatrical movie in 1991 called *Cool as Ice*. After that, a television movie called *Wildflower* came in 1991. Steven Spielberg saw this movie and asked Kaminski to join him to make *Schindler's List* in Cracow, Poland. Ever since the *Schindler's List*, Kaminski has been the cinematographer of all Spielberg's movies.

He has won the Academy Award twice, one for *Schindler's List* and one for *Saving Private Ryan* and both for Best Cinematographer. Altogether he has been nominated 6 times, other times were for the *Amistad*, *The Diving Bell and the Butterfly*, *War Horse* and the latest for *Lincoln*.

He has also tried directing his own movies, but he has always turned back to cinematography in the end. He has worked as a cinematographer in movies like *Lost World – Jurassic Park*, *Jerry Maguire*, *Minority Report*, *Terminal*, *War of the Worlds*, *Munich* and *The Judge*. (The Internet Movie Database 2015.)

5. SCHINDLER'S LIST

5.1 The story

The movie is based on the true story of Oskar Schindler, a German businessman, who saved about 1200 Jews in the Second World War. At the beginning of the movie, we can see Mr. Schindler as he enjoys the life at the beginning of the war. He is the member of the Nazi party, and arrives in Cracow to establish his business there.

In the same time, the Polish Jews are forced to move to the Cracow Ghetto. From there he hired Itzhak Stern, a Jewish person, who handles official matters in the Ghetto. He becomes the accountant of Schindler's factory. Stern helps to get money from Jewish investors. Originally the Jews could not own private property in the Ghetto, so it was a good way for the investors to save their money. With the help of bribery and black market connections, they manage to build up a flourishing factory, which produced enamelled pots and pans (Deutsche Emaillewaren-Fabrik - German Enamelware Factory). Also Schindler hired Jewish workers from the Ghetto, because they were significantly cheaper than the Polish workers. With this, Stern was able to get permissions for these workers. This permission showed that they were essentials for the war effort, and with this saving the life of these people. It was a win-win situation for both Schindler and Stern, who had first only a business relationship, but by the end of the war, they had become close friends.

SS-Untersturmführer (second lieutenant) Amon Goeth is ordered to come to Cracow and be the leader and later the camp-leader of the Płaszów concentration camp. After the camp is ready for prisoners, Goeth orders the whole Ghetto to be cleared out. Those, who are capable of working are forced to go to Płaszów for forced labour, those who are not are either sent to other concentration camps and killed or simply killed on location. Oskar Schindler and his mistress are a witness of this horrible act. Same time, we can see a little girl in her red dress. Most of the movie is shot in black-and-white, but in these scenes, the girl is having a red dress. With that she is surely remembered and becomes the symbol of the war itself. The shock caused by this event leads to a change in Schindler's attitude towards the human life and the war itself and probably that is the time, when he decides to help his workers.

Amon and Oskar become good friends, and Schindler makes sure that they keep a good relationship. He manages it with money and gifts of rare products. At the same time, we can see that Amon is a monster, who not only loves his “job”, but enjoys killing and torturing people. He regularly shoots at the prisoners of the camp from his balcony. He seriously mistreats his housemaid, a Jewish girl called Helen Hirsch. It is implied that he is in love with her at the same time.

We are also shown how awful the situation in the camp is. It is a heartbreaking sequence in the movie, when there is a selection in the camp and people are forced to run around naked in mud, while Josef Mengele and other doctors are choosing those who are going to work and who are going to be executed. After these scenes, the children of the camp are collected together while singing happy songs, and then transported away presumably to Auschwitz in front of their parents.

The war is almost over and Goeth receives orders that they have to get rid of the evidence. First they exhume the bodies of those who were killed in the Ghetto and burn them. Schindler comes and talks with Goeth next to the burning piles. This is the time, when Oskar gets to know that all the remaining survivors are ordered to be transported to Auschwitz. At the end of this scene, Oskar sees a dead body with a red coat on.

Schindler decides to move his factory to his hometown, Zwittau-Brinnlitz. He bribes Goeth in order to keep his workers, and practically pays for every single person. He spends his almost entire wealth on people and this is the time when he wins Goeth’s maid, Helen Hirsch on a card game. The infamous Schindler’s list is made. All those who are on the list, survive. His new factory in Zwittau is supposed to produce artillery shells, but they are of really bad quality.

The war ends, and Oskar Schindler becomes a fugitive. Before he leaves, he says goodbye to the people. The workers make a ring for him, to show their gratitude. In the morning, a soviet soldier comes and liberates them. The film ends with the survivors walking in a field. We can see Amon Goeth’s execution. Then the picture goes into colour and the actual survivors appear. They are visiting the grave of Schindler, every actor and actress with their real life counterpart. The film ends with the actor playing Schindler putting roses on the grave.

5.2 Analyzing the movie

Schindler's list was produced by Universal Pictures and Amblin Entertainment (A production company established by Spielberg and producers Kathleen Kennedy and Frank Marshall). The shooting started on 1. March 1993 on location with a budget of 22 million American Dollar. The length of the movie is officially 3 hours and 15 minutes. It was shot with the Arriflex 35II, Arriflex 535 and Arriflex 535B cameras in 1.85:1 aspect ratio. (The Internet Movie Database 2015.)

Kaminski used three types of 35mm stock for the film. The first one is the Eastman Kodak Double-X 5222 black-and-white negative film. According to the manufacturer's website, this negative is best used in exterior shots during daytime, fine with interior daylight shots and average with well-lit studio and limited light. This type of film was generally available in 400 and 1000 feet roll lengths. (Kodak 2013.)

The second type was the Eastman Kodak Plus-X 5231 black-and-white negative. This is a fine grain negative, which was designed for general movie productions, both inside and outside. This film was also available in 400 and 1000 feet lengths. (Kodak 1999.)

The third type of material was the Eastman Kodak EXR 500T 5296 colour negative. It was a widely used stock in its time. Many movies were shot on this until it was left out of production in 1996. It contained microfine grains and produced high sharpness on the image. (Kodak 1992.)

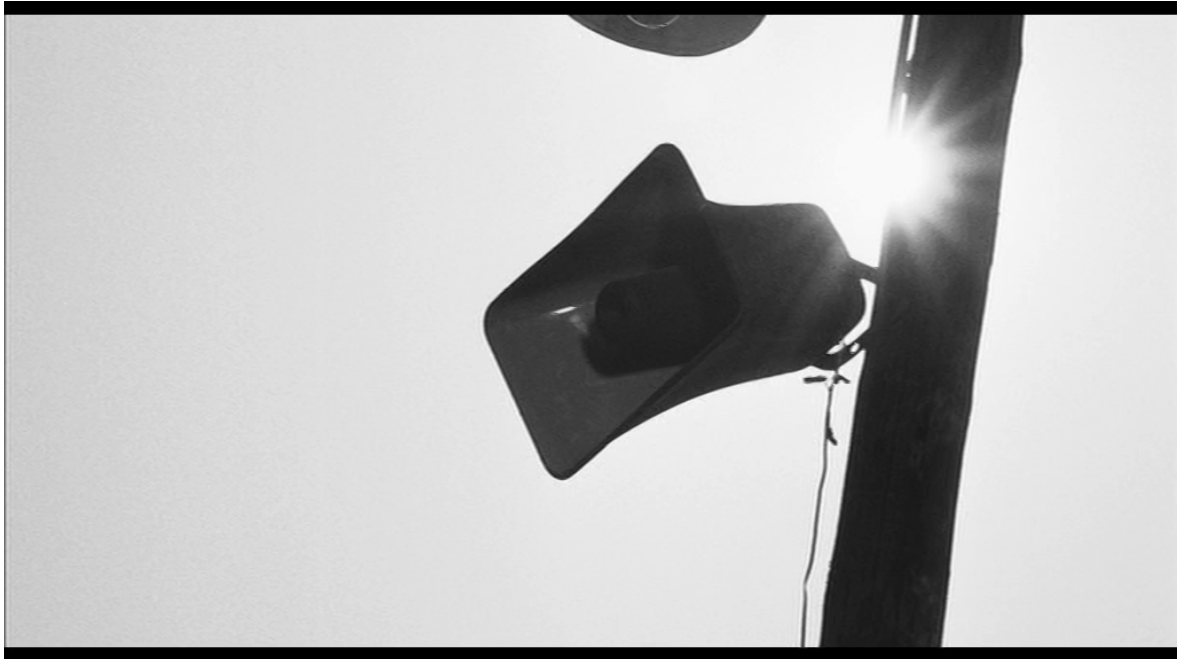
Graininess in black-and-white negatives is microscopic grains of black metallic silver. They are randomly placed in the gelatin of the emulsion and it results a statical clumping of the grains that form a pattern that becomes visible when a negative is enlarged enough. (Kodak 1984, 28.)

5.2.1 Janusz Kaminski's trademarks

If we examine Janusz Kaminski's filmography, we can see that he started in the movie business earlier, but still Schindler's list was his first big production. In spite of that it is possible to see already all the trademarks of Kaminski, all of them are coming back in his later movies as well.

First, one of the most recognisable one is when he uses a very strong backlight, which then draws out the outline of the subject. Sometimes he adds an extra key light in order to make the subject more visible. Backlight is basically a light that comes to a person or object from behind and above. A rim/edge light might be additional in order to distinguish a dark side of a face or object from the background. Quite often back lights are overexposed and they still keep their ability to record well on tape or film. Back light is also known as a hair light or shoulder light. (Brown 2012, 108.)

Two separate lights which are coming from behind the subject of the picture are called backlights and kickers. They make the subject visible, make them different from the background, and give the subject more depth. (Brown 2012, 114.)



PICTURE 1. The loudspeaker, which plays music during selection

The Picture 1 is an establishing shot from those scenes, when there is a selection in the Płaszów camp, and the SS officers are playing music while they are taking the children away from the camp. The strong backlight is in this case the sun and the key light was somewhere in the right a little higher than the loudspeaker itself. The evidence for this is the shiny reflection of the light source and the shadow which is cast by the centrepiece of the speaker.



PICTURE 2. Stern is leaving the camp for a short while to meet Schindler

Picture 2 shows a scene, where mostly two light sources were used. One light source from the left back, which is visible by the shadows cast on the ground. There is one searchlight in the background, which is moving around and does some lens flare effect, but just as those five small lamps nearby, it does not really affect the composition of the picture as it is quite far from the action.

Kaminski quite often brings this trademark on to the next level, when he adds more of his favourites to the shot. This favourite is the ambience. Fog, mist, smoke and other elements, which can make the light visible. There were many different types of smoke used on sets, but after a while they all turn out to be health hazard. There was one type called cracker smoke, which is basically atomized baby oil, cooking or other light oils are used in them. These smokes are extremely white and spread around easily and fast. In addition, it stays around for a long time before disappearing, which saves much time on set. (Brown 2012, 321.)



PICTURES 3 – 7. Examples of the added ambience

Pictures 3 and 4, even though they look similar, are from different scenes. The first one happens, when Schindler and Stern discuss the situation and it is known that probably Stern will end up in Auschwitz, so they decide to drink together for the first and last time. (Earlier Schindler offered alcohol to Stern, but he always rejected it). The second picture is when they actually start to write the list. Both of the scenes are really intimate and dramatic, and since they are both on the same location, Kaminski decided to use similar lighting for both. There are the strong main lights coming from the window, and the added smoke (which is supposedly the smoke from the cigarettes that Schindler is smoking all the time, but obviously more artificial smoke was used) makes the light beam visible.

Pictures 5 and 6 are from the scenes, when the women transportation gets mixed up and accidentally (paperwork mistake) got re-routed to Auschwitz. In these shots instead of the

smoke, snow and the breath of the people do exactly the same with the light as it was mentioned at the previous pictures.

Picture 7 is from the scenes, when the women are put into a chamber and they are not sure, if it is gas or water that is going to flow from the pipes. In the end it is water. In this case the strong backlight has a different meaning. With this tool, the water is glorified almost to a Godlike level as the women in that chamber think of it as the saviour.

Another common sight in the movies made by Kaminski is looking through things. He prefers not clean frames and these cause some memorable shots.



PICTURES 8 - 9. Schindler agrees to buy the Jews from Goeth

Pictures 8 and 9 are from a long, unedited shot, when a whole conversation happens between Oskar Schindler and Amon Goeth. They agree on the terms of the purchase of the Jews. The entire shot and discussion is recorded from inside through the multiple windows at Goeth's villa. With this tool, the audience has a feeling that they are witnessing something really big, but also a secret thing. At the end of the shot (visible on Picture 9), the two actors are perfectly placed in front of each other, and each of the actors has their own window part (probably they had to be careful to stand on the correct place, as just a few cm difference could result being off-frame. Moreover, this shot is a great achievement of the camera operator as he was able to keep up with all the movement perfectly). It is called a balanced frame. It is possible to interpret this shot in such a way that the characters in that moment are totally separated from each other. They are both the members of the Nazi-party, but currently they are just on the opposite side in terms of ideology. Schindler tries to save as many people as possible, when Goeth enjoys torturing and killing people.



PICTURES 10-12. On the way to Auschwitz

Another example can be seen on Pictures 10-12. On the way to Auschwitz, the women in the train do not know that they have been sent to the wrong location. One of the ladies is standing next to the wagon's window, and briefly can see a little boy foreshadowing their fate and destination. Later, when they actually arrive at the concentration camp, Kaminski used exactly the same angle to see through under the train, but this time instead of the little boy, there are the camp's guards.

Later, when the ladies are forced to take showers, there is one particular shot, which required strong attention from the focus puller. First the doors are visible and after the guards close them, the camera pulls close to the door and when it is close enough, the focus changes and the people inside the room become visible through the small circular window. If we look closely at the scene outside the room, there was only one light, the rest of them were inside the room. The one light outside was strong, as the camera stops just in

front of the small window, and the matte-box of the camera casts a shadow. Technically speaking this is a mistake. However it is forgivable, as it would not have been possible to get this close without making a shadow. (Most likely nowadays this would have been removed digitally in post-production.)



PICTURES 13-14. Looking through the small window

This shot can be interpreted in multiple ways. With this camera movement, and outside viewer comes much closer to the characters inside the room. Another possible explanation is to think of the camera as the point-of-view of an SS officer, who does not look at them as actual human beings. The third possibility is a simpler one; it is just an establishing shot for the following events in order to show the audience, where exactly the people are, even though they themselves do not know it yet.

5.2.2 The use of black-and-white and colour film

Even though most of the movie is shot in black-and-white, there are some moments where colour plays an important role. It certainly creates a strong contrast between the images and makes the point of the scenes very recognisable. It has been claimed that the reason for why Spielberg decided to make the movie in black-and-white is that during his life, he saw the Second World War in documentaries, where the war footages were always black-and-white. Because of this, he associates war with colourless, black-and-white images and that is the reason why the movie is shot in this way. (It was difficult to make the studio accept his wishes to make the movie in black-and-white as research showed that young people will immediately change the channel on the television if they can see b&w films. The studio originally wanted to shoot the film on colour negative, so at least it would be possible to make colour copies for the home video market, but fortunately this idea was quickly dropped.)

The most famous scenes which contain colour are the anonymous little girl in a red coat during the liquidation of the Ghetto. This effect was achieved by Industrial Light and Magic during post-production. There is one particular shot, where the girl is walking behind a tree, and it is possible to see that the effect studio had a hard time inserting the red through the tree branches. First she appears in the distance and as she approaches around her multiple events are happening. This is a beautiful way to show how innocence is still there despite the awful time. The inhabitants of the Ghetto were innocent civilians. Oskar Schindler witnesses and sees the girl from a nearby hill. During this time, the audience might think that this little girl in the red coat will survive, but later it is revealed that the reality was much harder in that time.

As the girl appears first, the camera is far away from her, and as the events go on, the camera concentrates more on the girl as she manages to get out from the crowd and go inside a house. As she goes up the stairs, a Kaminski look-through trademark shot is visible. At the end of the sequence, she hides under a bed. During this time, her coat went back to black-and-white.



PICTURES 15-16. Little girl in red coat first from distance and entering a house



PICTURE 17. The trademark shot

Unfortunately later in the movie, the audience has a glimpse of the fate of the girl. In one scene, Amon Goeth is destroying the evidence of the liquidation of the Ghetto by exhuming and burning the dead bodies. Schindler witnesses this event as well and at the end of the scene, he sees a body of a girl in red coat in one of the cart. With this short insert, the innocence is dead. Many critics think that this is the point, where Schindler changes and decides to make his list, which will save more than 1000 people.



PICTURE 18. The fate of the girl

With this very simple effect, Spielberg was able to point out one character in the story without introducing the character itself. The audience gets to know her for only a glimpse, but still they feel they know her entire story. If the movie had been shot in colour, it would not have had the same effect.

Another very powerful and wonderful way of utilising the colour footage in a predominantly black-and-white movie is the very beginning and the end of the film. When the movie starts, the studio logo is in colour. After that, the main titles are shown, while in the background a Jewish family is preparing for Shabbat. (The Jewish resting day, starting from Friday evening till the end of Saturday) They light candles and say a prayer. After a while it is possible to hear the prayer, but the family left already and only the candles are on the table. With smooth and slow cross-dissolve editing, the camera concentrates on one candle, and gets closer and closer by each edit. The last shot shows the candle die out. The footage is almost seamlessly transformed into a black-and-white shot and the candlelight itself was digitally coloured. As the light turns into smoke, the camera tilts up and cuts to a shot of an old train engine blowing out smoke.



PICTURE 19. A small amount of colour is still visible before the full b&w starts

These images with the smoke of the candle and the engine can be interpreted as a foreshadowing of the future events of the film and also the historical events. First we see a candle with family around and a short while later the family disappears and the candles stay alone until they die out giving out smoke. In the next shot families are being transported away with the very same train which gives out the smoke. The smoke can be seen much later in the film for one last time. It is in Auschwitz, shown after the families are entering a building, which has a big chimney attached to it giving out smoke and ash...

All these three shots are in similar framing, the object giving out the smoke are more or less in the middle of the picture. (Paul Coates in his book titled *Cinema and Colour* interpreted these scenes similarly with minor differences than me.) (Coates 2010.)



PICTURE 20. The chimney of the crematorium. (Note the strong backlight with an extra light on the right side of the chimney)

The last time when there is colour footage is at the end of the movie. The Jews saved by Schindler are liberated by the Soviet Red Army and since they do not have any idea what to do next, they start to walk to the nearby town. As the crowd is walking on the field, the camera is wandering around between the people. In the end, the whole crowd can be seen from the distance. Then the picture changes into colour and it is possible to see the real people nowadays. (Or in that case in 1992-1993 when the film was made) With this simple change, the story jumped ahead in time and also it got out from the directed scenes and entered into a sort of documentary film.



PICTURES 21-22. 48 years difference

After the movie turned back into the colour, Spielberg decided to introduce the real survivors in a very interesting way. Since Oskar Schindler died in 1974, the crew could only visit his grave in Jerusalem. They gathered as many survivors as possible and they filmed those ones in front, who appeared in the movie. In order to make it easier to identify the people, title cards were appearing on the screen and the actor/actress who played them in the movie escorted them to Schindler's grave to pay their respect.



PICTURE 23. On the right side of the picture Nuisa Horowitz with actress Magdalena Dandourian, on the left side Joseph and Rebeka Bau with actor Rami Heuberger

In the end, the audience can see a hand putting a rose on the grave and then a man can be seen from the distance in the cemetery. Many of the audience thought that it was Steven Spielberg, but in fact the man in the cemetery is Liam Neeson, the actor playing Oskar Schindler. (The Internet Movie Database 2015.)



PICTURES 24-25. Liam Neeson paying respect

If we do not count that one short appearance of the little girl in the red coat in the middle of the movie, the colour footage is only used at the beginning and the end of the movie. With this the film is in a way put into a coloured frame.

In the end, it is worth mentioning, Steven Spielberg has his trademark shots that he inserts into almost all of his movies. Since his very first officially released film, his movies contains at least one shot of either of the rear-view or side mirror of a car. (For example, the Tyrannosaurus Rex attacking a car and his jaw can be seen in the mirror) This scene is from that part, when Schindler is looking for investors into his business and the meeting is held in a car. The audience can see the investors discuss a proposition, and the whole scene is visible in the car's rear-view mirror.



PICTURE 26. The discussion

5.3 My own opinion and conclusion

I do not remember exactly how old I was when I saw Schindler's List for the first time, but I was still in elementary school. That time it was a really shocking movie and obviously I could not concentrate on the technical part of the film. I have not watched it for a while after the first time, but as I grew older I started to appreciate it more and more. Now I consider it a masterpiece in any aspect, the best movie in this subject and the second best Spielberg movie. (I consider the Empire of the Sun of his best) The cinematography is superb, something that should be and is being taught in schools. The awards which Janusz Kaminski won for it are absolutely justified.

The story itself is powerful and even though it is hard to watch for some people, it is worth watching it at least once. There is only one part that I feel to be a little out of place. At the end of the movie, when Schindler has to leave and hide, the saved workers gather to say farewell and also give him a present. Schindler breaks down and cries, stating that he could have done more if he had not wasted so much money on drinks and food. Those scenes are a bit too stretched; the audience can get the point that Spielberg wanted to say with less as well.

The film also has educational value, as it can be presented for future generations. With this (and of course more education about history) we can make sure that this awful period of the time called Holocaust will never happen again.

To conclude, the cast and crew created something important with this film and we can be sure that this movie will be remembered in the future. Unfortunately nowadays we rarely can see such masterpieces, as lately it is hard to get the attention for a 3 hours 15 minutes black-and-white movie.

6. SAVING PRIVATE RYAN

6.1 The story

The movie shows a fictional story, which contains sequences based on real events. The story starts from present day as an old gentleman visits a war cemetery with his family. He wanders around, looking for a specific headstone. During this he collapses and the members of his family come for his aid. As he looks straight forward, the camera goes for a close-up of his eyes and with this, the story jumps back in time.

The following sequences are about 25 minutes long in total. The sequences show the beginning of the invasion of Normandy on 6. June 1944. A group of soldiers arrive at the beach lead by Captain John H. Miller. They manage to get through the beach under heavy fire by the Germans. After that, they go through the German lines, clear up the beach and capture some of the enemy. At the end of the battle scenes, the camera looks through some dead bodies and one of them has a backpack, having his name "Ryan" written on it.

Back in the USA, ladies are writing telegraphs to the family members of the deceased soldiers. One worker realises something and informs the general. By this the general gets to know, that three of the Ryan brothers where killed in action and their mother is going to receive the telegram about their death on the same day. He gets to know that there is a fourth Ryan brother who is alive, however missing somewhere in Normandy. He immediately orders to get that brother back to the States safely.

Back in Europe, Captain Miller gets the order to save Ryan. He has to assemble a group of 6 people and himself to go to find the missing soldier. They go on a journey, where they face many dangers, and some of the group members are killed on the way. It happens twice that they find an incorrect James Ryan. In the end, when they actually find him, he does not want to leave stating that he wants to stay with the only brothers he has left. (Meaning the soldiers from his group)

Miller decides to stay with his group and tries to keep Ryan alive, when the Germans attack the town where they currently are. Many Germans are killed, but most of the original team as well.

In the end Miller is shot by a German soldier, whom he himself was set free earlier in the movie. Just when everything seems to be lost, the reinforcements arrive including airplanes and the Germans are defeated. Miller asks Ryan to come close to him, and he tells him to "Earn this". These are his last words, as he dies after this. The camera goes for a close-up on Ryan's eyes and the picture morphs into the old gentleman of present day, whom we knew from the beginning of the movie.

After finding Miller's grave in the cemetery, the old Ryan asks his wife if he was a good man. The wife tells him that he is in fact a good man. He then stands up and salutes to the grave.

6.2. Analyzing the movie

Saving Private Ryan was produced by Paramount Pictures, DreamWorks SKG (SKG stands for the name of the three people establishing the studio, the S is Steven Spielberg, K is Jeffrey Katzenberg producer and David Geffen film and music producer) and Amblin Entertainment. The shooting started on 27. June 1997 in Ireland, the UK and France with a budget of 70 million American Dollar. The length of the movie is officially 2 hours and 49 minutes. It was shot with the Aaton 35-III, Moviecam SL, Panavision Panaflex Platinum and Panavision Panastar cameras in 1.85:1 aspect ratio. (The Internet Movie Database 2015.)

Kaminski used one type of 35mm stock for the film. It was the Eastman Kodak EXR 200T 5293 colour negative film. According to the manufacturer's website,

This negative is a medium- to high-speed tungsten-balanced color negative camera film with microfine grain and very high sharpness. It features wide exposure latitude and accurate tone reproduction. The emulsion contains a colored-coupler mask for good color reproduction in release prints. (Kodak 2003.)

There were some other interesting techniques Kaminski and Spielberg chose to use during the making of the film. First, Kaminski decided to ask Panavision (camera and lens maker) to remove all the modern anti-reflection coating from the lenses, which made the lenses to be similar to those, which were used in the World War II.

The second technique is the bleach-bypass process. Bleach-bypass is the oldest of the special processing techniques of this type. It involves simply skipping all or most of the bleach steps of processing. Many film labs have variations on the technique. It comes in two different levels: Standard and Enhanced. It can be used at different stages of print production. (Brown 2012, 249.)

The third technique is to take the colour saturation and reduced it to 60%. Chroma (colour) saturation is simply how much colour there is in the movie. Zero saturation is a black-and-white image. Oversaturation means that the image is recorded with more chroma than was present in the actual scene. (Brown 2012, 180.)

The last interesting technique to mention is a rather practical effect. Kaminski simply put female stockings on the back of the lens, and this is then inserted into the camera body. As the light passes through the lens, at the end the stocking breaks it and that is how it goes onto the film. This results an eerie, stripy light effect. A perfect example of this is visible on Pictures 33-34.

6.2.1. Kaminski's work in Saving Private Ryan

Saving Private Ryan was slightly different than the other Spielberg/Kaminski co-productions, as Kaminski was more into improvising while shooting this movie and because of this not as many trademark shots are available in this film.

First of all, the movie uses tremendous amount of hand-held camera. If we calculate the entire length of the movie, about 80-85% of the film was done with that technique. The first 20 minutes with the Normandy scene, almost every shot was done by a hand-held camera. With this, the audience is put into the action, and it has an almost documentary feeling. The added lens and other effects just strengthen this feeling.

During every explosion shot, a lens-shaker was used. This camera addition does literally what its name suggests. It shakes the lens, when it is necessary and the picture resonates with it. The other effect to use to achieve a kind of a stuttering with the image is to play with the shutter speed/angle of the camera. Kaminski used 45 degrees for the battle scenes. (With the shutter angle, the longer the shutter is open in the camera, the more light will reach the film or the sensor in case of digital. The shutter speed and angle can be converted between each other with a certain mathematical formula.) (Brown 2012, 183, 208.) These effects make explosions look stronger.

As it is mentioned in the chapter about the story, the movie starts with some scenes in a military cemetery. Some establishing shots were used, where the identical tombstones are visible (except some of them, because this cemetery has graves of different religions too, in that case the tombstone is not a cross). Kaminski used a wonderful composition with these shots, as they are in perfect rows in a diagonal way.



PICTURES 27-28. The tombstones

As it is visible on the PICTURE 27-28, there is one light source on the right side. This time, it is a rather cold light, more like sunshine coming through clouds. At the end of the film, when we are back in the nowadays time, the light source stays in the same direction, but in the end it is already a warm light and looks like some unfiltered sunlight. This can be interpreted, that as in the case of Schindler's List, this movie is also put into a frame with these shots. Unlike Schindler's List, here there is no major contrast between the actual story and the "framed" parts. In Schindler's List, it was done with the changing of colour and black-and-white but in this movie, it is the change of the colour temperature.



PICTURE 29. The brighter light in the end of the movie

Moreover a very nicely composed image is when the gentleman at the beginning of the movie collapses in front of a cross, and he and his family gathers in the upper right part of

the cross and on the other side of the picture, the audience can see the row of tombstones. This shot can be interpreted in such a way that on the right side of the picture, the living people are visible and only the dead ones are in the left side and the tombstones are the line of the separation between those two. Moreover since it is an unbalanced image, the living people are in the majority in this case, meaning more people are alive thanks to the sacrifice of those heroes who fell during the war.



PICTURE 30. The family in front of the tombstones

Janusz Kaminski introduced a new and very unique way of showing a fallen soldier. In this scene, relatively early in the movie, one member of the rescue team is shot by a sniper. He falls down, but nobody can help him until they find the sniper. As this character agonises on the ground, Kaminski decided to do an extremely low angle shot, basically put the camera on the ground next to the actor. During these scenes, there is rain. Rainwater and blood collects next to the camera and actor. Since the raining is continuous, this mix of rain and blood bounces back from the ground and hits the lens of the camera. They decided to keep it like that, giving a more authentic feel for the shot. To put it onto the next level, the camera dollies towards the actor along his arm. It starts as a shot of his hand and slowly moves forward to the face of the actor.



PICTURES 31-32. Low-angle dolly shot

In the previous chapter an interesting technique was mentioned, when stockings are put on the lens itself. Here are some examples of how that looks like in the movie.



PICTURES 33-34. The broken light

Picture 33 shows a shot from the beginning of the movie, after the main characters broke through the German lines and took over the beach in Normandy. They used flame-throwers to get rid of the enemy from the gunner position. If we look closely at the flames, it is possible to see the effect of breaking the light through the filter inserted on the lens itself. Certainly it gives a strange mood for the scene. Kaminski uses this effect when there is something important. It is a relieve type of an event, but also comes with sorrow. In this case, they almost finished with D-Day with a major success, but on the other hand they lost a tremendous number of soldiers.

Picture 34 is taken from the end of the movie, when the character called Upham used his gun for the very first and last time during the war. The character finally gathers enough courage to kill the enemy, but it is a little too late. Upham gets the task to carry additional ammunition around, and if somebody need extra, he will bring them for where it is needed. Since he is too afraid of doing basically anything during the battle, he listens as his mate is

killed and he could have easily helped. Later he also witnesses as the main character Captain Miller is shot and that is the moment, when he finally steps up. Again, as in the previous example, this light-breaking effect is used to show a sorrowful milestone of the movie.

Even though the movie contains much of bloody violence, for a counterbalance there are peaceful sequences as well. These shots are separated by the colour palette. Even though the colour saturation is pulled back during the entire film, thanks to the filtering, these scenes have a unique golden-brown tint. It is obvious that the filtering happened on the lenses of the camera and not by putting gels on light sources, as the entire picture has the distinctive colour, not only parts of the image. If the cinematographer puts the coloured gels on the light, only a specific area has that colour, where the lights are aimed. (Brown 2012, 238-243.) Again, with such small and easy effect, these shots are absolutely the opposite of the fight scenes. Basically the battles are shot with a hand-held camera with a large amount of shaking and other effects such as explosions and flying dirt. Additionally, those shots have a weird, dark, bluish, greyish-green tint.



PICTURES 35-36. Comparison of the used filters

If we look at Pictures 35 and 36, the differences are immediately visible. Picture 35 is from the beginning of the movie, just after the big battle of D-Day. As the car is going towards a home to deliver bad news, there is an establishing shot about the location, the home of the Ryan's. The warmth of home is reflected by the already mentioned golden tint.

In comparison, Picture 36 is a POW shot of a soldier during the battle at the end of the film. There is nothing warm about this situation and it is well presented with the colour scheme of the shot.

The golden tint can be found the same time as the home is shown and when the army gets to know about the situation with all the Ryan sons. As the letters are written, a voiceover tells what the contents of the letters are. They are basically telling to families that they lost their sons, fathers, husbands and so on.



PICTURES 37-38. The ladies with typewriters

It is possible to see the usual strong light, coming through the windows, but this time from the left side. After this, again it is possible to see as the car with an army man and a priest is driving to the house of the Ryan family. As this happen, the following shot is shown.



PICTURE 39. The road to the home

In my opinion, Picture 39 shows a perfect shot, it cannot get any better than this. If we take a closer look at it, it is possible to see that the frame is divided horizontally perfectly in the middle. The sky takes up 50% of the frame, and the golden-brown crop takes the other 50%. The windmill is positioned correctly and the houses are along the golden ratio. The golden ratio is originated from Classical Greek philosophy, and philosophers were expressing that mathematics was the controlling force of the universe and it was showed in visual forces. It was later used in paintings, architecture and movies as well. (Brown 2012, 40.) To finish this perfect composition, there is the road added going through diagonally of the frame from the windmill to the houses.

Another perfectly composed image can be found in the scene, when the letters finally arrive to Mrs. Ryan. She is doing the dishes, when she spots the approaching car. She slowly walks outside to the porch and as the army man and priest get out the car, she collapses on the floor.



PICTURE 40. Bad news

The camera is inside the house, and looks through the door. Most of the frame is taken away by the event in the left side. If we look at the right side of the frame, there are some photographs of the sons of the lady. While most of the shot is in dark shadow, there is one strong spotlight making sure that the audience will pay attention to the small details on that

side of the shot. Most of the audience would probably concentrate on what is happening on the left. With this move, Kaminski managed to make sure that audience, even if it is subconscious, feel what the mother lost and deepened the drama.

Even though earlier it was mentioned that this movie is rather improvised visually, the usual key shots can be found in *Saving Private Ryan* too. As it is already visible on Picture 38, the events are watched through something, so there are not really clean frames in these scenes. There are multiple other examples of these during the film.



PICTURES 41-42. Looking through the windows

Picture 41 shows the scene, where a lady realises what has happened with the Ryan family. The camera sees through the window and the shades from the point-of-view of another lady. The dialogue is not audible, only John Williams' low key music is in the background.

On Picture 42, it is possible to see the already multiple times mentioned letter delivery scene. As Mrs. Ryan is doing dishes, the audience can see the approaching car through the window, earlier than herself can see it. Just as at the previous example, there is no dialogue in this scene, just Mr. Williams' music.



PICTURES 43-44. Strong backlights

Saving Private Ryan contains some shots with strong backlight as well. In Pictures 43 and 44, again the sun is the natural light source. In the first picture, there was no key-light added, so it is possible to see only the main character. (Even if it is not possible to see the face of the actor, it is easily recognisable as Tom Hanks) Additionally this shot also contains the filtered golden tint. In the second picture on the right, the very last shot of the movie can be seen. It is just a simple shot of the American flag as the sunlight shines through it.

To conclude the analysis of the movie Saving Private Ryan, an interesting fact has to be shared. Janusz Kaminski is actually visible in the movie. (He is in a cameo role. A cameo is an appearance of a movie-maker, crewmember or celebrity in a short sequence, usually without any dialogue. Alfred Hitchcock was one of the first directors, who appeared in each of his movies for a short glimpse.) Just after the D-Day, as the character of Tom Hanks is discussing his mission with a fellow soldier, they walk in front of a bunch of resting soldiers. Suddenly a person appears from the left side and walks through the picture to the right with a small WWII-era camera and records these soldiers. That person is Janusz Kaminski.



PICTURE 45. Janusz Kaminski as a war correspondent (Right side, with a cap and camera)

6.3. My own opinion and conclusion

I saw Saving Private Ryan for the first time many years after the initial release. I had heard that it is extremely violent and has much gore and since I was not really interested in actual war movies that time, I just missed it. Of course later I managed to watch it, and the raw power of the movie just took me aback.

It is considered as one of the best war movie and rightfully so. It is certainly the most realistic movie about the D-Day and the days after that event. The way they made this movie is a benchmark of the genre now and it is used in movie-schools.

In my opinion it is a great movie, however it has its flaws. First of all, the story is a little simple and I am not exactly sure why it is a good idea to send seven soldiers to their certain death just to save one person, who in the end does not even want to go home.

Second, it seems Spielberg could not finish this movie properly either. I think it is a wonderful way to finish the movie with the scene, when the old gentleman salutes to the headstone and thanks for the opportunity to be alive and to be with his family. It was really not necessary to have that last shot with the American flag. It is just an unnecessary shot to stretch the end, the audience already understands what the director wants to achieve and show with his movie.

Besides these flaws the movie is worth watching and still 17 years after the release, it is a critically acclaimed film, which has aged really well. The special effects do not seem outdated at all. The cinematography is superb as usual and Janusz Kaminski rightfully received his second Academy Award for it.

7. A.I. – Artificial Intelligence

7.1 The story

This movie is entirely fictional. The story is in the future, sometime around the late 21st century. Due to the global warming, the ice caps have melted and flooded the Earth and the population of Earth got smaller. Along the humans, there are highly advanced robots called Mecha, who are humanlike.

The movie starts in a company, where the owner proposes the idea for the associates that after creating so many successful robots, they should create a child robot, who can love. These robots can be sold to couples, who cannot have kids of their own. The prototype is called David, and later in the movie it is revealed that he was modelled after the owner of the company's deceased son.

Since they do not know how to test this prototype, they look through their employee list and find Henry and Monica, whose son has recently got sick and is at the moment in hibernation till they find the cure for the sickness. Henry takes David home and introduces him to Monica, who is really scared and dislikes him at the beginning as she is questioning the moral of this situation. Henry privately tells to Monica that currently David is just a machine; his emotions must be imprinted into him in a special way. (Hold the back of his neck while saying out a couple of words out loud.)

David observes the world around him, making the family uncomfortable and a little scared. To ease his boredom, Monica gives David a highly intelligent robotic teddy bear (called Teddy), who used to be Monica's son. David and Teddy become friends and pretty much they are going through their journey together. After a while, Monica feels connected to David, so she imprints the emotions into him. From this moment, they are like a real family. One evening, they receive a phone call, where they get to know that the family's son Martin is awake from the hibernation and he is healed.

There is a rivalry between David and Martin. (Mostly from Martin's side as David is not really capable of these emotions.) Martin first tells David that mommy will love him, if he cuts her hair during her sleep. This later happens and it looks like David wanted to attack

her. Also Martin chooses Pinocchio to be read to them by Monica. In this time, David learns from Pinocchio's story that an artificial boy can be real by the Blue Fairy. Later there is an accident at the family's pool, where David almost drowns Martin. This is the time, when the family decides to return David for the manufacturer to be destroyed.

While on the way to the factory, Monica cannot go through with this and abandons David and Teddy in a forest. At this point, we got to know a new character called Gigolo Joe, who is practically a male robot prostitute. He is framed for murder by his customer's boyfriend and becomes an outcast himself. He flees to the forest, where he meets David accidentally. They are both captured by humans, and taken to a place called Flesh Fair, where humans gather to a circus like arena and watch robots being destroyed in all kinds of ways.

One technical person of the fair sees David and first mistakes him for a real child. He acknowledges that David is in fact one of a kind. The man who captures robots does not care though, and puts Gigolo Joe and David in the circus. David pleads for his life, which makes the audience sympathetic towards him stating that a robot would never beg for his or her life. Riot starts, and that helps Joe and David escape. Back in the forest David tells about his story, and tells that he wants to find the Blue Fairy. Joe does not know how they can find her, but he knows where they can get information about her. There are information kiosks around the world, where it is possible to pay and ask questions from a computer who is a holographic animation of Albert Einstein (voiced by the late Robin Williams).

Joe, David and Teddy hitchhike to a place called Rouge City, which is a future version of Las Vegas. After several attempts with the information kiosk, finally they ask the correct combination of questions and get to know that they have to go to a restricted area called Manhattan. The police appears and arrests Joe and during that time David steals a transporting machine (a so called Amphibicopter) and manages to get Joe from the police. They travel to Manhattan, which is almost completely submerged into water.

David meets with his creator and it turns out that Monica told the whole story about David and the creator arranged so that the information kiosk leads them to Manhattan. As the creator leaves to gather his workmates, David walks around in the office and the factory

area. First he sees the place where he was created and the whole production line. He also sees that many copies of him are manufactured and also now a female version of him is available too. Finding out that he is not unique anymore, he tries to commit suicide by jumping from the building. Joe witnesses this from the Amphibicopter.

David falls into the water and floats around. Fishes also carry him around and he gets into the Coney Island area, where a theme park existed already. As he is there alone underwater, he spots a statue. He gets closer to this statue and it turns out it is the Blue Fairy. At this moment Joe grabs him from the water and brings him up to the surface. He tells Joe that he saw the Fairy down there. Joe puts David and Teddy in the copter and just when this happens the police arrive and take Joe away.

David and Teddy reach the statue, but on the way, he knocks down a Ferris wheel, which crashes on them, trapping the Amphibicopter. He is begging to the Fairy to make him a real boy. The camera pulls back and the audience can see them trapped there watching the statue.

Two thousand years go by and even though the lights of the copter die out after a while, David keeps begging the statue for this long. During this long time, humanity extincts and the Earth is a frozen planet. Mecha now evolved into a silicon-based life form and the only intelligent species on the Earth. These Supermechas are studying humans and they find David and Teddy under the ice. As David is unfrozen, he finally reaches the Blue Fairy statue, which breaks immediately when he touches it. When Supermechas download the memory of David, they realise that these robots are the last remaining life forms, which existed along with humans and thus making them special and unique. They create the image of the family home for David, so he can be in a familiar environment. In order not to scare him, they create the image of the Blue Fairy (voiced by Meryl Streep), and communicate to David through her. The Fairy tells him that she cannot make him a real boy.

By this the Supermechas realise that David is mature enough to understand the situation, so they send one of theirs to talk with him. This Supermecha (voiced by Ben Kingsley) tells him that they can only resurrect those, whose DNA they can find and even then only for a one single day. At this moment, Teddy joins the conversation and asks David, if he

remembers when he cut Monica's hair during that night long time ago. David answers yes; he was shaken by the father, Henry. Teddy proceeds to pull out the bunch of hair which was cut earlier. He had been storing it for this long time. David gives the hair to the Supermecha and tells him that if they really want him to be happy, they know what to do with that hair.

Suddenly the day comes, and David goes upstairs, where he meets with the currently waking Monica. They spend the perfect day together, even though David cannot tell too much to her, because he does not want to spoil the mood. In the end, they celebrate his birthday, as he never had such thing before. At the end of the day, they go upstairs, where slowly Monica falls asleep and eventually dies. David lies next to her, and closes his eyes while the narrator tells that he goes to the place where dreams are born.

7.2 Analyzing the movie

A.I. - Artificial Intelligence was produced by Warner Bros., DreamWorks SKG, Stanley Kubrick Productions and Amblin Entertainment. The shooting started in August 2000. on location and in Warner Bros. Burbank Studios with a budget of 100 million American Dollar. The length of the movie is officially 2 hours and 26 minutes. It was shot with Panavision Cameras and Zeiss Lenses in 1.85:1 aspect ratio. (The Internet Movie Database 2015.)

Kaminski used two types of 35mm stock for the film. The first one is the Kodak Vision 500T 5279 colour negative film. According to the manufacturer's website, this negative gives all the speed with fine grain and high sharpness. Rich black shadows, clean white highlights and lively colours can be reached. It is available in 100 to 2000 feet lengths. (Kodak 2003.)

The second type was the Eastman Kodak EXR 200T 5293 colour negative. It is a medium to high-speed tungsten-balanced color negative camera film with microfine grain and very high sharpness. It features wide exposure latitude and accurate tone reproduction. This film was also available in 400 and 1000 feet lengths. (Kodak 2003.)

Originally Stanley Kubrick wanted to make this movie, but he imagined it with an actual robot as a main character. He was waiting for the technology to reach that level and when he saw the CGI in Jurassic Park, he decided to step forward with the idea. He met with Steven Spielberg and they discussed how to make this movie, and in the end he himself agreed that Spielberg should direct it. Unfortunately Kubrick passed away on 7th March 1999.

Spielberg continued to develop the story, and after many years of break, he wrote the script for the movie as well. He decided to cast Haley Joel Osment for the role of David, so in the end not a real robot plays the role. However, many of Kubrick's ideas and style can be seen in the film. The style and look of Flash Fair stayed as he imagined originally. The movie follows the usual three chapter style that can be found in most of Kubrick's movies.

In this case the three chapters are as follows:

Chapter 1: Introduction of characters and the situations. The chapter ends with Monica abandoning David in the forest.

Chapter 2: It starts with introducing Gigolo Joe and his story. The chapter ends with David and Teddy trapped underwater.

Chapter 3: It starts with the storyline jumping 2000 years later. The chapter ends with the actual end of the movie.

As Kubrick liked to use classical music in his music, A.I.'s composer and Steven Spielberg's all time collaborator John Williams decided to pay a little homage for Kubrick. In the scene, when Joe and David got a ride to Rouge City, the tunnels to the city are shown. During this time, it is possible to hear Richard Strauss's opera, *Der Rosenkavalier*. Coincidentally, this opera has three chapters as well.

7.2.1. Janusz Kaminski's work in the A.I. – Artificial Intelligence

In this movie as usual, Kaminski used some wonderful techniques. As it was already mentioned earlier, the visual also follows the three chapters, dividing them with different looks.

Chapter one has some bleach bypass in some certain scenes. Mostly the scenes outside the home use this technique with extreme strong lights. A perfect example of this is the location, where the family's son is hibernated.



PICTURE 46. The hibernation hospital

In Picture 46, it is visible how the set decoration is used to make this unique look. The ceiling is done with some panels, which allows the light to come through. It is artificial light for sure, because it is visible that there were multiple light sources. Also some light smoke was added to enhance the light beams. With the strong lights and the bleach bypass, the faces of the characters are barely visible, but in this scene the location and the dialogue is more important.

The last sequence which uses this look is the shot, where David arrives home for the first time. As the elevator door opens, the camera is out of focus and it is if possible to see only

the outline of the arriving character. As he enters the room, the camera operator tilts down the camera and the focus puller makes the image sharp. Now only the feet of the main character is visible as he walks through the room. It is certainly an interesting way to introduce the main character, but it fits the mood correctly.



PICTURE 47. The arrival

Picture 47 shows the entrance of David. Thanks to this view, it looks as if David is an alien. Similar looking creatures can be seen in an earlier Spielberg masterpiece, the *Close Encounter Of The Third Kind*. In that case, they are really aliens. In this movie it is just a symbol for David, who is a totally outsider for the family in this point.

After David enters the apartment and the life of the family, the image turns into a warm atmosphere. Still strong lights are used, but more warm colours are introduced into the scenes. Kaminski again uses many images of reflections and also one of his trademarks, when the camera is looking through things.

David is experiencing new things and finds even such easy thing as making breakfast fascinating. He is a robot, but thanks to his childlike appearance and the fact that he was manufactured not so long time ago, he actually acts like a child, who is constantly learning new things.



PICTURE 48. Reflections

In this picture, the table is used as the reflecting surface. David is not blinking a single time during the entire movie, so this particular scene points it out perfectly. There is some strong backlight and one aimed light for the teacup. With this light the teacup is shown as something amazing for the kid.

When David walks around in the house and explores the place, he discovers the photos of the family (Picture 49). In this time his “brother” is still hibernated. When he sees a picture of him, David’s reflection can be seen there. In this case, it is implied that he feels like he is just a replacement for this other kid. It is not really sure, as the audience never knows how much these robots feel, but since David is one of a kind, we can say that it is highly plausible.



PICTURES 49-50. David exploring

In Picture 50, a simple shot can be seen. Monica feels distant from David and is outright afraid of him. In this scene, he is behind a door and turns towards Monica. With this type of glass in the door, his face is “cut” into pieces, gaining a mysterious look. Moreover, it is possible to interpret it in such way that his personality is really layered, and it is not understood yet, how many levels he will achieve during the story.

A simply most important scene in the first act is when Monica implants the human feelings into David.



PICTURE 51. Implanting feelings

First of all, Haley Joel Osment plays this scene amazingly, the audience can feel the second when he turns from the empty robot into a feeling almost human being. Most of this scene is shot in the angle which can be seen in Picture 51. Again, as during the most important scenes, a strong backlight was used without any additional key light. With this, the faces of the characters are almost not visible at all. Also a substantial amount of smoke was used to create the atmosphere. Thanks to this atmosphere and look, this scene is on the most memorable part of the movie.

When David cuts Monica's hair during one night, there is one particular shot, which presents danger well. There was minimal light used and Monica's eyes are shown in extreme close-up with the dangerous scissors in the picture out of focus. It is possible to see the fear in the character's eyes and also to see the reason for this emotion.



PICTURE 52. Extreme close-up

A little later, at the end of chapter 1, Monica abandons David in the forest. Interestingly and most likely on purpose, a similar layout was set up for the shot as in the scene where these two main characters bonded the most, meaning the emotion implanting part. Monica is on the right side, while David is on the left. In this case David is standing, but the character of the mum is similarly kneeling on the ground. Even though they are in the forest in this particular scene, the lights were set in the same way as earlier. Smoke was used again, but it seems that this time it was mostly aimed around the characters. Picture 53 shows this part of the movie.



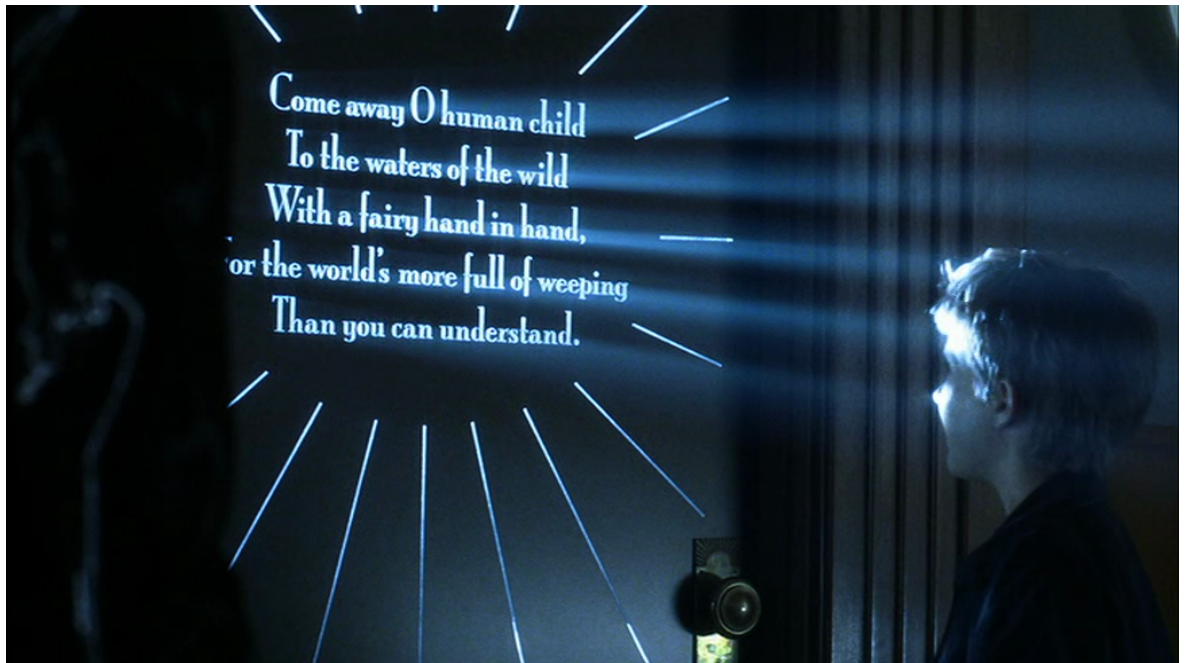
PICTURE 53. Abandoning

Chapter 2 has a completely different look. Even though it keeps the bleached look from the first chapter, Kaminski added filters, which gave the picture a blue tint. Interestingly, later in another movie called *Minority Report* (also directed by Steven Spielberg and also in a dystopian future) he used the same type of style. It seems that for him the future looks very sterile and blue. One way to interpret the blue colour is that firstly it is just a stylistic choice, because it looks good. Another reason for this colour can be to set the mood for the scenes, as blue is mostly associated with cold and sad emotions. (In *Minority Report* the entire movie has that specific shade of blue.) In *Artificial Intelligence*, this colour appears only when the sad scenes arrive. It also calms down the audience. The main character is constantly in danger, but still somehow the scenes have an eerie feeling.



PICTURES 54-55. The blue tint

In Picture 54, nothing special is happening, just some motorists are about to pass through that location, but it is possible to see how blue the lights become blue thanks to the filtering process. Even though Picture 55 shows an underwater scene, it is still certainly a stronger and deeper hue of the blue.



PICTURE 56. David found what he was looking for

Picture 56 shows a shot where practically all Kaminski's trademarks and additional effects can be seen. A strong backlight shines through the cut text on the door, while there is smoke added to make the lights visible. The picture also went through bleach-bypass and filtering.

Chapter 3 has a dreamlike mood. After waking up from 2000 years of sleeping underwater, the Supermecha creates the family house from David's memories. In order to achieve this, the picture was modified again, but this time the bleach-bypass technique was on an extra high level. It is hard to see any detail of the face of the actor, all the lines are blurred and the colours are already changing to pastel. In the making-of video of A.I. Kaminski admitted that he is a big fan of pastel colours, and it was his intention to make the "waking up" scenes using these colours.



PICTURES 57-59. Awakenings

It is visible that the dominant colour is still the blue. In the first picture, obviously the actor's eyes contain the most amount of that colour, but the tint is there in the white area as well. The lower pictures show the pastel colours with the blurred lines of faces and objects.

There is one recurring theme with lighting and objects (mostly lamps) in the movie. Quite many scenes show David as having a halo, making him look like an angel. It can be interpreted in such a way that he can be considered as a mythological character with his struggles. During the whole movie he tries to become human, so that his mum would love him. He goes through all these troubles and even waits for more than 2000 years in order to feel accepted. Another reason to think of him as a mythological character is that he is practically immortal. There is one scene when he breaks because of food, but after fixing him, he is pretty indestructible. (Many people however consider this as a plot hole in the movie, because once he breaks from food, but he is totally fine underwater in a pool scene and survives 2000 years of water, ice and other elements.)



PICTURES 60-64. The halos

Pictures 60 and 61 are from the same sequence. The first shot is through a lamp concentrating on David. Later in the movie, when he realises he is not special and unique, the exact replica of that set-up is shown with a slightly different lamp. Also he crashes one of his replica, and since he lost his innocence in this scene, the halo is not a full circle, but it is broken in the middle as it is visible in Picture 63. At the very end of the movie, when Monica is about to go to sleep forever, this halo is implied with just lighting.

As with most of Spielberg movies, this movie pays homage for some earlier productions and contains some trademark elements which are specific for Steven Spielberg.

There is one scene, when the humans are collecting the Mecha in the forest with a Moon-shaped balloon. As the balloon flies across the sky, it goes behind a tree and the lights from the balloon look similar to the lights from the alien ship in E.T. – The Extra- Terrestrial also directed by Spielberg 18 years earlier.



PICTURE 65. E.T. appears

During the sequence, when Monica is abandoning David in the forest, she drives away with her car. As the car pulls away, a typical car mirror shot is used, this time it is the side mirror though.



PICTURE 66. A mirror shot

7.3 My own opinion and conclusion

Just as with *Saving Private Ryan*, I saw this movie a couple of years after the premiere. However I am happy about it, because I might have not liked it, because it requires a certain maturity in order to fully understand and enjoy this story.

First time, I was not really satisfied with the whole movie. It took me a certain amount of time and amount of re-watching till it grew on me. Just as many of the critics and audience, I had a problem with the ending, meaning the third chapter. I thought that it would have been a wonderful way to end the movie as David is stuck underwater, wishing for something which might never happen. As the camera pulls back, I thought that will be the end of the movie, when it turns out that there is still almost half an hour left from the film. Many people thought that it must have been Spielberg's idea to put that ending there, to make a usual positive happy ending. It turns out that actually it was Kubrick, who wanted the Blue Fairy and the mum appear in the end.

There are multiple ways to interpret the last chapter. My favourite idea is that in fact the last part is just the imagination (or let us say even a dream) of David and he actually never left the Amphibicopter underwater. Since David liked fairy tales, he implemented some fairy tale like parts into this part. For example, the Supermecha tells him that they can recreate anybody, but only for one night. At the end, he goes to sleep, which we know it is not possible for him as he is a robot.

The most widely known interpretation is that the Supermecha is actually testing, how much can he grow and how developed he is, and of course creates all those images for him in order to make him happy.

The composer of the movie John Williams once admitted that he knows what was really happening at the end. He told that after Monica dies and the narrator tells David goes to a place where dreams are born, he actually dies with Monica, making it not a happy ending for sure.

As the first movie of Spielberg's unofficial "Running-man" trilogy (the other movies are *Minority Report* and *Catch Me If You Can*) Kaminski created a strong visual style to this

tale. It has some remarkable and recognisable shots. As earlier mentioned, he continued to use this style in the next dystopian future movie, too.

Even though the movie was not really successful and popular (it just brought back its budget) it certainly grabs the audience in, and also makes them think and discuss it. After all, that is what great movies do, whether or not they are successful at the box office.

8. CONCLUSION

To sum it up, it is time to think through how this thesis was done. After I had the initial idea, I had to decide which movies are the best to analyse. It was relatively fast to find out which movies will be used. Some time had passed by since I had seen these movies previously, so I just sat down with a notepad and watched all three movies carefully while making notes.

The next step was to make the screenshots, which were really easy to make thanks to the available technology. After the screenshots were done, I went forward with the research. I used the Internet as a first resource, Internet Movie Database was a significant help.

Three books were used mainly, and two of them were by the same author called Blain Brown. The first was *Cinematography – Image Making for Cinematographers and Directors*. The other book was called *Motion Picture and Video Lighting*. The other author was called Paul Coates and his book is called *Cinema and Colour*. The first two books were mostly useful with the technical details and background, while the last book helped with analysing the usage of colours.

With the help of the research, I was able to put together my thoughts about the movies and really concentrate on Janusz Kaminski's art. I also realised details that I had never acknowledged before, but also it changed my mind in some cases. For example, before I had not paid attention to why he was using the colour blue as a base in order to represent the future. Originally I thought of it as it simply looks good, but now I can see deeper into the reasons.

During the research, I realised that very little information is available on Janusz Kaminski's life before he immigrated to the USA. Also I did not know that analogue cameras are not manufactured anymore and even though I did not mention it in the thesis part, I found out most of the companies who manufactured raw materials for movie cameras have stopped making 35mm film.

Now that I have studied the trademarks of Kaminski in more detail, I can easily spot them during movies. In my opinion, if I can see a movie now without knowing the cast and

crew, I would be still able to figure out if the cinematographer was Janusz Kaminski. This does not mean that he is just repeating the same thing over and over. It means that he certainly has his own, easily recognisable style. He said himself in one interview that he likes to use backlight not to glamorise the subject, but because the direction of light represents storytelling. (American Cinematographer 2001.)

The research itself was fun and enjoyable. I had mostly problems with the typing, but slowly and surely I managed to get over those problems and finish this thesis. I hope it is enjoyable to read and can be helpful in future research about the art of this wonderful artist called Janusz Kaminski.

Personally I will continue to watch his movies later in the future and since his style evolves as most of the artists', there is a chance for future research as well.

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