



Image Aesthetics at the Time of Digital Cinema

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36^{ES} Rencontres Henri Langlois
Festival
International des Ecoles de
Cinéma

IMAGE AESTHETICS
AT THE TIME OF DIGITAL CINEMA
Round table for film schools
December 5th of 2013 in Poitiers

Modérateur: M. Jean-Paul Jarry (Professor of Cinematography at 3IS)



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Rencontres Henri Langlois

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Nowadays, cinema schools from all over the world have to cope with the disappearance of film, which has been the medium on which cinematographic pictures are etched. Now schools have to adapt themselves to digital technologies, the new medium making its way to the big screen. This change implies an important reshaping of the way of working with pictures, and subsequently of the way the profession is taught.

What place does post-production hold in comparison to the shooting itself nowadays? What are the consequences on the relationship between director and director of photography? What impact does it have on the way frame and lighting are taught? Is there any equivalent to the negative of film? Is it possible to preserve this original image all along the production line? Is there a way to organize the curriculums and works so that students can keep "control" of their creations? All these technical, aesthetical and educational questions will be tackled around the table which will be hosted by Jean-Paul Jarry, cinematography teacher at 3IS.

Luc Engélibert

Welcome to this round table dedicated to the esthetics of image in a digital time. The Rencontres Henri Langlois have always noted the technological evolutions, often as soon as they were emerging and we've noted the disruptions that these technological evolutions would bring to the ways we make films. Since we've always been careful to pay attention to these evolutions – and we've always supported the singularity of what is purely cinematic –, the Rencontres Henri Langlois feel legitimate in bringing a reflection on the esthetics of the image in times where film is disappearing and is being fully replaced by digital technologies. We know film schools well in this festival and we wonder how heads of school and staff have thought about – or maybe already answered – essential questions such as: how much room is still dedicated to shooting in the making of a film when post-production has taken up so much space now, or questions such as: is there still such a thing as an original of the frame as the negative used to be for film. Now that we've all shifted to digital, who has control over the picture itself, its images, does it still happen during the shooting or is it all challenged by new technologies. So, these are some of the things that we would like to discuss this morning. To conduct the debate, we've asked Jean-Paul Jarry to join us. He teaches and has also put together a school program to teach image, and who some of you know for the articles that he's published and the conference he organized in Munich.

Jean-Paul Jarry

Thank you, Luc, for this introduction and for putting this round table together. Indeed, cinema is going through major changes. Day after day, digital technologies are taking over film on which cinema was born. But is it just the carrier celluloid that has changed? Could it be that the cinema itself and the cinematic language are being disrupted as well? I imagine that you've all attended numerous lectures and talks about digital technologies. I've noted that on such occasions, discussions deal mostly with the techniques. What is the best workflow? That's important for sure, but I want to point out that we barely ever discuss the esthetics. My impression is that it was lost on the way. You all know that esthetic is the basic element to bring meaning to an image and the meaning of an image is at the core of photography and animated photography which cinema is. Such as a change does have repercussions.

Schools had to adjust their curriculum to digital technologies. Of course, it was the image that was targeted, because the image is at the front row, facing current changes. But not only the image. All of the connected disciplines were disrupted as well. That's the reason why, today, I would like our discussion to focus on esthetic issues and more specifically based on your experience in your schools.

To launch the debate, I'd like to point three main guidelines which I feel are important. What Luc was saying: what about the space taken up by post production in regard to the room dedicated to shooting a film? Shooting used to be the time devoted to creating the film and now I wonder: has it simply become a formality? What about the consequences on the esthetics of films and on the result on the big screen? What about the consequences on the relationship between director and director of photography? Is it all happening at post production? Traditionally, it was a strong relationship that bridged what was happening in front of the camera – with the actors for ex -, and what had to be done behind the camera. And I believe that the disruptions brought by digital technologies have changed a lot of things here as well. And last, what about the relationship between the image and the other disciplines? It had repercussions on direction, but also on production...

Timo Heinänen

I have two major concerns when it comes to the profession of cinematographer. The first one is... I will quote from this article in the ASC (which some of you may have read), it's by Benjamin B., about Gravity. He interviewed Emmanuel Lubezki, director of photography on the movie. It says here:

*(Lubezki) created virtual lighting with digital technicians, lit and shot live action that matched the CG footage, fine-tuned the final rendered image, supervised the picture's conversion from 2-D to 3-D, and finalized the look of the 2-D, 3-D and Imax versions. "In the process, I had to learn to use some new tools that are part of what cinematography is becoming. I found it very exciting."*¹

The CGI (Computer Generated Image) work has changed the profession of cinematography very much. I see the danger that we might be losing the profession of cinematographer at all if we don't fight for it and if we don't teach our students to actually participate and understand the whole work that concern the major CGI work. In that sense, Lubezki was not working as a traditional cinematographer. He has stepped into another kind of job.

My second concern is that because the digital technology, we are afraid of losing the meaning of lighting. It's enough to grab every single light at street corners at night and without any emotional impact. That you can see in the modern movies. I just recently got a package of European film Academy films from last year, it was some 30 films, and I think 20 of those were visually the same... without any impact of lighting at all, without any emotion coming from the lighting.

That's two of my major concerns when it comes down to the profession of cinematographer.

Erik Martens

The shift towards digital technologies has become an important aspect of the evolution of cinema, thought at the same time, we know that cinema remains very technical. Only the method, the technique, is cinema. It is constantly evolving. So it's only normal that we are shifting towards this stage (in the evolution of film). The only thing is that it has an impact on the image. It changes everything for those involved in the process of making an image, not only for those behind the camera. It also changes the distribution of film. In a digital world, creating a copy is so easy that it changes the way you distribute film. It also changes the way you work on the image – you copy and paste for example! – and it is the same with any digital media.

It changes one other thing, for me at least, at the Brussels Cinematheque, in the way you handle a movie for safekeeping. So what do schools do now with digital to save their images? I don't know. On the one hand, I would say that digital changes everything, but on the other, I would say that meaning remains the same: the meaning of a shot, of a frame, of seeing what you see, this hasn't really changed, has it?

Stuart Harris

¹ The original quote from The American Cinematographer may be found here : www.theasc.com/ac_magazine/November2013/Gravity/page1.php

I'm from the National Film and Television School in England and I'm also a working-cinematographer. The way the NFTS is set up: everybody who teaches there is somebody who works in the industry. There are no teachers, only people who work in the industry.

One thing I wanted to say to you, Timo, is that when I was a little boy, one of the first that I ever did as a clapper boy was to work on "2001" with Stanley Kubrick. If you had gone on that set, it would have grabbed the life out of you and that was back in the days of 65mm. When we talk about films like *Gravity*, we're talking about huge studio productions which always have huge technical requirements. You're working very closely with the post-production people. So, there's always going to be technical exercises. And as a cinematographer, we shouldn't be worrying about that because it is really not a problem. It is common sense.

What we need to be talking about is what is happening when young people want to make films. Now is the most exciting time ever to make films because cameras are available. Last night, I saw the Israeli film set in the toilet², I've just been told by the director of photography, 'shot in a 5D. Wonderful. Wonderful. If we want to go forward, we shouldn't be frightened about this.

Let me say something to you: exterior park day... exterior park day. Mother sitting on a park bench at 3 o'clock in the afternoon, we start the sequence. It's this time of the year in England when at 4 o'clock the sun will go down. You tell me how you continue that sequence if you're not a cinematographer, because there really is no computer that's going to do it. Well, there might be but that's going to cost you a lot of money. So cinematographers are not going anywhere. Don't worry about that. We're going nowhere. Cause we're needed to tell the story. The most important thing is the story not the crappy equipment, it's story. We need stories. Don't worry about this technical part, it's a joke. We're doing exactly the same as we always did. I just finished grading my latest movie, two weeks ago. It was shot using a Panavision Genesis camera. That's an old camera. It's lovely, it looks wonderful. Now, we could've done it on an Alexa. I think it's too sharp. We could've used a red camera and then you need too many technical people and we had three weeks to shoot a movie. The equipment got so much lighter now, it's much easier. In post-production, I still have to go to the grader and look at the image and grade it with somebody. There is no difference, we're not going anywhere, we should not be frightened. What we should be happy about is that young people coming into this business can make films that never could to the standards that they're shot at now. I just sat there yesterday for an hour and a half looking at magic. It's still magic, that's all I can say.

Timo Heinänen

My students are working on low budget films with greenscreens at the moment. They're grouping themselves with friends who know the techniques. And they're the one who will do the jump. They're doing high quality films, so that's what I mean, that we have to keep up with that. First thing happened with the Red one when it came. I'm a working cinematographer as well and I hadn't touched the camera (yet), but some of my students owned the camera before I could shoot with it. So, at that point, I noticed the change. They know much more than we do. So we have to keep up with their own interests as well and feed them with sense. And when it comes down to stories, for sure, stories are important.

Stuart Harris

Right, let me say something. If we're not careful, the engineers will take over the assignment – they will. If you let the engineers do too much, creativity will go out the window. So what you got to do, and this is what I always say to my students, just say 'indulge me', otherwise they're never gonna find a way. And also, keep away from the inside of the camera. Harriet was just telling me – she's got your problem –, we need to stop them going into things they wouldn't have gone into; they wouldn't have been able to go into a laboratory and play with the developing machine. You don't need to touch, though yes, it's got all that stuff in it, but we're making film. Put the technical away. I know what you're saying. The Red camera needs a little nurse-making (nou-nou), it needs someone nursing it. I'm not quite fan of it, but there you are.

Jean-Paul Jarry

Stuart was just saying to be careful not to let engineer take over the assignment. How far have they gone, now? Too far? Or is it still time to act, if I may say?

² *Good Stuff*, short film by Neta Braun, in Festival's Competition

Murat Akser

I am Murat Akser from Istanbul (Istanbul Kadir Has University & University of Ulster). The University of Ulster is going to offer a new cinematic arts program and the school's basic concentration is on digital. This department has to be for the future, so there, I have two different visions. Because of my training in the 1990's on film and every North American University starts with film and hand-edited film, because they want to teach the fundamentals. It's a big debate. When it comes to digital, teaching in film school, we're experiencing some difficulties. First of all, we need to renew all the equipment every other year. Getting to learn on how to use it and then teach esthetics with it is difficult because they become obsolete really fast. People won't sell tape recording cameras anymore. So, it's all cards. And this new and lightweight technology is vulnerable. Students lose data... and then all the work is gone. But in the old days of organization with film, you had the clapper loader, the focus puller... there was an organization and a discipline on a film set where people took their time to live through the filmmaking process. Now, this could be done with digital technology as well, because people coming from the old tradition can adapt. But for a 20-year-old, this tiny electronic magic box is indeed so interesting, they play with it and suddenly you have visuals with no meaning attached to them. They have wonderful shots. They think "If I present good frames, it will be cinema". No sir, when it's good storytelling that makes cinema. You tell us a story and then, esthetically, you communicate it. Now, adapting our curriculum to these needs is going to be difficult because the new technology, IFC, The Move Network, I-Film, whatever they are, well, big businesses are hunting for short films to fill the one-thousand channel universe. And they're buying. I witnessed people coming from Fox or Warner Brothers paying 10.000\$ for my students' films. They just purchase because it's filling time and it's important because they're selling their content to 90 countries. This actually works as an enticer for students, you see...: If I make this for the business, this way, then let's keep on doing it.

I also have this final argument to request to ask: digital SLR are changing too fast - we don't use them as we used to use former cameras -, new models come all the time and students using Canon 5D mark 2 or 3 in our 3rd or 4th year classes, their images look very similar to each other or there are the same, even after color grading. Once everybody uses the same model or brand, then, getting diversity is proving to be difficult. So theses were some of the comments that I wanted to make. Introduction of 4K as a new standard at least for a decade can be a solution to teaching film making with a standard. Thank you.

Tony Costa

Hello, my name is Tony Costa, I come from Universidade Lusofona in Portugal. I am teacher and a working professional. As a professional, I've been witnessing a lot of differences between the old times and our current times. Me, as a cinematographer, I don't really have a different approach on the set working with the director. But in fact, I do have a lot of work with post-production. Definitely. Whatever the shot, I have to go back to it to work on color match, the color of the set, the wardrobe's, the actors' skin color... The problem of the cinematographer today is that no camera is equal to another, whether we use the Red, an Alexa... they're all different, even in terms of aspect ratio. We think we're working in a 1,85 format when we're actually not, we're working in something else. Why? Because there are no standards in digital. That's the problem that we have. That's why Americans and Canadians are working on a color space called Aces, I don't know if you've ever heard of it but you should have. It's a new standard for old manufacturers to work on that color space which is even larger than CIE standard, usually used. This is very important for our professions to have something like a negative. Before, we had the negative, it would go to the lab, we would work with a technician in the lab to do color correction. What is happening today is that we shoot with a digital camera, we go to lab A which gives us one whatever color, and then to lab B which is different and then we go to lab C which again has nothing to do with A and B, so in the end, it's all a mess. It's a mess! And then comes a camera with a new chip, it's no longer a Red, it's called Alexa, and then it's another called the XD, and another is a little bit larger. It's always changing and there's no standard. Standard is a problem for a working cinematographer.

As a teacher, what I find really weird, I don't know if you have the same experience, but I am a very optimistic person, I like to look for the future and I'm not worried about the cinematographer becoming a lost profession. He'll do something else and he'll be there to do it. Philippe Ros³ wrote an article - not recently - and he said that cinematography is changing. It's in fact changing. And our profession is changing too. So, Philip Ros wrote an article recently and he stated that he signed

³ French director of photography, member of AFC - ED

one of his essays in cinematography with a Sony camera, he signed: "Director of image". What does he mean? He means that he's no longer a cinematographer like he used to be in the old days, when we were magicians with a light meter. Now we have a director who gives an opinion on framing, on lighting, on movement (because he's the director, of course). And we have two people working together on the set. What I'd like to stress is that students who want to become directors, they should know very well about composition, camera movements... and what the meaning is of a frame when you chose a certain move: what does going forward, backwards, moving the camera mean in terms of storytelling? Both must know what to do when they're working together. It's not just a matter of saying, oh, I'll just frame that a little bit down, left or right or make a movement here. No, the question is: what do you want to convey? This is what I found out: directors sometimes don't know. Like approaching to a close up, they don't know the effect in terms of meaning. But cinematographer and director are supposed to work together. The cinematographer needs to know more about directing and the director needs to know more about composition and cinematography to be able to work together on a story and to be able to work together in sync.

Concerning the future of cinematography, the cinematographer needs to know about post-production. I had to learn as well. Just five or six years ago, I didn't know anything about digital. And maybe I still don't know anything today. I get to a lab and I don't know, these guys talk to me to go to A, B or Cs..., they're all different, they all give me different colors. Someone mentioned the 5D, it's got only that color space, so all the images look the same, like 5D, 'cause you cannot work it. 5D is a normal camera, but it's about the discipline. What I found weird is that my students really want to work on film all the time. Why is that? I don't know. They like Super 16... I asked them: why do you want to shoot on film when this is over! And they said: no, teacher, we have discipline. It's not the quality, it's the discipline, you see. All we had, the lightmeter and everything, that was magic for them. And as my colleague said and believed, we have lost the magic of making films. When we were on film, we could see that everyone was in evolving in some kind of magic. Now, people shoot during rehearsals, whenever they want, and there is NO discipline.

Philip Cowen

There's a danger in developing technologies that have an emphasis on post-production techniques. All digital tools, I think, are good. They're used to create. The danger with the emphasis on post-production is that we lose all the discipline that you said: creativity in pre-production. Cinematographers often start long before the shoot starts and these days it goes long after it's finished, because we do need to be involved with the postproduction.

I teach cinematography at South Wales. My emphasis to my students is about the pre-production of a film. It is about creating meaning with images: the composition, camera movement and the lighting. That all comes from the script. The cinematographer need to be involved right at an early stage with a discussion with the director about creating images. There's a lot you cannot do in postproduction in terms of creating those images, unless you're working with motion capture, and things like that... the framing, the use of lenses... the camera movements, movement of subjects... It's all very important considerations that the cinematographer needs to do in preproduction. To me, that, in a way, is supposed to be lost, that kind of discipline, in terms of creativity.

Robert Buchart

You talked about the loss of magic so I guess the question is now: why is there a loss of magic? Students come to us, come as a freshman, they use their first camera, they start shooting their first film. And they're taking film-making habits without the knowledge of what it means. So the million-dollar question is: how can we be sure that they will learn these basic story-telling skills which are so important in the end, if we miss this in the beginning; it's hard to get to them later on. There's no ideal focus because to feel safe, they just do wide angle shots so they don't need people in the focus and the biggest problem is probably the lighting because they don't want. They have no idea what the lighting is for, they only think lighting is there for exposure when it's for storytelling, the feelings... So, how do we not lose this? Cause if we do, cinematography becomes a mechanic acquisition of knowledge.

Roehl L. Jamon

Bonjour, Roehl L. Jamon, from UP Film Institute in the Philippines. In 2009, I also attended this round table. When I was introduced, it was said that I came from the digital film making capital of the world. I thought I should feel offended. In the Philippines, I was trained to film making in the traditional sense. In 1995, our Institute embraced digital film making, because celluloid was very

expensive for us. So we embraced digital film making but we kept on teaching our students the traditional methods of making film: color theory, lighting, perspectives... We want them to master the techniques so that when they graduate they use the techniques, whatever the platform. That way, they can be prepared to work when a new technology or camera comes along. They have mastered all of the cinematic techniques. So it's not a problem when a new camera or a new set of lenses, or a new type of lighting arrives. So for us, the problem of aesthetics is really no longer a problem... We look at new technologies as a set of tools. Pick your own preference! You're familiar with Alexa, use Alexa. You're familiar with the Mark II, then use the Mark II. What matters is that you get the job done and you make the producers happy and you make your audience happy. So going back to the story, it's not about the tools, they will be obsolete in a matter of weeks, when the techniques remain.

Ghassan Koteit (audience)

Hello. I would like to go back to an early point in the chain of production for our students. I'm a director and so, on film sets, I interact with the cinematographer. And I also have a daily relationship with the students at the university. In Lebanon, as in the Philippines, we don't really have the means to shoot on film. Up to two years ago, we only had one project a year that could be shot in 16mm. And two years ago, the only laboratory in the country closed, so it's no longer a question. But we have a very long experience with previous digital formats, from U-matic, betacam, digital betacam. I noticed one important thing which is the symbolic of the medium that is used. There is a distinct psychological evolution on the part of the students regarding the camera they're using and regarding the difficulty of working it and setting the process and the ceremonial of production of an image. When the camera is basic – they all know they could just as well make a movie with their cell phones –, the image itself becomes simpler and we've noticed something positive two years ago when we started using the Alexa and the Sony F3 cameras, cameras that are bigger, with obviously fixed lenses and that were obviously independent. The fact that there were more people involved around the camera, the fact that one had to change lenses, has not only increased the technical quality but also the aesthetic quality of the images. They had time to ask themselves the proper questions, which they were able to prepare ahead of shooting. To make up for their lack of reflection on the making of an image, we made mandatory, on big projects, to view the first rushes (with no color grading corrections, Ed.) with a professor halfway through filming. So here we come back to a question that was raised earlier in the debate as for how to come back to something close to the negative in film, to an original image. When one imposes a screening of raw footage, what we can consider as original footage, I think that students are automatically going to ask themselves the question of the value of post-production and so on. As a result, we've been hearing less and less a saying we often used to hear these past few years: "we'll decide later, we'll correct that later on at post-production" which in fact would only lead to catastrophes.

Jean-Paul Jarry

I also think that it's important to teach them this kind of discipline and precision. So the question is: knowing how tools are changing, how should we do it?

Le film l'imposait de fait... alors, certes, il y avait aussi 100 ans d'histoire du film qui l'avait mis en place. Et maintenant, je remarque qu'on en revient aux bases fondamentales qu'il faut absolument maintenir parce qu'elles ont été quelque peu dévoyées. Alors, d'un point de vue de l'enseignement, quelle est la meilleure méthode ?

Ahmad Barghouthi

University of Al Quds and the College Al Asreia

Our film department was established ten years ago. We are still new in this industry. It's not yet an industry in my country but it will be one day. We are now in between two phases. We have come from the old school to a new one. I remember having this debate over the past ten years, when we were asking ourselves, for example, if we had to start with a cut to cut editing or if we had to buy to newest editing equipment. The department was completely new so we had to make all of these decisions. We had this debate on whether we should start teaching from zero, the ways of the old school, or if we had to take it where the industry was at the moment and buy the latest softwares. One of the things that was also ahead of us was that empirical based knowledge might be lost, this is a new software... so we did have the same debate. I don't think there's anything to worry about in having the latest technology, in learning on how to use it, we still need to focus on the story. I

am completely with you on that issue. It'll still be about how to tell a story, whatever the equipment.

Marc de Backer

I'm a working professional and a part-time professor and I quite agree with what has been said about new technologies. I think it's really a set of tools, we need to take what's good from it. It all changes so fast but big sensors still require that we adjust the focus. We need to be as strict as in the past on film. As a professional, I have never really worked on celluloid, I guess I'm from another generation. I have extensively worked on video in Africa, even on long feature films, and in Europe and Brazil, but mostly on digital cameras. We still have the same requirements. The job does not change dramatically. Adjusting to the new workflow is certainly the biggest challenge for the cinematographer. He still needs to be the conductor of the image from start to end, and especially towards the end, on anything that deals with special effects and grading. He still needs to be in charge. The cinematographer remains the master of the image of the film. The job may require new collaborators but I don't think there's a dramatic change in the job. I believe that when we used celluloid, when there were special effects, the cinematographer *was* the master of the image. I'm not really concerned. The job evolves, like another job. But most of all, it's the tools that change, and maybe the ways we teach how to use them. The biggest issue that we have in our school, is to adjust the workflow to the computers so that it works, on a technical level.

We also do have an issue with format, which M. Costa raised earlier. The format of filming needs to be the format in which the film is shown. But that's part of the apprenticeship. On film, there used to be steadiness tests, frame ratio conformity tests and now, we need to do tests on the workflow, on matching frames and on many other levels.

Jean-Paul Jarry

I think it's all about the same ways we teach. We need to make sure that they understand the need for tests. It's really one of the difficulties that we have with today's generations. Since they're really at ease with screens and tablets, they tend only to believe what they see. As long as they have a screen, it's hard to get them to look away from it. I noticed that when they don't have a monitor, they get the right reflexes back quickly, but when there's a monitor, that's gone.

Marc de Backer

I have created an exercise for first-year students in cinematography: narration with still images. They have to tell a story using fifteen still photographs. We used to do it on film, up until last year. It was complicated to find a laboratory which would develop them properly. Students still had to scan their negatives. Today, I tell them to work with their digital cameras. Take a thousand photos if you wish, you'd still have to tell the story in fifteen images. Good students usually take fifty photos and they have their fifteen good ones. Poor students do take a thousand photos with none good to use. It's still about talent. What's important in the first year as well is that our students get to work on 16mm film. Then they start using the F3, cameras with greater sensors which have the same technical requirements in terms of focus, and fixed lenses. We can still do 35mm with a cheaper budget, so to speak, we can do very interesting images with greater sensors.

Pierre Mennel

There was a big research done on digital to try to evaluate the impact on the audience... We tried to see the emotional difference on the audience's experience. What came out of the research is basically that there was no difference on the emotional impact. The only big difference that we noticed is that in the digital world, people, in narrative stories, remember different scenes than when it's shot in negative. What they remember are not the emotional scenes but for example, they'll remember the name of a brand on a cap, if you have a red sofa in the background, they'll remember the color red. So, we're still trying to find out why it came out that way. If you compare the pictures, you are not able to see any difference, to say which is which, if you tried to match them. It has come to state where using the Alexa or the Red does not matter, you don't see any difference. We did a lot tests, even outdoors. As far as I'm concerned, it's the same, so I would go for the new technology and forget the old one. What I find very interesting in our conversation is people talking about a loss of magic, and lack of discipline. I think we should take the old school into the new kind of working. Magic needs time. Lighting needs time. All the really magical situation still have time, and they need time. The other thing is very personal and has to do with

the way you teach. One can be a poor technician, but over the past ten years of working digital, I never under or over exposed a picture. And I never used a way-form, it doesn't speak to me. What I do, is always in the beginning, have my monitor and I need to know how my monitor looks. I have to calibrate precisely at the beginning of the shooting and then I just look at my monitor and I know it's always right and I'm ten times quicker than those who are always hitting buttons, doing tests... In the big studio scenes, I do, but for the outside shots, I think it's very good tool to use the eye when it starts to get in under, or over exposed areas, the colors are changing... You know how to look if you really teach make your eye as a tool and you work with your eye, not with all the digital tools. At first, I learnt, I really tried, but it's so complicated... every chip is different... I just give my instructions and I was never wrong.

Even with the 5D and the Mark II, I never had any problems. It doesn't have a lot of latitude, it's rather small, it's difficult to expose but I think that if you train your eyes, you'll see the magic come back.

Marc de Backer

I agree with you that the most important thing is learning to see and being able to analyze the artistic side. But, we, as film schools, need to give them the necessary tools to be able to use, say a way-form or know what the workflow is. Everyone has its own personality. You'll find cinematographers who are more artistic and you'll need to give them a camera that is ready to work, because they take on an artistic approach and on the other hand, you'll find cinematographers who will be at ease with the machines. As film schools, we have a duty in having a technical approach, though there'll always be the artistic side of filmmaking.

Jean-Paul Jarry

Let's say there's both: the basics and of course the techniques which they will need once they graduate.

Harriet Cox

First, I need to say that I come from a film school which feels it's suffering a sense of identity crisis with the name "film"⁴. Many of my colleagues – we're very old – feel our name should change because we're moving to shooting digital. I don't necessarily agree with this because we're still shooting films, we're not just shooting film stocks. But it is causing a problem within the school. If we look back at our teaching, what's interesting for us in this transition to make to digital, we teach five exercises over two years. Those exercises all have very restricted resources, whether it's time, equipment, what they're allowed to do within that is defined whether it's film or digital. I feel it's very helped us in moving to digital shooting because we still have these restrictions. We shoot 16 for two of the exercises, and Alexa for one and we're moving from 35mm to Alexa at the moment for the full exercise. In this, students are given a choice as to which they want to shoot, whether film or digital. And we'd like them to shoot digital, but they commonly want to shoot film. The only reason they're choosing to shoot Alexa is because it offers a potential of 9 minutes more record time in the exercise brief we give them. For them, having that 9 more minutes of recording, is essential in what they feel they can get performance out of their actors. This is why it was allowed to give more record time because shooting on film is so restricted for directors in terms of being able to work with the actors and ensure that that performance comes across in the final film. That's why directors want to move to digital. What I'm noting is that directors still aren't getting that record time is being taken by other things on the set. So, we're watching that.

The other thing that I want to say about teaching cinematography at the school is: I guess about a quarter of our students come wanting to become cinematographers. They want to learn all the technology but what I was really struck with is that they want to learn it within the discipline of film. So when we bought the Alexa, we bought monitors. We assumed that's what they would want. We'd always been asked for it. The first Alexa shoot, they physically wheeled the monitor out of the stage and they gave it back to me. They said they didn't want it because they don't want film making by committee. They want to be able to work closely with the director, the camera operator, the DoP, team together and they don't want everybody else coming on set giving opinions. We have to give a monitor because of focus. But, they really want to maintain that. They want to use lighting spots, they don't want to work with white foam. They like working with light

⁴ London Film School

meters. It's really a transition trying to maintain that discipline that we learnt, that we taught, for digital filmmaking. I find working within these resources is really useful to define it all the time. They have a set number in postproduction – we don't have a postproduction department, we have an editing department –, we have no postproduction facilities for green screen, rightly or wrongly. When it comes to the graduation film, they can do what they want, but in terms of what we teach, everything is defined. In terms of the storytelling aesthetic, the biggest change that I have seen is actually in how production design is working for us, and the need for production design in us to work in a different way, I think, is really essential. But other, we really enjoy the transition to shooting in digital. Shooting digital, I think, it's been really good.

Jean-Paul Jarry

Harriet, I know that in your school, you used to have a rather important set design department in which students built models for their sets. Has digital technologies changed that in any ways?

Harriet Cox

Nothing has changed in the resources. They have to build a set and shoot in their set. I think what's changed is the aesthetic, because we get such a clean image. I'm really interested in what you said about the memory, 'cause I'm trying to work out this aesthetic of digital images, talking students about filtration... but for me, it's the cleanest of production design that – and I don't know if anyone else has a production design team to work, we do that... you obviously do, and there I understand you...

Stuart Harris

I was going to be very naughty and say that our sets are always amazing, but I know exactly what you're talking about. Another thing, very quickly: you can't move forward unless you look behind you. I think we're getting too immersed into these bloody things. If you shut things off and just go with what your eye tells you, leave the engineering to the others. Teach them, show them the movies in the 30's and the 40's and the 50's, look at the classic films and the great stories that are being told and then, look at all the people who brought down the rules? Vilmos Zsigmond⁵ used to almost step on the negative, he used to do something with it. All the amazing that go on must still go on and they will. But we have to move forward and as we move forward, keep your eye behind you. What you said about the Canon 5D, obviously no director is going to say "ok, you don't come through the door anymore to a big close up cause we can't pull focus, right?", there's always going to be a need for a focus puller. We're getting too immersed in postproduction. Forget postproduction and just shoot the damn film. It's the engineers who will solve the problems out. When I graded my film, I didn't do anything different to the chemical process other than the grade I could show exactly what it was and then he got rid of me for two days while he set it and then I came back and look at it. Really, nothing has changed. When we had chemicals doing this stuff, you couldn't see instantly, you'd have to go away, we're too immersed in postproduction and not enough in doing the story. Forget about postproduction. No one can afford postproduction.

Harriet Cox

We are all overloaded with images. I find that students come absolutely overloaded with images, from the computers, all that surrounds... everything. How do we teach them to look at images, analyze images? I feel we don't have enough time in the curriculum to actually do that, rather than talking about the technology. Technology obviously has a really important place. But I would be interested in hearing from everybody, how to teach looking and seeing.

Jean-Paul Jarry

I'd like to hear one student in the audience, whose film is in the official competition. Maya Avidov, from the Sam Spiegel school in Jerusalem⁶... could you tell us how you dealt with esthetic?

⁵ American DOP, having very often managed negative flashing process, Ed.

⁶ Cinematographer on *Good Stuff* by Neta Braun

Maya Avidov

Few things I'd like to say. I think there's never been a better time to be a DP, certainly not a better time, as far as I'm concerned, to be a female DP... a physically small female DP. To me, cinematography is not a technical profession; it's an artistic profession with technical aspects. That's what should be taught. I think that when you say that students are only interested in the technical, I think maybe you have the wrong students or maybe I'm afraid of the future. I came into this profession wanting to be a director of photography, wanting the visual interpreter, working side by side with the director. I'm a terrible technician. I do not get excited with technology, at all. I was talking with Vilmos Zsigmond who said to me: you know, you don't talk like a DP, you talk like a director. And I said: don't say that, you'll scare them away. I am not a technician. I have never been and I never will be. I'm afraid that my first step into the profession that I'm about to have a very rude awakening that that's what people expect me to be: that they want me to be I'm a technician. That's what directors want, that's what producers want, because that's another opinion getting in the way. So good luck in creating your films alone, like Altman said: "if only we could get rid of all these actors and directors, maybe we got something."⁷ It just seems to me that the way I was taught is really like that. I went to my school because that was the only school in Israel that taught film. The year I came in is the year they stopped shooting on film, so I never shot film. But I do come from a still photography background. I printed color photographs for many years. That allows me to talk to DIDs in terms that they understand, in terms of colors, in terms of light.

One of the other things that scares me about teachers and about the way that I was taught, in terms of better and worse, I think that everything is equal now. I think it's fine if a film requires to be shot in mini DV or on VHS or on Alexa, you should teach students how you can shoot a film on a web cam if the story is valid for a web cam, or on a film if that's what the story requires. This idea of better or worse, I'm not comfortable with. If I look back on my studies, I shot with an Alexa, I shot on Red 1... mini DVs, DSLRs... and I always approached it from a practical point of view: where are we shooting? What's the space? What's the light? How much time do we have?, and always in terms of what does the story want to be, 'cause I don't think that there's better or worse.

Bulent Vardar

Electronic cameras have been on the tables of not just television producers but also movie producers as well quite recently. Particularly, after the improvements of HD and FULL HD Technologies, relatively with the advantage of costs, the number of productions of long movies shot by 2K and 4K cameras, have been increasing in both Turkey and abroad. Movie production process was long and relatively had higher costs if pellicle was used. As of today, if a movie shot with pellicle, post production processes are done with Digital Intermediate.

While exposing the pellicle with using film cameras, both negative black and white and colored films, in terms of contrast range, were more advantageous rather than SD (Standard Definition, 720x576) and HD (High Definition, 1920x1080) electronic cameras. This advantage was helpful to the director of photography to provide more dependable workspace while shooting in exposition of wide contrast range. Therefore, the possibility of losing details in the dark areas of the frame and the problems called bursts in exposed areas were decreasing and better and sharp black could be obtained.

Today, particularly with digital cinematography is becoming more and more common, with using compatible peripherals with film cameras in electronic ones, the possibilities of the medium have increased and the photography directors have begun to get used to the digital technology. During the course, the elements like cinema lenses, optical visors, the follow focus mechanisms, increasing contrast range are the prior ones. Besides, one important advantage of films compared to videos is high definition visuals (4K, 6K, 8K) and wider contrast range, not as competent as films, provided videos to catch up with films. These improvements also provided new achievements to the director and to the director of photography to build up the atmosphere and the aesthetics required by the movie.

Electronic cameras have been used primarily by the television production for years. Due to the fact that, TV world is more related with the functionality and have less expectation regarding aesthetics, using electronic cameras for film production took quite a long time. In fact, in aesthetics perception, more narrow field depth, soft, sensitive and thin shades, creating nearly original colors

⁷ In Robert Altman's *The Player*, Tim Robbins' character Griffin Mill says: "I was just thinking what an interesting concept it is to eliminate the writer from the artistic process. If we could just get rid of these actors and directors, maybe we got something."

were the primary advantages of the film. On the other hand, with the requirement of longer time and higher costs of the pellicule method and with the computer technology becoming primary element of movie production, the shooting process has the tendency in favor of electronic technology. For example, as of today, there's no shooting peripheral produced for photography. One of the primary companies in photography KODAK has shut down its Turkey branch and as of this moment, digital technology declared its absolute power. On the other hand, particularly in our country, movie production with digital technology, is not matured and saturated in terms of production and post production processes. Therefore, this makes the photography directors uneasy who got used to the possibilities and simplicity of 35mm as a medium.

When we take the educational perspective, digital technology, without any dispute, have the upper hand compared to pellicule. In the study environment of an institution which provides cinema education, it's not an easy task to gather and provide technical equipment, also it's even harder to employ the proper technical staff and cover the possible costs. In our country, though there's a cinema school which covers these facilities, digital cameras and post production processes are not valid in the education curriculum. Nearly all of the schools don't have the proper facilities and most of them also don't have sufficient equipment, the produced movies do not have the prevailing aesthetic quality as a result.

Digital technology, do not have the dimensions which are easily comprehensible for the academicians who have the art education history that comes from fine arts environment where flourished by technological developments. For an artist academician who studies on visual arts, as dissimilar from his/her preferences to use electronic image assets in its own art form, the academicians who provide education on motion pictures, need technical experience particularly on cinematography or digital video fields. The gravity of the situation should be comprehended better if we take into consideration that these schools have the responsibility to train qualified personnel to motion picture business.

In the production process using digital video, first the technical capability should be improved, and then theoretical information should be learned about the possibilities of the medium has to offer for better aesthetic results. In this regard, there's the need for educational methods about both light sources and lighting information, also the main elements of an image like contrast, brightness, exposure, white balance adjustment, color settings etc., to get eligible results.

Robert Buchart

I don't know about technology, but it's a tool. How do we keep our students working on what cinematographers call conceptual thinking?

Tony Costa

I believe that we are talking about something that uses a machine. How can I conceive any aesthetic, any shot, if I don't know the machine that I'm working with? It's impossible. And how am I going to teach aesthetic and not teach them what the machine has to give? What do we teach in school? The classic system? That a classic narrative is made of one, two and three acts? And we can break the rules... But when a director comes to me and ask for a specific image that'll be good for his story, I need to know which machine to work with! We need to teach them how to tell a story but we also need to teach them how to use a machine and be creative with it. That's what we used to in film as well.

Yaël Perlov

First of all, I would like to thank you for giving me the possibility of being here with Palestinian, Turkish, beside the Europeans... I thank you as an Israeli teacher from Tel Aviv University. It's very interesting to listen to my colleagues here.

Concerning what has been said so far, I would like to emphasize one sentence that has really moved me: it's time to watch. And I would like to say that moreover that it's time to contemplate. It's our profession. To put it in a larger context, this generation, which is my children's generation, is from a time of what is called in popular films: "quick and nervous". This is the time we're living in now, and that's the point I want to make. This generation, they're nervous, they're quickie, they want to have results very quickly. What I try in my class is just to calm them down, not just to look, but to contemplate. With this, I believe that the discipline will come. And then, the camera is with them. And I agree with you, it's not only the story, it's also about expression.

Erez Dvora

I never operated any of the cameras that you mentioned...! What I teach is film history. About digital cinema, this is a fundamental change in cinema. It's a vertical change. Everything is affected by moving to digital. I hope I won't offend anyone, but I think that, yes, you should feel anxiety. For us, as teachers, it's comfortable to teach what we know, what we believe in, and teach it again and again. Our time seems to me as a time in which teachers have to learn their craft again, and again, because of the technologies changing so fast. The idea that the telling of a story is in the end the most important thing is true, but still you need to see that – in art and it's true in cinema – cinema is a chronological medium and when technology changes, the way to tell the story changes. Moreover, the changes in technology reflect a change in society. It may also signal the end of culture or maybe a culture that needs new stories and new ways of creating them. What Maya⁸said is very true, I think, and profound for this discussion; she said "I want to tell stories and have many tools available to me and I have to figure out which tool is the best and most appropriate to tell my story". I think that what teachers can give – yes, the discipline is important, and so is the knowledge of classical methods –, but also what is important is that teachers regard themselves as students as well, and go for the ride to learn about the students' sensibilities. Cause they grew up with the new media and have a new approach on textures. And teachers need to create the conditions for them and their students to meet and exchange, to the benefit of both sides.

Jean-Paul Jarry

I would like now to hear Geert Vergauwe who represents animation. Animation deals also with the image which is also concerned with questions of esthetics and new technologies.

Geert Vergauwe

I'm from an old established department (since 1956), one of the first in Europe. We have witnessed all of the evolutions. So, that makes me the old man here...! And I'm the only one coming from animation. I also have to say that the school is one of the old ones among those which teach animation. Most of the schools now are also very technical. But we don't do 3D, so that makes us one of the few schools in animation in the world that don't do 3D. Some students do 3D but that's not in the curriculum. That allows us to focus on the content: story. We are an art school. Our students are artists which can be very different from other schools. So, I feel like I'm the old one here!

For one thing, I heard a lot about a loss of magic, here. We don't feel the same in animation. Actually, it keeps on growing more and more magical and I think that's what you're experiencing, I suppose. Live action film still carry a kind of magic and are becoming more and more virtual.

I didn't really prepare anything special. But what I can say is that in our school, what is special and what people find strange in animation and which is also very technical, is our one-week software class. Most schools will do more. What we find is that our students are not very interested in technologies. Just a little, because it's animation and it's film. But they are not keen on knowing every software and equipment. They want to express themselves, they're trying to be artists. From the first year-on, this will be our goal: who is this student and what stories and how does it want to tell them? So from the beginning – we have a bachelor's degree and a Master's –, they try to find their voice and they experience different techniques and technologies. They develop... they do research... We aim at a personal trajectory. It's an Art school so there isn't a lot of discipline. They don't necessarily have to work in teams, even though they do work in teams when making a film, but they work a lot from home. It's not a situation that you have in film where everyone has its own place and has to follow a discipline.

I was just thinking about what has changed. We used to shoot on film and now it's just a software. There's no lens anymore... almost. Except for stop motion. So that has changed a lot. About esthetics: depending on the cameras we used to use, the look of the images would change. Now in animation, depending on the software that you choose, the result will be even greater from one software to another. Softwares brought more change in the aesthetics of animation films, than a camera you would choose in the past for its specificities. Many films – not from our school, but those I see in festivals –, do look alike, a lot. I don't even see the difference with rich schools... it's the same when you can tell that it's a Pixar film... Films tend to look the same. And stories, too. But

⁸ Maya Avidov, see above Ed.

that's a personal opinion. You're not creative just because you tell a story, it won't make the difference... you need to do a set design or create a character... and so on... But something that has changed for everyone in software is Undo. Undo has changed more in animation than cameras. Before Undo, there was no time or money to redo something. You had to work around it. Our department started using it and you could see the difference right away. Before Undo, the image had imperfections and now, it doesn't; it's technically perfect, even without students learning to become technicians. For me, it has had a big impact. Imperfections have been lost! A lot of artists also look for imperfections; they can work with them and create something with them. Since our students don't have technician' skills,, they can have a real creative flow and find a different way with what they have when they have an issue with something and just push one button.

Another thing about esthetics: with 3D, characters started looking like puppets when at the same time we had stop motion. What I've been seeing over the past two years is the stop motion technology starting to look exactly like 3D; I'm a professional and I cannot see the difference. It's also because of the software that is being used. They use Dragon Frame. It's been perfected in such a way that you have the complete control of the camera, the complete control of the lagging, frame by frame, you can do motion control and have control over the movements of the camera. Esthetically, even two things as different to the eye as 3D and stop motion look exactly the same. It's mind blowing.

Jean-Paul Jarry

Erez, could you tell us about how the various disciplines in your school have evolved in relation to one another?

Erez Dvora

Not all the history of course. What caught my attention is two opposite sides. On the one hand, it is the cinematographer as an image-maker. On the other hand, there's the possibility of the filmmaker becoming only a technician, since post production has recently become the place where a lot of decision can be made. From what I can experience, people take pride in their profession and in what they teach. It seems to me like it's a great opportunity to reevaluate the artistic possibilities of the filmmaker. There was a lot of unease about this change. It seems to me that the time has come to draw attention to the range of possibilities available to a filmmaker, to his craft and his artistic expression. He doesn't face the same limits as before, that his work doesn't end where it used to, prior to digital. From this perspective, for them to understand the knowledge that they are the master of their images, it's a knowledge that they should feel is relevant to what they do. We should not let them be constraint and think of themselves as people who only do a certain kind of work over a limited period of time and only with what the software allows them to do. As an artistic process, the technology itself is something that you acknowledge in how it may help you get to where you want to go. But as you do what you have in mind, you need to go beyond it. And that will be the last point I wanted to make.

Jean-Paul Jarry

Thank you. From our discussion, I understand that everyone agrees on the need to maintain a discipline, a working-method that we have to teach our students... the basics of narrative, techniques and their evolutions. I also noted that lighting remains a point of concern to many of you --it still is of importance on a set. So, that's a bit paradoxical with what I was saying at the beginning. The importance of post-production is growing but lighting (so at shooting) remains key in making a film. Timo, how do you feel about that?

Timo Heinänen

We have a long tradition of workshops that take place every other year and that involve costume and set designers... but no directors. There might be one director running the show in the end when we shoot. It's a big 11-week workshop starting with seminars, developing ideas between disciplines. It's all based on cooperation between departments. It's very fruitful since all disciplines are gathered and can interact on esthetics without a director. We used to call them workshops but we ended up calling them labs because students had a tendency to make films during the workshops. We came back to the idea of a lab to try out things, get more knowledge, not to tell stories. Five years ago we had our first one and it was based on genres. The first one was called "horror" and we used the Red One and Computer Generated Images (CGI) for the first time. The

second one was on Science fiction and we used 3D for the first time. We had to figure it all out. The last one was on fantasy and it was called Magic. The topic was the old school visual effects which is something students asked for and they requested that it be done with analog technology. We ended up doing working with the old stuff. Students were eager to do it. What we had was a rather big thing. What happened during the last workshop is that we started in 35mm – we had three groups – but the last one found out they need the Alexa as well. They had two days to shoot. First one, was in 35mm with the water tank, a camera for high angle shots and a monitor. Everybody was focused on the water tank and they would check the monitor once in a while. The next day they had the Alexa and they had their big water tank on the floor and back projection and people there and the monitor on the side and the deal was “be like this, could you move the Alexa...” that’s how it happened, it’s so true, it’s like that. It may be anecdotal discipline but in the end, it’s very fruitful for the cooperation because from the workshops the students have carried on even after school, sharing the same esthetics as during the workshops. That’s what we have and it’s very fruitful.

Robert Buchar

We teach the lighting in a different way. Lighting is all color. It’s more about emotion. We shoot in super 16mm. It’s connected with the lab where students work with director projects on lighting. Then comes lighting city which is in connection with our design students. There are six groups, they design the sets, they light it. They work in different type of situations. All is shot in 35. Then it is transferred. Biggest problem now is to get them to think on the process: how to light a scene in order to tell the story.

Erik Martens

I would like to react to a few things I heard: the “quick, fast and furious” and the magic. It is true that we live in fast and furious times so the images have to come faster and in a more furious way. It’s also proven that digital has changed the medium in that sense because it’s a fast and furious medium. We’ve spoken also of a loss of magic on the set but if you look at the films, they become more and more magical. But of course, it’s a kind of magic that is digital. If you look at the number of fantasy films that are being made today, dragons and others..., it’s true that in this country, Georges Méliès initiated these things a hundred years ago, but it was a bit more difficult then. I think that what has changed today is all these magical tools, they’re in the cameras, in the editing room, in post-production too, and they’re so easy! I think that people who go to the cinema watch a film and even when it’s not a fantasy film but an action film, they don’t even realize to what extend the film they’re looking at is actually kind of an animation film. Because the photography aspect is actually just a small part, the rest is drawn with digital tools or edited and copied and pasted. I think that in a sense, classical films and animation films have become very much linked in cinema today and people don’t even realize it.

Geert Vergauwe

...we had two films refused in an animation festival last year because they said that it wasn’t animation. You know, it’s two-ways!

Someone in audience

You said digital tools, but they say digital artists. I think that the subtlety here is this. It’s a continuation.

Tony Costa

In Los Angeles, they call it expanded cinematography which is virtual cinematography. Recently, they were discussing in the academy the idea of having another prize – other than best cinematography –, for best virtual cinematography. Because of films like *Life of Pi* and many others.

Jean Gibran

I'm a bit of an intruder here since I'm a sound engineer. I'm a working professional; I mix films in Lebanon and in the Middle East in general. I had the chance to mix the first 3D movie made in the Middle East. What was different for me is that we didn't have the tools to mix the movie in 3D, so I mixed it the way I used to mix a 2D movie. To my surprise, when it was shown for the first time, the director came to me to say that it was great, but I told him: Are you kidding me? This is bad stuff. We have to mix it all again because sound perspective was so different when we saw it in 3D that it needs to be remixed to put sounds in the proper perspective, that is according to what you see. What changes for us is the process at work with 3D. We have to re-think sound, the way it's recorded, the way you work on it at post production...

What also changes now is due to the Dolby Atmos technology. We now have speakers, not only on the walls but also on the ceiling, above the audience. You can have up to 128 speakers in one room. I don't know whether you have a dolby Atmos projection room here but they exist in Paris for sure. It changes a lot things for us, such as the number of tracks that you need to record on the set. I just loved the discussion that you had about going digital. For sound people, this discussion took place twenty years ago and we didn't have a choice, we went digital. We may now ask ourselves if you're going to do in two-tracks or if we're going to give each actor its own microphone et deliver the whole thing separate. Those who take the decision are unfortunately the producers who expect things to come in fast and cost as little as possible. Someone must have told producers that it was going to cost less and be faster if things were shot digital. But then they become furious when they realize that in the end, it takes the same amount of time because more things need to get done in post-production. As far as sound is concerned, they know expect a sound track per actor and it takes quite some time to mix it all together. That's the difference with someone who used to only have one camera on set and had time. Now you end up with four different 5Ds on the set because it's faster, but you barely have room for a poll! And it does take more time in post production for them as well.

Bülent Vardar

As of today, digital technology is an important part of motion pictures, particularly in science fiction and history genre, it contributes to the narrative and visual diversity. Such movies like James Cameron's *Titanic*, *Avatar*, Peter Jackson's *The Lord of the Rings* and Ridley Scott's *Gladiator* can be held up as solid examples in this regard. In these movies the usage of digital technology, not just enriches the narrative and realism, but also contributed forming a new aesthetic.

In the classic cinema narrative, some practices realized not by "virtual" but via cheap tricks, current motion pictures, in today's postmodern relationship regard, begin to substitute the virtual reality as the absolute reality. Newly formed aesthetics begin to be reshaped by the ones who can better utilize the possibilities of the technology rather than the artist's experience and talent. Though it can be observed that a competent about stylistics and a sublime visual show business has been emerged when compared with the old cinema but yet it's more shallow in regard of its substance and with the possibilities of digital cinema it begin to be decisive for the cinema art, as a dominant narrative and aesthetics vision.

Our students have to participate training programs in the film sector as a part of their curriculum. These training programs include some practices in film laboratories, editing and sound design departments. Besides, our Faculty has the necessary implementations and equipments in order to help them about the technical problems that they can face. For instance, the staff, who work as colorist, can assist the students for their films' color grading. Moreover, some of our students, who are keen on cinematography, are also aware of these steps very well.

Philip Cowan

It's interesting that the discussion kind of implies a new technology for the DOP. I don't know whether there's an implicit underlying attitude that somehow the DOP's role has become more technical. Shooting film, choices of film... lighting, that's all technical... The job of the DOP has always been that balance between the technical and the artistic. The reason there is a great emphasis on post production is because the tools are there now to work in post-production. We need to go back to the absolute importance of pre-production and planning for the cinematographer and how they call for their image. And so much more artistically in that area, we need to emphasize. Someone was saying how we need to teach students to look. One of the most interesting exercise for me with my students is to get them to do storyboards. With their film, we do a test shoot of a scene in the studio, no props... All we're specifically looking at is the shots and shot construction. What camera, what lenses they're using, how many shots they're using, what kind of coverage they're doing and we shoot that very quickly as a test and we go through that.

And we analyze why you shot that shot like that... and we found that's a very good exercise for students. And they develop their craft much more in the pre-production stages.

Yaël Perlov

I'm pleased to hear the solution for shooting because I teach editing at the University. We do the same but also go further. Students do it by themselves, so they go on location. For example, there's a duel between an Israeli and an Arab in a landscape. So the director does both characters with his friend shooting and we discuss it on location, in the landscape. They come back and edit if with Avid or on the mobile phone and within an hour you can see the film and discuss it. Two years ago, you would take a piece of paper and I would show them, today, it's over. As I told you, it's quicky and nervous.

Harriet Cox

I was also going to pick up on the analysis of rushes and how digital has enabled us to actually come back to very good practice on that. While I come from a die-hard film school, it was unanimously agreed last week that teaching film isn't possible for good practice anymore because we cannot see the rushes the following day. So when students shoot in studio, we've told them everything, the shooting isn't supervised, so I don't go on set while they're shooting. But it means the next day, we close the studio while they have to come into the cinema and see the rushes and get feedback. I think that process, it takes it out..., sure, they will see them on their phone that night but actually going back and being to put it straight into the cinema and see it on a large scale enables them to make better decisions and they go back and change things as they're shooting; and I think digital has taken us back to be able to offer that decision-making process in a better way.

Jean-Paul Jarry

I think it's quite important to go back to the daily shots, I mean we talked about magic here and I remember the time of the day when we were shooting when we would gather all together to watch the daily shots. That was magic. Everyone was focused, no one would speak except for the director, a few words here and there, apparently out of purpose and you could know (by deduction) when there was a problem with something. I think that's what we should get back to and I agree with Harriet who was saying that their students had to gather on the next day to view their shots. It's not just daily shots viewed on a tiny phone screen but in a film-making atmosphere.

Murat Akser

I have experienced the use of multi-camera and the amount of work in digital is enormous. There used to be a time when the shooting ratio with film was 1 to 3. Three takes maybe per shot. For a 90-minutes film you would have five hours of footage. Now our students have ten hours of footage for a ten-minute film. They shoot everything several times and sometimes they do not turn the camera off during rehearsals. They have so many hours of footage it is impossible to edit! They don't just watch all the rushes, what we're teaching them in practice is to get your time codes and mark your best shots and transfer them only and then start editing. Nobody does it, they shoot nine hours of footage and sit on it for weeks and then start editing... over and over! Nobody listens...! It's very strange. I also witnessed during the shooting production of a drama-piece, four students were asked to shoot the piece. All at the same time ran out of batteries. I was so surprised. Their SD cards were also full, they did not have a system of backing up. Their cameras got so hot that they stopped shooting. I've never seen it happen before. These are new things that I'm experiencing with digital technology, because with film you would stop every 10-minutes to change the roll, and that was it. Shooting for 45 minutes on a disc or a little chip has its disadvantages! And another problem that they had was to stop shooting because they had to transfer but what's the transfer speed of the camera and what kind of wire do you use depends on your investment. Those were some of the issues. With the rushes, shooting non-stop and watching them and listening to feedback, and ending up with a never ending post production process. Their best product in the end was their first draft of the film... That was very frustrating for the trainers.

Harriet Cox

The way we dealt with that was that they had to see the rushes the next day. So if they shot two hours of rushes, that's two hours out of their time working day.

Ghassan Koteit

That's what I wanted to say as well. It is very difficult because it's time consuming for the professors. But if you do make sure that there's a screening of the rushes, then you will sure the magic and the discipline come back. When there's a head clap, you say "this is where the shot begins and this is where it ends", that means you have a beginning for a shot... you're able to hear someone say "Roll", "Action" and "Cut", and that's something that was lost on the way during the transition period. We ended up with tons of rushes, which at a time were on cassette tapes. When you start to discipline again, I believe that you start seeing things coming back together.

Jean-Paul Jarry

It is true that in between the words "Action" and "Cut" lies the magical moment, recurring shot after shot, for each take.

Ghassan Koteit

Right, at that moment, it becomes magic again. Without it, we're left with a continuity and that continuity is a big mess.

Marc de Backer

My impression is that the debate over the shift of cinema to digital may be going off the tracks a little bit, I mean, it's the same thing, the same discipline, we discussed it a moment ago, it's still the same job. Maybe we did lose some of it at the beginning: people shot more because it was cheaper. But today, we all know that it is not cheaper, because it's a rather heavy industry, there's a need for machines to actually digest the material that is being shot. We don't shoot that much more anymore because it's digital, I don't think so really, at least our school doesn't face this as an issue. It is true though that we kept the screening of the rushes on a daily basis, whether at the end of the day or on the following day, at the very beginning of the day so as to benefit from the presence of everyone on the set.

But I would like to go back to question of the DIT job. How do you deal with the new job of the data manager? How do you conceive it on the set? Does someone need to be trained within the image team or is it someone from the lab who comes on the set? How do professionals work it out? Someone still has to deal with the footage and of the raw material directly on set...

At our school, we have an Image department. Do you consider that it's someone from the Image department who should be trained to be the DIT, just like we train a 1st assistant?

Tony Costa

My side, as a professional, on one out of 10 films that I worked on, I work with a DIT, a digital image technician. A digital image technician is someone who makes the bridge between the old cinematographer and the new cinematographer. Normally, the DIT has his own assistant who takes care of that and who follows the time tables that I have set with him, to the lab. It works well. It's really paradise.

Sometimes, it's the second assistant that takes care of the data management and explicitly to two or three discs and then, we work down in the lab. We chose between 4k, 2K or even HD. And we work on color correction.

In school, it's the same procedure. We film until the discs are full and they are full very quickly and they go through the computers of the school and they go through editing. So far, we haven't lost anything, any footage. But in the end, the image can also be very corrupt, so we have to work on the workflow.

In our school, it's someone from the camera department.

Robert Buchar

This student usually comes from the group of cinematographers. We have a specific workshop to train them for the job.

Stuart Harris

I think that if we not care for whenever to leave the film set, we'd be grading, talking, we'd be on drugs... the thing is: digital technicians are needed on certain cameras but you just get a load of cards and you bring those cards in and at the end of the day, you send them back to the edit room, they put them in the server or whatever, they download it and you get the card back. You don't need a DIT. Problem with the DIT is that they just sit on the set and it looks a space station and you think you've arrived at the Kennedy space center. All they do basically is trying to grade film you don't want them to touch. So the DIT persons are fantastic, they're lovely people, I love them madly. But what perhaps we should think about is the fact that the focus puller on the loader is still on the crew. Those guys can still work this equipment. That's the great thing. What the engineering mob need to do is they need to find a way of getting the data wrangled in the most simplistic way so if it's a card – someone said about tape: tape only went away because of the tsunami in Japan, it would have gone away but it was accelerated because the factory was flooded – so I did the last film with tape on a Genesis camera which I then had to transfer. In the end, my producer said to me: "you do realize that you could've shot the film on 2 perf 35 mill for what it costs to wrangle the data". So, the data part needs to become simpler.

I just heard a very good comment on how are we aware of images. If you go back and teach the history, people would become aware of images, they would be aware of framing, they would be aware of all the technical things that are needed. What I'm saying is: in England, we used to have a word for someone who's supposed to be old-fashioned. Well, I'm an old person but I'm new-fashioned. I love digital technology, don't get me wrong. I love it, but I will not be told what to do by a bunch of engineers. The minute we do that, we might as well give up and shoot it all on computer because we are not needed. And that isn't really what we're talking about. You need to inspire people. Young people need inspiration. They don't need boredom, they don't need to be told about numbers, binary numbers and all that crap that goes on with it. We're film makers, first, and that's what we should remain.

Tony Costa

I would like to ask you: what do you teach as a cinematographer? How?

Stuart Harris

We have 16 cinematographers in a two-year MA course. The NFTS is in a studio so it has everything a studio would have. It has sound, editing, digital post-production. It has production design, sound design, directing, fiction direction, documentary directing, it has animation, it has everything just like a film studio. So they come in and they are taught photography. You teach them photography and teach them as if they never been near a camera in their life. And you teach them from the beginning photography. And because we're cinematographers, we can then start teaching them about lighting large spaces, lighting small spaces, going on location, what that means... what does the light mean? How can you emulate... One of the things we do is, we do a painting, we do a Dutch master brought to life. So we show them how light should be used. There's also a course going on move: a screen club each Monday and they go through the history of cinema. And so hopefully, it rubs off on them. And also, because we're not teachers, you can tell I'm not a teacher, I'm a cinematographer who's a very annoying person, but I love, I passionately love what I do and I hope I can get that over on to them.

Jean-Paul Jarry

I guess the question was more about the teaching methods (laughs). Could you please tell us more, more precisely about the methods.

Stuart Harris

Look, I got into this industry because my grand-mother used to take me to the cinema three times a week. I used to look at that screen and to me, that's when I say MAGIC, whether it's 3D, cinemascope... I want to see MAGIC. We're living in England, five years into a recession, everybody is broke. I'm broke, the students are broke, so we want to be taken into dream time. That's what we do. When you say "be specific", how can I be specific. We teach every day that they go to the school that they have something to do. There's a course every week, at the moment, they just had Billy Williams, you might have heard of, nominated three times for Oscars, he sets eight specific sets out for the cinematographers and they have to do something like a birthday party: a birthday cake arrives in the room and there's candles that lighten the faces of the people and as it comes through the room, the birthday cake is put down and it happens to be a fire with orange light glistening on their faces: you teach cinematography. I'm not an academic. I can't tell you. I can't put words. I teach what my job is. I spent thirty years of my life being a cinematographer and I try to get that over to them. But I try to listen. Teaching is learning so you listen. So how do we teach them? We teach them because we're cinematographers because we're passionate. We have different courses, they mix with other students. That's how we teach them. It works so far. We've been nominated for an Oscar two years in a run. We're doing something right. I can't tell you what you should do.

Jean-Paul Jarry

You were speaking about the screen and that's the final aspect of the image. It seems to me that two things have not changed. One is the screen and the second is the lens. The original forming of the image is exactly the same. Technologies for the optic have evolved but the principle remains the same. Optics have not become digital, they've remained purely optics. The two ends of one singular chain have remained the same. In terms of creation, the ways of forming an image for it to fit the rectangle of the screen, that has not changed. All that has changed happens in between.

Stuart Harris

You know, it's very interesting because Harriet and I were talking today about the Alexa. Personally, I find the Alexa is too sharp so I'm trying to destroy the image by putting a net in when it comes to a close up. Billy Williams gave me his net so I use a drop in on every close up in my movies. I told that story to a cinematographer called Walter Lassally and he laughed at me. I said: why are you laughing at me? Because he said in the 60's, film stock changed and it got very sharp and everything I shot was with a net. So when I became a cinematographer – just before I did, I was a focus puller – the thing was you went to Galeries Lafayette and buy ten Danielle Deel stockings and you get a low contrast filter in front of the lense and a stocking: beautiful whether you're in a cold mine or in an art gallery, it always look the same because you have the same rubbish.

What I tell students is that if you buy a Rolls Royce and you go buy a tire for a Rolls Royce, it costs a lot of money. So when they say, "is that tire any good?", you go of course it is, it's for a Rolls Royce, it's gonna be good. When you buy lenses now, you spend so much money, but a computer worked out what you should do so basically most of those lenses all look the same. So what we're doing, we're all going backwards trying to find the old lenses to put on the new cameras. I too haven't stop using a light meter.

Murat Akser

We have a new course desgined for 2017 to deal with this. We are trying to train students in such a way that they will able to play with small and bigger screen. Our motto is *High Quality Storytelling Across All Screens!* One of my problems right now is how to teach students to shoot for the web. They are now doing a webepisod production course with me and casting, budgeting, everything is the same but it has to be cheaper. They still have to work in groups. Dealing with multiple screens and streaming is the next step to do and it's proving to be quite complicated for the students who cannot think simpler. They always go complicated. This web episode needs to be really simple. I'm really dissatisfied with the content. Out of 100 projects, only 10 are ok, but they're all cinematic and have big budgets. So dealing with the future is quite complicated when it comes to different screens and streaming.

Ahmad Barghouthi

For me, basics remain basics. You are talking about lenses, using old lenses with digital cameras. Within two or three years, we will not be able to use those lenses anymore because they will not be available on the market anymore. So we have to go for digital, we are forced to. For me, it's like my father and the relation with new technologies. At the beginning he refused to use smartphones because he was used to the old stuff but day by day, he had to new technologies and he manages all right. We, too, have to and think about how to put them in the hands of our students, that they can create something with those machines.

Geert Vergauwe

I'd like to make an analogy with music and guitar amplifier. They had the same situation a long time ago. They had long tube amps and other technologies came but musicians kept on coming back to the old amps. Now, they are more of them than before. If something valuable is lost and we keep on it, maybe factory will make them again.

Stuart Harris

You are absolutely right. Just to dispel a rumor, *Fast and Furious* was shot on celluloid. It's not shot digitally. What you're saying is right. My son is a musician, plays guitar, uses a tube amplifier. Now what we do is we rush forward and we smash everything behind us and we keep going forward and so sometimes, all of these new cameras that come out, I mean, just stop for five seconds so we can look at something, but we can't! Rushing, rushing, rushing... I'm talking about lenses going onto digital cameras and that's not gonna change. What your enemy is, is Sony and people like that who bring cameras every three months. It's ludicrous.

Marc de backer

It's just business because cameras don't change, really. They may be a little bit more sensitive or have a wider sensor, but that's not really important. I think that even if the camera evolves, the most important thing is to teach students the basics of digital, the workflow, what has now become the new negative film. If you give them the instructions for use of the Sony F3, and if they really know how to use it, they're all set for the future, they will always be able to learn how to use new cameras. So, what we need to do is to teach them how to use one specific camera and that's the basis.

Pierre Mennel

We're here to talk about esthetics and we end up talking about technology again. Because there's an industry behind us ready to brainwash us. To create an image, the light is much more important than any camera. It's difficult to talk about light, to learn... but there's no industry of the light. It's the same thing with storytelling. There is no storytelling industry, and in the end, what is important is the light and the storytelling. So please, try to keep as simple as possible.

Jean-Paul Jarry

This is the end. Narrative principles I'd like to say are what is important, because that's what we tell on screen in the end and that's what we all wish to perpetuate, even the new generation. So, thank you everyone for participating, thank you to the festival.