Noir, pp. 100–11; and Joyce Nelson, "Mildred Pierce Reconsidered," in Bill Nichols, ed., *Movies and Methods*, vol. 2 (Berkeley and Los Angeles: University of California Press, 1985). The quotation "I feel all dead inside . . ." is from Henry Hathaway's *Dark Corner* (1946) and is quoted in Frank Krutnik's *In a Lonely Street: Film Noir, Genre, Masculinity*, p. 101.

Touch of Evil There is a wonderful sequence in Tim Burton's film *Ed Wood* (1994) in which the momentarily dispirited director of very bad films goes into a dark bar in the middle of a bright Hollywood day. He finds Orson Welles sitting in a corner working on a script. "Tell me about it," Orson tells Ed Wood. "I'm supposed to do a thriller at Universal, but they want Charlton Heston to play a Mexican!" The long take at the beginning of *Touch of Evil* is lovingly parodied in the opening of Robert Altman's film *The Player*. Altman makes his shot even longer, and the characters who move around in it keep referring to Welles's film.

Noir's Rebirth Original Technicolor used three black and white negatives that were filtered to respond respectively to the primary colors, red, green, and blue. These negatives were then pressed with dyes during the printing process and, in combination, laid down a full color image on the positive film. By the early fifties, Eastman Kodak developed a single-strip color process. This became the standard and three-color Technicolor disappeared. This was a shame. The original Technicolor was very stable. Eastman Color is not, and most films made between the late fifties and the mid-eighties fade if not properly protected.

European and Other Cinemas A good survey of postwar European and international cinema is in Robert Phillip Kolker, *The Altering Eye* (New York: Oxford University Press, 1983).

Italian Neorealism On Mussolini, Cinecittà, the history of neorealism, see Peter Bondanella, *Italian Cinema: From Neorealism to the Present* (New York: Frederick Ungar, 1983).

The French New Wave The best discussion of the movement remains James Monaco's *The New Wave: Truffaut, Godard, Chabrol, Rohmer, Rivette* (New York: Oxford University Press, 1976).

Fassbinder Some of Fassbinder's crew are now active in America. His cinematographer, Michael Ballhaus, now works for Martin Scorsese and has filmed such diverse projects as *Goodfellas* and *The Age of Innocence*.

The Influence of Brecht Brecht's theoretical writing is collected in *Brecht on Theatre*, trans. John Willett (New York: Hill and Wang, 1979).

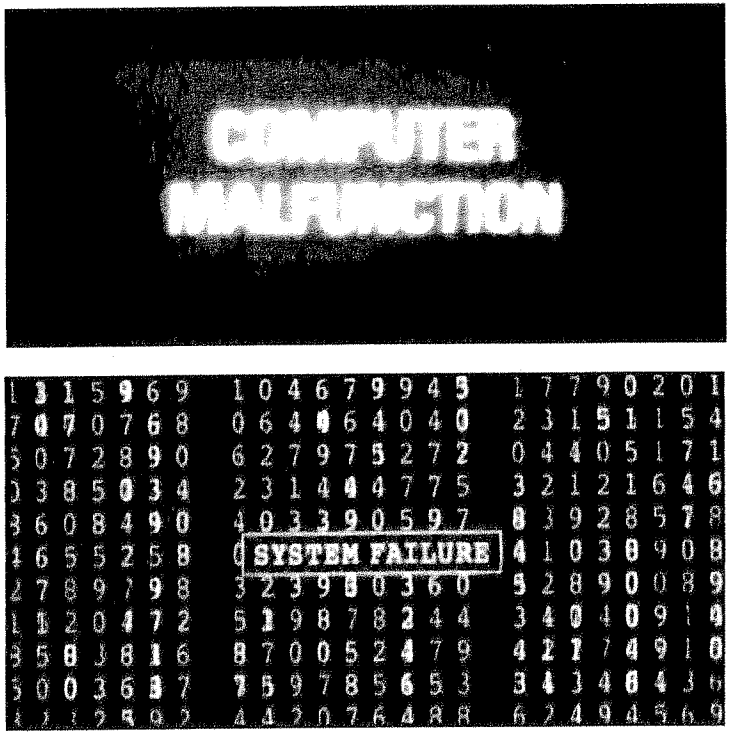
Visual Pleasure Laura Mulvey's essay is widely reprinted and can be found in *Film Theory and Criticism*.

6

OTHER SCREENS: THE FUTURE OF THE IMAGE

Even after all the careful analysis we have done about the forms and history of film, we must come to a realization that it is, in fact, a dying vestige of an old technology. Dying, after all we said about its vitality and ability to change? It is doubtful that its master narrative conventions as well as the innovations of individual filmmaker who looks for nontraditional means of story telling will die, but certainly the old nineteenth-century techniques of spreading photosensitive chemicals on a plastic surface, running the plastic through a camera, developing the negative in a chemical bath, editing the resulting images together with glue, printing a positive, distributing them to theaters, and then projecting them on a scrèen will. Like almost everything else in the film business, this will all change because of economics and new technologies. In the late twenties and again in the middle of the twentieth century, image recording and delivery—the ways in which the images and their narratives reached their audience—underwent some modifications. By the end of the century, the basic technologies and economies of the screen began changing in radical ways. Sound was added to film in the late twenties because film attendance was in a slump and a novelty was needed. In the fifties, a new screen had already overshadowed the movie screen: television. The studios responded by widening the size of the theater screen.

By the early 2000s, the computer screen promises to overshadow both, and Hollywood will meet it in two ways. It will continue to make films like *The Lawnmower Man* (Brett Leonard, 1992), *The Net* (Irwin Winkler, 1995), or *The Matrix*, that warn against the dangers of cyberlife, just as it made fun of television in the fifties. And, as it did back then with television, it will get into the computer business—with a vengeance that will put an end to celluloid-based film.



Cinema's view of the digital: The Matrix *by Andy Wachowski, Larry Wachowski (1999)*

With the merger of America Online and Time-Warner, we have an inkling of how the computer and the movie screen will begin to merge as a business. George Lucas will "film" the next *Star Wars* on digital tape. He has already experimented by showing the last episode, *The Phantom Menace* (1999), in a digital version. In other words, the "film" was projected from digital tape. As soon as the technology and the economics are worked out, all the studios will be making and distributing films this way—the digital way. They will be shown in theaters from either tape or discs that are cheaper to make and distribute than 35 mm film, or broadcast directly to theaters from satellites.

Almost everything concerning the image that we have been speaking about will change. It will look different from 35 mm, be made differently, composed,

lit, and in general structured differently. Whether the content of the narratives constructed by the images will change is another matter. The example of television does not give much hope.

ELEVISION

Television, of course, was the second new screen after movies. But TV was less a technological change than a cultural and economic upheaval. Like film, television is an analogue process, which means that the light waves reflected from a surface, such as the human face, are recorded on a chemical surface in intensities that are proportional to the original light source. But in television, instead of processing the surface with chemicals, the light is transformed into electronic signals. These signals are transmitted through the air, received by the television set, and reconverted into electrons that activate the phosphorous surface of the television tube, which responds to them by reproducing images whose electronic waveforms are analogous to those that originated the process.

The technology of television parallels the technology of film, and film is, more often than not, the primary material that television transmits. But beyond that, TV and film are very different. Film represents the outside world, not because a film narrative necessarily takes place in the outside world but because, before the late sixties, in order to see a current film, you had to travel into the outside world. Going to see a movie meant going out of the house. It was a communal, urban experience. After World War II, urban communities began to change. Middle-class people left the city in great numbers. At the beginning of this migration, before the growth of suburban malls where movie houses were relocated in miniaturized form, going out of the house to see a film declined as a social event. Television became the means to satisfy the driving need for visual narratives.

Film was always available on television: old movies, filmed series, and movies made for television were there almost from the start. Live television drama had a relatively short life, and Hollywood-made production took over by the late fifties. In the brief period of live drama—from the early to the mid-fifties—television produced a number of writers and directors—Rod Serling, Paddy Chayefsky, Arthur Penn, John Frankenheimer, and Delbert Mann, for example—who went to Hollywood and were important influences in the movies. Some live television dramas were turned into films that took a hard and tightly composed look at working and lower-middle-class characters: *Marty* (Delbert Mann, 1955), *12 Angry Men* (Sidney Lumet, 1957), *The Bachelor Party* (Delbert Mann, 1957), *Days of Wine and Roses* (Blake Edwards, 1962). This direct interaction was short-lived.

But no matter what the source of the programming, our reception and perception of television are very different from what happens to us in a movie theater. The space is different: domestic rather than public, inside rather than out. The focus of concentration is different: television is situated as a piece of household furniture to be stared at; it is usually watched in the light and with other

things going on in the room. The screen is different: it is small and lit from behind, its resolution is low, the image is fuzzy and full of noise. Television does not elicit the concentration demanded from us in a dark movie house. On commercial channels, programming and advertising contend for our attention.

Commercial Structures

The commercial structure of movies is, in a sense, subtle and deep. As we have seen, there is a quiet, profit-driven negotiation between filmmaker and film viewer that is maintained through all the processes of production and reception. In television, a kind of pay-as-you-go process was instituted very early on. Instead of individual funding for individual productions, money would come from advertisers. They would invest in a program not on the promise of delayed returns in the form of gross receipts but in the hope that viewers would buy the products that were advertised on the shows. In the early days of television, until the late 1950s, advertisers minimized their risks by producing the very shows they sponsored. The television program was another product of Kraft Foods or Firestone Tires or General Electric and was used to advertise those products.

By the late fifties, most production was turned back to the networks and their independent suppliers. Advertisers bought time on particular programs, or simply bought time periods, and their commercial presence thrived. But no matter the mechanism, the presence of the advertiser and the production of programming to support the advertised product constitute the essential dynamic of television. The programming does not stand on its own but is interlaced with commercials. In these commercials, the viewer may be exhorted to buy a product by a spokesperson or a disembodied voice that accompanies images of people using the product. Or the viewer may be engaged by miniature narratives, small stories of sexuality, of loss and desire, of inadequacy and fulfillment, of false cynicism and real manipulation, often in a style that is quite different from the classic continuity structure of the main program.

The Television Gaze

Watching a film is a self-contained, integral narrative experience. In a sense, it advertises itself through the continuity style that propels us forward and keeps us engaged. Watching a film or other programming on television is not integral but fragmented. As a television viewer, one watches and takes part in multiple narratives: the main program, the commercial interruptions, and the domestic dramas going on in the room, all of them folded one within the other. In this way, television becomes a kind of communal experience, though different from film and the movie theater. You go out to a movie and choose a specific film to go to. You stay in for television, and you are less likely to aim for a particular show than simply to "watch television." The light television creates on its screen may be there for many other purposes than simply making its images visible.

Stylistically, television is sometimes more eclectic, even more adventurous, than film. While most of the narrative material follows the rules of the continuity style, there are exceptions and there are structural conventions that are unique to television itself. News programming and some commercials, for example, have developed a style of audience address unlike anything in narrative film. News readers face and look into the camera, making eye contact with the audience (who are, of course, mediated by camera and screen). This is largely denied to practitioners of the classical style in film. The gazes of film work by indirection. The straight-on gaze of the news reader or advertising spokesperson, however, is instituted to create another kind of intimacy.

The television screen was promoted, from the early fifties, as the window on the world, the place where isolated suburbanites or besieged city dwellers could see into the outside without having to be there. Movies ask people to come out to the theater where they can see the melodramatic, the fantastic, and the uncanny and be moved. Television delivers the friendly, the frightening, and the informative directly. The person who delivers the information, whether of a man-made disaster or a new refrigerator, looks right out at you, confidently. In your private, domestic space, the face on the screen can pretend intimacy and evoke a narrative of participation and proximity, an invitation into a fantasy world of threat and violence (the news) or desire and pleasure (the commercial).

The News and the Gaze

As television and the world it pretends to represent progressed and the need for ratings and advertisers overcame good programming sense, the information it delivered got uglier, more vulgar, violent, and desperate. The look remained, becoming a demand for attention, a conspiratorial invitation into the shocking and dismaying. In commercials it became a mock-ironic beseeching look, asking us to consider that the value of one product was greater than another. The gazes of the news presenter, the host of a tabloid program or talk show, or the spokesperson for a commercial product are perverse examples of Walter Benjamin's theory of the loss of aura. Few things in life should be as intimate and moving, as subjective and unique, as direct eye contact with another person. But the eye contact of a television talking head is without uniqueness, without intimacy. His or her stare is for everyone and for no one in particular. It is, finally, a stare for the camera, which is translated to the screen. The viewer stares back, not at the head but at the screen. The result is a narcissistic interaction of mutually noncomprehending gazes.

Benjamin hoped that loss of aura would mean increased access, an ability to see more deeply and communally into the world. Removing the sacred presence of the artist and the ritual aspect of looking at "great works" might allow proximity, even active insertion of social imagination into works of all kinds. But television's lack of aura creates a wider gulf between the viewer and the world than film does, precisely because the direct gaze of the talking head or the hysterical boyfriend on Jerry Springer and the constant supply of

information *seem* to provide a look into the wide world. Quite the opposite occurs. The view is shallow, not deep. It is directed by a belief—on the part of news and other producers—that violent and antisocial events interest the largest number of people. It is a paranoid and antisocial view; and rather than provoke people to look deeply into the world, as Benjamin hoped movies would do, television—especially the television of news, talk, and tabloid programming—promotes a paranoid view. Television wants people to stay home and watch television.

Narrative Programming

Narrative programming on television can sometimes have a different effect. Dramatic programs and made-for-television movies sometimes tackle current social problems, the latter occasionally from a woman's perspective. Theatrical film addressed social issues, long ago (capital, credit, and community were themes of *It's a Wonderful Life*); television has taken up the responsibility. Cable and broadcast movies are sometimes concerned with political issues, even moral problems. Serials (programs with an open narrative line that continues from one episode to another like soap operas) and series (programs with a continuing set of characters in somewhat different narrative situations in each episode like situation comedies) may not address social issues, but often offer interesting exceptions to the classical continuity style and the stereotypes so often present in theatrical film.

Soaps Closure is a key element of the classical Hollywood style. In finally pulling closed all open narrative threads, recuperating any transgressive actions back into the cultural mainstream, the classical style creates a sense of uniqueness, the impression that what we have seen is a contained and one-of-a-kind story. It offers satisfaction, the assurance that everything is now OK.

Television serials and soap operas work in quite the opposite manner. The main narrative work of the soaps is to keep its narrative going, to never let it end! Every installment of a soap opera opens more questions, spins out more narrative threads, generates more trouble for its characters than it can ever close or solve. Another part of soap opera's work is done through its slow narrative rhythm and its concentration on female characters, intimately engaging its viewers. Soap opera is an extension of melodrama, which, as we saw, is often constructed around a woman repressed by her family, inhibited, unhappy, briefly liberated, and then, through an act of great sacrifice, brought back into the domestic fold in harmony with the moral demands of the culture. Soap opera greatly expands the liberation and sexual questing of the female characters by delaying their recuperation into the normal scheme of things for as long as it can. It allows a considerable latitude in the behavior of its characters and demands a long-term attention and commitment from its viewers beyond that required for any film and most other television programming. The slow pace of soaps, their lingering on character and details of the gaze, their exaggeration of

goodness and villainy help integrate them into the lesser melodramas of daily life. They become part of life's routine.

Series Series are the mainstay of evening television programming. They demand a peculiar kind of "now you see it, now you don't" response. Although they are broadcast every week, with the same characters, who regularly demonstrate the same characteristics in the same physical surroundings, both the characters and the programs also present the illusion of being reborn in each episode. In situation comedy, the events in one episode rarely recall the events in the previous one. The only continuing thread is the way characters will respond to a given stimulus. The characters and their narratives seem to live in a closed universe. Their narratives are like miniature genres, which can be depended upon, in episode after episode, to deliver variations on the same ideas, the same lines, the same physical and emotional responses, the same viewer reaction. They are the same each week, only different. The breaks in this convention are rare enough to be striking, as when a character on *Seinfeld* mentions something that happened on another episode. *The Simpsons*, the postmodern animated series that embraces and mocks popular culture in complex ways, parodies the amnesia effect of television series. Homer's boss never remembers who his employee is, no matter how many close experiences they have had.

More than movies, series (sitcoms especially) attempt to address the world many of its viewers live in. They are family or work oriented—though when they deal with work, they try to turn the workplace into a surrogate family—and they look at small issues, small "situations." They can, these days, be very vulgar and exploitative in their references to sexuality, but they can also be comforting in their familiarity and their repetitive pattern, their sense of sameness and difference, their reassurance that, whatever happens to their characters, they will respond always in the same way.

Flow

It is possible to think of the whole of television as a genre, and its sitcoms, melodramas, commercials, news, tabloids, music videos, "reality" shows, and nature programs as subgenres of a general, overriding structure in which images and the viewer's attention are casually locked into an assenting gaze. This is a structure of enormous elasticity where disparate images and stories, facts and factoids, representations of sexuality and merchandise, or merchandise as sexuality, the steady gaze of the news anchor or the nervous, twitching camera movements that, borrowed from MTV videos, are now commonly used for commercials and coming attractions all flow together. These bits and pieces are mediated by the television screen, which is gazed at by millions of people, all of whom seem easily to absorb the flow. The British cultural theorist Raymond Williams developed the concept of **"flow"** when he was trying to make sense of American television's homogenized disorder, the seemingly random, jarring movement of styles and stories, sameness and difference and constant

interruptions, a movement that invites intimacy and refuses it at the same time. Flow is the coherence of the incoherent, a representation of life in bits and pieces. A reflection of the postmodern world.

Williams' notion of flow is somewhat analogous to the continuity style in film, a way to make coherent sense out of the fragmentary. But in the case of television, any illusion of continuity must come from the viewer with little assistance from the structure of what is being viewed. Unlike film, whose self-contained pattern of fragments follows the clear rules of continuity, television breaks programming down and interrupts it continually with few apparent rules of continuity. For the flow of parts to cohere, the viewer has to will it into coherence or accept the fragments as they move past his nonattentive eye. Curiously, television viewers seem not to want the flow to cohere as completely as in a movie, and, in fact, they sometimes add another layer of disruption. Channel surfing, in which the sixty or so channels of an average cable hookup are moved through in random disorder by means of a remote control, is a popular act of televiewing that is both a sign of desperation and a welcoming of the incoherent. Channel surfing allows the viewer to impose a subjective disorder on the chaotic flow of images and information, narratives, and advertising supplied by the producers of television. It creates a curious intimacy by turning externally produced chaos into personal chaos—another kind of negotiation between the viewer and the text.

Nothing like channel surfing is available when watching a film in the movie theater (perhaps, moving from one theater to another in a multiplex). My guess is that surfing rarely occurs when a film is viewed on cassette or laserdisc. Film is conventional in its demands for linear attention no matter what the venue, whether mall theater or domestic space. When we watch a film on cassette or DVD, it can recede into the background the way television often does. But when we give it our attention, it holds us through its length, if it's not boring, the phone doesn't ring, and no other domestic demand occurs that would be absent in a movie theater. The television screen becomes a convenient surrogate for the movie screen when the self-defining, self-cohering images of a film narrative are projected onto it—though with DVDs, there is the opportunity to move to different scenes in the film. When *television* is projected onto it, however, that coherence disappears, and the screen reflects as much our own restlessness as it does the fragmented programming and mix of styles sent over the air or through cable.

Cultural studies has embraced television as the form that is most amenable to viewer negotiation. Because the television screen is placed in an intimate, domestic space, the desire to make it a part of our subjective lives is strong, as we've just seen. Because television is the major diversion of the culture, watched by almost everyone, it becomes both private and communal intellectual and emotional property. Of course in reality no one owns television but its owners—General Electric (NBC), Rupert Murdoch (Fox), The Disney Company (ABC), Time Warner (HBO), Viacom (Paramount Pictures, MTV, Comedy Central), Westinghouse (CBS)—and most of these are involved in many other

communications operations such as filmmaking and publishing. These companies sell their broadcast time to advertisers—except for HBO and other cable networks that get their fees from subscribers—and programming decisions remain far above viewers, who are represented in the abstract by viewership numbers, the Nielsen ratings (based upon relatively small viewer samples), and focus groups. But the desire on the part of viewers to make an accommodation, a negotiation, is very strong, and a kind of ownership grows at the home end. People talk about "my shows," fans appropriate *Star Trek* and rewrite episodes, sometimes as pornography. Celebrity trials become major cultural preoccupations. Watching soaps and sitcoms and quiz shows and "reality" programming becomes part of a life's routine, and some of us may feel deprived without them.

Televisual Pleasure

The television screen becomes a cultural mediator far different from the movie screen. Film delivers large emotions in intense bursts. The television screen reflects and refracts small, lingering, persistent, even obsessive concerns. Its fictional programming goes on and on, and viewers' capacity to look at a series of programs over and over again seems as limitless as the broadcast outlets these programs find. *I Love Lucy, MASH, Star Trek* (in its many incarnations) are shown and watched with a fascination that indicates a desire to own the pleasures and imaginations of these programs and reexperience them endlessly. Situation comedies build their own dominant fictions of a closely knit family or, more often, a contentious but ultimately warm workplace community that's like a family, but without its oppressive blood ties. These are stories that speak to people about desires that are hard to fulfill in life.

But it is not sufficient to explain the popularity of such programs by reducing them to substitutions for the experience we want but can't seem to find any place else but on television. More important are the touches of humor and imagination, the characters that represent traits we find endearing or those we imagine we could emulate, the narrative structures that play intricate changes on some basic themes—the way films that belong to a genre do: these are the determining characteristics of the form and structure of television narratives. So is their intimacy, their omnipresence in the space of domestic life, and their ability to be retrieved, almost at will, from local stations, cable channels, and videotape. Television is available, emotionally as well as physically. It is with us and of us. We ignore it and embrace it. We shore up its fragments for our pleasure.

FROM ANALOGUE TO DIGITAL

The play of intimacy and industry remains a key to understanding television and why its screen has become the site of the obsessive gaze of millions of individuals and of multi-million-dollar mergers and high corporate aspirations. Intimacy also plays a determining role in the most recent screen to occupy domestic space, the computer screen, where new kinds of representations—

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some nonnarrative (in the conventional sense), some with peculiar, suppressed, or labyrinthine narratives—are addressing and even creating new audiences, communities, and cultures. In order to understand what this means, and to begin a transition from our discussion of the analogue to the digital screen, we must first recover some terrain.

Film and television are analogue processes: the light and sound waves that originate from the subjects being photographed are, on a physical level, related to the light and sound waves that light the screen and that vibrate the loudspeaker. The digital image does not have physical continuity with whatever originates it. Light or sound from the source object is translated into information that is *not* analogous to the source. Input—light, sound, a request for a withdrawal from an automatic teller machine, or a search through a library catalogue—is translated into the common language of the binary. This is code, represented at its base by zeros and ones that operate the electronic switches that make computers work and act upon any information fed into them. That is why the very word "information" has stretched the limits of meaning, signifying not knowledge or ideas but the almost ineffable process of input to output, what goes into the computer and is digitized, compressed, and sampled and what comes out, the characters and graphics displayed on a screen.

Digitized information, because it is reduced to a relatively simple binary language, stripped of all excess and redundant material, is easily manipulable and can be copied repeatedly with no degradation. This makes it perfect for moviemaking. Let's for a moment go back to our discussion about how filmmakers construct a shot. Wherever possible, a shot is built up from a number of elements that do not have to be in front of the camera at the same time. In predigital times, a human figure would be photographed against a blue screen. Later, a painter would make an elaborate, real-looking image of a backdrop. In the effects laboratory, these two shots would be projected onto another strip of film, resulting in a composite image of a character on a road, on a cliff, in a cityscape, moving, flying, and so forth. This is a complex, multistep process in which, among other things, the image is degraded as it is rephotographed over and over.

Digitizing images reduces the steps and does not degrade the final result. Digital manipulation of images allows anything to be done by artists and programmers at graphics terminals. Real movement can be created out of still figures, and figures can be created that exist nowhere in reality. Digital artists can place a figure in any kind of environment. In Spielberg's *Jurassic Park* (1993) and *The Lost World* (1997) all the dinosaurs that are not mechanical models are digital designs matched with human figures. Almost everything seen in the sky in *Independence Day* (1996), including the flying saucers and the airplane sorties against them, is digitally created. Films use digital design in more subtle ways as well. Crowd scenes can be created by simply duplicating figures digitally; the head of one actor can be pasted upon another; stunts can be constructed on a computer terminal with a minimum of actual human activity. Digital image manipulation and replacement have pretty much replaced optical special effects,

just as digital "automatic dialogue replacement" (ADR) has replaced sound dubbing, so that filmmakers can construct the best reading of lines after the film is shot, perfectly synchronizing sound to lip movements. The result of all this is that what you see and hear in a film is even less authorized by the exterior world than it was before. The feather, that image of grace and simplemindedness, drifting down to Forrest Gump's foot, is a digital effect.

Storage and Distribution

What can be done on the micro level of the shot can be done on the macro level of the film itself, and so digitization becomes a distribution as well as a creative process, changing the way films are seen and where. Entire movies can now be digitized into electronic files, the way a term paper is digitally stored on a word processor. To be sure, the process is more complicated, and the computer resources that are needed for the process are enormous. But in the realm of the digital, storage and transmission problems are rapidly solved. With the solutions will come different kinds of ownership, availability, and access. If dozens, or hundreds, of films can be digitally stored on a computer, and if that computer can be accessed over a television or phone company cable or via satellite, viewer habits will undergo a major change. The introduction of DVD, which are the size of CDs and can store enormous amounts of digitized material, will make movie watching even more of a portable experience than it is now with videotape.

Availability and access will expand. On a more profound level, the aesthetics of the image will change. Digital HDTV (high definition television), currently under development, creates an image made up of 1,125 lines of scanned resolution, as opposed to the current resolution of 525 lines. Although the HDTV image is still made up of scanned lines, as opposed to the fine chemical grain that makes up the film image, the number of those lines, along with the digital sampling that removes any extraneous visual "noise," renders an extremely well resolved image that is capable of reproducing a gradient of color and brightness quite astonishing in its subtlety. It does not look like film. The quality of light and shadow is different; it has another kind of visual presence. When HDTV becomes available, a new kind of cinematography, or videography, will emerge that will allow imaginative film or video makers to create images as intricate and subtle as any on film.

As we've noted, the studios are already thinking about the economies that can be realized in broadcasting HDTV images directly to theaters rather than the current practice of striking prints of a film and shipping them around the country. The result will be that, when we go out to the movies, we will, in effect, be going to see television, though with a projected image of more visual subtlety than is now available on television. The content may very well remain film content. There may not be commercials that interrupt the narrative, though they will continue to exist inside the film, in the form of recognizable products, easily identified, a practice that has been going on for some time. But the image will be a video image, projected on a large, wide screen.

HDTV promises a video image of high resolution and large size, but neither it nor any other new delivery and distribution systems promise anything radically new in content or any experimentation in narrative structure. Indeed, all previous technological developments in film and television suggest that the old narratives will remain pretty much the same. The pessimistic view is that the movie screen and the television screen will become almost identical. What is projected on them will increase in spectacle, because the creation of large, explosive effects seems to be the direction that digital rendering is going in commercial film. What the images and narratives speak to us about, however, may exist within the old generic contours, driven by the same master narratives that have controlled film from its beginnings. The economics of large technological change almost always result in a conservative approach to the content delivered by new media.

THE THIRD SCREEN

Pessimism is countered, however, by the computer screen itself, which has rapidly found its way into the home and is competing with television as the primary screen in the domestic space. So much so that television and film companies are making deals with computer companies (Microsoft co-owns the NBC cable outlet MSNBC) and almost all shows have Web components. (*The Blair Witch Project* gained its popularity first from a web site!) A main reason for the popularity of the computer screen is that it affords the greatest amount of control, the most solid interaction between the viewer and the material viewed. This is a direct, intimate control, unlike the process of negotiation that goes on with the unyielding images of film and television. The computer monitor looks a lot like a small television. Technically, part of its operation is like a television set in that electrons activate phosphors on the back of the picture tube and images of text or pictures appear on its viewing surface. However, here the similarity ends. The way those representations get to the monitor, what they represent, and who owns and controls the creation and reception of them are quite different from film and television.

Despite the fact that computing requires technical knowledge and active participation, which might logically have led to the argument that it could not be considered a popular art or part of the mass media, its popularity has grown and grown. Although there still exists a frustrating "digital divide" that limits access to personal computers by economic class and by education, the number of all users, of all races and genders, grows exponentially. Although the numbers of machines in use and access to the Internet grow yearly, their penetration into the home is nowhere near that of television. Figures still hover around the 60 percent range of American homes with Internet access, as compared with nearly 99 percent for television. The largest growth in use in early 2000 was by women. However, these figures change when put into economic contexts. Far fewer poor and minority families own computers, but nearly all groups own one or more television sets. Still, working or playing at the computer is becoming a major preoccupation for many, and it makes up in intensity what it lacks in numbers of people whose lives it directly affects. The computer screen and all it represents have become a cultural, political, and economic force; it has changed us in some profound ways, some of them not for the better; and it will change more as more people get access.

Other Narratives

The computer screen offers creativity and inclusion in a process. Unlike a television program or a movie, what is displayed on the computer is not an ongoing story that positions us to respond emotionally at just the right moments, but an invitation to work, to be included in, or placed in control of, a process. The conventional film or television narrative sutures us into its forward momentum, even when the latter is chopped up with commercials. Our interaction with the computer screen lacks the linearity of a classically constructed story with dramatic characters. The drama is made by us; we are the character interacting with the machine and with the words and images it helps us generate.

Human–computer interaction is ongoing, in process, and demands an active participation as opposed to a simulated one. It involves knowledge, specifically attained as opposed to passively absorbed. We learn the codes and conventions of film by watching films; we know how to interact with the computer by learning specific skills. This knowledge and the processes involved in working with the computer and its screens are subdivided into different kinds of interactions. These vary from relatively passive ones to the complexity of programming new screens, creating new computer applications and multimedia projects. Surrounding all this activity is the phenomenon of the Web, the ability of one computer screen to access thousands of others, on which different processes, different representations of data, can be observed and different interactions can be performed.

Computer Games

Computer games are on the passive end of the scale, requiring more reflex than thought. In many ways, they constitute the closest analogy to movies and television. Games are, in fact, the computer venue in which movie studios are investing much time and money. They are often created as tie-ins with movies, and original computer games are made with movielike narratives. These are based on the action-adventure genre—often with second-string actors appearing in digitized videos within the games, some of which are mere blood sports, with destructive responses expected from the user and representations of violence shown on the screen.

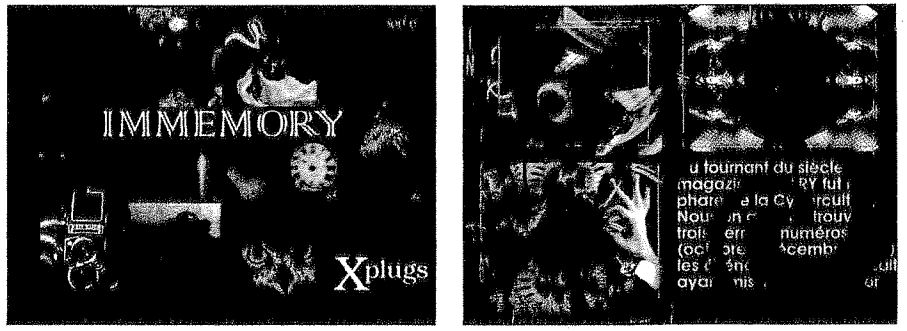
There is an interesting correlation between these games and the primitive period of film. One of the legends about early cinema—a story told over and over regarding the Lumière brothers' film of a train leaving a station—was that the audience, so inexperienced with cinematic images, pulled back in fear at the

sight. There is, of course, no likelihood of this reaction occurring in the face of the digitized, pixilated figures of a computer game. In fact, there was probably no likelihood that the Lumières' audience reacted in this way either. The legend is more important than the reality. But computer games do attempt to simulate a kind of primitive reflex reaction by allowing the viewer to contend with elements of a program (represented by images of warriors or monsters on the screen) that will do various things in response to various kinds of input. If you click the mouse or move the joystick at the right moment, in the right place, the program will respond by graphically representing on the screen a digitized figure spouting blood. There is emotion involved, based on the anxiety of timing the response at precisely the right moment, and satisfaction of sorts at seeing a figure seem to drop dead because of your action (or disappointment at seeing the figure representing you expire). But the interaction goes no deeper, takes no part of the complex structures of interactivity that the computer offers. Game playing is simultaneously a little more and a great deal less than a movie experience, reduced in size, with a crippled mise-en-scène and a considerably restricted internal narrative. It is the nickelodeon version of computer interaction.

Myst and its sequel, *Riven*, created by Rand and Robyn Miller, use the computer game model—moving around the screen to find the answer to a riddle. But it removes most of the violence, adds a mise-en-scène that owes something to cinema, makes use of complex computer graphics capabilities, and elaborates a pattern of process, uncertainty, probability, logic, and open-endedness that is as close as we currently are to a program that expresses native computer potential. *Myst* and *Riven* speak a language and engage us in a narrative that is possible only on a computer screen. And this is an important event. Computers began as machines to replace and make easier jobs that used to be done by other means—typing, decoding, managing data, doing math, moving money (which is just another kind of data). Now computer–user interaction can produce images and events that are not substitutes but original creations in a discourse that can only be spoken by the machine in relation to the user.

Artists and filmmakers are also turning to the potentials of computer expression. Chris Marker is a longtime French avant-garde filmmaker who is best known for his short science fiction film, *La Jetée* (1962), made mostly of still images and the source for Terry Gilliam's *12 Monkeys* (1995). He recently made a CD-ROM called *Immemory*, which uses vast numbers of images and text woven into a pattern of discovery, dream, and thought, involving cinema, animals, war, and other human experiences in a complex hypertext, where each link takes the user to unexpected images and sounds. Like *Myst*, though with less of its game-playing aspect, *Immemory* brings the conventions of narrative into a kind of computer-driven crisis. Part museum, part journey, part associative poetry, *Immemory* is an object of discovery.

All of this offers more answers to some important questions about computers and narrative. Can computers tell stories at all? Can they narrate as opposed to being part of a larger cultural narrative? That is, can they—should they—represent a series of events in time in which characters are created, given a context,



The French filmmaker Chris Marker's CD-ROM, Immemory.

placed in a world, have things happen to them, which are then resolved back into equilibrium that allows their world to be closed off? Can they provoke us, as viewing subjects, to enter this narrative web, evoke in us anticipation and desire? Can they make us want things to happen simply to see how they will be resolved?

Conventional computer games do some of this. They set up a chase and pursuit model with a set of rules. By and large, they do this within a limited loop: chase, kill, be killed. The variations on the genre are limited. The narrative is bound not by what the computer is capable of but by the limits of the genre of the game and the restrictions set by the assumed desires of their players—mostly adolescent males. The computer is capable of doing much more. More accurately, imaginative designers and programmers, artists like Chris Marker and others, are capable of making the computer reach for something approaching a new language and, therefore, require the user to do more work, as well.

Interestingly, computers are, at their binary fundamentals, makers of narratives. A computer program is a kind of script, a set of instructions that make the machine perform, take user input and calculate it based on the information available to the program, move through that information, do recursive actions so that some things happen over again and others don't, branch, loop, and finally display the results of calculations on the screen.

A script for a film is interpreted as the director, editor, actors, production designer, composer, and cinematographer translate the words into images. A second interpretive act occurs when the film is viewed. Each viewer responds according to the cinematic and cultural codes structured into the film's narrative and his or her subjective reactions. These reactions have little effect on the narrative being constructed on the movie screen, except in the way it is interpreted. The script that is a computer program, on the other hand, can respond in varying ways. It can, within the limits of its construction, incorporate user response and change its calculations—where it branches, loops, whether

something done in one place has repercussions on another part of the program—and represent the result of its calculations on the screen. These images can be addressed in turn and can make the program respond in different ways.

This should be obvious if we consider something as ordinary as a word-processing program. The program on the computer I used to write this book helped dictate the book's form, structure, and to some degree even content. It allowed me to type in whatever text characters I wanted and helped me put them in the form of chapters, paragraphs, caps, italics, notes, and so on. It responded to my needs, acted the way I wanted it to act. It can do many things, except supply the words I need (though even in this case I can open the computer's thesaurus database and find analogous words for a word I highlight). When I manipulate images on the computer, the program does much more. It samples colors down to the smallest visual unit on the screen—the pixel—and can alter it. I can clip a figure from one image and paste it into another. Here, the computer is in a complex mode, reading its program (its script), the information I give it, and working out new images as a result.

Computers and the programs that drive them do not have intelligence in the sense that they can originate ideas (though this has long been a dream of one branch of computer science, artificial intelligence). But they are manipulable in that they can take one piece of information and, if they have been instructed how to do so, produce a number of different results. This is the basis of computer program structures that operate on logical elements: if ... then ... /and ... or ... /true/false/yes/no. Within these and other parameters, they can manipulate user input to produce a variety of different results. The results themselves can then be changed to create new results, which can then loop back to alter the foundation of whatever created the original results in the first place. The more intricate the program, the more articulate the graphical representations on the screen; and the more latitude given to the user to alter them, the more complex the interactions can be.

These are some of the principles that lie behind *Myst*, *Riven*, and *Immemory*. The structure of the program represents what appears to be an endless series of alterations, each one having a ripple effect so that a choice in one place creates consequences in other places. This would be interesting in an abstract, mathematical sense were it not for the fact that these programs work their changes through graphical representations that are the closest the computer screen has come so far to creating a mise-en-scène—images of imaginative worlds. The designs of *Myst* and *Riven* bear a visual relationship to the art of 1950s science fiction magazine covers and are articulated in the blue/green colors best suited to the limited range of some personal computers and articulated with objects that can be addressed by the user: switches, buttons, dials, cranks, books, pictures—the moving of any of which has an effect in some other screen, some other structure of the program, another imaginary, graphical space. As in a movie, musical themes are associated with various places, rooms, and worlds, spaces and times through which the viewer moves in search of the answer to a riddle, which itself has to be discovered before we know where we can begin to look for the answer.

This mise-en-scène is remarkably humanized, though without representations of human figures. A video of a man, talking incoherently, can be located in one of the books in the library of *Myst*. Winged figures, reminiscent of the mythic Icarus, who flew too close to the sun, can be seen floating from the sky on some of its screens. But the worlds of *Myst* are unpeopled landscapes, a fact that becomes part of the mystery. (There are a few more figures in *Riven*, but there, too, the player is the most important presence.) The mystery—the plot of this particular digital world, about kidnapping and ancient family feuds—is of considerably less interest than its process. The "people" of *Myst* are its players. The main character, the subject of the work, is the person operating the program during any particular session. The main narrative movement is the exploration of images and devices. Like some movies, the plot is simply less intriguing than the narrative process that creates it. The best part is the process of investigation, inventing a narrative within the wide-ranging bounds provided by the program, moving through the graphic images of imagined worlds.

In *Immemory*, the images vary a great deal in style; and navigation, though not worked like a game, is deeply hidden. Marker is not so much interested in where you click, but why, and what you will see when you do. He wants the user to make not narrative as much as a pattern of sights and sounds, to become the author's author.

Hypertext/Hypermedia

Process—in which the viewer/user is both subject and object, in control of the screen, searching for data, images, connections, following branches and links, pursuing paths, being led down blind alleys, coming up with specific or diffuse results—is something almost inherent in the form and structure of the computer. In 1965, a Harvard graduate student named Ted Nelson coined the word **"hypertext"** to describe an idea he had of computer-generated nonlinear connections or links between data. Such links would allow the user to connect disparate parts, connect big and small chunks of text and images, open one set of text to reveal others, move in ways other than straight lines, link data continuously and extensively. He called his project Xanadu, after Samuel Taylor Coleridge's magical kingdom in the poem *Kubla Khan*, and after the unfinished castle, filled with the world's art treasures, in Orson Welles's *Citizen Kane*. True to its conception, the project was never completed.

But the idea of hypertext and hypermedia caught on. *Myst* is a kind of hypermedia creation. Some works—like Michael Joyce's *afternoon, a story*, Stuart Moulthrop's *Victory Garden*, and Carolyn Guyer's *Quibbling*, and the poems and novels in the hypertext issue of the online journal *Postmodern Culture*—have attempted a new fiction in which blocks of prose or verses are linked in apparently arbitrary ways that alter the conventional linearity of the literary narrative, providing alternative ways of reading, alternative possibilities of how and where texts and textuality may exist. Hypertext fiction has not quite reached the status of a literary movement, and it is more provocative theory than good literature.

Outside of word processing (in which the user is actively creating words), plain text is not the most inviting of representations to look at on the computer screen for long periods of time, even if it can be manipulated into curious patterns that allow the reader to create variable narrative structures.

Hypertext fiction needs to be linked into the larger concept of hyper- or multimedia, the ability to represent relationships between images, text, and sounds in a design that provides links between them, allows the user to discover or make connections, and displays contiguities of ideas that might not be obvious or possible in traditional linear, page-bound presentations. Hypermedia is a methodology for exploring insides and outsides, of seeing into the margins, of opening the linkages between different kinds of representations, and explaining one class of representation (a visual image, for example) by means of another (a sound or words). In a hypermedia project, a word or a block of text can be linked in various ways to other words and can be associated with an image. Parts of an image can be divided and linked to verbal description; a sound or voice-over narrative can accompany, embellish, or contradict the elements on the screen.

Film, Form, and Culture: The CD-ROM

If *Myst* or *Immemory* is a kind of multimedia presentation that calls upon complex, covert links between image, language, and sound, the CD-ROM that accompanies this textbook is an example of multimedia used for analytic purposes. The study of film has always been hampered by the difficulty of access to illustrative material. Before the computer, it was next to impossible to quote from film, the way a literature teacher and critic can quote from a novel or poem. The cinematic text is physically removed from the viewer; it can't be held in the hand like a book; its sequences are difficult—and on the printed page, impossible—to access. Although videotape and laserdisc media have made it easier to control the visual text, showing a sequence on a printed page, the way lines from a poem or a reproduction of a painting can be shown, has remained elusive.

This is an elusiveness that constrains our ability to understand how the form and structure of film work. Still images don't do the trick and are hard to authenticate. Unless they are clearly frame enlargements—that is, photographs made from an actual frame of a film, as they are in this book—they are usually production stills, posed photographs of a film's stars that may have been made outside the main production. These were common throughout the studio period and are still made. They are not quotations from the films.

The ability to digitize film images, to turn their rich, analogue visuals into the common binary language of computers, puts them in the same class as any other computer file. They become the equal of text file and can become integrated with it. They can be addressed, altered, programmed, and designed into a larger textual entity. Earlier, we spoke about the ways in which Hollywood filmmakers are using computers to do the kinds of image manipulation that

was formerly done by optical printing. Similar kinds of manipulation can be done on smaller desktop computers, and the result is a new kind of control of the moving image that leads to a new and more authoritative analytic and critical understanding. Digitized motion picture images can be incorporated into most advanced word-processing programs. Although they can only be seen with the document on a computer screen, there they provide instant examples, clarifications, and authentications for the prose analysis. In the CD-ROM that accompanies this book, digitized sequences from films become one part of a larger interactive design; they are used as examples and their mysteries revealed. Taken out of the ongoing narrative flow of the film, isolated and broken down, they become part of another text, a hypermedia text in which image is linked to image, to analysis, example, and redefinition. As you will see, it is possible to open a critical dimension within the image so that by interrogating it (by a mouse click), information is divulged. Images in the CD-ROM from Eisenstein's *Battleship Potemkin*, Welles's *Citizen Kane*, and Pare Lorentz's *The Plow That Broke the Plains* have animated lines diagrammed within them—the way a football commentator on television diagrams a play—to show how the filmmaker uses space and mise-en-scène to define character and narrative. All the moving images can be paused and stepped through, as if a VCR or DVD were incorporated into the computer screen. Abstract principles like point of view and genre—and general concepts like continuity cutting, montage, lighting, music, sound and the work of the camera—are made visible. Idea and image are put in the reader's control.

The Computer and the Text

The hypermedia event, no matter what its subject, is a creation of dimensions, an elaboration or invention of contiguities and connections, a way of creating an intertextuality of word, image, and culture in space by opening up linkages and associations that move in many directions. At the same time, it concentrates diverse materials in accessible ways. A central tenet of cultural studies is that people and the things they do never stand in isolation from each other. Texts are large, coherent events that include not only a single book, a film, or a television show but the various events going on around them, all directly or indirectly connected. Social attitudes and situations, ideological currents, newspaper reports, fashions, music, the history of the moment, and our own responses are all part of a larger textuality that is, in turn, a part of the culture. Hypermedia enables the creation of a text that can pull together these various textualities and explicitly or implicitly make links between them. It is a text of texts that makes range and depth part of its properties, and access an ongoing, interrogative process.

The creation and use of multimedia put the viewing subject in a situation unlike any other textual event. It gives the viewer control of a variety of large amounts of data that can be structured in intriguing and imaginative ways. It creates a sense of connection and exploration; and, in its networked, global form,

it is creating a new kind of community, a kind of universal culture, in which subjectivity, identity, and participation are in the process of being redefined.

Modernity and the Internet

In Chapter 4, we discussed the concept of modernity and defined it as the movement of technological advancement; increased urbanization; rapid fragmentation of dependable, cohesive structures (such as family, religion, a dominant race or ethnicity, and government); and the falling away of individual agency. Modernity can be figured as a movement away from a center, and that "center" can be understood through a variety of representations: religion, the extended family, the small community, the ideology of free will and independent action. Computer technology is a bridge from modernity to postmodernity. It allows us a way to experience and manage the transition. It shows ways to break away from the centers and create new configurations of the individual in the world that are both liberating and nostalgic, freeing and constraining. Film and television make us nostalgic about the simpler times that exist only in its images, offering us ways to dream ourselves out of the confusions of the modern world. Computer networks let us see modernity and offer us ways to navigate through it.

Modernity is developed on the ground of communications. The ability of people to be in immediate contact with each other offers ways to transcend local community and construct the global one that is essential to the processes of decentralizing culture. The invention of printing in the fourteenth century was a primary event in the spreading of information and ideas, the diffusing of the authority of the individual by making his words take the place of his presence, spreading those words beyond his voice, his ideas beyond his control. Printing helped conquer space by making ideas and information movable and independent of an individual. This was when aura began to diminish.

In the nineteenth century the process received another boost. During the last half of the nineteenth century, the railroad became a way for physical decentralization, allowing people relative ease of movement across a country. In the twentieth century, the car and the airplane took the place of the railroad and provided international access for many and local mobility for almost everyone. At about the same time, the cinema became an imaginative and emotional means of expansion, a means to access images of other spaces, other kinds of behaviors. Telegraphy and the telephone created—like the book and the film—a curious hybrid of movement and stasis. Through them, a person could reach another, distant place while remaining physically rooted in her original location. The telephone permitted the voice, the most forceful of communicative agents, to transmit its presence and intimacy. It broadened community and, like the railroad, increased commerce. Telegraphy and the teletype allowed the transmission of writing and images and therefore the communication of detailed information, structured, authoritative, and official, in the way speaking never could.

Telephone and telegraphy, like movies and television, are part of the analogue realm—continuous waveforms of information, transferred from point to point. The transportation, quality, management, and storage of this kind of communications were bulky and limited, subject to the constraints of space and to the "noise" that is introduced by factors as various as sunspots, poor equipment, and distance. "Noise" is a concept in communications theory that stands for any kind of interference in the transmission process, physical, ideological, corporate. The digital reduces noise on many different levels. By transforming the analogue into the binary, image, sound, and text can be sampled and compressed as numbers rather than waves. Physical noise can be removed, and, as we've seen, degeneration in quality is eliminated. Most important, because large parts of the digital repository of information are open, accessible to all who have the rather simple (if still somewhat expensive) equipment necessary to find and see them, the ideological "noise" of ownership and information control should be somewhat diminished. However, as we have seen in recent years, especially in the music world, ownership of digital files has become a major issue. Still, though computer communication is hardly as universal as the telephone, and corporate constraint continues to raise its ugly head, where it is available, it offers opportunities of access and content, individually controlled, that no other communicative form has.

The great repository and distribution system of digital communications is the Internet. Although it is a product of modernity, it is also a model of what postmodernity is about. The Internet is an idea without a location, a thing with no single physical presence, a way of moving ideas, visual images and sounds, and a lot of text around the world, from screen to screen, with as little noise as possible. Early on, the Internet defied capitalist rules of ownership, because it wasn't owned. It was originated by the U.S. Department of Defense in the 1960s, taken under the partial stewardship of the National Science Foundation, and became governed by a loose confederation of universities, government agencies, and corporations. Ownership did not define the Internet; access did. The Internet is, in its simple reality, many computers—called servers—linked together through a complex addressing protocol that makes each one of them identifiable and addressable by any other. An individual who can access a network directly or by a phone hookup can connect to some or all of the Internet, find those servers, and look at what they have to offer.

This, of course, is its major limitation, the place where noise enters the system in the form of economic and class barriers to access and the growing ownership of web sites by corporate interests, crowding out public and academic access. This is partly because though unowned in the normal corporate senses of the word, the Internet costs money. Those costs are usually borne by universities or corporations. Any student who is assigned an address and has access to a machine with a modem or direct connection can access the network. For around twenty dollars a month, anyone else with a computer and a modem, and a local company that provides an Internet connection, can get access. Pay-for-use dial-up services, like America Online, provide some Internet connections. In many

communities, public libraries, churches, and community centers are providing access. The advent of high-speed cable modems and telephone-delivered DSL (direct subscriber line) services is making that access quicker and easier—and more expensive. The poor, minorities, those living in the inner city or outer rural areas still find access very difficult.

For those who can access the Net, and despite the growing corporate control, there are various genres, various ways of representing, communicating, and receiving data, each with its own conventions, structures, and protocols. Newsgroups provide a large and sometimes bizarre variety of ongoing discussions, from computer programming to paramilitary rant. Some newsgroups constitute the male-only barroom of the digitized world, where aggression, vulgarity, and old rituals of gender exclusion are played out with uncensored ferocity. More propriety is shown on listservs, which are also discussion groups but made up of subscribed members, grouped usually by academic interests. Listservs are easily formed and made local, so that your college class, for example, can create a listserv in which members can discuss related topics with one another.

These means of personal communication, combined with electronic mail, which uses the Internet to send individual messages between people with server access, make the digital a personalized realm, and a comfortable one as well. Although, as in any community effort, loud and angry voices sometimes threaten to overtake conversations, niches have quickly developed, giving them a place where they can be either attended to or ignored. The spaces that remain are filled with people exchanging information, making contact, talking, a faceless, spaceless community in which subjectivity is redefined by intellectual and emotional interests, where one can simultaneously be audience and participant.

Were these the limits of the Internet, it would remain the province of university researchers and people who like to chat about everything from politics to sex and guns. What has brought it into prominence, made it a part of the cultural landscape where it is vying with film and television for the attention of both individuals and the corporate world, is another means of depositing and retrieving data across thousands of servers, called the World Wide Web. The Web was developed by computer scientists as an easier means of transmitting images and sound along with printed text across servers around the world. So easy, in fact, that almost anyone who has Internet access can design a "home page" and put it up for the world to see. The home computer can become a distribution site.

Web sites work in hyperlink fashion. Sites are linked to other sites, often continents away, through a mouse click; images yield texts and texts images. Experimentations with every kind of material occur. Individuals put up pictures of their children; there are online collections from most of the major museums in the world; advertisements for local flower shops; scientific and humanities research; those large corporate sites that supply everything from moving images of recent film releases to software updates. These exist along with literary texts, photographs, avant-garde art and literary experiments, pornography, government and medical information, bibliographies, library catalogues,

scholarly journals—a world of broad though often, except in the case of full-length articles or books, narrow "information."

Every university, most of its departments, and many of their students and faculty have a web site. Special public services, such as forums for sufferers of particular diseases, groups and companies attempting to bring Internet access and information to African American and Hispanic and Latino communities as well as to older citizens, have sites. Rock groups, film festivals, and government agencies have web sites. Using special sites that provide search mechanisms, you can find the most general or particular information on the Web. It is an enormous, unruly assemblage, a place where many people go to look around and find, with time and patience, what they need. Because of its unruliness, it is sometimes an untrustworthy place. Much of the information is, as I mentioned, very thin; some inaccurate. Some literary texts posted on the Web are inauthentic. Many essays that appear to be scholarly may not have stood the test of review by academic peers. In a structure with no central authority—where almost anyone can be a producer—the facts and the narratives may be wrong or devious.

Any number of judgments can be made about the Web: the lazy person's shopping mall; a community for shy people; a passing fad for those bored with television; a useful, though limited, research resource and a very poor replacement for the library; a place for businesses, large and small, to make another buck; a space to exhibit and exchange images of all kinds—a postmodern space of sense and nonsense, the banal and, though not often, the profound. It might be useful to think about it on a slightly more abstract level. The Internet, and the World Wide Web in particular, are the current outposts of the postmodern, where subjectivities—the sense and the place of the individual self—shift and change. The Internet is an enormous and a small space where a person can assert herself by connecting to and communicating with (no matter in how limited a way) almost every computer in the world. Or a person can be absorbed by the images and words shifted around the globe from server to server and screen to screen. It is a place, like the movies, of myriad representations but, unlike the movies, of few stories in the conventional sense.

Like almost everything on the computer screen, the World Wide Web is a place of process in which everything happens but nothing is resolved. Unlike the movies, its images and words do not fall into closed, knowable fictional worlds (when fiction appears on the Internet, either it is of the hyper variety, which means that it is fragmented and without closure, or it is a reproduction of a traditional text, difficult to read in its entirety on screen). As we said earlier, what is narrated on the Web is the story of investigation and participation, the subject's progress through an open-ended system.

The representations on the computer screen are open, ongoing, and their constraints are much different from those of conventional story-telling media. Because of the interactive nature of the computer and its screen, the individual subject is turned into an active participant and agent. And with that turn, rules are changed. Mass media, as we've said many times, require a largely passive

response. Despite the validity of the cultural studies argument about negotiating interpretations and engaging the text according to our determined desires to read what we want to read, much of our interaction with film and television is a passive reaction to its codes and conventions. Little passivity is possible in our interactions with the computer screen. We need to know what we are doing, actively seek things out, and often interact with what we find. No matter how strong corporate interference becomes, this will never change.

More than film and television, our engagement with the images on a computer screen is without aura. That startling idea of Walter Benjamin's, stated in the 1930s, is even more applicable now. With the advent of digital cultures, we are freer than ever to enter a community of ideas, of words and images—of representations—and find our way with less constraints than the older media. Benjamin wrote in "The Work of Art in the Age of Mechanical Reproduction":

> Every day the urge grows stronger to get hold of an object at very close range by way of its likeness, its reproduction.... To pry an object from its shell, to destroy its aura, is the mark of a perception whose "sense of the universal equality of things" has increased to such a degree that it extracts it even from a unique object by means of reproduction.... The adjustment of reality to the masses and of the masses to reality is a process of unlimited scope, as much for thinking as for perception.

For "masses" read "ourselves." We are the ones extracting images and ideas, our own subjectivities, and testing them in the digital, networked world in ways the makers of popular culture could have never imagined. Through the digital, reality is being adjusted, just as it was with the movies at the turn of the century. And, just like then, we are searching for new languages of expression, new ways to create the new realities.

The structure of the World Wide Web, the possibilities inherent in hypermedia authoring, the resources available to computer programming, may yield a language of inquiry, of humanity, of emotional resonance that could speak to us—or to which we may speak—with complexity and insight. This language will be of a different order of resonance and responsibility than the great works of film, the movies of Hitchcock, Kubrick, Welles, Scorsese, Godard, Antonioni, Bertolucci, Altman, Fassbinder, and all the others who have used their medium to probe and ask questions. But it will address and articulate our curiosity and desire.

All the tools we have to act, perceive, and create have the potential to ask questions and find new meanings, new realities; and the languages of the computer and the possibilities of its screens have no more inherent limits than any other. The limits exist only in those who use the languages, who make the images and read them. Someone once said that the computer is still looking for its D. W. Griffith. What that means is that we still await the imagination that can turn the language of the computer program and the images of the computer screen into articulate and coherent statements that speak to our selves, our history, our culture.

Film, Form, and Culture, the CD-ROM

The *Film, Form, and Culture* CD-ROM is itself one example of new media, in which film and analysis appear in a computer-created interactive environment.

NOTES AND REFERENCES

Television The best source for a cultural study of how television infiltrated the home is Lynn Spigel, *Make Room for TV: Television and the Family Ideal in Postwar America* (Chicago: University of Chicago Press, 1992).

Commercial Structures A good history of the development of commercial television is William Boddy's *Fifties Television* (Urbana, Illinois: University of Indiana Press, 1990). Mike Mashon's *A Word from the Sponsor: Madison Avenue and the Evolution of American Television*, forthcoming from University of Texas Press, clarifies television's early history.

Narrative Programming For a good differentiation of "series" and "serials," and a discussion of narrative form in television, see John Ellis, *Visible Fictions: Cinema, Television, Video* (London: Routledge, 1992).

Soaps For soap operas, there are two collections of essays: E. Ann Kaplan, ed., *Regarding Television: Critical Approaches* (Frederick, MD: University Publications of America, 1983); and Suzanne Frentz, *Staying Tuned: Contemporary Soap Opera Criticism* (Bowling Green, OH: Bowling Green State University Popular Press, 1992).

Flow The citation for Raymond Williams is in Chapter 4.

From Analogue to Digital: Storage and Distribution Here is a story about a film that combines digital replacement with advertising. *Demolition Man* (Marco Brambilla, 1993), a film set in the future, with Sylvester Stallone and Wesley Snipes, has sequences that take place in a Taco Bell fast-food restaurant. There were no Taco Bells in Europe—where American producers count upon a film making a lot of money—but there are Pizza Huts, which are owned by the same company, Pepsico. Pepsico paid to have Taco Bell appear in the film. The filmmakers simply did a digital replacement so that Taco Bell now appeared as Pizza Hut. No refilming was necessary, and Pepsico got advertising in its European markets. (See *The Wall Street Journal*, Dec. 2, 1993, p. B1.)

The Third Screen: Hypertext The original group of hypertext authors were published on disc by Eastgate Systems. One of the best hypertext stories is Matthew Miller's "Trip" in vol. 7, no. 1 (September 1996) of *Postmodern Culture*. *Postmodern Culture* is an online subscription journal available at http://muse.jhu.edu/journals/postmodern_culture/.

Hypertext theory is outlined in J. David Bolter, *Writing Space: The Computer, Hypertext, and the History of Writing* (Hillsdale, NJ: L. Erlbaum Associates, 1991). Bolter's *Turing's Man: Western Culture in the Computer Age* (Chapel Hill: North Carolina University Press, 1984) is an interesting attempt at a cultural history of computing. A classic book on interactive narrative is Janet Horowitz Murray,