Richard Leacock
Visiting Professor of Cinema
M.I.T.

Technology and Reality at the Movies

Richard Leacock
Visiting Professor of Cinema
M.I.T.

Technology and Reality at the Movies

Technology influenced the content of movies we remember, and it influenced the circumstances under which we saw them. A new technology of film-making will make possible a new kind of realism and a new kind of communication.

It has always been my ambition to get film-making away from technicians and into the hands of people who have something to communicate. Ironically, it seems that this will never be accomplished without becoming involved in precisely the technology of film-making, because it is technology that makes film-making inaccessible to communicators as it becomes more complicated and more expensive. The latest super-films cost something like twenty million dollars—enterprises that have more to do with investment banking than communication.

I am assured that "film is *the* medium today," that "everyone is into film," and I am aware that there is a vast army of young people making films. Yet I'm equally aware that they are constantly frustrated and that their work is in effect suppressed by the nature of the system of producing and displaying films. There is no alternative to this system because we have not found solutions to some important social and technological problems.

But before examining the frustrations of today, it would be useful to look briefly at the development of the technology of film-making. For in my view, the problems extend into the past: technology has dic-

tated the form and often the content of the films we remember.

The First Breakthrough

The films from the silent era that I still look at with great pleasure and that still seem almost modern fall roughly into four groups: those based on the ancient art of pantomime (Chaplin); those based on cinematic tricks (Keystone Cops); those that recorded real life (Flaherty); and those that used a stylized imagery of theatre or poetic form ("Caligari"). Then there are two groups that I find very odd to look at today: the "play films" in which a play without words was performed by actors reduced to making outlandishly broad gestures, while the medium tried to help elucidate the crude plot with titles; and the extraordinary development that took place in the Soviet Union where revolutionary themes had to be conveyed to audiences who could not read titles and, at least partly as a result, a form of gut sign language was developed. Combined as they were with revolutionary zeal, the Soviet films caught the fancy of those intellectuals who were just becoming aware of film as an art form.

I think most people would agree that the least interesting of all six groups was the "play film." Almost none have survived; the run of the mill Hollywood films—of which thousands were made, such as "The Eternal Triangle" with Mary Pickford—are amusing for about five minutes and agonizing after ten.

What happened with the advent of the first big technological change: sound?

There is almost no pantomine any longer, even though Chaplin, at that time a hero with a far greater following than Jesus and probably

greater even than the Beatles, resisted and resisted. His "City Lights" used speech noises, but finally he gave in and in a sense gave up.

The old cinematic tricks no longer worked. In a modern chase sequence, for example, the chase must be "realistic," largely because sound and dialogue impose real time upon film. In the wonderful, zany chases of the Mack Sennet period, action could be speeded up, wholly improbable cuts were possible—it was a cinematic fantasy. With rare and rather special exceptions, these cinematic fantasies died out.

The Soviet tradition, with the exception of a few films which used the image much as before, adding sound in an operatic rather than a realistic manner, completely disappeared. There was no further need for a sign language. Pudovkin's second sound film, "Suvurof," was nothing but talk accompanied by static images—an astounding transformation.

After a few years, the trend became very clear. The "play film," so unmemorable, though so numerous, when silent, had annihilated three species of film development, leaving itself and the recording of real life, the "Documentary," to react in their particular ways to sound.

The play film, using synchronous sound dialogue—with an overlay of music to give dramatic values to wooden acting—began to inch slowly toward the kind of "realism" that we accept today.

The Documentary in the Sound Era

A philosophy for the documentary had been well expressed in 1904 by Leo Tolstoy:

"It is necessary that the cinema should represent Russian reality in its most varied manifestations. For

this purpose Russian life ought to be reproduced as it is by the cinema; it is not necessary to go running after invented subjects."

However, this was an illusion for the time being. Without dialogue it was possible to communicate only actions and settings, with the natural result that people tended to make films on processes—the way Nanook builds his igloo, the way he catches a seal, or subsequent British documentaries on catching fish or blowing glass.

The new sound equipment meant little to documentary makers. It was hopelessly bulky and at first could be used only in studios. The result was a form of documentary that used silent footage and added a voice-over commentary. Music filled up the gaps. In the last gasp of an epoch, the form depended on stirring music, pseudo-poetic sound narration, and rich imagery that could often be made to serve just about any propagandistic purpose.

By 1936 sync sound equipment had developed to the point where film crews could "go on location"—a euphemism meaning that the location became a surrogate studio. The avant garde of the documentarians set out to mirror the real world in sound and pictures, a well intentioned aim that almost succeeded in killing documentary film-making and gave the word documentary a connotation from which it has never recovered.

A situation in real life deemed to be socially important was first "scripted." Then a veritable army of technicians with truckloads of equipment descended upon the hapless "real" subjects in their "real" habitat. Thousands of feet of electric cable were laid, acoustic blankets were hung to reduce the echo,

windows were covered with gelatin filters to reduce the intensity of outside light in relation to the interior artificial lights that were erected. A mammoth camera weighing some 200 pounds was mounted on an immense wheeled stand known as a velocilator, which made camera movements possible. A microphone boom was installed. The director would go over the "action" and the dialogue and then on into the full studio routine of "Lights! sound! camera! action!" with the added admonition from the director to the subjects to "relax and just be yourself."

It was not long before directors who wanted to achieve a "natural" effect realized that this could better be done by employing professional actors to replace the "real" people. In short, starting with the best intentions, film-makers destroyed what they had set out to capture, then recreated a grade-B studio version that had no more validity than any other theatrical films.

Filming Reality

If we were ever to achieve any part of Tolstoy's dream we had to reduce the impact of the filming process on our subjects. Not only the documentary film-makers saw this need; actors in theatrical productions in play films are trained to be impervious to their surroundings, but of course they are not.

In 1959, Jean Renoir described the problem of motion picture technology in an interview with film critic Andre Bazin and Roberto Rossellini: ". . . In the cinema at present the camera has become a sort of god. You have a camera, fixed on its tripod or crane, which is just like a heathen altar; about it are the high priests—the director, cameraman,

assistants—who bring victims before the camera, like burnt offerings, and cast them into the flames. And the camera is there, immobile—or almost so—and when it does move it follows patterns ordained by the high priests, not by the victims.

"Now, I am trying to extend my old ideas, and to establish that the camera finally has only one right—that of recording what happens. That's all. I don't want the movements of the actors to be determined by the camera, but the movements of the camera to be determined by the actor. This means working rather like a newsreel cameraman. When a newsreel cameraman films a race, for instance, he doesn't ask the runners to start from the exact spot that suits him. He has to manage things so that he can film the race wherever it happens. Or take an accident, a fire. It is the cameraman's duty to make it possible for us to see a spectacle, rather than the duty of the spectacle to take place for the benefit of the camera. . . .

"The real creative artist in the cinema is one who can get the most out of everything he sees—even if he sometimes does this by accident. . . . The creator of a film isn't at all an organiser; he isn't like a man who decides, for instance, how a funeral should be conducted. He is rather the man who finds himself watching a funeral he never expected to see, and sees the corpse, instead of lying in its coffin, getting up to dance, sees the relations, instead of weeping, running about all over the place. It's for him, and his colleagues, to capture this . . ."

Cinema Verite

It was after chasing Leonard Bernstein on a conducting tour of Israel with the ridiculous equipment avail-

The development of synchronized but unconnected recorders of sound and motion produced a movement called Cinema Verite, Direct Cinema—anything but the tainted word "Documentary."

able at the time that I became directly involved in the search for a technological breakthrough. Had the motion picture industry or TV been remotely interested it might have happened more easily. However, they were not and are not interested.

The problem as we saw it was to reduce the film-making unit to two people, one person with a silent, manageable camera which could be held with no supports, braces, or other prosthetic devices on one's shoulder, the other person with a small tape recorder and microphone. Motion and sound were to be fully synchronous with no wire connecting the two devices that recorded them.

In the Fifties, the development of magnetic tape recording, the invention of the transistor, and the development of miniature, low-power circuitry that resulted, soon made possible this second technological leap that would produce a radical change in documentary filming.

By 1960 we had a working unit and the revolution was on. The movement that started then has been called Cinema Verite, Direct Cinema—anything but that tainted word "Documentary." Whatever it is called, the emphasis is upon realizing Tolstoy's dream, making it possible to go out and observe life with radically less interference with the situation being recorded.

It was not long before play film makers started to use the same techniques, in which the camera is able to respond to a form of acting, much of it improvised, just as it would to a real situation. But perhaps a more important effect that this technique of filming has had on the play film is to expose the "reality" that was so much in vogue in the '50s and '60s as a shallow hoax.

For the final effect of film as a distortion of reality was a profound one: whereas 60 years ago most of what people knew was from their direct experiences, as the media developed, more and more of what we experienced was at second hand, highly prejudiced, and largely myth.

For example, I think that I know pretty well what goes on in courts of law, but when I question this belief I have to admit that I have never in fact been in a courtroom during a trial. My experience is based purely on films, television shows, and detective stories, which, I suspect, may well have been directed and even written by people with no better credentials than my own. Further, I had thought I had a fairly clear idea of what would happen if war were declared, but the period following the attack on Pearl Harbor was utterly different from my movie-myth; as far as I could observe, just about nothing happened around me. I have seen film versions of the Nazi takeover in Germany but I knew the films were wildly inaccurate because in this case I had my own experience: I lived in Germany for several months in 1936 and '37. The shift was far more subtle and therefore far more difficult to oppose.

We may now be seeing play films moving more and more away from ersatz-reality toward a more stylized and truly theatrical form, with much less of the "this-is-the-way-it-really-is" approach. Play films may be moving toward a poetic style attempted by a very few films in the silent era.

Today's Solutions...

We are now going through the painful process of manufacturing the first models of a complete Super-8 film-making system that is both sophisticated and cheap. This system was designed for student use but clearly will have far wider application. It is possible, by editing film footage and transferring the edited version to color video tape, to make a 20-minute film in color with sound sync for an out-of-pocket cost of about $180. If such a film could then be distributed on cheap video discs to be played on your home TV, then surely the basis for change exists.

Wherever possible, our system is based on existent mass-produced items, modified to do things they were not intended to do. The camera is a standard Super-8 camera encased in an aluminum box to suppress camera noise. Its motor is controlled by a quartz-crystal oscillator so that it transports film at precisely 24 frames per second. A separate cassette tape recorder, completely independent from the camera, is modified so that a 48 hz. crystal-generated control frequency is recorded on the tape with the sound track. Later, the sound is transferred to Super-8 sprocketted magnetic sound film by a "black box" that uses a photocell to count passing sprocket holes and compares that rate with the control frequency on the cassette. Thus the sound, now on sprocketted magnetic film, can be exactly matched to the images recorded by the Super-8 camera.

We designed almost from scratch an editing table similar to the new horizontal tables recently developed in Europe. It plays the Super-8 format visual and sound films simultaneously.

The edited sound tape is finally loaded on a transfer machine, and the picture on a modified mass-produced projector. The two machines are held in sync by the same "black box" used in sound transfer. There are many alternate final forms to

4

The word for these stills from the author's "Happy Mother's Day" is "grainy." Hollywood's stills are posed; these are enlarged frames from Richard Leacock's film about a town's celebration of the birth of quintuplets. Above, the American Legion Band, and at right, the parents "acknowledging the applause from an open touring car." With 24 frames per second presented to the human visual system, movies can produce more than the illusion of motion. Since useful visual information is randomly blighted by graininess in each frame, human vision's integration process also yields sharper perceived images than are actually present on any one frame.

choose among. The sound can be transferred onto the Super-8 film that recorded the image, the film can be blown up to 16mm, or the film can be projected into a tele-cine chain that produces videotape, such as a ¾-inch video cassette, or ultimately video discs for mass distribution.

... and Today's Frustrations

So the technological problems are being solved. But it is not yet much easier to make films, and it is certainly no easier to get them shown.

Today, sophisticated equipment—both 16mm and Super-8mm—could be manufactured cheaply and easily. But it is not being done.

There are people who manage through sheer cussedness to get the expensive equipment and make films for an audience small in comparison to the audience for which television fare is deliberately designed. However, with very, very rare exceptions these films fail to reach their audience and cannot pay for themselves.

The problem is that an LP record that sells 100,000 copies is a success. A book that sells 100,000 copies is a success. But a film that is seen by only 100,000 is a disaster, and a television show that is seen by only 9,000,000 is also a disaster. Besides production cost, the main difference between books and records on the one hand and theatrical film and television on the other is that the former has a selective audience. There may be only five people in Aberdeen, South Dakota that want to read a book or listen to a record; they can. But imagine putting a film in Aberdeen's only movie theatre for five people, or using prime time on the tube for that sized audience. Scandalous!

Let us speculate on what might

5

happen if sophisticated equipment —either Super-8 film or video tape equipment—could be manufactured for a tenth the price of current "professional" equipment (and it can be) and that this equipment will make products (works of art?) in a convenient form (such as some sort of cassette; they already exist in various forms) that would cost a tenth of what normal films cost, and that these products would be available at your local supermarket for rental or purchase, and you could take them home and run them on your television set at your convenience, with friends or alone, without having to hire a baby sitter, find a parking place, stand in line, or go through any other aspects of the ritual of "going to the movies." Then surely we will have a different fare available to us.

The Relevance of Quintuplets

One of the most difficult questions is always, What should one make a film about? The normal approach of institutions such as television networks and the foundations is that films should be about subjects of general social importance. This approach sounds reasonable, and I accepted it for years. The problem is that it is largely meaningless; "Old Age in America" and "Pollution is Just About Everywhere" are among the current virtuous subjects, but such broadly nebulous themes almost never yield good films. These themes tend to push people in what I have come to regard as a dreadful direction.

Some of the very best films that I have ever been involved in making have been on trivial and even absurd subjects. Some years ago, James Lipscombe, who worked with us on a series of experimental films for

Time Inc., kept insisting that we should make an hour-long film, at a cost of something like $80,000, about a football game that takes place between two high schools every Thanksgiving Day. Now I don't think any responsible executive of a serious enterprise would go along with such a project, but Bob Drew, our producer at the time, understood. The film was made. Several two-man crews observed what was going on in both schools for days before the game. At game time we had as many as eight crews, two assigned to film nothing but the coaches, others covering players driving to the game, in the locker rooms, on the sidelines. Entitled "Mooney vs. Fowle," the film is to my mind a most extraordinary social document.

I was once asked by the *Saturday Evening Post* to make a film about a woman who had just given birth to quintuplets in South Dakota. They wanted the film in order to exploit the situation—that is, for what I regard as the wrong reasons. Joyce Chopra and I made the film, also for the wrong reasons—we were broke. The events we filmed culminated in a spectacular celebration of the one-month birthday of the quintuplets, including a speech by the mayor wherein he says, among other things, that "never before in the history of the United States has a city official borne the responsibility that I bear today." This is followed by a soprano singing "Moment Musicale" to the stunned amazement of our honored parents, and a parade, complete with the American Legion Band, drum majorettes and the mother and father of the quints, acknowledging

the applause from an open touring car.

My point in telling all this is that when I went to work on the film I thought it was a stupid idea. It was only in the making of it that we discovered we had a fascinating film. The *Saturday Evening Post* rejected it.

Do you think for a moment that the head of a TV network would have sent a film crew on a five-year voyage with a young biologist (no Ph.D.) on the Beagle? Has anyone seen films made by blacks on how a black child learns that white people have no use for him? Are the people of the so-called underdeveloped countries in Africa, Asia, and South America making their own entertainment films, educational films, observational films? Why not?

If it doesn't begin to happen with a breakthrough in technology that makes all this at least feasible, then we will know to look somewhere else for the bottleneck, because this dream of a simple form of communication constantly recurs. Let us go back to 1920 and Dziga Vertov in the first years of the Soviets. Here are his slogans:

1. Filmdrama is the opium of the masses.

2. Down with the immortal kings and queens of the screen! Long live the ordinary people filmed in everyday life and at work.

3. Down with the bourgeois imagination and its fairytales! Long live open everyday life!

4. Filmdrama and religion are deadly weapons in the hands of the capitalists. Only through showing our revolutionary daily life do we strike the weapon from the enemy's hand.

5. The modern art-drama is a relic of the old world. It is an attempt to press our revolutionary reality into reactionary forms.

6. Down with scenarios of everyday life. Film it directly and as it is.

7. The scenario is a distortion of our life which the writer imagines; but we live our lives and are not dependent on fiction.

8. Everyone works and does not disturb others while they work. It is the task of the film-maker to film the people in a way which does not distract them from their work.

9. Long live "Kino-eye" and the proletarian revolution!

But when I look at Vertov's work—aside from his newsreels of famine, extraordinarily honest, but they could show no more than the physical horror of what was happening—I do not find the films he is describing above (a splendid program and exactly what I have been advocating if one removes the revolutionary rhetoric and cliches). Some think that Vertov was prevented from making such films. I think that it was simply impossible because the technology of the time did not permit it and this caused him to retreat into contrived and tricky films such as "The Man with a Movie Camera," which got him in trouble for being "formalistic"—and no doubt "right deviationist," "revisionist"," etc., etc.

I do not wish to imply that all that we are going to get from the new technology will be a multitude of reflections of peoples' realities. The coming breakthrough is going to result in an avalanche of films, hopefully all manner of mixed media, inventions, poems, new species of opera. Making a bad film is much less work than writing a bad book and less difficult than making up even a lousy song. But we, the audience (the consumers?), will be able to decide what goes and what doesn't go. I, eternal optimist that I am, think that given any opportunity, we really do seek to communicate with each other. And something *can* be done.