

Jon Fauer, ASC

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Passage from Film to Digital

Preview:

Vittorio Storaro and Woody Allen on "Cafe Society"



# Passage from Film to Digital: Vittorio Storaro, ASC, AIC

*“Cafe Society” opens at the Cannes Film Festival on May 11. It was the first digital motion picture for Director Woody Allen and Cinematographer Vittorio Storaro, ASC, AIC. Woody Allen has directed 47 films on film. Storaro has shot 58 films on film.*

*I met with Vittorio several times in New York while he was grading “Cafe Society” at Technicolor Postworks.*

*Vittorio is famous for his cinematic discussions of art, style and symbology. But we also know that he is on top of the process at every level—artistic, digital, and technical—with more knowledge of bit depth, resolution, dynamic range, DaVinci the software and the artist, to keep FDTimes readers on the edge of their seats.*



SONY F65 and Vittorio Storaro, ASC, AIC. Photo by Simone D'Arcangelo

## **JON FAUER: Vittorio, how did your recent passage from film to digital with Woody Allen begin?**

VITTORIO STORARO: I first met Woody Allen when we were filming “New York Stories.” I did the section directed by Francis Coppola. Woody Allen and Martin Scorsese were directing the other two parts, with cinematographers Nestor Almendros and Sven Nykvist. A few years later, in 2000, Alfonso Arau asked me to be cinematographer on “Picking up the Pieces.” Woody Allen was the lead actor.

In 2015, I received a call from my agent Paul Hook (ICM) in Los Angeles. He said, “Woody Allen is preparing a new film. Darius Khondji, the cinematographer for his last four movies, isn’t available. Woody asked if you would be willing to do the movie.”

I sent an email to Darius, to be sure that he knew directly from me what was going on. I asked Paul if it was possible for me to see the treatment or script. I find it difficult to discuss a project without knowing something about it. I need to be able to add something from the visual point of view in order to justify my involvement in the movie. Paul said, “You know, Vittorio, it’s very difficult for Woody to send the script. He keeps it quite secret.” And I said,

“I’m sorry, and I respect Woody very much, but I need to know what the script is about. When we’re going to meet I would like to present to him some ideas about the visualization of the story.” So they sent me the script and I loved it from the beginning.

It was really a Woody Allen story. Not only that but there were two major locations in need of distinctive visual styles: the Bronx and Hollywood. There were two specific visual themes to be presented. So I was very interested.

I have done 58 films on film. The last one was “Muhammad,” and during the 3 years I spent doing its pre-production, production, and post-production, I saw how the film industry was changing completely. It was an almost 100 percent switch from film to digital.

I flew to New York to meet with Woody. We spent more than 2 hours speaking about the project. Then I said, “Woody, you have always used film. I also have been using film up to now. But I think that the time has come for us to change and make the passage from film to digital—because progress is something that we cannot stop. We can speed progress up or we can slow it down, but we cannot stop it. We are running behind something—film and the photochemical process—that we know is going to disappear.



Visual style of the Bronx: The Dorfman family at dinner



Visual style of LA: Hollywood party

## Passage from Film to Digital, cont'd

Or we can jump into this new digital world together, and make it our world. We can improve it only if we are inside the process. We cannot criticize it from afar. I think it's time for us to embrace digital capture." So we started speaking about the kind of digital motion picture camera that was possible to use. I have always been dreaming of working with a camera that gives me, from the beginning, the specific 2:1 aspect ratio that was suggested to me by Leonardo Da Vinci's painting "The Last Supper." In cinema, I call this aspect ratio "Univisium."



Leonardo da Vinci "The Last Supper" 1495-98

Whenever I had been experimenting with digital over the years, constantly being disappointed, I was always thinking about my dream camera. There were several additional elements to satisfy. If film is able to capture at least 16-bit color, then the digital camera must record the same, if not more. And if we scan film at 4K, 6K or 8K, then the digital camera must have at least 4K resolution.

Then, one day I discovered that Sony made the camera called F65. This was the closest possible to my dream. The gate was almost perfect: the aspect ratio was almost 2:1. And it was from 8K to 4K, 16-bit, with very little compression. This was the camera that I would like to use.

Speaking with Sony, they sent me to Panalight Camera Rentals in Rome. My assistant and I were able to test it. So when Woody asked which camera I'd like to use, I said, "Woody, I would like to work with the Sony F65 camera. Are you ready to jump into digital with me?"

Woody said, "Let's do it."

### **You didn't have to twist his arm too hard?**

No. He understood the technology, but I'm sure if I had suggested we stay with film he would have been very happy as well. But I was ready. I thought that it was the time to go to digital with the Sony F65 camera. I think we both realized that sooner or later it would happen. Once he saw me so determined to make this passage, he agreed we should do it together. Then I said, "Woody, I would like to have on set one Sony calibrated monitor for you and one for me, so you can see the image while we are filming. We will have almost the same quality as the final image on the big screen. No longer will the image be a flickering video assist, from a film camera, that is barely an image in color and that is not even vaguely close to the final result. Instead, we will see exactly what we're doing. You will see from the beginning to the end what we are going to achieve in the final result."

### **What lenses did you use?**

I used the lenses that I always have loved, the Cookes. We



Ethan Borsuk, First AC and Simone D'Arcangelo, DIT in a camera test. Photos and montages by Vittorio Storaro unless otherwise credited.

organized the cameras and lenses and tested at Panavision New York. We used Cooke S4 lenses because they are built for cinema. I need the best lenses to record the plastic movement of light on every kind of image, from maximum brightness to maximum darkness, particularly into the penumbra, as Leonardo da Vinci called it. I really wanted the style of the film to underline the different sections of the story, each one in a very specific way, and to maintain an overall cinematography style: mine.

I remember the day we did the first make-up and wardrobe tests with the actors. I prepared two very simple lighting setups in the studio and I explained to Woody that he would be able to see the actual color, look and feel of the scene on his monitor. But everybody, particularly the line producer, told me, "Vittorio, don't be surprised and don't be offended because Woody never looks at the monitor. In fact, are you sure you need these two big monitors on set?"

I answered, "For me, it's indispensable. I watch the image carefully as I operate my light board. And I control the lens aperture with a wireless control. So I have to have a perfectly calibrated monitor. It is up to Woody if he wants to watch his monitor." But after I finished the lighting, I did indeed notice that Woody was not even looking at his monitor. He was watching the actors. Then I saw, on the monitor, something about one costume's color that I was not happy with in relation to the color of the background. I asked Woody if I could show it to him on his monitor. We played back the scene and he understood what I meant and I said, "Woody, you realize the quality of this image is exactly what you will see later in the finished film? We are practically looking at dailies while we are recording the images."

From the day on, whenever Woody came on set, he would ask, "Where is my monitor?" He never stopped looking at his monitor because he really was able to see exactly how the movie would look—a look that we were able to achieve about 80 to 90 percent of the time on set, even before final grading.

### **Did that change Woody Allen's way of directing?**

No. He always spoke with the actors at the beginning and end of every scene. The sets were mostly intimate. He doesn't like to do many takes. When I asked Woody whether he liked the video monitor, he said "Vittorio, now I know exactly what you're doing and what are we doing. For me it is the same, I didn't change anything in my directing of the actors. So I felt very comfortable."

**And how about for you? Did it change the way you did things,**

## Passage from Film to Digital, cont'd



Steve Carell as Hollywood agent



Kristen Stewart and Jesse Eisenberg at the Vista Theatre, Los Angeles

### almost watching dailies as they happened as opposed to the mystery of seeing it the next day?

It changed the way I worked because I wanted to see exactly how everything was going to look. I already understood this in 1983 when I did "Arlecchino in Venice," directed by Giuliano Montaldo, with the first Sony HD Video system.



HD Video "Arlecchino in Venice" (1983)

That experience foreshadowed the end of my little nightmare of agonizing how the image would look on screen. With film dailies, we waited until the day after, sometimes the week after, depending on where the laboratory was. With digital, you see right away what you are going to achieve at the same time that you are thinking about it. This is incredible. You're watching an image and you see exactly what you are thinking at that moment. You're able to make immediate changes. It takes on a new life. Perhaps we lose our innocence. Moving from film to digital, we gain consciousness. We are aware of the kinds of images that we have in front of us. It is true that the cinematographer was once considered the only one who had the advance knowledge of how the scene would ultimately look. Let's be honest: the cinematographer was the only one who was able to predict how the image would appear when it would come back from the laboratory the next day.

There were so many things that could change, and no matter how vast your experience, knowledge and technical preparation, there was always the challenge of something going differently from the expectation, in the developing of the film or the printing or the color timing in the lab. As much as you could be knowledgeable or experienced, there was always doubt, followed by the great emotion of relief upon seeing the first image on screen.

### Anxiety and little nightmares?

Anxiety can now disappear with digital. But this doesn't mean that the journey of cinematography is ending on the set. Here's an example of a little nightmare and how digital would have helped.

On "Apocalypse Now," I found myself on the river, at night, below the Do Long Bridge. Suddenly I realized that I didn't have enough lights or generators. We had only four arc lights and only one generator. It was incredible: at that time film was 100 ASA. Then with Dean Tavolaris, the production designer, we had the idea to string light bulbs along the bridge. I asked A. D. Flowers and Joe Lombardi, the special effects guys, if we could have some explosions on the other side of the bridge to reveal it in silhouette. I asked my electricians to keep panning the arc lights back and forth.

So there were explosions, the light was moving, the camera was moving, nothing was still. But, the real question was how the film would look after it came back from the lab. The images from Technicolor Rome's lab were 2 weeks away from our location. We didn't even have a video tap. There certainly were some questions in my mind about this scene, although not about the original concept. Probably if I were shooting digital, I wouldn't have had any doubts.



"Apocalypse Now" (1979) Charlie's Village

### No dreaded phone calls at 3:00 in the morning?

There was not even a phone in the little village near Pagsanjan. It was Ernesto Novelli, the Technicolor's colorist, who would send me telegrams from Rome, telling me how were the negative condition. We were doing something extreme at that time, We were flashing the negative to reduce the contrast of the new Kodak negative.

**The horror. With digital, do you find yourself even more daring,**

## Passage from Film to Digital, cont'd

### trying things you probably wouldn't have done with film?

I usually tried for extremes all the time, ever since I was young. I was probably a bit presumptuous. But all the time I pushed for the extreme. I never stopped because I was not sure. I tried to discover the unknown...for me...no matter what, film or digital.



"Apocalypse Now" The horror

### I don't want to compare, but why did you pick the F65 when more than 90% of major films are shot with other cameras?

I wanted to get out of the swamp of lower resolution. I think it is absurd to be working at lower resolutions than what we have with film. I was introduced by Rob Hummel to the Dalsa digital camera, which was what I had in mind: 4K, 16-bit, uncompressed, and exactly a 2:1 aspect ratio. But it was just a prototype.

Sony 65 is the first digital camera that meet my expectations, but Sony needs to believe more in the quality that they have available and should be ready to listen to what cinematographers have to say during the use of their digital cameras. No camera is perfect. The F65 camera is, in my opinion, the best digital camera that I have used until now, but it shouldn't necessarily stay the way it is. There are several things that can be adjusted, modified, improved. I have sent a letter to Sony about this.

I hope every company will take the same steps to achieve higher quality. Particularly in two or three major areas. We come from film. It has been a journey of one century. One hundred years of history. For my last movie on photochemical, I used four different Kodak film stocks: two for daylight, two for tungsten light. That allowed me to have 50 ASA, a lower sensitivity, for shooting daytime desert exteriors, where the range of information was the widest possible. If I went into interiors using daylight, I was able to have a 250 ASA film stock to help me in lighting those scenes. If I'm using artificial light in the studio, I can have the incredible range and tonality with 200 ASA tungsten. And if I'm filming at night, I have the 500 ASA film stock.

How is it possible today that all of the best digital cameras in the market only have one sensitivity, which is usually 800 or 1,250? They are very sensitive but force us to use ND filters in front or behind the lens when the light level increases. Without any doubt, these filters can change the dynamic range, the color and contrast. We don't even have the chance to increase or lower the sensitivity of the camera electronically without changing the level of noise or contrast. We had this ability when we used film.

So in my opinion, SONY, ARRI, RED or any other camera manufacturer should give us a camera with at least three sensors that the camera assistant can change, like changing film magazines. We should have sensors with very low, medium, high sensitivities.

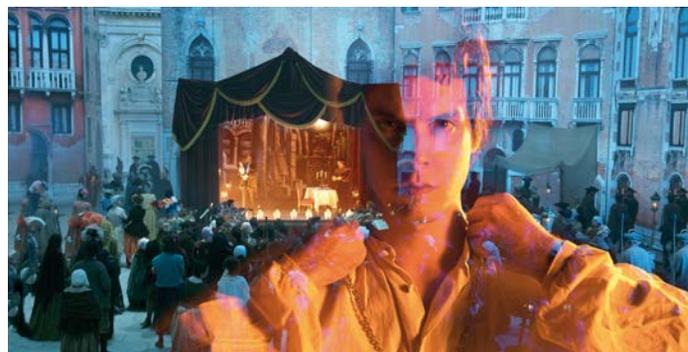
I'm a member of the Italian Film Academy, European Film Academy and American Film Academy. I receive many screeners. Most of the time I am just watching ridiculous images. They don't have anything to do with the story, the period, or the magical world of visual art. With cameras being so sensitive today,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

**Many of our colleagues complain, just as you said, that so many movies look the same. They blame it on the digital camera or the lens. But I can guess that you will say it's not the camera, it is still all about the lighting.**

Right. As always. Light is the most important visual element, particularly when it is in relation to shadows.

**On the Woody Allen film, tell us more about working with your DIT and data.**

I brought Simone D'Arcangelo, our Digital Imaging Technician, from Italy because I think the DIT is a very important figure who is not fully appreciated by everyone but who can help us express ourselves in a better way. Simone is also here with me while I do the digital intermediate. He was my student in LAquila. He was my camera assistant for several years on the films "I, Don Giovanni," "Caravaggio," "Muhammad," and many others.



"I, Don Giovanni" (2009)



"Caravaggio" 2006 and "Dinner at Emmaus"

## Passage from Film to Digital, cont'd



"Gone with the Wind" (1939) above. "Senso" (1954) below.



And now Simone is a DIT, a very important figure in the new digital world. But, at the same time, we have to be very wary of their advice. If you remember when Technicolor gained the market in color film, they sent out their special Technicolor "supervisor," especially Natalie Kalmus, credited on most Technicolor features from 1934 to 1949. What happened was not always beneficial. They were supposed to be experts in the area of color, but sometimes they were too controlling, mostly afraid of shadows, especially if the cinematographer wanted to try something different. Remember the stories about Oswald Morris on "Moby Dick" and "Moulin Rouge" where they were trying to fire him because he was doing different things compared to what they expected. Practically the entire industry until the early '70s, in my opinion, had this kind of mentality. "Color is very good for western, for comedies, for musicals. But not for drama. Because color doesn't read well in shadows," they said. But that was not necessarily true. Look at Ernest Haller's work on "Gone With the Wind" in 1939 or G.R. Aldo's cinematography for Luchino Visconti's "Senso" in 1954. Today, the DIT can be a similar figure. They can give you suggestions, considerations, advice. Or they can try to keep everything in a specific, safe range.

### Then how do you protect yourself?

In the beginning I was listening to Simone when he pointed out a light that was too bright, an area that was too dark...where I was losing information, etc... Then, at one point, I said, "Wait, Simone. It is very important what you are telling me and it is important that I listen to you. But it is also essential that once I know the range and the possibility of the system, I can go beyond the limits, because otherwise I will be stuck, without any sentiments. I will

be flat. I have to use my sensibility, my creativity, to follow the story. The story is like music. It goes up and down in movements, in motion. I need to follow the emotion of the story."

It is very important to be working on the set with an intelligent DIT and you must be strong enough to know when to say "No." I think it was very important for Simone to be at the D.I. Session. To see all the finishing touches about light tonalities, colors and image composition, it completed his experience on this film.

The most important thing is to listen, to hear, to take care, to be aware of knowing the system—but don't get stuck in the mud with the system. And don't be stuck in just gathering information through this instrument. There is a moment when, as the cinematographer, you have to follow the emotion of the story and go beyond the system... with knowledge.

### Is that the reason a number of our colleagues are saying that they still prefer film?

Not necessarily. For example, at a panel discussion I was on at Camerimage, I mentioned that film, in my opinion, was something that we were losing. Ed Lachman said he still prefers film because of the grain, color, information, and look. I said, "Eddie, you are very romantic. You were raised like me, on film. We both come from the same era. But do not forget the history of the image. Human beings started out a long time ago trying to express themselves with images drawn inside caves. Later, they used little stones to make mosaics. Then they painted on wood, did frescoes on walls, and on canvas. When photography arrived they started to work in black and white emulsions. Then they went to the cinema, the image moved, sound arrived, we had color, and stereo 3D. And now we have digital, it is part of the evolution of cameras and media." At first, the transition to a new medium can be difficult and different from the one we use to. We should work with our creativity to make the best images possible with any material. The industry has changed so much. In Italy, Technicolor shut down their laboratory. Kodak shut down their offices, we don't have film any more and there is no one left to develop it.

### It's no longer an artistic decision, it is logistical. But some are still hanging on to film: Tarantino, J.J. Abrams, Ed Lachman.

Yes, but they are very romantic people. Yes, somebody does it, probably they think it is more artistic. I did my first movie in black and white: "Giovinezza, giovinezza" ("Youthful, youthful", directed by Franco Rossi, 1968).



"Giovinezza, giovinezza" (1968)

## Passage from Film to Digital, cont'd

If you propose to me today to do a black and white movie I will say, "No, thank you. I will miss color." But of course anybody can do anything they love to do.

It's a difficult transition, but it's progress. Even Charlie Chaplin continued to make silent movies after sound was invented. When they invented talkies, the camera couldn't move as easily because it was noisy and they had to put it into a large soundproof box the size of a telephone cabinet. One of the greatest poets of the century, the father of Bernardo Bertolucci, Attilio Bertolucci, said, "When cinema learned to speak, it lost the poetry. It is mainly an expression of Images." In the beginning any new technology is usually never better than the previous one. Progress can be pushed or slowed down, but it can never be stopped.

**When you initially read the Woody Allen script, was there was enough "poetry" to keep you interested?**

Absolutely. First of all, the script is very well-written. Second, it is very personal, a story of a Jewish family. You can feel it's really a Woody Allen's movie. Third, it is a period film, 1935-1940. Four, there are geographic elements, Bronx and Hollywood, that require different looks. So there were enough elements for me to perform and be very interesting.

**At Camerimage, you probably had discussions with colleagues who were saying that the cameras are too sharp, too crisp.**

Oh, yes, that's what they said. I replied that when you change the media, you have to know or to learn the new technology. It is not necessarily exactly what you were expecting or what you're used to. You have to respect it and try to understand that it is different. Maybe it is better or worse. But probably it is better—only different. So you have to know how to use it.

I heard comments like, "Too sharp, the depth of field is too large, we miss the foggy and grainy images..." And I said, "In that case, you can use your fog filters or add a net, etc... etc... But don't expect to stop the entire system. We have tools to create the styles that we need according to the specific story." I think that the main element is the language of light, using the proper relationships between light and shadow to express yourself perfectly with any kind of material in cinematography.

Look at the different styles that Woody Allen had with Sven Nykvist, Gordon Willis, Carlo Di Palma, Darius Khondji and myself. With a similar set, similar story, same Director, each one of us adds his own sensitivity and approaches the film style in different way. It is like the same director working with different actors. In my opinion, we should follow our creativity in search of a specific style for every single story through our personal point of view.

**On the Woody Allen project, did you and your DIT grade on set to give it the look that you wanted?**

No. This was in my imagination in 1983, during the first Sony HD Video test, when I was thinking, during the production, of having Ernesto Novelli on the set, instead of being at Technicolor. Today I realize that on the set I need to concentrate on having as many ideas as I can. The finishing touch can be done later in the laboratory. The only thing that we did on "Café Society" was to establish, from the beginning, four different kinds of looks, but keeping an overall style. Like a symphony with four movements:

A) The Lunar Bronx, with the life of a poor Jewish family.

- B) Sunny Hollywood, when the lead character moves to L.A.
- C) When the lead character comes back to New York and he becomes the director of a nightclub, we see the New York of rich people, going to dinner in tuxedos.
- D) The last part of the story, in L.A. and in N.Y. where the natural and artificial lights are influencing each other.

**Let's talk about composition and the style of the movie.**

Woody and I discussed ways to move the camera. He did not feel that the modern look of a Steadicam was appropriate to a movie set in 1935/40. We decided on a classic approach. The cinematography style was set between two complementary looks, one for New York and one for Los Angeles. I proposed examples of the great photographers such as Steichen and Stieglitz and Painters such as Georgia O'Keefe, Otto Dix, Tamara de Lempicka and Edward Hopper.



Otto Dix "Mitteltafel des Triptychons - Metropolis" 1928

But on top of the two different main locations, the entire story is narrated by a voice over, the voice of Woody Allen. So I felt that Woody's narration of the story belonged to a different period of time and place, required a special, different camera style. The narrator is practically the principal character of the story.

It needed the use of its own descriptions and emotions. I proposed using a Steadicam for the scenes described by the Narrator. Woody found it interesting. I said, "Usually I don't like to use a Steadicam only when somebody is running or is going up the stairs. When the narrator is describing something about the different characters or situations, we need to have a different camera movement, with an emotional feeling, more harmonic." Just as I had used a Steadicam on "La Traviata in Paris" with Garrett Brown and Valentin Monge, Steadicam operators who succeeded in moving the camera in a rhythm that was dictated by the music, in our movie the Narrator's words should have, in "Café Society," the same emotional level of the Giuseppe Verdi's music in "La Traviata."

**Would you call it point of view?**

No. It's covering the scene by following the description of the Narrator. Woody liked the idea and Will Arnot was our wonderful Camera and Steadicam operator. He has the great versatility to be able to do both. What touched me about his personality is the dedication to be specific in his choices and the "will" to try to reach perfection in every shot. I used to tell him "You are writing with the camera".

# Passage from Film to Digital, cont'd

## How did you approach the Woody Allen project technically?

The Woody Allen movie originates on a digital capture camera. My ambition was that the image would not just look like video. My basic rating of the F65 was 640 ISO outside and 500 interior. More or less I went to the similar ratings I would use with a high sensitive film negative.

I did all my best to use the language of Light the way I would normally do it on Film, without being intimidated by the limits of Digital. Each scene has its own specific lighting style, according to the main style of the entire story. Even though the camera had a very sensitive sensor that allowed me to see the image in any given location, I would use not only location light but also illuminate the scene to “write with light” in my own style, using images that represent what is written with words.

I liked the fact that Cinelease in NY and in LA has the same lighting package from Iride Rome that I normally use in Europe. I felt comfortable to continue to use their Cinematography Lightboard and all the lights on a dimmer system. I tried to establish the look of the Bronx in 1935 to show a little family inside a small apartment. The color was very desaturated. Then we jumped to Hollywood, the land of sun, of warmth.

When you see the film, I would like to ask you to forget that it is shot in digital. Just watch the movie. You don't have to know and hopefully you will not care in which system it is recorded.



above: Tamara de Lempicka “Portrait of the Marquis d’Afflito” (1925)

below: Edward Hopper “Summertime” (1943)



## Where are you grading?

Technicolor Postworks NY, with a wonderful colorist, Anthony Raffaele. He was with us from New York to Los Angeles, from the beginning to the end. That's something I really love, as I'm used to do in Italy, to have the same colorist doing dailies and doing the DI as well, following the movie in its entire journey.

## Are you using the looks set in pre-production for the DI?

Yes. The basic structure exactly follows my original idea. I have to say that I did as much as possible on set. Now I'm just refining and pushing a little bit further. I don't subscribe to the idea that you can do whatever you want on set and fix it in post later. I like to set my style from the beginning and stay with that particular look. Of course, I can adapt during prep, while filming, and then raise the bar during post-production.

## How much time are you spending on the DI?

We did one reel a day. After the 6th day, when we finished the first pass, I asked Woody to come see the entire Film, to have his impressions to add to my second pass in order to refine everything. My surprise was that he asked, as he usually did on every other movie, to see the corrected copy without sound. I mentioned to him that I did the entire DI with the sound, even if temporary, because there are in the dialogue, in the Music and particularly in the Narrator, a lot of visual references and feelings of the mood of the film, very important for the finalization of image and sound.

He felt that I was disappointed and said, “All right if you need to show me the Film with Sound, we can see it with sound”.

But I understood the reason for his request and I said: “No, you should be comfortable doing it the way your are used to. Do not worry about me, I know what I did.”

We didn't speak a word during the entire movie and when the lights of the theater that came up, he said: “I like several parts of the Film, but some sequences seemed to me were better in dailies.”

It happened to me several other times that a Director came to see a timed film, and had a special memory of some sequences that are difficult for them to see again with the same emotions. Time plays an interesting thing into memory. Knowing that, very often during the grading, Anthony and I had went back to see the same image from dailies, in order to have a confirmation that we did a step forward or not. I mentioned to Woody that it was not a problem to show him any sequences that he preferred in dailies.

After he saw some of those images, one after the other, he said, “Now that I saw the difference between dailies and the DI, everything is all right for me; please complete your work, Vittorio”.



Vonnie and Bobby

## Passage from Film to Digital, cont'd



Veronica and Bobby listening to Jazz



Bobby and Vonnie in Central Park

After that, we spent another day or two refining things. All in all, it's about the same amount of time as if we were grading any negative film.

**Then there's no turning back from this passage from film to digital? It's a one-way ticket?**

Correct. It's progress and we cannot stop progress. However, I would love to have back the original Technicolor Dye transfer. I saw a major difference when I did "Apocalypse Now Redux" in re-printing the old material. The colors were faded and the black was grey. I did a test to find out if we could print the entire movie using the Technicolor matrices. It was unbelievable compared to the normal printing stock. But I don't know how we can reach those levels ever again.

My worry is how long the digital image can stay alive. No digital system is secure for the future. Rob Hummel, once again, is behind a system in Los Angeles called DOTS. (Digital Optical Tape System). It is able to capture an image at a very high level that will last almost forever. They tested it under laboratory conditions in Rochester, tested equivalent to 500 years. That's what we are missing now. We need the digital world to become Digital Optical. That's the direction I would like to go. But I do not have to go back to film origination, which is already in the past, let's say.

**You used both the F65 and the F55 on the Woody Allen movie? They share the same codec, but the sensors are different. F65 is 8K and F55 is 4K. Did they match?**

When we decided to use a Steadicam for the narrator segments of the Woody Allen film, I realized that the F65 is a little too heavy. I spoke with Fabien Pisano at Sony in France about that. He said, "Vittorio, if you are careful about the lighting, you can mix them." Certainly the F55 is less heavy. It's much better for the Steadicam operator. And we used the F65 for everything else. During dailies I didn't notice any difference. But now that I am at Technicolor Post Works, grading live on the big screen in 4K, 16-bit, I can see the difference. Sometimes the difference is not very evident. It depends on the scene. I notice the F55 has a bit more contrast and it doesn't have the entire range of color that you have with the 65.

In the future, I would prefer to only use the F65 and not mix the F55. I would do my best with the assistant to make the F65 camera as light as possible. I have been pushing Sony to give me three things. First I need more choices of sensors in one camera. I can't live with only one sensor. That's ridiculous. Second, give me 4K, 16-bit, uncompressed. There is a little bit of compression in the F65. Third, give me a perfect 2:1 gate. Gates of the F65 and F55 are not the same: the aspect ratios are a little different.

**Has the role of the cinematographer changed in this digital era?**

We already spoke about the fact that there was a period when the Cinematographer was the only one who knew how the image would look before the laboratory delivered the dailies. Somehow, the Cinematographer was almost like a magician, pulling, from something mechanical, an image out of the screen. In the analog era, to be a Cinematographer meant either having many years of training or learning from a master. My generation came from schools, learning photography and cinematography. At that time, because of my many years of study and years of working in a laboratory, I was one of the Cinematographers most knowledgeable about technology. But that was not enough for me.

I realized that I was lacking in one area completely. I felt the need to express myself in a different way, but I didn't know how and why. I knew the technology and how to use it, but I still needed somebody to tell me what to do. When I discovered that, I tried to fill the gap by studying, researching, listening to music, reading poetry, reading prose, looking at paintings. I wanted to understand why great artists chose one color over another. Why were they using a specific composition, why did Caravaggio choose to penetrate darkness with a strong beam of light, why was a sculpture by Bernini different from Canova or Michelangelo?

Today the image is no longer a mystery. We have in front of us a beautiful monitor in high definition and the color represents the image almost exactly as will be on big screen. Since everybody can see the image, there is no more mystery. Many people now think of the camera as an automatic tool to record an event. What then is the strength of cinematography now?

Cinematography means "Writing with light in movement;" it is to know the meaning of what you're doing. To know the "grammar" of vision. To know how one color connects to another color and the kind of emotional reaction you can have in relation to them. To understand the psychological way you can separate or unite light and darkness. That kind of knowledge will give us the strength to present an image to a Director, Production Designer or Costume Designer and to define how the camera should move, how the scene is composed, how much brightness is required, what the color tonality should be.

**In Vittorio's passage from film to digital, it seems that the tools have the potential to be even more interesting, powerful, and artistic than ever before?**

I already crossed the bridge...between...film and digital. Not only are the tools interesting and powerful—but they are also here, right now. The digital world helps me to express myself.



Leonardo da Vinci "Annunciation" (1472), Uffizi Gallery, Florence. Vittorio commented, "The Annunciation presents an innovation—the angel is like a messenger bringing a new form of knowledge, a symbol of light, of a new era. The painting is also a symbol of perfect vision, with a composition of 2:1. After seeing this painting, I knew I was ready to cross the bridge to a new era."

In the analog days, when I was speaking with Bertolucci or Coppola, Beatty and Saura, I would describe my theories and opinions only verbally. It was up to me to convince the Director about something visual by using words. Now, in this digital era, we Cinematographers have a much greater opportunity to express ourselves. Having a high resolution, color image on the monitor allows us to show, not only tell, the Director and everybody else why the image is right or wrong.

Today, the director can say, "Oh, Vittorio the light is too bright. This light is not good." Or whatever... Sometimes, perhaps he's right and I can address it right away. But, especially now, I have an additional chance in looking at an image, with knowledge of philosophy, art, music and poetry, to try to explain why the light that I placed in a certain direction or at a certain level is correct for that specific scene.

Therefore, we can use the images to express ourselves better. Images are very good at communicating knowledge quickly. Cinematographers today have to be more knowledge-able than before. Not only about foot candles, filters and technical matters. Don't get me wrong, technology is very important—otherwise you can't achieve your idea. But the most important thing is the IDEA. That's the most important thing in every ART.



Vittorio Storaro, ASC, AIC crossing the bridge to Digital



Woody Allen and Vittorio Storaro working in New York, August 2015  
Photo: Sabrina Lantos © Gravier Productions, Inc

*Woody Allen sent his comments on the Passage from Film to Digital by email.*

**JON FAUER: Vittorio calls it a Passage to Digital. As Director, how was the journey? How do you find digital compared to film?**

WOODY ALLEN: To me it's the same thing with a number of small advantages, but it didn't make that much difference to me, and any difference was on the plus side.

**Did "instant dailies" — seeing a very good image on set — affect the way you worked? If so, how?**

No it didn't change the way I worked, but it was a great convenience.

**Are you pleased with the results? Will you go back to film or stay in digital?**

I am happy to stay in digital because the end result is fine. I may as well enjoy the convenience that digital brings. Also it clearly is the way the industry and the future is going. I'm not one of those people who is fanatic about celluloid.

**Comments about the Journey with Vittorio?**

It is always a pleasure to work with a great artist and it was a privilege to work with him.

## Will Arnot, SOC, Camera Operator



Photo of Will Arnot: Sabrina Lantos © Gravier Productions, Inc

I started out as an electrician and local 52 grip. I pushed dollies for a decade before I became a camera operator. I spent several of those years slowly overlapping as a Steadicam operator. As a dolly grip I had the privilege to learn from many great operators. When you move a 1,000 pound dolly, you learn the importance of anticipation. Pushing a dolly really trains you to watch the actors. You get in tune with body language and intention. Camera movement shouldn't stand out as its own thing. Effective camera movement should be invisible and yet it should have impact, meaning and feeling. These principles of anticipation and invisibility apply not only to dynamic movement but also to composition and framing when not moving the camera.

My world growing up was constantly in motion, having attended 11 schools on 5 continents by age 15. Dynamic camera movement and the challenges offered by Steadicam were of great interest. The two important relationships in a moving shot are between camera and subject and camera to background. It sounds elementary but without this, many things change, namely composition and focus. Blending axes of movement is disturbing to me and remaining linear to the action is preferable. It is the arcing diagonal movement that gives away the fact that you're on a Steadicam.

The 'A' Camera Operator on any project has a unique opportunity (and responsibility) to weave a consistent feel into how and where the camera is placed and how it is or is not moved. On "Cafe Society" with Woody Allen and Vittorio Storaro, I tried to incorporate my dual roles as camera operator and Steadicam operator to look as seamless as possible and to maintain continuity of composition and movement. If I know that a scene starts out with a dolly shot and we're going to continue on a Steadicam or another tool, I always try to compose and operate in a way that I can replicate the methodology both in feel and look.

"Cafe Society" was a lesson in wide lenses. Mostly we used the 18 and 21 mm Cooke S4 lenses. A wide lens invites your eye on a journey around the frame, where depth, lighting, and background action require strong composition and diligent blocking to give the writing and acting real life, not edited life using close ups. Longer lenses compress and flatten the depth and make the focus more selective thus limiting the point of focus, not allowing the eye to travel, forcing the audience to observe only one thing, which usually becomes less interesting. Woody and Vittorio excel

at their respective craft and were a fantastic team for me to support and learn from.

Woody is an actor's director so he is not very interested in ruining a good bit of writing and acting with unnecessary coverage. He is very economical this way. He is also economical with his direction to camera. So, in speaking with Vittorio I would always help maintain a quiet set and allow them to work it out, but also so I could listen to every detail and not need to have the whole discussion repeated to me. Woody is brilliant with blocking. For example, instead of two people on a couch fairly close to the camera, he would have one person on the couch playing to camera and the other person playing very deep in the background far away, but still have them play to each other. It stretched the acting and reinforced the depth of the composition which Vittorio had created with the lighting and camera angle. The two of them worked extremely well in this way, Vittorio creating a dynamic arena and Woody blocking the acting to allow them often to complete a scene in one take.

My very first meeting with Vittorio was when we started prepping at Panavision Hollywood in LA. He came in. I was quite intimidated. He took us into a board room and laid out his ideas. He showed us examples from the great Masters of art history like Caravaggio. I remembered an email I had sent Simone a few weeks earlier asking what format we would be shooting in. Simone said, "Univisium 2:1. I hope you'll like it!" Exclamation point. I hadn't done that before. And then Vittorio explained the 2:1 ratio and Da Vinci's "Last Supper." It was a wonderful lesson for me.

I would say the transition from film to digital for Vittorio and Woody was seamless. I think Woody was happy to see a really clean image on his monitor. I don't think there's anyone who doesn't appreciate that. Especially when you have looked at images from a flickering analog video tap for so long.

On set, Woody and Vittorio were usually right next to me. Vittorio was always concerned about the director's comfort. He laid down the law on the first day. "I'm going to be here, on one side of the camera. Woody is going to be on the other side. There are not going to be any cables between the director and wherever he has to go," he said. Vittorio is a great leader; that was perfectly clear. Cables would be neat and organized and out of the way. I appreciated that because when working in small spaces it is easy to get on top of each other. It was one of those small but important things about perception and running an efficient set. And it was an awareness of giving Woody, the director, that ease and pleasure to be on the set. It's one of those wonderful human aspects that you appreciate so much when working with Vittorio. He really encourages everyone to be mindful on set. Not just setting a high technical bar, but intertwining a real awareness of everybody's job, that we may each respect and admire the others work.

There is always that very first week with any Cinematographer where he's feeling you out, testing you. I was trying to make sure I was getting what he asked for and I think he trusted me early on. After the job, Vittorio told me that I was "writing with the camera." That comment was a real pinnacle for me. According to Vittorio, in his inimitable style, perhaps there were three writers on this movie: Woody Allen, who writes with words, the camera operator, who writes with the camera, and of course, the incomparable Vittorio, who writes with light.

## Simone D’Arcangelo, DIT



I was the DIT on “Cafe Society.” I have worked with Vittorio since the beginning of my career. I was his student at the Academy of Image in L’Aquila in 2002. Then I was his second Camera Assistant and loader on films beginning 2006. When we started to be interested in digital cameras, I was one of the first in Italy to become a DIT. So I’m a DIT who used to be a loader.

We used the Sony F65 on “Cafe Society” because Vittorio wanted a camera that could record at least 4K, 16-bit. It actually has an 8K sensor with a dedicated green photosite for every pixel in the 4K output. This is very important. Now that we are doing the DI, we see the camera’s great range of color and tonality.

We did tests at the beginning to establish the looks that we built with Anthony, the colorist. I had these looks with me when we changed locations and scenes during the story. The looks were loaded in Livegrade on my custom DIT station. I brought my on-set and near-set equipment from Italy and integrated with the help of Panavision NY.

The workflow was as follows. We recorded 4K 16-bit RAW onto Sony SR Memory Cards. We simultaneously sent S-Log3.Cine via HD-SDI cable into Livegrade on my DIT cart. The show LUT was applied and that went to Vittorio’s and Woody’s monitors on set. We also used Pomfort Silverstack for data management and MD5 checksum verification.

My cart had a Sony BVME 250, Leader 5333 with Sony opslog, my DIT box with LUTer and SDI hub, and video IO cards—but it was still lightweight and easy to move around. A video assist operator took care of video playback for Vittorio and Woody Allen. The 2nd AC took the SR Memory Cards from the camera to the loader on the camera truck. Just like a traditional film loader, he downloaded the data using Silverstack onto a 24 TB RAID. He also checked the footage and made framegrab stills. Then we sent the Memory Cards physically to Technicolor Postworks.

Vittorio has a unique way of working. He likes to be very close to the set with this cart, watching his 17-inch Sony PVM OLED monitor. He controls the lens aperture with a Preston wireless hand unit and set light level with his dimmer board. Woody Allen has his own 25-inch Sony PVM monitor, also right up close near the actors. That’s what Woody and Vittorio wanted. They did not want to be far from set in a video village. It was very interesting for our crew to set it up this way every day. Vittorio is very precise. He tells you how



Left: “Cafe Society” Camera Crew under the Hollywood Sign, L-R: Vittorio Storaro, ASC, AIC, Ethan Borsuk, Simone D’Arcangelo, Tim Guffin (2nd AC), Nathan Stern, Digital Utility. Above: DIT Station.

and where you have to put everything. He saved a place for himself and for Woody to be comfortable on set with the actors close by.

I’d like to compliment Chris Konash, the engineer from Panavision, who set up our F65 digital system during prep. The F65 was very solid. The workflow was easy. I think that the image was probably the best quality that I have ever seen. And we never had a problem with the camera. In terms of software, the camera was very solid during the entire movie.

Vittorio asked all of us to keep notes with suggestions on improving the camera. One thing we all agreed on was the need for a faster download station with Thunderbolt or better. Our stations were Mac Pros with a Promise RAID, Sony SR-D1 USB 3.0 and SR-PC4 10 GbE.

Dailies were graded with Baselight by Anthony Rafaele, who also graded the DI. Every day, I would send him emails with requests from Vittorio, with CDLs, notes and 16-bit TIFF framegrabs. Sometimes with Vittorio, we graded the footage with DaVinci Resolve on my cart to show Anthony how Vittorio wanted it. DaVinci is very helpful for me to do color correction using specific windows and providing directions. Livegrade is reserved for primary grades, with CDLs, and to feed the monitor on set.

We had a Sony F55 camera for Steadicam. The workflow was similar although the data bitrate was about half. The F55 and the F65 matched reasonably well together. However, in high contrast situations, Vittorio noticed a difference and preferred the F65.

It was a pleasure to have been part of the first Journey from Film to Digital for two legends like Vittorio Storaro and Woody Allen. I always thought that nothing had changed, except for some little differences, and that if used with consciousness, it represents incredible advantages. I believe Vittorio and Woody felt very comfortable with the system. From my side, I tried to set up everything to make it familiar for the way they are used to working.

As Vittorio says, it’s progress. We can’t stop it but we have to seize the advantages and improve upon them, being part of the evolution.

## Anthony Raffaele, Senior Colorist



I am a senior colorist at Technicolor Postworks New York. I became involved with Woody Allen's "Cafe Society" when Vittorio Storaro requested a Baselight colorist who could do both the dailies and the final grading. The stars aligned for me to be in that position. It's more and more unusual for the same person to do dailies and DI, but it's definitely a way that I like to work.

Vittorio established looks at the outset. After we met in New York, the production started in L.A. I flew to L.A. and met with Vittorio. It was funny. He said, "We're not going to do anything right now. We'll just talk." We sat down and he started explaining the concepts behind the film and what he was looking for. He went over the script, pointing out his feelings for the story, the different types of looks that he wanted emotionally and how those emotions translated into visual concepts.

There were three looks. The Bronx, L.A. and then New York. For example, the Bronx was supposed to be a softer palette. It was poor. Lower toned, subtly less contrast and cooler. L.A. was more vibrant, new and fresh. More colorful. Warm. Brighter. The New York look was more of a merging of the two, bringing something back from Los Angeles, with a luminance, brightness, a fresher look. It's a little cleaner in tone as far as color palette. But it's still vibrant and brighter. These looks were saved to SD card as LUTs. And then Simone D'Archangelo loaded them into Livegrade on his DIT cart on set.

The language between the cinematographer and a colorist is often vague and creative. Vittorio sat down and showed me some of his inspirations artistically, from Vermeer and Caravaggio to Norman Rockwell. I did lots of research on Vittorio in advance. I watched most of his films and read most of the interviews he had given. I began to understand his language. But sitting down with him, discussing and then working with him was a wonderful evolution from that first conversation we had in Los Angeles to what we have now.

We set the looks physically, technically, and artistically—beginning with the primaries. For the Bronx, we softened the contrast a little bit, brought down the highlights, and brought up the shadows. We used Baselight. I feel Baselight is a tool designed for serious artistic color correction. Not that you can't get the looks with another system, but I like the manner in which it handles the timeline, the color palette, the layers. It has additional tools, like diffusion plug-ins, grads, keys, windows, sharpening, noise, and grain. You can add camera shake or stabilization.

In terms of workflow, the media cards came back to me with CDLs and DaVinci Resolve framegrab stills with circles and arrows and notes from Simone and Vittorio. Every day, I went through all the shots and applied the LUT that I already had. Then I'd make adjustments according to their notes. They did not shoot a lot of footage. I think the most they shot in a day was maybe an hour, a little less than a Terabyte. Grading the DI did not take long. I started with the CDL, the on-set LUT, and our output LUT (also known as the Show LUT). And then, as Vittorio might say, I would add my collaboration. The material is 4K but I graded in HD for dailies. One of the assistants then synched and logged it all up with ColorFront OSD (On Set Dailies). A lot of care was taken to keep the naming structure so the dailies files mirrored the 4K file structure. Vittorio got a Blu-ray copy and the editor got HD files for the Avid.

For finishing, we got the EDL from editorial, pulled all the RAW media files from the LTO, and conformed in Baselight. Then I graded on the fly from the RAW in 4K. We graded using ACES, with the BaseLight converting to XYZ. ACES enabled me to obtain better black levels for Vittorio.

Working with Vittorio is like getting a degree in art history and cinematography. We discussed technical color science, black levels, density, red to orange, warmth, coolness. We also discussed the emotional aspects, with Vittorio's art references. If I did not know the works of art, Vittorio would virtually take me to the museum. If you really want to do something special when you're in a grading suite, you need to be able to discuss both the technical aspects and the emotional feel of the story line.

One of the big changes that many of us colorists have experienced over the past five to six years is the change from film to digital. Many colorists who were sensitive to the film look are able to reference the feel, look, density, color, tonality of film and translate it to the digital medium. I think that Vittorio has done it with this passage of his from film to digital. He wasn't shy about shooting with strong highlights and low shadows to get a great contrast ratio. And his camera seemed to do it as well. But, at the end of the day, the camera doesn't matter as much as the cinematographer using it. Vittorio is an amazing artist. But he's also highly technical. Don't let him fool you. He knows what he's talking about on every level: artistic, digital, technical.

Working with Vittorio was like being taken inside the inner circle of what it means to be a true filmmaker. Vittorio is prepared from the beginning. When I sat down with him in L.A. he had a notebook three inches thick with scenes drawn out on each page, accompanied by art references, cut-outs, swipes, notes. He starts from day one with ideas about the emotions of the movie and he carries those through the entire project. He's a Maestro. He would say, "Hey, can we try this? Can I look at that? What if we try it, tell me, show me."

It's amazingly refreshing because when you take the time, if you care about the project, care about his intentions, if you think about what he's asked you to do, displaying those emotions, feelings and looks, if you put the time in to come up with ideas about what he's looking for, then he wants to listen to you and explain everything. He's absolutely a perfectionist. But he's the most collaborative cinematographer I've ever worked with.

