

Preferences Recorded in Parallel Shoot

by Kim Foley

Can viewers tell the difference between film- and video-originated programming? Do viewers have a preference for one medium over the other? How closely can film and video resemble each other when shot under optimal parallel conditions? To what degree does lighting create the "film look" and the "video look"?

As a media producer, these were some of the questions I wanted to explore with other researchers at the Massachusetts Institute of Technology. It seemed that a systematic evaluation of film and video programming which had been shot in parallel might provide some answers. But because I was unable to locate any existing parallel footage as a basis for comparison (exclusive of test charts used for psychophysical testing), I realized that a parallel shoot was in order.

A parallel shoot involves taking an arrangement of two or more cameras, aligned as nearly as possible, and shooting simultaneously with the goal of attaining "virtual framing" (virtually identical framing). This set-up would allow for controlled experimentation of multiple variables. The resulting footage would then be edited and screened before audiences of non-professionals as well as experts, in hopes of shedding light on the "film vs. video" issue.

The goal was to minimize the differences between the look of film and video to see how closely they really could approximate each other. Once that level of similarity was reached, an attempt could be made at analyzing what differences in "the look" still remained.

Intrigued by the project concept, a number of area media professionals signed on, among them: Henry Ferrini, director; James Griebisch, director of photography; and Joseph Levendusky, lighting director.

Ferrini enthusiastically endorsed the project saying, "This was a chance to determine how format subtleties impact the audience. My own thoughts about the two mediums are that film has a past tense feel to it, that we are watching something that has occurred. Video on the other hand has a present feel to it. Curiously, the only tense I was concerned with was the fu-

ture and not having enough of it to accomplish this task in a few short weeks."

Griebisch also spoke of the challenges of this project, "It was stuff you had to be very meticulous about. Working out the little things, the differences in framing for example. There were a number of complicated lighting requirements to make this thing work. And then, of course, the parallel rig was just so damn heavy!"

A dance company was selected as subject matter. We used NTSC video and 35mm motion picture film. (HDTV had been another obvious choice for this experiment, but probably more than any other constraint, politics surrounding HDTV — and MIT's relationship to it — prohibited this as an option.) The Arriflex BL3 with a Cooke 20-100mm T 3.1 lens and the Ikegami HL79 EA with a Canon J-13 9-117mm T 2.2 lens were selected as cameras. We

chose 5247 Kodak film stock because of its similarity in speed to the calculated ASA of a video camera the 35mm at ASA 125 was closely matched by the set-up of the HL79 which was set to approximate 125.

The Arriflex was fixed on a 6" riser plate and the Ikegami was mounted on an O'Connor 50 fluid head. Both camera assemblies were placed side by side on a 13" plate which was mounted on a Worall head. This allowed coordinated tilt and pan motion of both cameras. The focal lengths were fixed and calculated for each shot. Matte boxes

were used on both cameras to control flare from the lights and academy aspect ratio was maintained on the 35mm camera.

The Ikegami was customized with a crosshair and raster generator. This is similar to the crosshair seen

Film Vs. Video Study

Correct Answers by Program and Subject Sample

CONTENT TYPE	PROGRAM	MASS	EXPERT	COMBINED
Music Concert	Carly Simon film	40%	83%	63%
Feature Film	Black Stallion film	85%	96%	91%
Animation	Walt Disney film	85%	96%	91%
Television	Frog Prince video	85%	87%	86%
Sit-com	Odd Couple film	50%	39%	44%
Sit-com	Cheers film	50%	48%	49%
Drama	Miami Vice film	60%	78%	70%
Commercial	1125 Ad HDTV	80%	83%	81%
Sports	Football HDTV	90%	96%	93%
News	News video	95%	100%	98%
Performance	Parallel Shoot film & video	85%	87%	86%

Subjects were shown 30 second clips of each program and asked to select whether the originating format was film or video.

through the film camera but is electronically generated, thus facilitating easy alignment of the two cameras. Carefully calculating the parallax, focal length, distance and depth of field was essential to optimizing the matching of frames.

The lighting design for the shoot was a complex issue, especially since lighting is one of the most common claims for the difference between the film look and the video look. Says Griebisch, "Front light was important, but sidelight would really minimize the differences." Lighting director Levendusky devised an optimum lighting scheme

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with Griebisch, using 38 instruments and combining stage and video lighting. In addition, the lighting scheme relied heavily on highlight as a common denominator.

Most of the eleventh hour problems that seem obligatory in a grand-scale experiment ensued. Snowstorms threatened the arrival of the lighting director from Chicago, crew members teetered precariously on 30' high ladders as the lights were hung and focused, coproducer Dorothy Shamonsky slid on some winter ice and broke her arm days before the shoot. And yet, in the end, the shoot itself flowed smoothly, much to our amazement.

On the heels of this success, a transfer from film negative to 1-inch videotape on a Bosch transfer station was done. From the two 1-inch videotapes — one film-originated and one the video original — two identical tape masters were edited. These masters were identical in every way but for medium origination and virtually undetectable parallax.

It was now time to test the work we had so carefully crafted.

The study was composed of two groups of subjects. A mass audience sample was chosen by random number selection from the local telephone directory and an expert sample from production and engineering media professionals. These subjects were assembled singly or in pairs in a viewing room at MIT's Media Lab.

Before we screened the parallel material for these groups, we did an additional study. The subjects saw a series of 13 program clips which were selected from a variety of television programming and traditional theatrical film. These 30-second excerpts covered a range of content types including drama, sports, music, news and adventure. Subjects were given a questionnaire and asked to place a "V" (video) or an "F" (film) in a blank corresponding to the clip number they viewed to indicate their choice of originating format.

This segment was crucial to the study in that it demonstrated pre-existing content biases. After viewing the 13 program clips, subjects were asked to explain how they decided whether each clip was film or video. To do this, they relied on a combination of content, history and technical cues. It was not uncommon to get comments like, "I know that a guy sitting in the studio reading news is video, I don't have to see the way

it looks," and "You expect since they're called 'music videos' for them to be video."

Though it is difficult to distinguish specifically when viewers are using certain factors of identification, it seems that when asked to state whether a program is of film or video origin, viewers look at content and historical factors first. Trying to get at people's intuitive perception of "the look" was not easy. Very few seemed to use the "look" or the "feel" of the piece as an indicator and most found it difficult to isolate themselves from their preconceived biases. It was generally agreed that there are several types of programming that have a blatant film look, such as movies (feature films) or video look (news, soaps and game shows).

On the average, experts got one and a half more correct answers than the mass audience, and 48 percent of the experts got ten or more correct compared to 15 percent of the mass audience sample. This implies, not surprisingly, that the trained eye has a better sense of the "look" than the average viewer. However, the experts did demonstrate fixed ideas about particular content types and carry assumptions with them that sometimes get in the way of their ability to see the "look." (For example, the assumption that a sit-com would be video prevented the experts from realizing that both *The Odd Couple* and *Cheers* were shot on film.)

After the 30-second excerpts were screened, subjects were shown the parallel dance program on two identical TV monitors and asked to write down which screen displayed the film and which video.

Seventy-four percent of the random sample preferred the film. All of the subjects who preferred film were correct in their guess, whereas 35 percent of the subjects who preferred video thought they were preferring film. This might indicate that viewers want to believe that they prefer film. In response to the question, "Which screen is sharper?" 65 percent of the expert sample found the video image sharper compared with 45 percent of the mass audience.

After a discussion about the parallel content, subjects were asked questions which focused on arriving at individual perceptions of the look. Subjects were asked to use adjectives describing the film look and the video look. They were asked their ideas about cultural similarities, differences between

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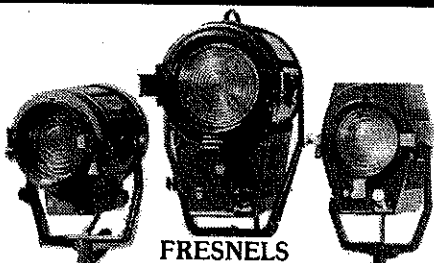
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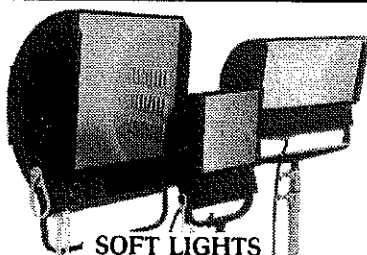
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the two media, and their projections for the future. The results have demonstrated that viewers define "look" in broadly different terms.

Words that came to mind when describing film included "grainy," "distant," "lush," "soft," "liquid," "moody," "rich," "saturated," "deep," "jerky," "textured," "subtle," "clear," "dynamic," "emotionally involving," "natural looking," "naturally lit," "natural colors," "lifelike," "sensuous," "realistic," "atmospheric," "warm," "edgy," "high contrast," and "quality."

For video, descriptions included "present," "washed out," "sharp," "smooth motion," "live," "bright lights," "artificial," "flexible," "convenient," "harsh," "contrasty," "lifelike," "dull," "colorful," "unrealistic," "glary," "pop outs," "electric," "hard edged," "stark," and "precise."

Despite the plethora of terminology, most subjects found it hard to articulate the differences between the film look and the video look. On the whole viewers see a difference, but mass audience member and expert alike have a hard time pinpointing exactly what it is. As for the emotional response to film or video, comments ranged from, "I've never been emotionally involved with a TV set, it's just difficult," to "I went to a movie last night, I couldn't stop crying."

High drama aside, the more feet-on-the-ground preference question ("Do you prefer movie theaters or television?") revealed that 85 percent of the viewers chose the theater experience for screen size, environment, high picture quality, newer material and the fact that it is a social event. One subject said that he didn't like the theater because of the rude audiences, but other than that, the quality and content offered at the theater was better than that available on television. One subject preferred television because, "It's more comfortable to stay at home."

Questions on look and preference put to the media professionals in this study revealed strong opinions and fierce loyalties. When asked about perceived differences between the cultures of film and video, noted cinema verité filmmaker Richard Leacock said, "... people who have gone into filmmaking and film editing have really labored over how to make a cut and how to film, and how to use lighting properly. Video has traditionally been controlled by radio people. In a video production, you know where the director is. In the control room.

He talks to camera people through headphones, he thinks he's controlling things, camera people are considered to be idiots. . . The image is denigrated. . . It really has nothing to do with it being video, it has to do with the traditions of the industry."

When asked, "If video were conducted with the same craft as film, do you think there would still be differences in the look?" another professional said, "I think you wouldn't be able to tell the difference." The parallel shoot, however, revealed that the differences remain. In this side by side comparison, 86 percent of the viewers were able to tell which monitor displayed the film-originated material and which displayed the video.

"Will video replace film?" (and more specifically, "Will HDTV replace film?") evoked a variety of responses ranging from the emphatic "Definitely!" to "My god, look at it! It's such a minor improvement, I can't tell you!" (This latter comment was in response to viewing several HDTV clips down-converted to NTSC.)

One filmmaker elaborated on the question concerning the future of film, "I don't think there will be any. Film's horribly expensive and clumsy, and I don't see any point in it." Meanwhile, a few professionals expressed the belief that if the same care is taken with video that is traditionally taken with film, then the costs would be comparable.

Consensus is that video has a very present, live, here and now feel to it, while film is removed, a fantasy, representative of a dream state. Film enables one to transcend reality and make the leap to becoming part of the story.

It is pretty clear that the public perceives video as the information medium and film as the entertainment medium. Aesthetically speaking, film is the preferred medium. Also it is this author's opinion that with current technology it is not possible for video to achieve the "film look." This isn't to say that it won't be done, but it has yet to be demonstrated.

Meanwhile, I eagerly await this achievement-to-be with the filmmaker who said, "...there's going to be a point at which video and the characteristics of video go the step beyond film." ▲

The author has a masters degree in media laboratory at MIT and is a cinema researcher at that university.

Film Meets Challenge

One recent evening in Hollywood, as the Arriflex Corporation unveiled one more in a distinguished line of motion picture cameras — the 535 — its president, Volker Bahnemann, made the introductory remarks which included an appraisal of the historical challenges film has met and bridged. Here are excerpts from his speech:

"... Film celebrated its centennial in 1989. Film, as we know it, is 100 years old. This is quite remarkable since there are not many industries of similar longevity. Especially not any that had one of its biggest years in history coincide with its centennial. There is no doubt that film is doing well.

"Film is many things to many people. To producers, distributors, investors, it's a business. Their expectations and objectives are relatively short term, largely tied to the financial climate, interest rates and global capital structures.

"To the creative community film is art, and their objectives and aspirations regarding film do not necessarily coincide with or complement the ideals of the former. But the contribution of the creative community is undoubtedly the most important component and most responsible for film's enduring popularity.

"To us, film is technology! Along with others, our task is to enhance the artistic, creative possibilities as well as film's economic viability through the continuing advancement of supportive technologies. All elements are essential. All need to be progressive and compatible for film as an industry to continue successfully into its bicentennial.

"As with any other industry, film throughout its history has gone through cycles of crisis and adaptation. Film never lacked its prophets of gloom, but equally, it has been rich with visionaries willing and able to meet the perpetual challenges that time inevitably presents.

"In 1926-27, when talking pictures were commercially introduced, many in the field saw them as a threat, even as the potential end of the movies. Some could not adapt. Many others recognized the opportunity and benefitted greatly. Warner Bros. in 1926, for instance, out of economic necessity introduced the Bell Labs' sound-on-disc Vita-

phone system with the landmark film *Don Juan*. Starring both John Barrymore and a synchronized music and effects score, it put Warners back on a sound financial path. *The Jazz Singer*, starring Al Jolson in 1927, put both sync dialogue and new economic muscle into film. Clearly, here was a technology that advanced the industry.

"In the 1950s, when television exploded onto the scene, the business side of the industry initially perceived it as a threat. It envisioned itself with empty theaters and vacant studio lots. But artists created the bridge, and television eventually turned into the single largest growth sector for the film industry. Again, a new technology advanced the potential of the industry.

"Eventually, the ever increasing demand for programming created a new, independent layer of production, gradually changing the role of the major studio system. The studio system, once the common home for film, combining business, art and technology, also disappeared. In today's looser, independent environment, new impulses result in dynamic growth for the industry.

"More recently, in the early '80s, video and high definition started to cloud the happy scene. This time, the technologists pondered their imminent demise. Everything, so it seemed, was soon going to be recorded and beamed around the world electronically.

"Obviously, it hasn't happened that way. We believe that this latest change too, as so many before, existed as a threat mainly in the minds of the uninspired and the insecure. We saw, and with increasing confidence see, electronic imaging as an opportunity for film. In fact, the only way it could become a true threat is if we permit film technology to age to a point where it is no longer competitive or compatible.

"But that is not the case. Innumerable technical advances have been made, minor ones and major ones, which together keep film well ahead of competing imaging technologies. Advances made in film emulsions, such as Eastman Kodak's T-grain developments, have kept opto-chemical imaging film way ahead of even the most advanced electronic imaging concepts. George Eastman started it 100 years ago. The company he founded is still a leader in the field today.

"ARRI, too, has been synonymous with film for 73 of those 100 years. ARRI, too, is still a leader in its field, and

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