

Jay David Bolter  
Richard Grusin

# Remediation

Understanding New Media

## *Introduction: The Double Logic of Remediation*

---

"This is not like TV  
*Strange Days*. This is  
straight from the ce  
it, hearing it . . . fee  
technological wond  
over her head, its s  
her brain. In its rec  
of the wearer; in it  
tions to the wearer.  
fier sense experienc  
make all media ob  
tique would seem  
so on. The wire by  
from one consciou

The film *S*  
Lenny and his cust  
beyond mediation  
power and ubiqui  
days of 1999, on  
voice- and text-b  
board-sized telev  
this media-filled  
nology, despite—  
signed to efface it  
Lenny coaches t  
cording, it becom  
contrived as a tra

"This is not like TV only better," says Lenny Nero in the futuristic film *Strange Days*. "This is life. It's a piece of somebody's life. Pure and uncut, straight from the cerebral cortex. You're there. You're doing it, seeing it, hearing it . . . feeling it." Lenny is touting to a potential customer a technological wonder called "the wire." When the user places the device over her head, its sensors make contact with the perceptual centers in her brain. In its recording mode, the wire captures the sense perceptions of the wearer; in its playback mode, it delivers these recorded perceptions to the wearer. If the ultimate purpose of media is indeed to transfer sense experiences from one person to another, the wire threatens to make all media obsolete. Lenny mentions television, but the same critique would seem to apply to books, paintings, photographs, film, and so on. The wire bypasses all forms of mediation and transmits directly from one consciousness to another.

The film *Strange Days* is less enthusiastic about the wire than Lenny and his customers. Although the wire embodies the desire to get beyond mediation, *Strange Days* offers us a world fascinated by the power and ubiquity of media technologies. Los Angeles in the last two days of 1999, on the eve of "2K," is saturated with cellular phones, voice- and text-based telephone answering systems, radios, and billboard-sized television screens that constitute public media spaces. In this media-filled world, the wire itself is the ultimate mediating technology, despite—or indeed because of—the fact that the wire is designed to efface itself, to disappear from the user's consciousness. When Lenny coaches the "actors" who will appear in a pornographic recording, it becomes clear that the experience the wire offers can be as contrived as a traditional film. Although Lenny insists that the wire is

Figure I.1 A virtual reality head-mounted display. Courtesy of Professor Larry Hodges, GVU Center, Georgia Institute of Technology.

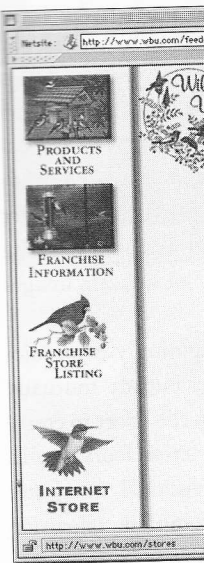


“not TV only better,” the film ends up representing the wire as “film only better.” When Lenny himself puts on the wire and closes his eyes, he experiences the world in a continuous, first-person point-of-view shot, which in film criticism is called the “subjective camera.”

*Strange Days* captures the ambivalent and contradictory ways in which new digital media function for our culture today. The film projects our own cultural moment a few years into the future in order to examine that moment with greater clarity. The wire is just a fanciful extrapolation of contemporary virtual reality, with its goal of unmediated visual experience. The contemporary head-mounted display of virtual reality is considerably less comfortable and fashionable (fig. I.1), and the visual world it generates is far less compelling. Still, contemporary virtual reality is, like the wire in *Strange Days*, an experiment in cinematic point of view. Meanwhile, the proliferation of media in 2K L.A. is only a slight exaggeration of our current media-rich environment, in which digital technologies are proliferating faster than our

cultural, legal, or educational, addressing our culture through hypermediacy, this film is a *remediation*. Our culture is all traces of mediation, an act of multiplying the

In this last decade, in a position to appreciate the rise of new digital media and the status of older media, we see new and old media and the permediacy in their efforts to fulfill our apparently insatiable view television program. A police officer on a dark night, hurtling through space, costs dollars to film on location in order to make their “virtual cams” on the Internet. The film is a panorama in the Can





ing the wire as "film  
and closes his eyes,  
erson point-of-view  
re camera."  
ntradictory ways in  
day. The film proj-  
future in order to  
re is just a fanciful  
ts goal of unmedi-  
nted display of vir-  
ionable (fig. I.1),  
g. Still, contempo-  
an experiment in  
n of media in 2K  
edia-rich environ-  
g faster than our

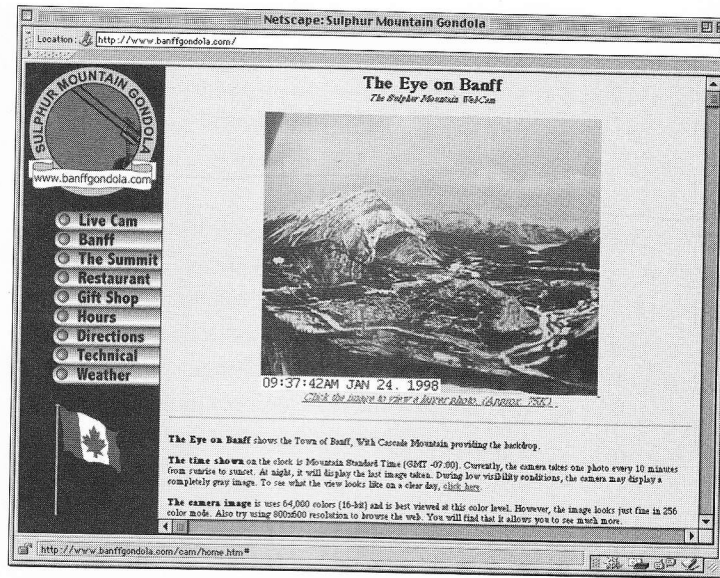
cultural, legal, or educational institutions can keep up with them. In addressing our culture's contradictory imperatives for immediacy and hypermediacy, this film demonstrates what we call a double logic of *remediation*. Our culture wants both to multiply its media and to erase all traces of mediation: ideally, it wants to erase its media in the very act of multiplying them.

In this last decade of the twentieth century, we are in an unusual position to appreciate remediation, because of the rapid development of new digital media and the nearly as rapid response by traditional media. Older electronic and print media are seeking to reaffirm their status within our culture as digital media challenge that status. Both new and old media are invoking the twin logics of immediacy and hypermediacy in their efforts to remake themselves and each other. To fulfill our apparently insatiable desire for immediacy, "live" point-of-view television programs show viewers what it is like to accompany a police officer on a dangerous raid or to be a skydiver or a race car driver hurtling through space. Filmmakers routinely spend tens of millions of dollars to film on location or to recreate period costumes and places in order to make their viewers feel as if they were "really" there. "Webcams" on the Internet pretend to locate us in various natural environments—from a backyard bird feeder in Indianapolis (Fig. I.2) to a panorama in the Canadian Rockies (Fig. I.3). In all these cases, the logic



Figure I.2 Bird feeder webcam: the view is updated every three minutes. [http://www.wbu.com/feederCam\\_home.htm](http://www.wbu.com/feederCam_home.htm) January 24, 1998. © 1997, Wild Birds Unlimited. All rights reserved. Used by permission.

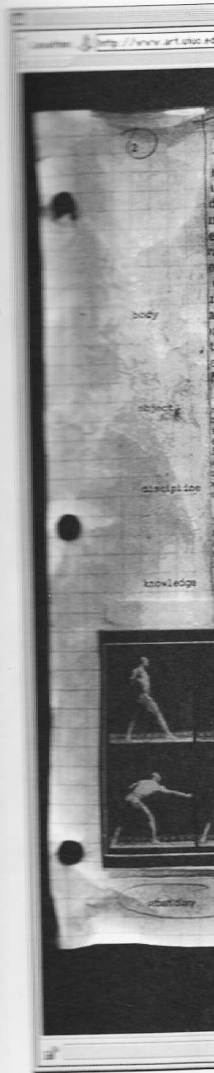
Figure I.3 Sulphur Mountain webcam, providing a repeatedly updated view of a mountain in the Canadian Rockies in Banff, Alberta. <http://www.banffgondola.com/> January 24, 1998. © 1998, Sulphur Mountain Gondola. All rights reserved. Used by permission.



of immediacy dictates that the medium itself should disappear and leave us in the presence of the thing represented: sitting in the race car or standing on a mountaintop.

Yet these same old and new media often refuse to leave us alone. Many web sites are riots of diverse media forms—graphics, digitized photographs, animation, and video—all set up in pages whose graphic design principles recall the psychedelic 1960s or dada in the 1910s and 1920s (Fig. I.4; Fig. I.5). Hollywood films, such as *Natural Born Killers* and *Strange Days*, mix media and styles unabashedly. Televised news programs feature multiple video streams, split-screen displays, composites of graphics and text—a welter of media that is somehow meant to make the news more perspicuous. Even webcams, which operate under the logic of immediacy, can be embedded in a hypermediated web site (Fig. I.6), where the user can select from a “jukebox” of webcam images to generate her own paneled display.

As the webcam jukebox shows, our two seemingly contradictory logics not only coexist in digital media today but are mutually dependent. Immediacy depends on hypermediacy. In the effort to create a seamless moving image, filmmakers combine live-action footage with computer compositing and two- and three-dimensional computer graphics. In the effort to be up to the minute and complete, television



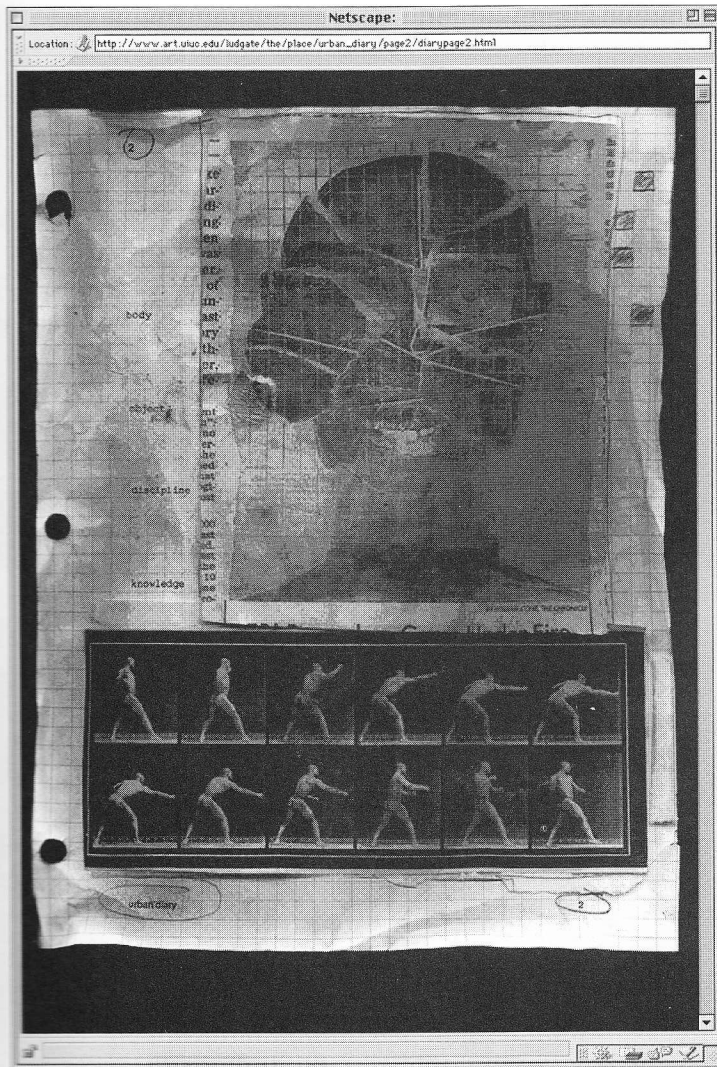
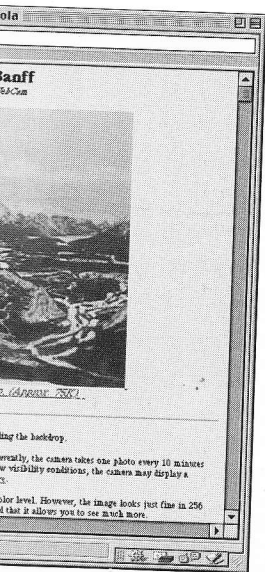


Figure I.4 A page from Joseph Squire's *Urban Diary*. [http://gertrude.art.uiuc.edu/ludgate/the/place/urban\\_diary/intro.html](http://gertrude.art.uiuc.edu/ludgate/the/place/urban_diary/intro.html) January 24, 1998. © 1995 Urban Desires. Used by permission.

lf should disappear and  
ed: sitting in the race car

a refuse to leave us alone.  
ms—graphics, digitized  
in pages whose graphic  
or dada in the 1910s and  
h as *Natural Born Killers*  
ashedly. Televised news  
screen displays, compos-  
at is somehow meant to  
ns, which operate under  
hypermediated web site  
oox” of webcam images

o seemingly contradic-  
oday but are mutually  
y. In the effort to create  
ve-action footage with  
dimensional computer  
d complete, television

Figure I.5 An image from the RGB Gallery at the Hotwired web site: a collection of digital art. <http://www.hotwired.com/rgb/opp/> ++++++ January 24, 1998. © 1994-1998 Wired Digital, Inc. All rights reserved.

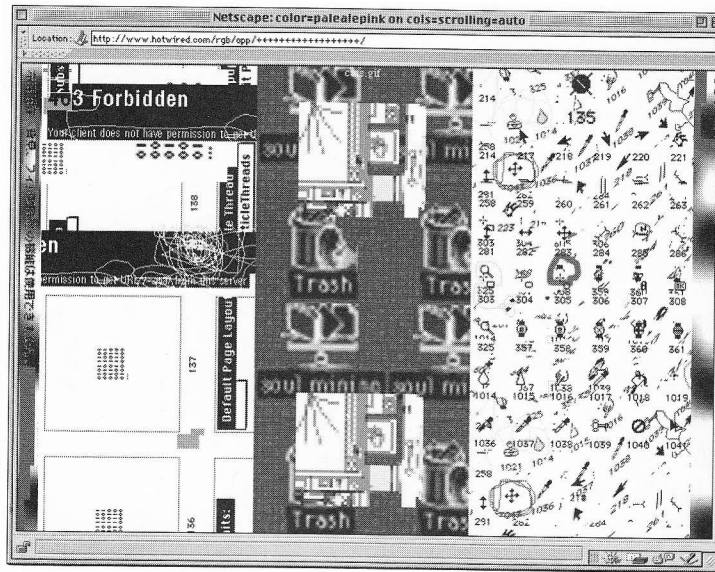
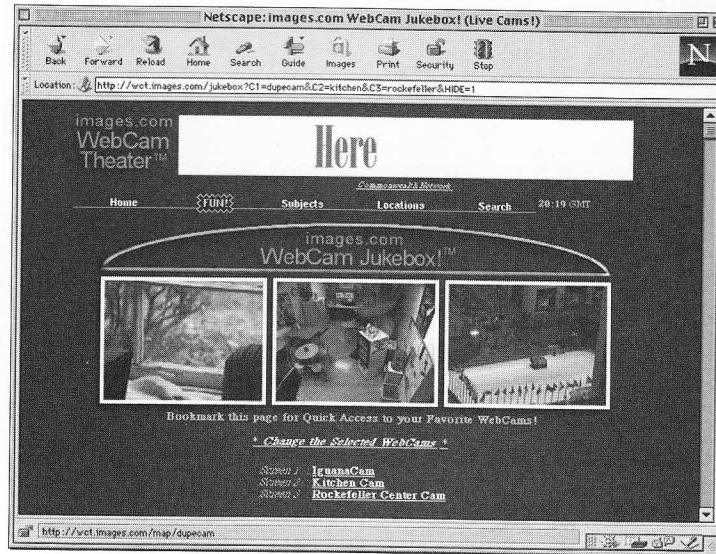


Figure I.6 This webcam jukebox allows the user to combine three individual webcams of her choosing. <http://wct.images.com/jukebox> January 29, 1998. © 1998, Kamal A. Mostafa. All rights reserved. Used by permission.



news producers ass  
 graphics, and even  
 the case during the  
 hypermediated pro  
 Directors of music  
 to create an imme  
 great pains to achie  
 sic. The desire for i  
 each other as well a  
 sion, and photograp  
 viewers of its imm  
 tion. The CNN si  
 video in multiple p  
 hyperlinks; yet th  
 televised CNN nev  
 ing to resemble we  
 team of web edito  
 Atlanta from whic  
 clearly want their



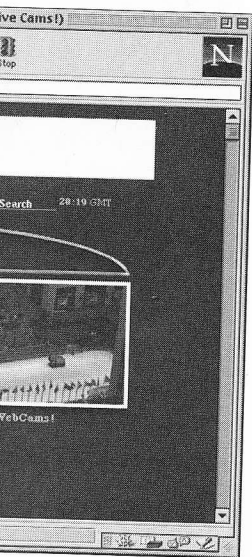
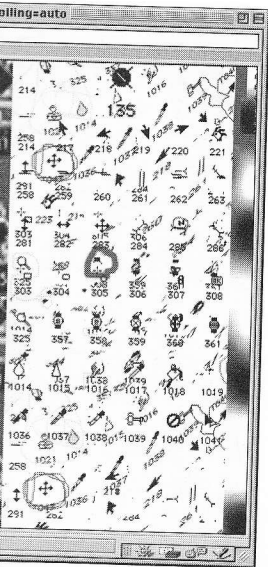


Figure I.7 The CNN Interactive web site. © 1998 Cable News Network, Inc. All rights reserved. Used by permission of CNN.

news producers assemble on the screen ribbons of text, photographs, graphics, and even audio without a video signal when necessary (as was the case during the Persian Gulf War). At the same time, even the most hypermediated productions strive for their own brand of immediacy. Directors of music videos rely on multiple media and elaborate editing to create an immediate and apparently spontaneous style; they take great pains to achieve the sense of “liveness” that characterizes rock music. The desire for immediacy leads digital media to borrow avidly from each other as well as from their analog predecessors such as film, television, and photography. Whenever one medium seems to have convinced viewers of its immediacy, other media try to appropriate that conviction. The CNN site is hypermediated—arranging text, graphics, and video in multiple panes and windows and joining them with numerous hyperlinks; yet the web site borrows its sense of immediacy from the televised CNN newscasts. At the same time televised newscasts are coming to resemble web pages in their hypermediacy (fig. I.7 and I.8). The team of web editors and designers, working in the same building in Atlanta from which the television news networks are also administered, clearly want their technology to be “television only better.” Similarly,

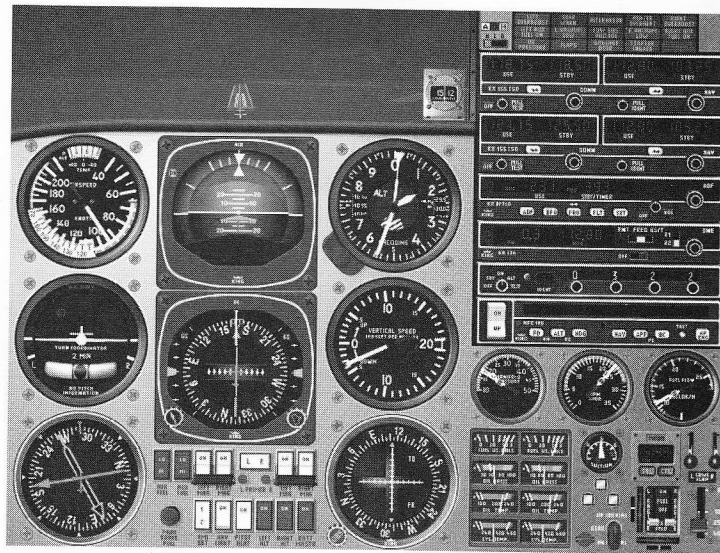
*from one form to another*

*designed to feel like something else*

Figure I.8 CNN Headline News.  
 © 1997 Cable News Network, Inc.  
 All rights reserved.



Figure I.9 Photorealistic Piper Seneca III Module: the interface for a flight simulator. © 1998 Initiative Computing AG, Switzerland. Reprinted with permission.



one of the most popular (fig. I.9). The architecture of the monitor the instant show the player "with immediacy of the experience of the cockpit is full of detail. The immediacy of this experience of this Remediatio media. We can identify hundred years of seventeenth-century Weston, and a completely important ways, by monitoring or denying. All of them seek viewed. The illusionistic" lighting (fig. thematizes linear illumination (fig. graphics specialist painter or even the

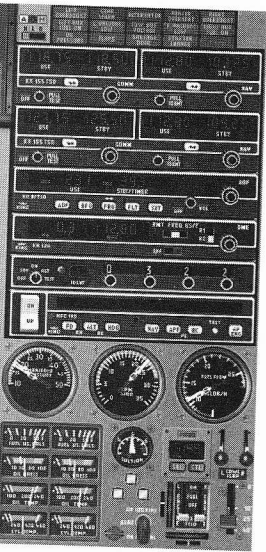


Figure I.10 Saenredam, Pieter Jansz. "S. Bavo in Haarlem" 1631. The John G. Johnson Collection, Philadelphia Museum of Art. Used by permission.

one of the most popular genres of computer games is the flight simulator (fig. I.9). The action unfolds in real time, as the player is required to monitor the instruments and fly the plane. The game promises to show the player "what it is like to be" a pilot, and yet in what does the immediacy of the experience consist? As in a real plane, the simulated cockpit is full of dials to read and switches to flip. As in a real plane, the experience of the game is that of working an interface, so that the immediacy of this experience is pure hypermediacy.

Remediation did not begin with the introduction of digital media. We can identify the same process throughout the last several hundred years of Western visual representation. A painting by the seventeenth-century artist Pieter Saenredam, a photograph by Edward Weston, and a computer system for virtual reality are different in many important ways, but they are all attempts to achieve immediacy by ignoring or denying the presence of the medium and the act of mediation. All of them seek to put the viewer in the same space as the objects viewed. The illusionistic painter employs linear perspective and "realistic" lighting (fig. I.10), while the computer graphics specialist mathematizes linear perspective and creates "models" of shading and illumination (fig. I.11; plate 1). Furthermore, the goal of the computer graphics specialists is to do as well as, and eventually better than, the painter or even the photographer.

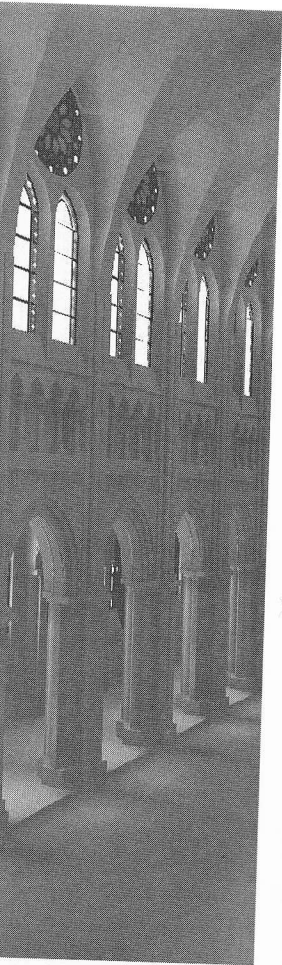
*doesn't acknowledge media*

Figure I.11 A photorealistic computer graphic: the nave of Chartres Cathedral, by John Wallace and John Lin. © 1989, Hewlett-Packard Co. Used by permission.



Like immediacy, hypermediacy also has its history. A medieval illuminated manuscript, a seventeenth-century painting by David Bailly, and a buttoned and windowed multimedia application are all expressions of a fascination with media. In medieval manuscripts, the large initial capital letters may be elaborately decorated, but they still constitute part of the text itself, and we are challenged to appreciate the integration of text and image (fig. I.12; plate 2). In many multimedia applications, icons and graphics perform the same dual role (as in figure I.13; plate 3), in which the images peek out at us through the word ARKANSAS. This dual role has a history in popular graphic design, as a





its history. A medieval  
ury painting by David  
edia application are all  
edieval manuscripts, the  
decorated, but they still  
lled to appreciate the  
2). In many multimedia  
ne dual role (as in figure  
ar us through the word  
alar graphic design, as a



Figure I.12 A page from a Book of Hours, circa 1450. © Robert W. Woodruff Library, Emory University. Used by permission.



Figure I.13 Arkansas: the splash (opening) screen for a multimedia celebration of the state.

Figure I.14 A Coney Island postcard from the 1910s. <http://naid.spps.ucla.edu/coneyisland/histart.htm> January 24, 1998.

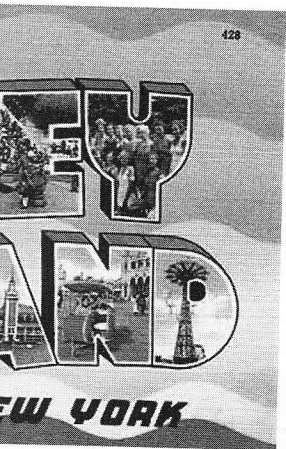


postcard of Coney Island from the early twentieth-century shows (fig. I.14). Today as in the past, designers of hypermediated forms ask us to take pleasure in the act of mediation, and even our popular culture does take pleasure. Some hypermediated art has been and remains an elite taste, but the elaborate stage productions of many rock stars are among many examples of hypermediated events that appeal to millions.

In the chapters that follow, we examine the process of remediation in contemporary media. In part I, we place the concept of remediation within the traditions of recent literary and cultural theory. Readers who are less interested in theory may want to turn directly to part II, which illustrates the work of remediation in such media as computer graphics, film, television, the World Wide Web, and virtual reality. These illustrative chapters should make sense even without the fuller explanations of transparent immediacy, hypermediacy, and remediation provided in part I. In part III, which is again more theoretical, we consider how new digital media are participating in our culture's redefinition of self. Because readers may choose not to read the book in linear order, we have provided references—the printed equivalent of hyperlinks—to connect points made in the theoretical chapters with examples in the illustrative chapters, as well as some references from each illustrative chapter to others. This link directs the reader to part II. **p. 85**

Our primary concern will be with visual technologies, such as computer graphics and the World Wide Web. We will argue that these new media are doing exactly what their predecessors have done: pre-

venning themselves as ref  
the. Digital visual media  
which they honor, rival, a  
caption, film, television, an  
single media event, seem  
media, any more than it  
numeric forces. What is ne  
ways in which they refas  
media refashion themsel



entieth-century shows (fig. mediated forms ask us to en our popular culture does been and remains an elite many rock stars are among t appeal to millions.

process of remediation in he concept of remediation ultural theory. Readers who n directly to part II, which edia as computer graphics, irtual reality. These illus- out the fuller explanations d remediation provided in oretical, we consider how ulture's redefinition of self. book in linear order, we valent of hyperlinks—to ers with examples in the ces from each illustrative to part II. **p. 85**

ual technologies, such as We will argue that these ecessors have done: pre-

senting themselves as refashioned and improved versions of other media. Digital visual media can best be understood through the ways in which they honor, rival, and revise linear-perspective painting, photography, film, television, and print. No medium today, and certainly no single media event, seems to do its cultural work in isolation from other media, any more than it works in isolation from other social and economic forces. What is new about new media comes from the particular ways in which they refashion older media and the ways in which older media refashion themselves to answer the challenges of new media.