

Random
thoughts on

Le Futur



written and compiled
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Returning home to France last winter, I wondered how cinematographers here would respond to the {digital versus film} debate. After lengthy interviews and discussions, each person decided to compose their own contribution in their own words. Here are their most immediate, honest, and sincere thoughts on the subject.



Bruno Delbonnel

SINCE I NEVER SHOT WITH A DIGITAL CAMERA, MY POINT OF VIEW IS PROBABLY IRRELEVANT SINCE I DIDN'T HAVE TO FACE COLLABORATION WITH A DIGITAL TECHNICIAN OR WHOEVER WOULD BE ON SET TELLING ME WHAT TO DO OR NOT DO.

I'm one of these "dinosaurs", as Chivo called me, who still use film. I'm really fortunate as well because nobody told me "yet", you have to use a digital camera no matter what you think.

For my three last feature films, all three directors (four actually), Alexander Sokurov, Tim Burton and the Coen Brothers, asked me my feeling about shooting in digital. It shows that we are not the only ones to be "obsessed" by the changing of time. Directors have their own reasons to go or not go for digital.

Not having to reload film and keep the momentum going with the actors is sometimes for them, good enough reason to think that digital is a great system. Interestingly enough, after talking with these directors, for artistic reasons, we decided to shoot those three movies, "*Faust*", "*Dark Shadows*" and "*Inside Llewyn Davis*", on film. For all three,

the "look" and the "texture" of film was what they were aiming for, however all these movies were digitally graded.

I've never been a purist. I'm not a pure "cinematographer" in the sense of < what you see on set is what you'll get on the print >. Ever since "*Amelie*" I use digital grading to get an image I couldn't get with a chemical process, therefore, everything I am doing on set is based on the final result.

On "*Harry Potter 5- the Half Blood Prince*" my contrast ratio was only about 4 stops because I was looking for a grey palette with almost no highlights. A higher contrast would have made this impossible without "bending" everything later on.

But wasn't that what we were doing with the ENR process or bleach bypass? We had to be careful and pay close attention to what the chemicals were actually doing on the negative, and do what was necessary on set to avoid problems.

Up until now, people have been using digital cameras only for economical reasons: it is cheaper, (even though I think that's a lie). If you want good quality, the post production is expensive, it's lighter... but all those things have nothing to do with an artistic point of view. An economical reason is considered a good enough reason. The problem is that people have been asking digital to look like film. That's stupid. It's as if you were asking an "aquarelle", a watercolour, to look like an oil painting. It's not only impossible, it's ridiculous. We found ourselves in situations where they wanted to create a bleach bypass look with a digital camera. My answer to this kind of request was always: "If you want a bleach bypass look, do it for real on film. Use film negative because it, (the bleach bypass process) was created for film. You don't "bleach bypass" pixels, do you?

Regarding the control we have on our images, I think it has always been a problem. I remember a producer telling me he was paying an actress a lot of money, therefore he wanted to see her. Translating that sentence into DP's language, it means < Don't go too dark...> I try to work around these kinds of requests and not try to convince them that they are wrong. Instead, I try to find another look than the one I was aiming for and creatively, it's even more interesting, because inside those problems you can find solutions you never expected to find. Also, I try to avoid battles I know I will lose anyway.

Because I'm bending the image so much, I work with people I trust and who understand what I'm looking for. Since I started, I've only worked with two graders: Yvan Lucas and Peter Doyle, and both of them, aside of being great technicians and artists, are absolutely on my side. They are involved in all discussions I have with the director about the look. While shooting, they grade the dailies and on a regular basis, we show the director these 'evolving' grades so usually, when I finish principal photography, the look of the film is very close to the final look. Working this way helps to control the visual effects as well. Everybody is aiming towards the same goal: the grade I've determined and that has been approved by the director.

With regards to digital cameras, when I shot "*Harry Potter*", I tested all the digital cameras on the market at that time and none of them were as good as film, but that was 6 years ago. Now since the Alexa, which I've tested, it's a different game.

It means for movies, there are digital cameras and digital cameras. You don't compare an 8 by 10 negative with a 24 X 36 negative, so why should we compare an Alexa with a Canon 5D?

You don't use an 8X10 camera to take pictures on the frontlines of a war, you use a Leica. This raises the question about the final result: What is it we want to get?? When I say I'm not a 'purist', that means my one and only goal is the final result, the image I want to get. I love contemporary art because those artists use whatever they think is useful to get what they are after. Robert Rauschenberg glued newspaper clips, stockings, metal bits, band aids and Plexiglas on his oil paintings and I've made his approach my own. If I think it's right to use a pinhole camera I will do so. If I think that the poor quality of a Canon 5D is interesting, I will use it.

So far I haven't found the right project to use this equipment on, just as I haven't yet found the right project to use the Alexa. Maybe one day I will use a cardboard box camera, but it will have to fit the story and the look I'm aiming for. My feeling is that we are right in the middle of big changes. I'm not a purist because I'm not nostalgic about film.

Whenever people ask digital to look like film, I will say, < Use film >. I think we have to find the "language" of digital images. It has a different quality than film and we have to discover how to use it properly.

If I were to compare, as before, Aquarelle (watercolour) versus oil painting, they are two different 'languages'. You don't even paint the same thing. It is quite rare to see a portrait painted with watercolours or 'aquarelle' because it is a different approach and a different feeling.

What is the "feeling" of digital images? I don't know yet and if I don't know what it is, I cannot know how to use it or how to distort it (because for me, distortion is more interesting than reality). It remind me of the early days of photography when painters were using stills as a reference. Everyone said they were not painters and painting was dead.

I don't know what the future will be. What do I know anyway??? These sentences are just things going through my mind now. Maybe they are not even relevant. Very shortly I will probably move to digital cameras and it will <hopefully> be fine - as long as nobody tells me how to light a scene. Eventually, the real question and the real fear is: WHAT BECOMES OF THOSE DIGITAL FILES IN 20 YEARS FROM NOW???????



Philippe Rousselot

IF THERE WAS EVER A REAL DEBATE ABOUT DIGITAL VERSUS FILM (WHEN SHOOTING FEATURE FILMS), I MUST HAVE MISSED IT...

But what I have heard is the type of discourse that presents Digital Cameras as one necessary step in the way of progress, as if progress was always a linear movement only conditioned by an increase in technological sophistication. Therefore, technological sophistication is deemed a sign of progress: necessary, unstoppable, and anything preceding it must be abandoned and relegated to the history books. Refusing to accept the march of progress has always been frowned upon, and it's always hard to put up any form of resistance, especially when new technologies offer opportunities for individuals to reaffirm their expertise and increase their power in the work place.

If the development of digital cameras has been good for one thing, it has been to revive a dying market, (mostly for still cameras), and flooding the shops with a vast array of new and appealing products.

This is what our mercantile society is good at, constantly reinventing and developing new products, products rapidly out of date, with an ever-diminishing life span that are programmed for quick obsolescence.

Have the best interests of filmmakers been taken into account? Are digital cameras giving the filmmaker better results? I doubt it, not having seen any real benefit in this new technology when applied to feature films. Contrary to all the marketing and publicity forced down our throats, shooting features digitally is neither easier nor faster. It is less reliable, and in the end, the picture quality is far from being convincing. The financial savings are also elusive, and when film negative is gone for good, along with the competition its presence still offers, the price of this new technology will most probably rise astronomically- without limits. Therefore, I find it impossible to have a legitimate debate on the merits of one technology versus the other, without reflecting on the economic forces at work and their influence on those actually participating in that debate.



Guillaume Schiffman

MY EARLY EXPERIENCES IN DIGITAL WERE NOT HAPPY ONES, I FELT THE ENTIRE PROCESS WAS TOO HEAVY AND TOO COMPLEX- YOU NEEDED SOMEONE TO INTERPRET THE LOOK UP TABLES OR ELSE YOU COULDN'T SEE ANYTHING, SO I CONTINUED SHOOTING MOVIES IN 35MM. BUT NOW I LIKE BOTH.

This is only the first generation of these new digital cameras and they are improving and upgrading all the time, but I think that for artistic purposes, having both film and digital to work with is really important and necessary. We have to accept that the future came a little too quickly, but I think we might be going too fast in a direction with a tool that we haven't yet learned how to master or control.

When I photograph a movie, I also operate the camera, so it's important for me to have a physical support or relationship with the camera. That is why I don't really like the RED, it is not shaped like a camera. I find the image quality of the new RED almost too precise, too sharp, the rendition is too high.

This can also be said about the Alexa but I'm just more comfortable working with the Alexa. It is designed like a camera, and when I mix material from the Alexa with 35mm film, it works really well. When you shoot in very low light and you set the LUT's at 1200 ASA, there is still noise and other artifacts so I think maybe 10% of the time the Alexa can be useful but 90% of the time, film negative does exactly the same thing. And better!!

I firmly believe that it is the director and the cinematographer who should choose whether to photograph the movie on film or on digital. It should NOT be the producers who decide, which is very often the case, and always for the wrong reasons. Producers insist that it's cheaper on digital but, if it is more interesting for the project to be photographed on film, there are plenty of ways to make adjustments and economize in other areas. The difference is relatively small anyway. If anyone really analyzed budget breakdowns and costs, they would notice that it can take twice as long in the DI suite to do the grading with the colorist in order to get results that are almost equal to that of 35mm.

One thing I absolutely don't want is the director to be looking at the exact image that he'll see afterwards. I want the director to have confidence in the quality of my work. You can't rely on the look of the monitors because often they are not very well adjusted or calibrated and each one looks different which causes a lot of unnecessary confusion on the set.

The most important thing for me as Director of Photography is (having the) Time and (having the) Choice of the tool, of the medium, but often those are things that are imposed on us that we can't control.

These days, I do the adjustments to the image on set with my eye. I no longer need Look Up Tables because I know what I can achieve with the Alexa and where the limitations are. I work a little with my light meter, a little with the wave length monitor to watch the gamma, but I work exactly the same way as I always have. I work with the colorist/grader for the first version and then later on with the director on the final look of the movie.

I am neither nostalgic about film, nor am I anti- digital; I think the two are equally valid and deserve to co-exist. My primary concern is the visual imagery that tells the story and I achieve that with my personal taste and my talent- if I have any. The rest I leave to others.

The younger generation is infatuated with digital, but they're more interested in effects driven movies and for that, digital works really well. But when your lighting is more subtle or nuanced, something naturalistic, or bolder when you are taking risks, and the effects aren't the only thing to watch, then 35mm is STILL the most wonderful tool.

Eric Gautier



IF I AM STILL UNABLE TO SEE THE POINT OF WORKING IN DIGITAL, IF I CONTINUE TO SHOOT ON FILM, IT'S BECAUSE THE DIGITAL IMAGE IS LESS RICH IN THE REALM OF THE IMAGINATION THAN WHAT IS IMPRINTED ON CELLULOID.

I have always made what I felt were the most appropriate decisions and choices on set when we are shooting because those are the bets (the risks) I make and what I envision in my imagination, I dream of a certain look, a certain outcome. And these choices are printed in the negative and I find them again, afterwards in the final grading stage when they take on their true meaning once the film's been edited.

It's has to do with an objective image on celluloid versus a virtual image that does not exist in reality. Of course when shooting digitally, you've adjusted and calibrated your monitors, checked the curves, the white levels, black levels, established your LUTS...but you are recording an image that is boring and flat. In this final stage, you won't be able to find any trace of your original intentions or the look you were aiming for when you were shooting.

The information has not followed along, been carried through to this stage, and even more important, each person along the way is able to change the parameters, (the colorimetry- color values, contrast, density) at the various stages of the process- the transfer, the editing ... So of course, even though they tell me they have all the information necessary to do whatever I want in post production, I am well aware that it's not here, at this stage (where they are suggesting being cautious and 'reasonable') where you will be very creative.

What I love about film (celluloid) is the experimental dimension, a property uniquely belonging to Cinema: the uncontrollable, the accidental, the risks, and the surprises... those things that cannot be anticipated or foreseen... and that are irreversible.

With enough experience, there won't be mistakes or errors. The very worst that can happen is there might be some clumsiness or imprecision, but that is what makes the truly great films charming. Digital pushes for (and imposes) technical perfection. The entire image must be controlled, and each shot must link perfectly together... and all that is profoundly boring.

In my work, what is most interesting to me more than anything else is to invent a unique visual universe for each film. In particular, it is to bend, to distort, to do exactly what you are not supposed to do to the film negative (that's been calibrated to be used normally by the greatest possible number of customers according to the manufacturer's prescribed recommendations) by being adventurous and playing (a bit daringly) with the exposure, the development, the colours . [For example, saturating a color while shooting and then compensating for it in the grading, distorting the final look of this colour, etc.] I work with the contrast, sometimes a bit excessively. I like to explore the extremes of underexposure and overexposure. With modern Fuji or Kodak film stocks - that are extraordinarily good, we don't talk about them enough! - You get magnificent results with rich detail in precision and colour when the negative is highly overexposed. And you can work with the dark shadow areas; play with parts of the set or the actors who are in the shade with a varied tonal range in the black areas that can be either very deep or a little milky. With digital, one has to be careful in order to contain and control the very brightly lit areas and strong highlights to prevent your picture burning out and creating the effect of a 'white hole'. I don't share this obsession about seeing all the detail in the black areas, it should be just so that the shadow areas register, so that they 'read'. One thing for sure, murky blacks are pretty ugly in digital.

Of course, (any) one can make beautiful images with these new cameras but it's easy to make pretty images with whatever tool you are using today. What is difficult, is to make choices, to establish and maintain a certain style that most suits an original film without delivering the usual clichéd shots. I'm not saying it is not possible with digital, but I think it's extremely difficult to free oneself from the technical requirements, restraints, and conformity that digital imposes.

I find the look of digital images cold and glossy. I'm not impressed by the number of pixels. (I've never liked very crisp, sharply defined images, I have always liked grain) Nor am I impressed by the sensitivity of the camera. In 1959, Raoul Coutard filmed 'Breathless' without any lighting at all...

I like the texture of film, its sensuality, the beautiful skin tone, and the subtlety of the colours. Again, I'm not saying that I will never find digital interesting; it all depends on the project. If we could make an analogy comparing the look of a film image to a digital image by using painting as an example, it would be between the sensuality of the Impressionist's oil paintings and the bold, graphic, saturated colours of acrylic paint used in Pop Art. If you reversed the two techniques, the result would be of no interest at all...

Let's say that digital will never be better than film, it can be interesting when used in another way for a different kind of look. I have seen very interesting results (Fincher, Cronenberg, Audiard, von Trier...) but nothing as stunning or earth shatteringly beautiful as the imagery of "*Fanny and Alexander*" or "*The Godfather*". There is no poetry in digital.

Having said that, for many years now I have been using digital grading, I wouldn't want to work anymore without it.

To me, 80% of the image is made in the shooting, and the 20% in the grading is essential because you can take the effects so much further with infinitely more richness In digital than in traditional (photochemical) grading. I have always believed in mixing technologies. Whatever happens, I would just like to have the choice of which tool I am to use for my future projects.



Agnès Godard

DIGITAL IS AN EXTREMELY ATTRACTIVE MEDIUM ESPECIALLY IN LOW LIGHT CONDITIONS.

Without doubt, certain cameras and processes can produce excellent results. Nevertheless, the multitude of interventions which digital requires, from shooting through to post-production can, unfortunately, adulterates the end result.

To this day, the challenge remains how to create a digital image in collaboration with a director, without having the implacable trace of these chromosomes.

While the effects can be impressive, what often gets lost along the way is the intangible, subjective sense of poetry, and the original intentions- an elusive but crucial alchemy that one strives so hard to achieve and preserve, and which is an intrinsic part of fiction, pure human fiction.

It's as if there is no longer room for this mysterious quality. What is vital for the future is to search for the mystery of this medium that seems bent upon total demystification – it's the beginning of an exciting quest.



Darius Khondji

MICHAEL HANEKE'S "AMOUR" WAS ONE OF THE VERY FIRST MOVIES EVER TO BE SHOT ON ARRI RAW AND MY FIRST EXPERIENCE WORKING WITH THE ALEXA.

It was more like a recording of a year in an elderly couple's life so I thought it would be interesting to shoot it digitally, but it proved to be a somewhat difficult experience processing the raw files on our system. Now I keep thinking how really beautiful it would have been on film, but.... Can I really blame it on the Digital?

I was not completely satisfied with the images I was shooting on digital because they were not as controlled or as beautiful as they could have been on film. I felt the quality had been compromised. In the pre-production stage, we compared tests of the best digital cameras against 35mm film footage and we all pretty much agreed they looked the same. Being able to shoot in very low light levels and making it look organic, along with the size and versatility of certain digital cameras made shooting in digital advantageous and very seductive, but after looking at every aspect of the finalized film,

Why do my eyes tell me it is not the same quality that we saw at the beginning? Something has been lost somewhere in the process.

At the moment, I prefer the Arri Alexa because it has the purest signal and for a filmmaker who is used to shooting films, it feels the most familiar, the most comfortable to work with because it is designed like a camera. We look at the image and we play with it, we manipulate it, transfer it, grade it, and it looks really nice, but somehow the rendition of the overall image is different. It is a mutation of the original image and it has lost this film quality. The Sony F65 and the RED Epic can also make other kinds of beautiful images: some are filmmaker friendly and some are more appropriate for making documentaries or are better suited for commercials and the fashion industry. It is all a matter of taste.

Of course, these cameras are continually being "upgraded", but at least for the next few years, we know that shooting feature films digitally on a large format for theatrical release in cinemas automatically means you are working with a team of Digital technicians who have varying degrees of expertise.

This dependency on this new layer of technical people does influence, or can impede, how freely we are able to shoot and how innovative we can be with our photography when using this new tool. On my latest digital shoots, what really struck me was how much quicker it was shooting on film.

You were alone and focused on your craft, whereas now you have to share so much of your work with many more people on the set. This means a serious adjustment – to adapt to this new procedure, this mutation of the filmmaking process, but I hope this will change for the better very soon.

Regarding the DI process, again, I'm not totally satisfied with the images in the DI because they can easily take on a plastic-ey look. I've noticed this on other people's movies, and because I always work with the best colorists, I know the problem is not there.

Recently I was shooting a film in NYC and I found the best way of working for me was to NOT let other people interfere and manipulate our images. In many ways I have reverted back to how I used to photograph movies at the beginning of my career; I know exactly which direction I want to go in, and I do not want to have endless options for straying anywhere else. I expose the film with a definite idea in my mind, and I never think about how it can be fixed in the DI. If the director and I want to go dark, why give it more exposure? The same applies to Digital, and this is where trouble lies.

If the Director and I want to deliberately overexpose the film and go for that look, why treat it like a normal negative or give it a normal file? I believe we must be able to capture the film or the Raw signal the way we want it to look later on.

It's time to dispel the myth that digital post production allows cinematographers to work more quickly on set because everything can be fixed afterwards in the DI – It is not the correct way to think, plus it is simply not true. I also don't subscribe to the belief that digital has surpassed film. Film is still unique and sometimes better for the Cinema art form and for certain storytelling. It has a specific chemistry that gives it a mystery and it's magic. Film, with its definition, resolution, grain or lack of grain is more sensual. It has a three dimensional quality. It has depth, shape and texture. There is something about the rendering of people's faces that is sculptural and bigger than life.

The more urgent question for me is: Why am I not satisfied with my end results with digital images printed and projected on a screen in the same way that I was with film? If this is the way the world is going- if film is to be totally phased out and replaced by digital, then I suppose we have no choice but to follow. As cinematographers, I believe we must at least dictate our own terms and not let technical restraints and requirements of the digital process dictate to us the direction we must go in, the way we must work, or how we must alter our lighting and our cinematography.



Thierry Arbogast

EVEN THOUGH I'VE BEEN ANXIOUSLY AWAITING A VERY LONG TIME FOR DIGITAL TO FINALLY ARRIVE, I WOULD ONLY SHOOT ON A HIGH QUALITY CAMERA THAT HAD A VERY LARGE SENSOR AND A DYNAMIC RANGE EQUAL TO SUPER 35MM.

The first film I photographed digitally was "*Asterix at the Olympics*" in 2007. For me, it was always so stressful not being able to see what I was doing in my work, and then having to wait for the labs to tell me everything turned out all right. This is why I was very PRO- digital right from the start.

This was the third Asterix movie and the producer wanted us to prove that digital was a better choice than film, (which he preferred), so we tested 35mm alongside the genesis and the D20. We all looked at the

tests projected on a screen and no one could see any real difference between the digital and film material. The digital wasn't superior to film but it was very high quality and almost equal to film. For different reasons, we chose the genesis; the colours were better and overall, it had a more beautiful visual rendition than the other cameras, even though in those days the cameras could not handle the extreme levels of high light and low light the way film does.

It is very important for me is to have a large HD monitor on set so that I can see (not really, the "final" image- because it still has to go through the grading, the DI, etc. but) something that is pretty close to the final look of the film. The image quality on the Alexa is beautiful and with the LUTs incorporated inside the camera, you already can get a very good idea of what the image will look like, with good contrast, and well balanced colours. Right there on the set you have this lovely image and you can see what you are doing. I can see the direction I am going in with my lighting, and how it will look in the scene, which was never the case before. So, to me, it's great!

I'm a big fan of digital because it has completely taken away those concerns. I was always very relaxed and comfortable about the work itself on the floor, but there was always this lingering worry about how it was going to turn out in the labs- Is the exposure right? did I get my levels correct? was there a mistake with the filters? Sometimes I'd spend twenty minutes on the phone with the guy at the lab explaining in detail to me what the previous day's rushes looked like. All that's over now, and I go home happy, not having to worry about a nasty phone call saying there was a technical problem with the lab.

When you shoot on digital and it all gets transferred to 35mm, frankly, I defy anyone to say they can really tell if it originated on digital or on film, and now the new Sony 65 has an even higher quality definition and resolution than 35mm film. It's unbelievable how digital performs in very low light; you can open the shutter to 360 degrees which means you gain a stop.

One night I was shooting in a kind of marshy back waters near Le Havre and there was a full moon. I opened the shutter to 360 degrees and raised the camera sensitivity to 1200 ASA and it was incredible. The moonlight reflecting on the water registered, it made the water glisten and it is all there on the image. I'm not saying that it lit up the scene; I'm simply saying that the camera was so sensitive that it captured the moonlight on the water. Now, imagine if you wanted to create that effect on film. You would need a cherry picker, lots of heavy duty lights and a team of electricians so that changes the game entirely. That night, I spent my time cutting the levels of the street lamps that were too bright and putting out ugly shadows.

And if you want to film a night sequence in very low light conditions on the streets of Paris with a digital camera, you don't need to put huge lights on every street corner anymore in order to light up the area. This is an enormous advantage, to be able to work with the available light and to capture existing ambient light- if there is any, (which is not always the case).

Financially speaking, there is no question that digital is more economical than film. It's not a myth. If you work with a director who shoots a lot of takes and you go directly to digital grading, it's obvious that shooting digital is cheaper. Three backups at night, a good computer and a few hard disks and it have finished. One technician has replaced the lab during the shoot.

You can't really compare our budgets with those of American films because there they don't really count the cost of film stock in their budgets, but here in Europe, budgets are very tight.

In my soul, I am very technically oriented, (the more complicated things on the set, I'll leave to my assistant to figure out) but I love all these new technical developments and evolutions that allow me to be more productive and perform better. I can achieve much better results, it enhances the quality of my work, and I am very happy about that. I am also happy that there are so many different digital cameras on the market today that are really excellent.

The reality is that today, with a digital camera, anyone and everyone can record, capture, and make decent images. But photographing a movie requires creativity and imagination and experience, which still remains the domain of the Director of Photography. That is a huge responsibility that can only be achieved by someone who knows what they are doing. So the job remains the same- our profession is intact.



Caroline Champetier

THE FIRST TIME I WORKED ON A 2/3" CAMERA WAS FOR DAVID TBOUL'S "5 AVENUE MARCEAU", A THREE-MONTH PROJECT FOLLOWING THE MAKING OF YVES SAINT LAURENT'S LAST WOMEN'S COLLECTION.

Since the film was coproduced by a Japanese company, I was given a Sony camera calibrated to NHK settings, with no detail enhancement. In that way I entered the digital world, knowing that this artifice gives the illusion of crispness, but destroys textures and the beauty of actor's skin tones. After that, I used the same NHK-type settings for "*Un Couple Parfait*" by Nobuhiro Suwa and "*À l'Est de Moi*" by Bojena Horakova, both shot in 2/3" and ever since that time, whenever I meet a European cinematographer who has turned their image enhancement off, I think maybe I had something to do with that decision.

I liked using the camera in low light and low contrast situations, and even found that once transferred to film, the very substance of the digital material was quite a plus. I've never been a fan of extremely crisp images and I am not interested in searching for ultra-sharp lenses. Choosing a medium for a film is balanced between the necessity of getting the desired texture you are after and having a suitable way of shooting, in other words, a camera that's not too bulky with lightweight lenses and an 'appropriate' workflow. I loved the work Harris Savides did for "*Zodiac*" using a Thomson Viper and introducing 'abnormal' depth of field, so when I was working on "*Holy Motors*", I considered using the Viper, but the camera's low sensitivity made this impractical. I live in the modern world, and am not particularly hooked on either 35 or 16 mm but it would be a Disaster if film were to disappear.

I have been supervising the 4K mastering of Claude Lanzmann's "*Shoah*", photographed on 16 mm in the early eighties. The digital scans done by Imagina Retrovate in Bologna have revealed details and colours that no optical print could ever have, so the concealed wealth of its images is extraordinary.

So far, my experience working with cameras with Super-35-sized digital sensors is limited to two films: Leos Carax's "*Holy Motors*" and Margarethe von Trotta's "*Hannah Arendt*". I shot them back to back with the same camera, the Red Epic.

What was technically required to photograph Carax's script touched both extremes and was totally contradictory: you needed very bright light and expansive camera movement in some scenes and very low light and restricted mobility inside the limousine in others. "*Holy Motors*" could have been shot in Super 8, 16 and 35 mm, but switching back and forth between formats would have interrupted the film's narrative so Carax preferred to use only one type of camera. We quickly abandoned the idea of using the Alexa because ProRes, with its low definition backgrounds and pale skin tones is not acceptable on a large screen and adding a Codex raw recorder would have made things physically too unwieldy inside the limousine.

The RED Epic arrived in France at Panavision just in time; this little black box was very much like the Panasonic DVX 100 that I used on "*Merde*", one of the Tokyo segments which Carax loved.

The Duboi lab people suggested I work in linear 16-bit 4K, instead of log and 5K and this was excellent advice because the combination produced better blacks without that surgical crispness I hate. I nearly always use Zeiss T2s: they photograph with more than enough definition. It is my job to create the (very matter of the) image on location through photography, and that is why I make a point of requiring the laboratory to respect the values and chromatic balances I have created during the actual filming.

Except for two high-contrast scenes, "*Holy Motors*" is quite a somber low-contrast film, so the Epic's relatively low dynamic range was not really a problem, nor was this particular shortcoming an issue during the shooting on "*Hannah Arendt*" in the controlled lighting conditions of a studio.

The challenge for digital sensors is whether they are capable of handling both high-contrast exteriors and natural daylight and also the subtle textures of the human skin. Even if the Epic was acceptable in terms of chromatic rendering, the HDR option meant to boost the dynamic to 14 stops was not really convincing. As of now, the only camera that truly corresponds to my vision of dynamic range is the Aaton Delta. I find the colour fidelity remarkable. I note that the new little BMD-CC, like the Delta, records images using the DNG professional photo standard, which will certainly make things easier in post-production.

I am currently shooting Claude Lanzmann's "*Le Dernier des Injustes*" on Kodak's 5213 and 5219 film stock. As someone whose beginnings in cinema were at the time when Eastmancolor's 5247 was the best thing around — and we all agreed it was fantastic — I would never have imagined that Kodak would come up with such dynamic range and chromatic perfection as it has achieved with the 5213 stock.

So let's give the digital manufacturers a few years to develop some equally wonderful surprises for us.

"For things to remain the same, everything must change" (from Visconti's "*The Leopard*"). The medium is changing in every way, but that change is only technological. With all these new tools at our disposal, whatever they may be, our fundamental role as Directors of Photography remains the same: to accompany the script, the director and the actors on the journey, and to guide the spectators gaze in order for them to experience the depths of their own emotions.



Philippe Ros

AFTER FINISHING THREE DEMO FILMS SHOT ON THE SONY F65 AND LEICA SUMMILUX-C LENSES, I CAN SAY THAT AS A CINEMATOGRAPHER I AM PLEASED BECAUSE THE RESULTS WE GOT GRADING (IN POST) WERE ASTONISHING.

The dynamic range is very, very large, both the colorist and I were really impressed because it offered the greatest possibilities we had ever seen. Issues: there is no separate control for the outputs to apply LUTs. As a camera operator, I'd have to say the camera is a little bulky, the balance needs to be improved, The electronic viewfinder is the camera's weak point (but we know Sony is working on that) so when I must also operate the camera, I'm more comfortable with the Alexa Studio or soon the Delta Penelope from Aaton because of the optical viewfinder. I know, because of the sensitivity of these cameras, I will use a small monitor when shooting in low light.

The director and I wanted to avoid a video look, but what we found at the end was something different, it was neither a film look nor a digital look. I think the digital future will offer us new textures, even if we have to accept things we are not used to or don't like, including the artifacts.

We are now facing different textures and sometimes 'things' happen that do not originate from the sensors (of the Alexa, F65, Epic and soon Aaton Penelope), but from the workflows. What I discovered in these three demo films (shot on F65) was the huge difference in textures depending on the exposure, the calibration, the choice of Lut's, and the type of grading used.

On these films we redesigned the workflow and all mathematic processes including De-Bayer with an artistic approach. We chose certain paths based on what we felt most appropriate for the look of the image and the process was different for each of the three films. At the very beginning, I decided to work with a colorist and the DIT to ensure we were perfectly calibrated with the lab. The idea was simply to create a digital stock, an LUT, for each film and that is what I like about the digital workflow.

What is most important to me is the calibration of the workflow, even if the movie has been shot on film negative. My experience with raw cameras showed me that some manufacturers don't know or even anticipate the important 'issues' created by these new Bayer patterns, these new codec, these systems of compression, the colour spaces ...

There are not only two different worlds- the world of cameras (that contain a part of the lab), and the world of the lab, but two different types of people. The people who know and understand the cameras thoroughly are not the same as the people working in post who know how to handle the workflow correctly. Except for the high end laboratories who invest money in R & D, there is simply no time for people to learn about all the new cameras, codecs, lenses... especially as new products are being introduced into the marketplace every few weeks. It's very rare to find a technician who knows all the specifications of a camera and who also knows about all its different workflows- that would be a truly impossible task!

The European Community conducted an investigative survey which revealed that more than 50% of all films shot on film or digital arrive at the post production stage suffering from very serious "issues". One cannot imagine any other industry or commercial enterprise being allowed to deliver such imperfect products (that require such extensive problem solving at the final delivery stage!).

The arrival of the ACES* architecture will improve these issues and assist {filmmakers, cinematographers, producers} to easily match different sources, helping to preserve the quality of the camera image through all the workflow stages with the widest colour space possible. (*ACES: Academy Color Encoding specification is a radiometrically linear light encoding which provides methodology from any source (Film, Digital, etc.)

If I were to be "nostalgic" about film, it would be for what we have lost. When photographing a movie (on celluloid), it was always a great pleasure discovering the dailies the following day, projected on the screen in a theater with the different departments of the crew watching together what they had done. They would see, and learn from their mistakes, or watch the wonderful things they had accomplished.

All of this has vanished now. There is no more meeting point so there is no learning ground for the less experienced members of the crew. This was especially important for camera operators, focus pullers, grips, and gaffers (but also for production designers, art directors, costumes, hair, make-up, and script supervisors). These days, only the director and the DP watch dailies, mostly on DVD's in their hotel room. The crew doesn't see any of their work anymore, so it isn't surprising that they are not really involved or invested in the film like they once were.

As cinematographers, I believe it is our responsibility to master and control these new cameras and these workflows, to impose our true artistic style on these new technologies and to ultimately reclaim our work from start to finish. I'm very happy working with these new tools and I'm very enthusiastic about the results I get with Alexa, Epic, F65 cameras and the right workflows. The key point for me is the finding the best way to work with the entire team starting from pre-production right through to post.



Benoit Delhomme

I'M NOT NOSTALGIC ABOUT FILM. DP'S SAY THEY ARE LOSING CONTROL OF THEIR WORK, BUT I THINK THE DI IS THE MAIN PROBLEM. IT HAS TO BE DONE SO QUICKLY AND OFTEN THE CINEMATOGRAPHER DOESN'T HAVE ENOUGH TIME FOR REFLECTION.

I would say that my work as a DP is 50% in the lighting and 50% in the storytelling, but in HD especially, the relationship of the DP and the Director is an extremely close collaboration.

I'm happy to "share" lighting decisions with the director as he or she shares their work with me, asking my opinion about the performances, how the scene works or if we should do it in another way, etc. In the past, it was difficult to explain how the lighting would look on film, you'd say "don't worry, it won't be this bright...I'll print it down so it looks darker...." but with HD, you have to verbalize what you are doing. you have to explain your lighting choices right on set because if you have a good DIT and good calibrated monitors, the Director is seeing (almost) a final image.

Last year I shot 'Lawless' with John Hillcoat on HD, we wanted to do something different from what we did on "The Proposition", but people said we were crazy to shoot a period movie on HD.

They are nostalgic about certain looks and textures, so I realize it might take a while before audiences accept something different. But when you look at the original prints of Walker Evans' photographs, they are very crisp with hardly any grain.

I was a bit pressured into using HD on 'Lawless' because John had some very specific lighting choices that could have been difficult for me to achieve on film. He wanted very low light levels and to go very dark while having very soft contrast. I was more relaxed with HD as we could see what we were doing and could work together on the 'right' levels of darkness.

We shot "Lawless" with the Alexa in Arri Raw and this was my first digital experience after photographing 29 movies on film. It was a totally New World. We were experimenting every day. I stopped using a light meter and put myself in the hands of a DIT who was creating a new LUT for nearly every scene... (as if we had hundreds of different film stocks all with different contrast).

Hillcoat wanted an absolute minimum of light so I was spending more time with the DIT than I was creating my own lighting on set. We had no lab behind us because the line producer decided labs were obsolete for HD...so we were doing the dailies ourselves in the editing room.

Like everyone else at the time, the DIT was new to Arriraw, and I was worried about exposing the images and processing the files in the right way. Whoever says "this is the end of worries and sleepless nights" can think again.

We definitely had scary moments when we came back to L.A. and tried to see our images in a DI suite because the LUTs we had built on set were not based on film curve response. The engineers at Technicolor had to change all their settings for us and fortunately it saved my life!

During post, John was so worried about the highlights looking HD, he asked the colorist to get rid of them in the final DI, and we spent hours dimming things down. On film, I always liked windows and lamp shades burning out; I don't feel that highlights betray HD's weakness anymore. On the movies I photographed, my blacks were always too black because I never used much fill light, but with HD I can work in the same way and still get plenty of detail in the shadow areas.

I am now shooting "*The Most Wanted Man*" with Anton Corbijn, again in HD with the Alexa Arriraw, but now I have gone back to my roots, relying on my many years of experience working on film. I use my light meter and I create only one LUT, as if I were shooting the entire movie on one film stock.

Last night the DIT came up to me and said, "there is too much light coming from the left" and part of me thought < I don't want to know that > and another part of me thought <okay, maybe he's right, I should take another look >

These days with HD, people on the crew feel entitled to express their opinions about what they see on the monitor. They try to persuade you to "fix" things. They want you to make it perfect - perfectly "normal" and under these circumstances, it becomes difficult to develop a personal style. you must be very strong and focused to resist all of that extraneous noise.

My problem with HD is that all cinematographer's work looks almost too good. There are no more accidents, surprises, or "mistakes" anymore because everything gets fixed, first on the set and later on in the DI. The colorists try to make every shot look fantastic, and they turn out looking all THE SAME. Films are becoming "masterpieces of control".

In the 60's and 70's, movies looked so great, so interesting, because cinematographers let 'accidents' happen, whereas now, many DP's want to be Renaissance painters. I hope we can find a way to loosen up on this 'total control' and break away from the technical constraints put upon us and get those accidents back in our work.

I am now very comfortable working with the Alexa, but I really love having a large choice of cameras that come with different standards and can offer different possibilities and textures. I am very excited about the new RED monochrome camera for shooting exclusively in black and white.

I find this all very exciting!