

George Lucas on shooting HD

*Over a period of two days in 2001, I spent several hours talking to George Lucas on and off the set at Ealing Studios in London, while he was shooting **Episode II** of Star Wars.*

Writer, director, producer, entrepreneur, George Lucas is a complex and paradoxical figure. He is a billionaire who explains that he's an independent filmmaker. By founding THX, he has contributed greatly to the quality of film projection, which he is presently seeking to replace as quickly as possible with digital. He has spent much of his life spearheading new technology, yet he writes his scripts in longhand on legal pads, and says that he is not interested in the details of the technology he promulgates. He has spent thirty years creating digital sound, editing and effects companies that push the technological envelope of cinema in order to make a series of science fiction movies modeled on the matinee films of the 1930s.

One thing is clear to any one who meets George Lucas: he is a consummate filmmaker who has a deep, unwavering passion for cinema as a story-telling art form. The following is a slightly longer version of an article that appeared in American Cinematographer.

What brought you to shoot Episode II in digital video rather than film?

George Lucas : In the end it doesn't make any difference which medium you're using, it's all storytelling. I dispatched with my nostalgia for film very early on, twenty years ago, and after that, whenever I came into contact with film, it seemed a cumbersome medium for me, and it became increasingly frustrating.

I started with special effects where the challenges are horrific. Digital really opened up that whole field in a way that you couldn't think of doing optically with the photo-chemical process. I spent a huge amount of money, effort and research developing Pixar and ILM, to get all the images into the computer so we could start working with them digitally. At the same time, we developed the EditDroid videodisc-based non-linear editing system so that I could get the actual photo-chemical celluloid strips out of the editing room.

I came to digital because of quality and ease of work, which is why I pushed Sony and Panavision to build digital cameras and lenses, and why I've been pushing TI and the theaters to project digital.

What was the role of Sony and Panavision in getting the system together?

Lucas : They have been great. We went to Sony before *Phantom Menace* and they had a prototype system. And we said : 'This is great but it's absolutely essential to be in 24 fps in the short run in order to get us into the theaters'. So we talked them into it and got another prototype. We tried to be ready for *Phantom Menace* but we couldn't find anyone to build lenses for us, and we went everywhere. So we missed our dates for *Phantom*.

Then Panavision said they were interested in making the lenses. So we got them together with Sony and we said ‘We want to be able to shoot *Episode II* with this, that gives you about two and half years, can you get it done in time ?’ And they said ‘Yup, we’ll do it’. And I must say, they did. They had to invest a huge amount of money and bet that this was going to work, and that it would look good. And I must say I think this is best looking film I’ve ever done.

How would you compare shooting 24P to shooting film?

Lucas : I’m not going to argue about whether the blacks are better, or whatever. A lot of my enthusiasm for digital is because the process is so much easier. Also I have so much more control in the shooting and in the post-production process, in terms of changing the images and making them the way I want to them to look. It’s like a car, that for me, looks sleeker, drives better and goes faster.

Obviously shooting directly in digital allows you to skip the step of transferring film to digital.

Lucas : Yes, *Phantom Menace* was completely transferred to digital. It is complicated to convert from film into the digital world, and we threw years of suffering and high costs out the window when we decided to shoot directly in digital, but that is more of a technical issue than anything else.

Do you think HD cameras change cinematography ?

Lucas : For me, cinematography is not about technology, it’s about lighting and aesthetics, it’s about understanding what a good quality shot looks like.

We shouldn't confuse technology with aesthetics, although in a lot of cases the aesthetic is driven by the technology. I'm not going to get into an argument about whether black and white is better than color, or deep focus is better than shallow focus. Those are aesthetic decisions. You make those decisions by saying 'I want this look'. You use a particular lens because you like the look of that lens. You use a long lens because you want everything to be squashed up.

The issue is whether the lighting is evocative of the mood that I'm after. Is it beautiful, or is it spooky? I'm interested in the emotional impact of the lighting and the framing and how that moves in time. That's what I care about.

Don't you think that 24P has a distinct look to it, different from film?

Lucas : The great thing about digital is that I can make it look like anything I want it to look like. We have programs that make it look like Kodak or like Fuji. We're even starting now to break down the numbers so that you can make it look exactly like a particular stock.

Does shooting HD change the way you work on the set ?

Lucas : In general things move faster. You don't have to worry about people stopping the process in the middle to reload film. That means I get more set-ups in a day and I like that.

I like to do a lot of set-ups a day, I realize that by taking more time you get better quality images, but in the over all aspect of the film, there is a point where that becomes self-indulgent.

Also digital is fabulous for the director, because you can see everything. It's a big step up from video assist. The giant (plasma 36 inch) screens

are great for watching performance. And you'll notice that all the key people from wardrobe, makeup, and props are all behind me watching, because the screens are so big that everybody can see without crowding around the monitor. The screens are also big enough for the crew to see what they need to see : you can see whether the netting on a wig is showing up.

If I want to see what it's really going to look like, I go back (to the engineering station) with the director of photography and look at the image on the other (24 inch) monitor, and that's like watching dailies.

Who are some of your favorite cinematographers ?

Lucas : I've always been a fan of Haskell Wexler. I admire David Watkins, I had the fortunate chance to work with him on *Return to Oz*. I'm a fan of Conrad Hall. Greg Toland is one of my favorite cameramen of all times. I think he's a genius master, I love watching his movies, especially when they're brand new prints and look good. I like black and white, I like depth of field.

The style of the cinematography of the *Star Wars* movies seems classical.

Lucas: *Star Wars* is extremely controlled. I purposely kept the look of the film reasonably conservative. I have to stay in a particular norm that is designed for young people and family movies.

I think *Phantom Menace* looked beautiful, and all the *Star Wars* movies look great. Even though we have moody scenes, it's still reasonably straightforward in terms of framing and lighting. It's nicely lit clean photography. I think it's aesthetically pleasing, it's not flashy or over-lit, and, quite frankly, I'm very proud of it. At the same time, if I had to pick

what I really love to see in a movie, what I'd like to do more than anything, then this is not the style I would pick.

Then why use that style?

Lucas: Because it's appropriate for the material. This is a particular story that needs to be told in a very romantic, classic, 'golden era of Hollywood' style. That's part of what *Star Wars* is. This film is very specifically done in the style of a 1930s Saturday matinee serial.

Is that why you use so many wipe transitions?

Lucas: That's what the wipes are about. It's an old-fashioned movie and it's designed to be like a serial, with six episodes,

I also noticed that the camera doesn't move much in the *Star Wars* movies

Lucas : In the past, the technology was not conducive to moving the camera, because I had a lot of effects. Now I can move the camera a lot more. If you watch the *Star Wars* films, you're watching the progression of learning to walk in the digital medium.

How do you feel about the increased depth of field of 24P versus film ?

Lucas : We definitely have more depth of field, which I love, because it's much easier for me when I get into split situations -- where I'm shooting across two people. It also makes it much easier for the focus pullers, they're not struggling quite as much as in the past.

You wanted a deep focus look for *Episode II*?

Lucas : I like a deep focus look. The real issue is that, if I want to take the depth of field away, I can do it. Most of the shots have a blue screen background, so all I really have to worry about are the people in the frame, and we can do the focus any way we want. We can isolate the characters in the frame and fuzz them up as much as we want to.

Sometimes I get into a situation where I can't keep both people in focus, say one's in the foreground and the other's in the background. In cases like that, I'll just shoot it twice, focus on one, focus on the other and then I split it and put the two focussed halves together.

And that allows you to do a cleaner blue screen?

Lucas : Well also, in terms of the actors' performances, it's just like doing two singles. We simply cut the foreground and background characters apart and put them together in a different way. In editing I've really gotten into taking each character and popping them out of the picture and changing the synch.

So you cut out the actors from two shots a lot?

Lucas : I do it a lot. I would say that at least a third of the shots in the picture have been manipulated in that way. Sometimes I've slowed down one actor because he looks up too fast, little subtle changes that make the scene so much better. The kind of details that are so subtle that it's sometimes hard to catch them on the set; you don't really notice them until you're editing. So there's a constant kind of manipulation that way. To me, it's exactly like a word processor.

So, for you, editing means not only cutting images together, but also changing parts of the image. Does editing mean being able to access and change every pixel ?

Lucas : No, I can't do that, but I wish I could. But if someone blinks right where your making the cut, and you can't make the cut because it doesn't work with the blink, I just get rid of the blink. I can just slip the synch, so that I can get the very best performance on the actor in background and still get the action to match up in the foreground.

In your movies you're mixing real people with virtual beings and sets created by computer. This marriage of virtual and real is easier in digital.

Lucas : At this point, my business is to do fantasy movies. That has made me have to push certain barriers in order to be able to create those fantasy worlds. I had to push digital special effects forward just to be able to create the kinds of imagery that I was interested in doing, because it's not possible to do a lot of the things that I'm doing now in the photo-chemical process. It just isn't possible. So in order for me to tell the stories I want to tell, I need the malleability, the flexibility of this digital medium in which I can create certain characters, sets, locations that you can't do any other way.

It's not a matter of replacing one system with another. Steven Spielberg loves film, I prefer to use this system. I love film too, but I prefer to work in the digital world. Steven still cuts on film. I haven't cut on film in ten years.

Most of *Episode II* is shot with blue screens, and little or no sets. It must be difficult to direct a movie with virtual sets that will be created later.

Lucas : Marty Scorsese has just finished shooting a movie, and he built huge sets in Italy. My film has got sets just as big as his, but mine are virtual. It's a matter of what medium you prefer to work in. He has the added inspiration of actually being able to stand in his world, and watch what he's doing. I have to conceptualize what I want to do first, and then create it, but where I can go is unlimited. Where he can go is limited: even if he's got the largest set in the world, at some point he bumps into one of the streets outside Cinecitta. My sets are unlimited and I prefer that, even though I have to make the sacrifice of conceptualizing it.

Watching you work, I noticed a lot of improvisation on the set. What is the balance between control and improvisation on your set?

Lucas : You want to be able to have ultimate control of the material, which means that you don't have to have total control on a day to day basis. So you can improvise within the context.

I would be bored to death if I had to sort of copy the story board shot by shot. I do have to do a certain amount of that, especially when we're doing pick-ups, like now. But usually when I shoot, although I use the storyboards as a guide, I'm basically free to improvise.

I know the movie pretty well, so I know where I'm going, but I'm free to let the movie breathe, and do what it wants to do. I've learned that in screenwriting: I can have a very concrete idea about what the plot is and what the characters are, but sometimes the characters just won't go where I want them to go.

The movie has its own life ?

Lucas : Yeah, and so do the characters. If you develop really strong characters, there are certain places they won't go even if you want them

to. And you have to accept that and say ‘Okay, this character can’t go there unless I rearrange his personality’. The movie does the same thing. Once you start shooting a movie, it has a life of its own. The movie becomes like a horse. You can’t force it to be exactly what you want it to be. You have to trust that it has its own mind, and that it has a sense of what’s happening also. You have to work together.

Do you feel there is a kind of magic on the set ? A kind of serendipity ?

Lucas : Oh yes. Once in a while I purposely keep it loose so that unexpected things can happen. Sometimes I’ll put an operator in a position where he’s going to have trouble. Sometimes I will purposely frame shots to feel slightly documentary. In *Phantom Menace*, sometimes you’ll see a digital character that’s framed in half. Now, I can put that character where ever I want it.

As you pointed out earlier, you can also put the real character where you want.

Lucas : But you have to be very purposeful about framing. You can make it look like the spread was a little too great between the two characters for that lens, and one of them got cut off. And that gives you a documentary sense. I use that a lot to create a kind of reality, it’s subtle and most people aren’t even aware of.

What effect do you think digital tools will have on cinema ?

Lucas : More people will have access to the medium, which for me is very important. It’s going to be more like novels or plays: if you have the talent you can probably express yourself. To me, that’s very important, and that’s not possible in film, it’s just too expensive. Beside being more

democratic, digital will allow filmmakers to have a wider range of subject matter.

What kind of subjects will digital make possible ?

Lucas : Look at big period films. Recently, period films have been off limits, unless you were Merchant Ivory and you could do one for less than 20 million dollars, because then maybe you'd find an audience for it. But you couldn't make a 100 million dollar period film. Digital sets have changed that.

You couldn't make *Gladiator* five years ago. It would not have gotten made because every one would have said that it was way too expensive for the market. And even though it ended being a very expensive movie, if they hadn't had digital technology to create those sets and environments and the larger picture, they would have ended with a very small movie with one hundred and forty people sitting on a bench cheering every once in a while.

You are perceived by many in the industry as saying 'Film is Dead'

Lucas: I never said 'Film is Dead'. The media did.

Let's set the record straight, do you believe film is dead?

Lucas: Quite frankly I think more people are going to prefer digital. That's what I'm saying. It's sort of like black and white movies. A lot of people still shoot black and white movies, but more people do color. That doesn't mean that black and white is dead, and I still love black and white movies. I don't believe silent movies are dead either, any more

than, say, the pencil is dead. That's different from the media saying 'Film is dead, long live digital'.

You have published a statement that states that film and digital are “technically indistinguishable”. I can't believe they don't look different to you. Maybe to an average audience member, but not to you.

Lucas: No they don't look the same, but then no two movies look the same. It's the art of photography, the art of lighting that tells the story. Digital is much more malleable than film is. And film has other aspects. And to say that you don't have as much leeway in digital as you have in film is erroneous. It's a different leeway. They're just different, it's not like one is better than the other.

Will you ever shoot with film again ?

Lucas: I don't know, I have no idea. When I get finished with this, I'll probably do some non-special effects movies. But I imagine that I will shoot them digitally because I want to use smaller cameras, because I like rough things.

Is there life after *Star Wars*?

Lucas: I look forward to being able to do other things. I've been lost in this *Star Wars* world for so long. Each time I commit to it, it's three films and ten years of my life. People ask me if I'm going to do more, I don't think so. This is the last trilogy, there'll be six movies and that's the end of the story. Will I do other special effects films ? Probably, I know the medium very well and it's easy for me to work in it. I want to do television. I want to try and recreate things. I like history. I want to

do period pieces. For thirty years I've been saying I was going to do movies that are more experimental, but I've never gotten around to doing them.

It'll be interesting to see you make other kinds of movies

Lucas: Well, I have another five years of this. Then I've got a lot more ideas for movies than I've got time to do them in.

Which is better than the other way around

Lucas: Hopefully I've got myself into a situation where I can go until I drop. I don't have to worry about somebody not letting me do it because I'm too old or not hip enough or some other ridiculous thing.

I don't think anybody's going to stop you.