Redefining cinema: film in a changing age

26

Film and changing technologies

Laura Kipnis

The problem in writing this chapter is that by the time you read it, everything will have changed radically, once again. Electronic and digital technologies are having seismic, unsettling effects on the film industry, and film production practices are being transformed and retransformed on practically a monthly basis. Computers are increasingly affecting every stage of production. Traditional filmic processes are disappearing, replaced by new forms of digital image manipulation. Everyone connected with film is waging a valiant struggle to keep up with rapidly changing technologies, trying to make sense of the present, while simultaneously hazardiong calculated guesses about the future. Professional organs like American Cinematographer, which always viewed encroaching electronic technologies (such as video) with barely contained suspicion, are now suffused with free-floating anxiety, their articles permeated with loss and pathos about film’s potentially diminished stature in the digital age. One can hardly help but notice the emotional and at times overwrought language brought to bear on the topic within the world of film production.

The anxiety is not confined to the industry either. At a film studies conference in Chicago in 1996, academic panellists fretted about ‘the death of the camera’, and ‘the end of film’. Academics involved in teaching new technologies routinely speculate about the ‘end of narrative’, given the various forms of non-linear temporality and interactivity that new digital technologies have made possible. And now is our curriculum supposed to reflect the end of narrative, when we can’t even figure out what production technologies to invest in, given that every time you look up, another one is being phased out? And these changes aren’t entirely welcome ones. To the great detriment of independent filmmakers, Super-8 film is now virtually extinct
(although still making special guest appearances in features like Oliver Stone's *Natural Born Killers* (1994) to signal 'experimentation'), killed off quickly by the introduction of affordable and easy-to-use VHS camcorders circa 1985. (On the subject of technological change and uncertainty, let's not even get into the panoply of video formats that have come and gone over the last two decades, and how many carcasses of dead or dying production technologies litter our equipment rooms.)

Even the future of 16mm seems precarious, with support services—labs, sound services, projector-manufacturing—rapidly crumbling. Once Betacam camcorders hit the scene in 1982, news-gathering changed immediately to video, as did industrial and corporate film, as well as much documentary production aimed for broadcast. Eastman Kodak, the world's largest film manufacturer, has been struggling schizophrenically to keep up with these technological changes, shifting corporate strategies virtually from week to week—first moving into videocassette, then storing up film production and fighting to ensure that film would remain the favoured origination medium in image-based mass entertainment, now jumping feet first into digital imaging. Kodak has laid off at least 17,000 employees in the United States and over 30,000 workers abroad since the mid-1980s, in corporate belt-tightening occasioned by a series of bad forecasts about new technologies and heavy worldwide losses. Kodak's Rochester workforce has been downsized—to use the current euphemism—by 40 per cent in the same period. Rochester, NY, had long been something of a company town treated by Kodak like a favourite nephew; more recently the company has vastly retreated from this century-long civic commitment. These changes in technology don't affect filmmakers alone or happen in a social vacuum; they have had sweeping repercussions everywhere, from international markets to local issues like health care for Kodak's retirees—even down to the specifics of the number of hospital charity beds available for the poor in Rochester.

In short, the language of crisis, loss, and uncertainty is endemic to anything connected to film these days. It may be that these are the linguistics of any period of rapid technological transformation, and that at the birth of radio, or of film itself, or the introduction of film sound, or the invention of television and early computers, similar anxieties reigned. Or it may be that digital technology will transform all things, including film, beyond recognition and that what we are hearing now are merely small rumbles compared to the thunder of stampeding elephants coming over the horizon.

At the same time as technological changes in film-related industries are having sweeping material effects in terms of jobs and markets, transformations in image-making procedures brought about by digital technologies are spawning complex theoretical questions about the ontological status of the filmic image itself. Can a photograph be considered evidence of anything in the digital age, and if not, what does this mean—aesthetically, socially, or juridically? It has now become routine, via the magic of digital manipulation, to see long-dead cult actors like Humphrey Bogart or Jimmy Cagney 'interacting' with live actors in commercials; or to witness 'character replacement'—for *In the Line of Fire* (1993), footage of George and Barbara Bush disembarking from Air Force One was digitally scanned, and actors playing the First Couple were composited into the image. The truth-status of any given image is anyone's guess. Or if there is no 'original' but only endless perfect digital clones, does this have implications for how value and meaning are assigned or experienced? How photographic technologies work and how they make images available to audiences—questions of reception—open onto an array of impossibly large questions about referentiality and indexicality, onto questions about mimesis and realism. Issues of photographic reproducibility, as Walter Benjamin has so famously pointed out, are inseparable from even larger issues of modernity, capital, and their respective ideologies. And will the new modes of interactivity make linear narrative obsolete? This is certainly a question with ramifications far beyond film studies, as narrative seems to be one of those basic categories of human conceptualization.

Or, taking the long view, are interactivity, non-linearity, and the 'digital revolution' a bit over-hyped, and are we falling into a romantic and narrow technological determinism if we envision that new technologies alone will alter something so indelible as narrative, or vastly change something so much a facet of contemporary culture as film? And is all of this really so new? After all, the mute button on your television remote control is an interactive technology. Non-linear narrative has been a staple of modernist experimentation for most of this century (or since the invention of the unconscious, if you consider dreams a media form). And are computer-generated images any completely
different from the use of models, mattes, optical
effects, rear projection, and a host of other ways of
manipulating images that have long
been staples of cinematic technology. In other words,
does the photographic or filmic image ever have any
particular relation to truth or evidence to begin with?

And does it really matter whether these dinosaurs are
miniatures or computer-generated, optically printed
or shot against blue screen or digitally composited?
Should the mode of production of the image change
the kinds of theoretical question we ask about it? So,
for example, if a filmic image no longer originates in a
'pro-filic event', but is generated by a computer,
does that necessitate revisions in theories about realism
and reception? If a character in a film isn't
portrayed by an actor acting, but is the result of
manipulating scanned images of numerous faces or
bodies, for instance, do new theories about identification
need to be devised?

But as technological changes are provoking or
reproving such epistemological uncertainties, let
us remember that these revolutionary new technolo-
gies are social technologies, meaning that their revolu-
tionary potential is limited to the uses that surrounding
social institutions and economic forces allow to be
made of them. The captains of industry have a lot
invested, in all senses of the word, in hooking us on
ideologies of continual technological obsolescence
and change: if, as in one proposed scenario for the
future, movie theatres stop projecting film and convert
to screening high-definition television (HDTV) signals
beamed in by satellite, some lucky captain of industry
and his stockholders stand to make a megafortune on
the deal. Or, will HDTV—the latest much-hyped
thing—eventually go the way of 3-D film, into the
trash-heap of technological also-rans with all those
cute little cardboard 3-D glasses? And do consumers
really care about television images with better resolu-
tion, or do they care to the tune of the several thousand
dollars they'll have to spend to convert to the new
system, if it ever gets off the ground, which still seems
doubtful? Do you? It is estimated that consumers will
be forced to spend $75 billion to upgrade old television
sets once the conversion to HDTV is complete.

But before you whip out your credit card, keep in
mind that much of the fascination with newness and
innovation, our beliefs in progress and the necessity of
change, have ideological implications and serve spe-
cific interests, namely those of capitalism's ongoing
necessity for new markets and fresh innovations to
keep itself viable. And despite the hype about inter-
activity and revolution, the centre of the flow of cultural
influence and power are not likely to change one bit, and neither
is the direction of the flow of cultural products, or the
tendency towards global domination of cultural markets
by big capital. Rather, digital reproduction will most
likely simply aid the penetration of new markets by
multinational media conglomerates, creating new
delivery systems for not-very-new and hardly-very-dif-
ferent images and information.

So if film studies has been somewhat slow to come to
terms with a changing apparatus, or to theorize the
shifts in film language and grammar that technological
change seems to have so rapidly brought about, the
reasons are understandable. As I have tried to indicate,
these are impossibly large questions, and unfortu-
nately this article too cannot even begin to attempt
to answer them: predicting the future, or revamping
film theory, or performing large-scale social analysis, or
even offering detailed comparative historical case-
studies in previous technological changes are all
beyond my scope. Instead, let us call this chapter
both a case-study in technological innovation (and
particulatly in the anxiety of technological innovation),
and an experiment in how to write about technological
innovation from within the midst of the maelstrom,
where things are both nebulous and hopping about
drastically from one moment to the next, like Silicon
Valley techno-nerds on No-Doz and caffeine highballs.

Film and video

But another reason for the hesitation around technolo-
gical change is that film studies is, to a large extent
precisely distinguished from film as a discrete
technology. The same understanding permeates the
industry's discourse about itself. I would like to suggest
that, historically, film has constructed an identity for
itself that was maintained by erecting a somewhat
fictive separation between itself and neighbouring
electronic technologies, and that changes in technol-
yogy are making this separation increasingly proble-
matic.

One of the ways that film studies has been able to
achieve credibility as an academic discipline in the
humanities is precisely to distinguish itself from tele-
vision, to claim (and produce) a more elevated and more
high-minded status for itself, that is to distinguish film
as art—or 'Film Art' (the title of a well-known introduc-
tory film textbook—from the noisy lower orders of video and television. Perhaps this imperative even factors into which film theories achieve success as paradigms for the field, and which fade away: the emphasis on film as a discrete technology and on cinematic specificity seems to be maintained within the dominant traditions of contemporary film theory, such as apparatus theory (Rosen 1986).

What will be the fate of dominant film studies paradigms in the face of technological shifts that attenuate the distinctions between the film and electronic technologies? It now makes less sense than ever to speak of ‘film’ as though it were a discrete technology. But, in fact, if you examine the recent history of film technology, it appears that, despite the conventional academic separation of film and television studies, in practice film and video have been quite interdependent and increasingly proximate for at least the last twenty years, that is, ever since the introduction of the Rank-Cintel Flying Spot Scanner in 1972. What the Rank-Cintel did was obviate the difference in frame rates between film (24 frames per second) and video (30 frames per second) in film-to-video transfers. You don’t really care how—the important point is that this opened the possibility of reinventing the entire method of film post-production and distribution in North America, because now origination medium wouldn’t necessarily determine the finishing medium. In other words, something could be shot on film, and edited and finished on videotape, and released on either film or video.

The advent of digital non-linear editing (the Avid is the best-known example) has pretty much finished off film editing: even films that are theatrically released on film are almost universally edited electronically (either on tape, or on a non-linear system) before being reconstituted on film. And of course film-to-video transfers opened up the possibility of the home rental market, which has had a major transforming effect on all aspects of film financing, production, and viewership, not to mention transforming film studies and education, given the new access and availability of film. The unfortunate casualty has been the 16mm film print business, pretty much dead and buried.

Other major intersections of the two technologies are video assist on film cameras, in which a video tap on the film camera allows the image (or a black-and-white version of it) to be viewed on a television monitor on the film set, instead of waiting for the film to be processed, printed, and returned from the lab the next day. This, as you can imagine, has had a decisive effect on the directorial process, and on film sets. Francis Ford Coppola now directs from an electronically rigged trailer off the set, where he can view the unfolding scene on television monitors, rather than, as was once the practice, from on the set, and in proximity to the actors.

The ever-greater commingling of film and video seems to provoke a certain state of alarm, and indeed acrimony, on the part of the film profession, or so you would infer from the language used to describe the experience. Video technology is encroaching on traditional film production techniques from several directions—advances in video assist and the dreams—and nightmares—of many directors of photography (Brandt 1991: 93). Or ‘A lot of film showmen and editors come to video with a queasy feeling, a sense that they’re about to surrender control of their work.’ Film folk get the ‘flutters’ when they approach video, according to this author, who begs the reader not to conclude that he has been seduced by the ‘mindless and endless proliferation of video technology’ (Roland 1992: 53–4). So while there is no argument that computer-based random access editing—which is to video editing what word-processing is to typing on a typewriter—is incredibly convenient and allows editors increased flexibility and creativity, it is still an experience fraught with risk. According to American Cinematographer, it’s only natural for an experienced professional to feel some trepidation towards new technology, especially in a historically hands-on task like film editing. One [film] editor who recently tried our system for the first time was very, very nervous, recalls the vice-president of a company manufacturing digital editing systems; ‘He actually got a piece of film and attached it to his desk, so he’d still be able to touch film’ (Pizzello 1994: 22). Or, ‘Rostock, like most film editors, initially resisted the idea of editing film on tape . . . She still has fond memories of film cutting, however. “There’s this whole cosmic thing about wanting to touch the film, which I still miss, and you can’t mark tape with a grease pencil!”’ (Conner 1992: 26–7). Anecdotes of this sort are quite typical of the curiously emotional tone of much of the writing about new technologies from within the film profession—as is the somewhat tiresome and slightly ponderous status accorded to film in these accounts. And I can personally testify that one quite often does hear film makers, when discussing the inferiority of video to film editing, invoking this loss of ‘touching film’ as if
The film-to-tape transfer—also known as the telecine process—and the site of greatest full-body contact between film and electronic technology, becomes, perhaps predictably, a scene of particular fretting and distinction-making. One reason, of course, is that film and video still do have different aspect ratios, one of the problems HDTV is meant to solve. Film has a wider frame than video, and when transferred to video, only the centre of the film frame makes it to your living-room. To compensate, especially on the widescreen film formats, video engineers often add camera movements the director never intended (this is known as 'pan and scan'), by panning to the edges of the film frame itself during the transfer process, thus enabling viewers at least to see any crucial action instead of lopping it off. This is a less than happy solution, but so is 'letter-boxing', in which widescreen films are shown full width, but squeezed down to microscopic size, with bands of black at the top and bottom of the video frame. Most directors, knowing their films are eventually destined for television, simply do not employ the edges of the frame for significant story information, in a routine compliance of aesthetics with commerce—another defeat of film's breadth by video's narrow frame.

It is these resonances and connotations that need to be pointed out, rather than focusing on the obvious material differences between film and video. The more interesting question is one of assigned differences: how does value come to be attached to what are mere distinctions, and how has film's discourse about itself relied on hierarchizing such distinctions into relations of value and merit? Like the penchant for touching film, when you start looking closely at these things, they can start to seem rather odd.

In reading over the last ten years of American Cinematographer on the subject of film's relation to electronic technologies, one can't help but notice that the vocabulary brought to bear on the subject—which often relies on metaphors involving the lack of a 'shared language' and corresponding concerns about 'relationships', 'communication problems', and 'incompatibility'—seems oddly reminiscent of the vocabularies associated with other hotbed issues involving cultural confrontations with 'other' like race or immigration, in which language differences also become a way of articulating boundary anxieties. Language issues are also typically a mechanism through which the 'other' is inbricated into a structure in which dissimilarity is redefined as inferiority, and in which cultural differences are rearticulated as hierarchized oppositions. So the fact that, from within discourse, video didn't speak the right language is significant in its fall from value. It is not simply a different technology, it is figured as a social inferior. My point here is not that the film-video opposition has crushing social significance on the order of race or immigration issues, or that we should bring humanitarian empathy to bear on video's plight, but that discourses about social technologies can be seen to follow certain conventions of the social and linguistic contexts they inhabit. And I am suggesting that these discursive conventions have had significance in both the film profession and film studies, and that current shifts in technologies—in which video and electronic technologies are permeating film far more than ever before (and perhaps eventually displacing it)—are making this more apparent.

Typically, an article in the March 1993 American Cinematographer on 'Telecine: The Tools and how to Use Them' (Harrell 1993) focused less on material differences like the 'pan and scan' problem than on the cultural differences—the shared-language problem. Film people just don't know how to talk to telecine operators. The kind of 'close relationship' that exists between a film's director of photography and the film's colourist, that is, between two film professionals from the same world 'is very much a personal relationship'. But, conversely, 'telecine color correction and movie color timing are two different worlds'. The shared terminology that has been honed and developed for nearly a hundred years 'in film' hasn't yet been fully developed'. And, in that what makes film an art is the photographic intent of the film, or what director of photography Conrad Hall calls 'the artistic use of color, grain, sharpness, darkness and motion', the fear is that, left to the mercy of the telecine colourist, this art will be lost. So, it looks to the telecine operator to make film art work for video technology' (my emphasis).

So the language difficulties become a way of erecting an anti-technology opposition, and that opposition is one of the most frequent ways that film figures its
CRITICAL APPROACHES TO WORLD CINEMA

distinction from, and hierarchizes its relation to, video. I think this is worth a closer look. The typical form this distinction takes is that film is human, sensuous, and creative, while video is dominated by machines, engineers, and technocrats. (Thus the control functions of the telecine colorist are described in the American Cinematographer article as looking like “the cockpit of a 747”.)

To those outside the field, film’s aversion to video, or its relegation of video to the sphere of technology, might be seen as merely an instance of what Freud referred to as the narcissism of small differences. Many people can’t even tell the difference between something shot on film and something shot on video, particularly on broadcast television, which reduces the appearance of the difference anyway, by squashing the number of lines of resolution (a measurement of the quality of picture information) down to television’s bandwidth. (If you are one of those who can’t tell them apart, think about news, soap operas, live sports: that’s video. Hour-long dramas, movies of the week: that’s film. See the difference?) The difference between the look of the two is diminishing with the advent of digital video cameras, which feature controls that allow you to shape the look of the picture to make it resemble film, adding grain, flicker, and diffusion.

But video does look different from film. It is not only its lower resolution: video can’t reproduce the same contrast ratio from lights to darks, meaning that it has less range, and gives less detail at either end of the light-dark spectrum. A consequence is that there are certain technical rules about how light your video whites can be and how dark your video blacks can be, and how vast a difference between the two there can be, particularly in broadcast situations. So video is routinely bad-mouthed in film discourses for allowing less latitude to the cinematographer, and thus less creative freedom, and less ‘art’. And the fact that television engineers do get the final say about what may or may not be broadcast leads to no end of arguing by cinematographers that video is a medium overruled by control-room engineers and soulless technocrats, not artists, because if your blacks are below 7.5 and your whites above 100 on a horrible contraption called a waveform monitor, you may have won an Oscar for cinematography, but your masterpiece won’t go on the air.

So when filmmakers approach video, it has usually been with great trepidation about losing their souls in a devil’s pact with technology. The arm’s-length distancing is evident in the jacket copy from a widely used 1985 (that is, pre-digital) American Society of Cinematographers handbook whose project was exactly to forge some heretofore unknown rapprochement between film and video via what would have previously been thought an oxymoronic title: Electronic Cinematography: Achieving Photographic Control over the Video Image. The jacket reassures the nervous cinematographer:

Here’s a book that uniquely demystifies video and reveals its creative potential. The authors, who have worked on both film and video, approach electronic cinematography from the point of view of the cinematographer, rather than that of the engineer... If you are interested in combining the refinements of motion picture film techniques and aesthetics with the technology of video, you will find a wealth of applications...

The book requires “no previous electronics experience”, the reader is assured. Once again, film is the realm of aesthetics, video is technology.

But let’s get real. Shooting film can hardly be considered less technocratic than shooting video, and is actually far more technically difficult, requiring precise measurement of light, detailed knowledge of arcane things like sensitometry, and a somewhat overstructured relation to numbers: between film stocks (7287, 5298), film speeds (250, 500...), frame rates, f-stops, lenses, the Kelvin scale (a measurement of colour temperature), footcandles (a measurement of light intensity), and wattage (the power drawn by lights). These hardly seem as “technological” as more sensuously personal than anything you would encounter on a video shoot.

Perhaps the art-technology distinction starts to seem a little more jiffy. Now a hard-core film buff will probably intervene at this point to insist that we talk about the quality of the image, and the “artfulness” possible with film that simply can’t be achieved with video. And video often does look different from film, but that is also largely the result of the uses to which it is put. Video does do a technically less precise job of directly reproducing reality with the same degree of detail and verisimilitude, even though it tends to have a “harder edge” and a more “real” look. But this look of “realness” is, to a great degree, a product of video’s historic association with electronic news-gathering: ENG: it is a convention, not an essence. When cinematographers want to make video look more like film, they will actually try to fuzz that hard edge somehow.
using diffusion or filtration. Film may tend to look more beautiful, but this is also, to a great degree, a matter of convention: it is generally lit differently (low-key or gay, as opposed to high-key and functional), and for different purposes.

But the issue is the way in which material distinctions and differences between film and video become expressed as relations of value, and the issue of value is never far away from any discussion of film/video distinctions. One reason may be that, as one filmmaker philosopher put it, 'In shooting on film you're shooting on precious metal, that is, silver. With video technology, you're shooting on silicon, which is essentially dirt.' It may not be exactly the silver-dirt distinction that lends film its aura of preciousness, but the fact that this makes film costs subject to fluctuations in the silver market. Film does cost more to shoot and process. Consequently, video is often shot in situations where money needs to be saved, for example lower-status genres like sitcoms or soap operas, or to advertise lower-status consumer commodities like used cars or down-market furniture, or in live (and thus usually more passing and disposable) programming like news or sports. So it may be that video has come to be associated with cheapness, with the momentary, the real, the quotidian. So it starts to look cheap, while film, by contrast, comes away with higher-class status. It starts to look richer, and this, I'd suggest, is a sub rosa aspect of the romance about film. And, of course, you only see video on television, for free, in your home, whereas the optimal film-viewing experience is after you have travelled somewhere and paid for your seat.

So, in short, the film-video distinction has come to have certain class connotations that are piled on top of the other oppositions already in play: art-technology, silver-dirt, higher genres-lower genres, and cinema-television (even though 75 to 85 per cent of what is broadcast on prime time US television is shot on film).

**Film, video, and digital culture**

This brings us back to the present, and to the vast changes sweeping the world of production. How exactly do they affect and trouble the status of film? Well, a new generation of digital video cameras has recently been introduced by Sony that is said to rival 35mm film in terms of image quality. New advances in digital cinematography software allow camerapersons to simulate different film stocks on video, by selectively adding graininess or other film characteristics, to boost particular highlights, alter colours, change the overall tonal scale or contrast ratio—all previously activities proprietary to the 'art' of cinematography. The first all-digital live-action filmless movie was shown at last year's Sundance Film Festival, about which American Cinematographer wrote, 'The Berlin Wall between film and video may or may not be tumbling down. But if the recent all-digital production of Mail Bonding is any indication, there may be some serious cracks in the separation between these two media' (Kaufman 1995: 50). It is interesting to note, though, that three years earlier the magazine's editor had announced breathlessly, 'Cinematography now stands at the crossroads of film, video and computer technologies' (Heurin 1992: 25). The film world still seems unsure, regarding electronic technology, whether the Cold War rages still or détente has been achieved: should we pull up the drawbridge or welcome the invaders with cake and punch? Even though video technology has been in bed with film for at least twenty years, the profession, with a certain symptomatic disavowal ('yes I know, but . . .'), seems to keep greasing it anew.

Anxiety and disavowal are typical responses to unwelcome change, but what might also make film particularly prone to a current sense of instability is that, as I have suggested, it had never completely habituated itself to the presence of electronic technologies to begin with, and the technological changes currently under way seriously muck up the distinctions that have traditionally structured film's own discourse about itself. If digital technologies will allow video to rival 35mm film in terms of image quality, positioning electronic technologies to share in 'film art', perhaps it starts to become more apparent that the deeply held conviction that film is art, not technology, is something of a smokescreen for another material issue: that film is, of course, really, a vast business. It is economics, not art, that drives the development of these new technologies and their applications, just as it is economics that has driven the film industry from its inception. It seems fairly clear that one way film has played out its anti-commerce ambivalence is by assigning all forms of such crudeness to the realm of video, while clinging to the notion of itself as somehow purer, an 'art form'. Even film academics, who might seem less likely to buy into the art thing in any wholesale way, can regularly be heard disparaging and distancing themselves from television studies. The Society for Cinema Studies,
the leading film studies professional organization, has only recently contemplated changing its name to allow some allusion to television.

It may be that film is on its last legs. Speculation is currently running high that economic forces will inevitably lead to electronic distribution of theatrical features, and to the demise of projected film. That is because it is ultimately cheaper to distribute electronic images and sound via satellite, fibre optics lines, or another carrier than it is to mass-produce film prints and physically deliver them to theatres. And instant home distribution of first releases by satellite (with pay-per-view by credit card) is even more financially advantageous because producers could recoup on their investments almost immediately. If 60 per cent of revenues are now generated by video distribution a year after a theatrical release, financiers are carrying those debts until the features hit the home viewer. Why wait so long? The most dire scenario for film is that there won’t be sufficient economic incentive for film manufacturers to compete, and that there will eventually be a transition away from film as an original
What is the future of film and changing technologies? A general sense of impending loss permeates much of these discussions. What seems to provoke ambivalence about so much of this technological change is the sense that something ‘human’ is being lost, or shunted aside. There is a definite loss of older crafts and craft knowledge: film editing is virtually dead, along with special effects crafts like mould-making, casting, modelling, drawing, to mention optical compositing and effects. Matte painting is on its way out, replaced by computer workstations. One response has been a defiant quasi-Luddite return to older technologies. Tim Burton’s The Nightmare before Christmas (1993) had a cast entirely composed of puppets, bringing stop-motion photography back from the edge of extinction because many older technologies like stop-motion, according to Ray Harryhausen—one of the big names in traditional special effects—lend a certain strangeness to fantasy films which is lost if you make a film too realistic. ‘You lose that dream quality’. Other special effects old-timers compare the cleanliness of computer workstations to ‘accounting procedures’ (Magrid 1994: 26–8). Perhaps there is the loss of something ineffably human in these new technologies. The two big hits of summer 1996, Independence Day (which had the largest openingbox office of any film in history) and Twister, are both noted for replacing ‘star power’ with massive computer-generated special effects. New computer software, such as the infamous ‘morphing’ technique of Terminator 2 (1991), becomes the stars of the big new blockbusters, which now tend increasingly to be written around new special effects rather than special effects being used organically to help tell a compelling story.

There has also been much post-Jurassic Park (1993) speculation that computer technologies will ultimately replace actors, sets, and locations with digital simulators; that ‘if an actor’s too fat to do movie number four, his head can be grafted onto somebody else’s body or recreated digitally’. Whether or not this is the wave of the future, Jurassic Park did, in fact, feature a computer-generated actor portraying a human: for the final seconds of the shot in which the T-Rex devours the attorney Gennaro head first, a computer re-creation of the actor was used (Magrid 1994: 30). Certainly cutting costs by eliminating actors is always an incentive. In Forrest Gump (1994) an anti-war protest scene involved a crowd of 200,000; all but 1,000 of them were digital replicants. Spiralling mega-salaries are the largest factor in out-of-control film costs, and film executives are starting to notice that big stars don’t necessarily generate big profits.

Forrest Gump was, of course, the breakthrough movie that digitally put words in former presidents’ mouths by ‘repudiating’ their lips, leading to much commentary and concern about the propagandistic or manipulative potential made available by digital technologies, in which every pixel in a frame can be endlessly manipulated and transformed. Says special effects artist Ken Ralston, ‘Forrest Gump’s shots of Hanks interacting with historical figures definitely pushes the outer edges of effects work, dabbling with what were supposed to be photographic documents of history. When seeing is no longer believing, the concept of photography as proof of anything seems on the verge of extinction. Here’s the technology to do really dangerous work.

Political, and cultural theorists, have been writing about the loss of a sense of history for some time now. So does a society get the technology it deserves, or technologies that make own dominant ideologies more visible, more livable? As American Cinematographer wrote with some excitement regarding the then revolutionary morphing techniques in Terminator 2 (you can now buy a similar programme for your home computer for under $200), ‘The big news was that the audience accepted an incredible illusion as reality, and they loved it.’ Well, it hardly seems like news, following on the heels of Reagan-Thatcherism, that audiences will accept incredible illusions as reality, or that the relationship between technologies and social ideologies has a certain quality of identity. The task is then, as usual, for independent imagemakers to work to utilize these new technologies to create images and contents that aren’t simply business as usual. Technology needs to be demystified, as do so cheap manufacturing oppositions between this or that technology on the basis of false notions of ‘value’. Instead, technology can be utilized to contest the forces of social amnesia, rather than reproducing the industry’s incessant bottom-line drive towards newer, bigger, shinier tech. What does it matter if independents produce more ‘artistic’ but equally tunnel-visioned technological metaphors, that is, succumb to experimentation as an end in itself? Too many young film- and videomakers have got caught up in mastering each successive new technology, each new computer-
imaging program, and end up producing pretty, technically competent wallpaper. Many of the most talented students seem to be producing the most vapid work, spending endless hours manipulating pixels into submission without stepping back to wonder what for.

Instead, now that it’s possible to alter landscapes digitally, perhaps we can think about using these ‘revolutionary’ technologies as tools to alter social landscapes in more permanent and even more unsettling ways, rather than being seduced into quiescence by the lure of the new.

BIBLIOGRAPHY


Millennium Film Journal (1995), Special Issue: Interactivities, 28 (Spring).
Williams, Raymond (1975), Television: Technology and Cultural Form (New York: Schocken Books).
Despite the centenary of cinema in 1995, it has been common in recent years to talk of the decline of cinema, and even its ‘death’. A number of factors have underpinned this kind of thinking: the decline in cinema attendances world-wide and a declining variety in film production, the loss of a certain kind of cinematic experience involved with cinemagoing, and a corresponding diminution of the cultural importance of film. There is certainly a degree of validity in these claims. Although there has been an upturn in a number of countries in recent years as a result of the opening of multiplexes, the global trend in cinemagoing has been downwards. At the same time, there has been a crisis in film production in a number of countries and a growing domination of the world market, outside Asia, by the output of Hollywood. Cinemagoing is no longer the central leisure activity it once was, even for those who attend the cinema, while the composition of the cinema audience has also changed, no longer consisting of the ‘mass’ of the population, but only a particular—mainly youthful—segment of it.

However, if we take into account the significance of television and video, this situation looks somewhat different. For while cinemagoing has been in decline, the actual watching of films has not, and is probably greater than ever before. This can be seen in the way in which the economics of film, television, and video have become increasingly entwined. Towards the end of the 1960s and the beginning of the 1970s the Hollywood majors were faced with economic crisis; by the end of the 1980s, however, they were once again restored to financial health. The key factor in this turn-around lay in the ability of the studios to adapt to, and take advantage of, the new video and pay-TV markets, the revenues from which soon outstripped those from theatrical release. Whereas returns from theatrical release (both domestic and foreign) accounted for nearly 76 per cent of studio revenues in 1980, these were only responsible for 32 per cent of revenues in 1990. In contrast, revenues from pay-TV rose over the same period from 4.8 to 9 per cent, while, most dramatically, revenues from video increased from 1 to over 45 per cent (Screen Finance 1993: 8). Thus, while cinema admissions over the same period fell in the United States as well as globally, this clearly does not indicate that films were watched less—only that they were increasingly viewed on the small screen (Screen Digest 1993: 204–5).

This means that, 100 years on from the first public film screening in 1895, films—whether broadcast or on video—are now more likely to be watched at home on television than in the cinema. But does this matter, and what are the implications of this for an understanding of the current situation of cinema? In order to answer these questions, it may be helpful to examine some of the arguments which have surrounded the development of the increasingly close relationship between film and television and the ways in which this has been perceived as both a loss and a gain.
Economics

As the above suggests, the drive towards a convergence of film and television has been economic. For although film and television have often been seen as clearly distinct (and even as enemies of each other), the relationship between the two has been complex and varied. As William Lafferty has argued, 'contrary to conventional wisdom, the economic relationship between film and television has a lengthy history' (1988: 273). He traces this relationship back to the 1930s, when Hollywood invested in television and radio broadcasting stations and networks as a means of controlling the development of a potential competitor, and also explored the potential of theatre television (see also Gomery 1984). These strategies, however, failed to bear fruit because of the opposition of the Federal Communications Commission, which was already concerned about monopoly tendencies in the film industry. Consequently, it is the 1950s which Lafferty identifies as the period in which a 'symbiotic relation between the film and television industries' was properly sealed (1988: 281). It was at this time that the studios fully opened up their film libraries to television broadcasters and began direct production of programmes specifically for television, leading to the emergence of the 'made-for-TV movie' in the early 1960s.

In doing so, Peter Kramer argues, the Hollywood majors were involved in a 'dual strategy' (1996: 38). On the one hand, the majors adapted the processes of the old studio system to regular production for the television audience; on the other hand, they sought to 'differentiate' the cinema film from television through investment in special 'blockbuster' movies (characterized by the use of new technological developments, special effects, and spectacle) that would continue to attract audiences into the cinemas. Despite the growing dependence of the big-budget 'event' movie on small-screen media for the generation of revenues, Kramer argues that this is not as contradictory as it might at first seem. For it is precisely the 'lure of the big picture'—the 'grandeur and mystique of cinema'—which he argues provides a major part of the film's appeal for the television and video audience (12).

This 'dual strategy' may also be linked to changing modes of movie consumption. For the majority of people, the actual activity of cinemagoing has become much less regular and more of a 'special' activity than in the heyday of Hollywood's studio system. The social character of the audience has also changed, with the bulk of the moviegoing audience belonging to the 15–24 age-group. In contrast, films on television and video are watched by an older and more socially diverse audience for whom the activity of film viewing is often regular and habitual. Thus, in the case of US telefilms, Laurence Janvik and Nancy Strickland argue that, despite their low critical status, they often attract audiences well in excess of theatrical releases and that 'the enormous viewership for movies-of-the-week and mini-series parallels the huge regular moviegoing family audience of Hollywood's Golden Age (1988: 42). However, while much more time is now spent watching films of all kinds on television than in the cinema, questions also remain. As Sylvia Harvey suggests, it is important to consider the significance of the time spent watching films not just in terms of 'quantity' but also in terms of 'quality' (1996: 241). A number of different issues arise in this respect.

Technology

In the first instance, the viewing of film on television or video inevitably involves a drop in technical quality. This has various aspects and includes a certain loss of quality in sound, colour range, and resolution (from 3,500 to 4,000 lines of resolution to 525 lines of resolution in the United States and 625 in Europe). There is also the vexed question of aspect ratio. Whereas the aspect ratio of television is normally 1.33:1, films since the advent of widescreen processes in the 1950s—have characteristically been shot in much more rectangular ratios (such as 1.85 or 2.35:1). In order to accommodate films to a television format, 'panning and scanning' techniques (ironically developed by the film industry itself) have been adopted, which lead not only to a loss of much of the original image but also to a degree of 'remaking' of films as well. As a result, and despite the appeal of the 'big picture', filmmakers have increasingly had to acknowledge that television is a film's ultimate destination and stick to 'safe-action' areas when filming. Frank Thompson (1990), for example, indicates the differences between John Boorman's Point Blank (1967) and Miloš Forman's Amadeus (1984) when seen on television. The latter, he argues, was evidently filmed with television in mind, whereas the former was not. As a result, Amadeus still 'works' on television, Point Blank by
contrast, looks 'jumbled' and 'sloppy' (1990: 41). However, with the growing acceptability to audiences of 'letter-boxing' (whereby films are shown in their proper aspect ratio), some of the problems associated with panning and scanning are beginning to be overcome.

It is also the case, as Dan Fleming (1996) has argued, that there has been nothing inevitable about television's inability to deal with the widescreen image. The technology has existed for some time to provide widescreen television, with high-definition images and good-quality stereo sound, which, if not necessarily matching the quality of the projected film image, is at least capable of approximating it much more closely. That this has not so far been made widely available has more to do with its economic feasibility than an 'essential' difference between the film and television media. This is also true of what are often taken to be other fundamental differences between film and television. Thus, while film involves the watching of a large screen image in a darkened public space whereas television involves the viewing of a small screen image in a private domestic space, this again is largely a historical contingency, resulting from the economic imperatives of the film and television industries, rather than any inevitable difference. As Kramer (1996) indicates, in its early phase of development, film was initially conceived (by pioneers such as Thomas Edison) as a domestic technology, just as television was in turn conceived, and tested (in the form of theatre television), as a public one.

In the same way, television has often been regarded as basically a 'live' medium which is better suited to relaying the 'live' event than transmitting pre-recorded entertainment, such as film (see Barr 1996). However, while television may have exploited this 'live' quality to great effect in relation to news, sport, and important public events, it does not follow that television is 'essentially' a 'live' medium or that it is this 'live' quality which should shape the direction of drama on television. Robert Vianello, for example, argues in relation to US television in the 1950s that 'The question of “live” versus film formats was not simply a technological or aesthetic matter but an economic one (1984: 210).

'Live' programming, he argues, gained dominance in the early years of US television not only because it was cheaper to produce than filmed programming, but because it was used to justify the power of the television networks and enforce the dependency of local television stations. By the late 1950s, however, when the conditions that had made 'live' programming an advantageous strategy for the networks began to change, production shifted decisively towards the telefilm. In this respect, the legacy of 'live' drama on television has been read in different ways: as something particular to television which the shift to recorded forms has lost, or as an inhibition upon the aesthetic potential of television which the development of a closer relationship with cinema then overcame (McLoone 1996).

Aesthetics

However, if the influence of film forms on television drama may be seen to have encouraged the demise of 'live' television drama, this influence has not always been seen as leading to drama which is then regarded as properly 'cinematic'. This again has been partly a matter of economics. Made-for-TV films or theatrical films made with television money have often been made more quickly and cheaply than those made by Hollywood and often lack the production values associated with the 'big picture'. However, as McLoone argues, there is also a tendency in this kind of discussion to draw a 'false contrast' between film and television: between the extremes of television at its least "adventurous" (aesthetically) and cinema in its big picture, "event" mode (1996: 81). In this respect, it is often the big Hollywood 'event' movie which is used to define 'cinema' even though the bulk of Hollywood's output during the studio era consisted of much more routine, modestly budgeted productions that lacked the special effects or expensive displays that are now associated with the 'event' movie.

As a result, many US television films can be seen to belong to a tradition of low-budget Hollywood filmmaking, and succeed as cinema despite their television origins. Steven Spielberg's Duel (1971) is one of the most celebrated examples of this, but, more recently, John Dahl's Red Rock West (1993) and The Last Seduction (1994), which were given successful theatrical releases after they had been made for, and shown on, cable television, vividly illustrate how television beginnings do not necessarily vitiate against the production of 'proper' cinema (Lyons 1994). Similar examples may also be found in Europe, where television broadcasters have been involved in extensive support of film production. Despite complaints, especially in Britain, that the films which television finances have lacked the cinematic values associated with 'real cinema', it is difficult to identify any shared television
influence or 'TV aesthetic' informing such films, especially when it has included work as diverse as that of Federico Fellini, Roberto Rossellini, Ermanno Olmi, and the Taviani brothers in Italy, Rainer Werner Fassbinder, Werner Herzog, and Wim Wenders in Germany, Pedro Almodóvar in Spain, and Peter Greenaway, Derek Jarman, Stephen Frears, Mike Leigh, and Ken Loach in Britain.

However, if it is difficult to isolate clear-cut aesthetic differences between film and television, this is not to say that the way in which film and television have become intertwined has not had aesthetic consequences. Lafferty, for example, argues that although television inherited from film a set of narrative and stylistic conventions, the pressures of time and cost upon television production led to the adoption of new techniques by television which then fed back into film production. He cites, for example, the use of 'non-classical' techniques such as rack-focus, overlapping sound, and, particularly, the zoom which were adopted by television in the interests of speed and cost but subsequently became commonplace in filmmaking practice. Indeed, by the 1970s, Lafferty argues, there had been 'a virtual melding of film and television techniques' (1988: 299). With the advent of video, critics have also argued for more wide-ranging forms of interaction. Timothy Corrigan, for example, argues that the 'distracted' conditions of television and video viewing has encouraged new types of cinematic narration. He indicates how the 'classical' model of film narration has begun to give way to forms of narration in which time is 'wasted' and in which narrative incident and visual display exceed motivational logic (1991: 166). Corrigan, in this respect, identifies some of the features of what has become identified as 'post-classical' cinema in which plots have become looser and more episodic, identification with characters less intense, and the relations between narrative and spectacle less tight-knit than in films of the 'classical' period. In doing so, he is also attributing special significance to the changed viewing conditions of films in so far as such features are connected to the less concentrated manner in which films are likely to be watched on television and video.

**Spectatorship**

To some extent, it is this interest in spectatorship that has informed some of the more recent writing of film and television. Sylvia Harvey, for example, has sought to differentiate film from television in terms of 'the quality of the viewing experience' and its 'social and public character' (1996: 250). The quality of the viewing experience, she argues, is related not only to the size and density of the film image, but also to the concentrated attention span which it receives in the cinema. Drawing on Bazin's work on the ontology of the photographic image, she calls for a recognition of the special, even 'sacred' character of the film image, which she argues, 'derives not from divine authority but from human response' (250). Something of a similar line is taken also by Anne Friedberg, who argues that, with the advent of the video movie, 'the aura of the original moment of cinema exhibition also disappears' (1993: 139). There is, however, a slightly paradoxical twist to this argument. For Walter Benjamin (1936), it was precisely the 'mechanical reproducibility' of the mass media, as exemplified by film, which destroyed the 'aura' of traditional art and its attachment to notions of the 'original'. In the age of television and video, however, it is now the film-viewing experience that is seen to possess 'auratic' qualities and provide precisely the experience of the 'original' which, it is argued, the television or video viewing of films now lacks.

In such arguments, it is the concentration and involvement that characterizes watching film in a cinema rather than on television or video which is given emphasis. Television spectatorship, in this respect, is seen to be fundamentally different from cinema spectatorship. Raymond Williams (1974), for example, has defined the key experience of television as one of 'flow', while John Ellis (1982) lays stress on television's dependence on 'segmentalisation'. For both authors, it is the experience of 'watching television' that is considered more important than the watching of individual programmes and, for Ellis, this also involves a particular relationship with the viewer. Thus, unlike the concentrated gaze at the screen expected by cinema, television only invites the 'glance' (163).

It is this 'glance aesthetics' that Corrigan (1991: 31) sees as governing the contemporary viewing of films, while Friedberg (1993: 139–43) discusses the 'spectatorial filanerie' and active relationship to texts permitted by television and video technologies. In both cases, this new form of spectatorship is also linked to changing forms of (postmodern) subjectivity. For Corrigan, the new forms of film reception involve the disappearance of 'a clear and stable viewer' (1991: 2).
while, for Friedberg, the new media produce 'a shifting, mobile, fluid subjectivity' (1993: 143). However, although it is clear that television and video have allowed a greater control (and interactivity) over the viewing of films, there is also a tendency in such writing to make overly general claims and draw too strong a contrast between 'old' and 'new' forms of viewing. Thus, the watching of films in cinema is not, and has not been, as concentrated—just as the viewing of film on television and video is not necessarily as attentive—as the oppositions drawn between film and television viewing sometimes suggest. The conditions characterizing the viewing of films have varied according to historical and geographical circumstances and, indeed, John Belton suggests how contemporary movie-going has echoes of both the peep-show and the nickelodeon era (1994: 342). Moreover, the assumption that the conditions generally taken to be characteristic of cinema spectatorship (large screen, darkness, relative immobility) necessarily 'fix' subjectivity in some straightforward way (as in apparatus theory) is clearly inadequate for an understanding of the complex ways in which audiences have actually responded to films socially and historically. In the same way, it is not possible simply to 'read off' forms of subjectivity from the technologies of television and video. Subjectivity in this respect is 'produced' not by the media, but by a whole set of social and cultural determinants, which may, nevertheless, include film, television, and video.

**Cultural Identity**

This emphasis upon subjectivity also overlaps with concerns regarding the role of film in the shaping of social and cultural identities. As we have seen, one contrast between film and television has been to see television as encouraging a more 'privatized' form of film consumption. However, once again, the opposition is not necessarily clear-cut. As Harvey notes, while cinema may offer a shared experience in a social space, it can also be one which is 'intensely private' (1996: 241). And, while watching film on television may be regarded as private, it can also be a shared experience. This is not simply because television viewing often involves a group of some kind (be it family members or friends), but because watching a film as it is broadcast can involve a sense of collective belonging as well. From this point of view, the simultaneous viewing of a film by a large audience draws together spectators in a shared experience similar to those provided by other forms of television such as public occasions or episodes of a soap opera.

This also complicates models of television viewing as a relatively undifferentiated 'flow'. While the emphasis upon 'flow' may have drawn attention to important aspects of television viewing, it has also underestimated the role of the independent programme and how it is distinguished from, and often watched separately from, the overall flow of television (Waller 1988; McLoone 1996). Films on television can be important in this regard precisely because television can make use of a film as an 'event' which breaks up the visual flow and offers a 'special' experience separated out from the rest of television. In doing so, film can also participate in the 'public sphere' of which television is now a central part. Thus, Jarvie and Strickland defend US TV movies in terms of their 'social function', arguing that, in addition to the provision of entertainment, they constitute 'the town hall of public debate on important historical, social and political issues' (1988: 42).

This is an argument which also has relevance to the relations between film and television outside the United States, and especially in Europe. For European television has been much less driven by commercial imperatives than its US counterpart, and the co-operation between film and television which has occurred within European countries has characteristically been linked to public-service values. Thus, while in the United States it has been the networks and the commercial pay-TV channels, such as Home Box Office (HBO) and Showtime, that have financed films, in Europe it has been public-service stations (such as ZDF in Germany, RAI in Italy, Channel 4 in Britain, RTVE in Spain, and RTP in Portugal) that have been of crucial importance in sustaining European film production. In the case of France, the government's legal requirement that broadcasters support French film production has ensured that France is the Continent's largest film-producing country.

The importance of television's support for film production in Europe may be explained by the growing economic might of Hollywood and the problems national cinemas have faced in trying to maintain levels of production. From this point of view, an alliance between film and television has provided not only the most economically prudent form of cinema for European countries, but also the one most likely to offer a culturally distinctive alternative to Hollywood.
norms, by drawing on television’s public-service traditions and speaking to their own cultures in ways that Hollywood films, aimed at a global market, cannot. Thus, in the case of films supported by Britain’s Channel 4—such as My Beautiful Laundrette (1985), Letter to Brezhnev (1985), Riff-Raff (1990), The Crying Game (1992), and Naked (1993)—there has been something of a fusion between the formal interests of ‘art cinema’ and the socio-political concerns of public service television (Hill 1996). The issue in respect of Europe, therefore, is not so much whether it is desirable that television should support film, but whether it will continue to possess the means to do so. This question has become especially pertinent in the 1990s, given the increasingly commercial climate of broadcasting across Europe, which has made support for film, because of its cost, increasingly difficult, as the examples of RAI in Italy and RTVE in Spain have demonstrated.

Conclusion

It is now clear that the future of film is inextricably linked with that of television and video. In this sense, it is an irreversible development, and there is little point in lamenting the ‘decline’ of cinema in its traditional form. However, this chapter has also suggested that it is misleading to ‘essentialize’ the differences between the two mediums or homogenize the characteristics of each. It has also pointed out that the relationship between film and television is historically and geographically variable, and, although crucially important, the US experience is but one model of the way in which film and television have reached an alliance. And while there may be certain losses involved in the new relationship between film and television (such as technical quality or type of viewing experience), there have also been corresponding gains (such as the increased accessibility of films and the emergence of more
active viewing forms). In this respect, cinema is not so much in ‘decline’ as entering a new historical era.

BIBLIOGRAPHY


Bailie, Tino (ed.) (1990), Hollywood in the Age of Television (Boston: Unwin Hyman).


Friedberg, Anna (1993), Window Shopping: Cinema and the Postmodern (Berkeley: University of California Press).


— and Martin McLoone (eds.) (1996), Big Picture, Small Screen: The Relations between Film and Television (Luton: John Libbey Media and University of Luton Press).


Screen Finance (1993), ‘Studio Film Revenues Set to Grow by 4.9 per cent in 1993’ (5 May), 8–13.

Thompson, Frank (1990), ‘The Big Squeeze’, American Film (Feb.), 40–3.

Vianello, Robert (1984), ‘The Rise of the Telefilm and the Networks’ Hegemony over the Motion Picture Industry’, Quarterly Review of Film Studies, 9/3 (Summer), 204–18.
