

For more than a year,
the images
relentlessly
confronted people
throughout
America: the white
Bronco followed by
dozens of police
cars, the bloody
black glove, and

O. J. Simpson sitting stoically in the courtroom. No trial in history received as much attention. The jurors in Simpson's criminal trial were charged with

determining whether the Los Angeles Police Department had evidence to prove that he had killed Nicole Brown Simpson and Ronald Goldman.

But the images carried on television, in newspapers and magazines, and even on the Internet would help to decide Simpson's guilt or innocence in the minds of most Americans. Were those images reliable? Soon after the murder of his ex-wife and Goldman, both *Time* and *Newsweek* published cover photographs based on police photos of Simpson, but *Time* darkened its picture, adding contrast and shading. Tabloids such as *The National Enquirer* printed photographs that emphasized Nicole's blond hair against O. J.'s black image. Critics charged that such images did more than represent facts—they increased racial tension and sensationalized the trial.

In his 1922 book *Public Opinion*, Walter Lippman wrote about how media affect pictures in people's heads. He said, "The only feeling that anyone can have about an event he does not experience is the feeling aroused by his mental image of that event."¹

Humans are image-oriented animals. Scientists estimate that up to 75 percent of the information processed by humans comes through their eyes. This should come as no surprise to the U.S. citizen who wakes up to the graphics on the back of the cereal box and falls asleep to the flickering images of television.

Visual communication has long been a central part of human societies. Cave drawings and paintings were early forms of written communication. The sculptures of ancient Greece and Rome, African tribal masks, stone carvings on medieval European cathedrals, and ritual paintings by Native Americans also were used to convey messages. From the eighteenth century onward, inventors worked to perfect technology that would increase the power of images to convey messages to broader audiences and would link these images with other print forms. Photographic, printing, video, and computer technologies have revolutionized communication, allowing visual messages often to dominate other forms.

As visual images become more dominant, how people react to them has important consequences for social maintenance and social change. Here, there are more questions than answers. For example, media professionals and critics want to know whether audiences accept images at face value. Do they understand that visual images can distort and manipulate? How powerful is the image? Does it sway emotion? Does it persuade with rational appeal? Does it encourage people to buy advertised products they don't want or need? As people come to rely increasingly on visual images rather than on words, significant issues emerge, such as the following:

- How has the development of visual technology influenced the U.S. media? How does it continue to influence media development?
- How do citizens in a democratic society learn to separate visual reality from visual distortion? What is the significance of being able to do so?
- How will image forms, such as photography and information graphics, change with converging technologies?

Visual communication in American life

Although chemists and inventors had been working since the days of ancient Greece to develop the photographic process, it was not until the 1880s, with the development of **halftone** technology, that newspapers and magazines could reproduce photographs inexpensively. Nevertheless, publishers considered illustration important, and they used cartoons, woodcuts, and engravings in an effort to visually depict stories about people and issues.

Images in your life



Pervasive Images

Memorable images come to us through mass media. Sometimes we associate a historical event with a particular photograph or a slogan with a

T-shirt sold at a singular event. What do you associate these events to?

WHERE DID YOU SEE VISUAL IMAGES?	DEPICTING O. J. AND NICOLE SIMPSON?	DEPICTING THE BOMBING OF THE FEDERAL BUILDING IN OKLAHOMA?	DEPICTING YOUR FAVORITE POLITICAL CANDIDATE?
In a Political Cartoon?			
On a Late-Night Television Show?			
From a Rented Video?			
In a Movie?			
In a Television or Film Documentary?			
On a T-Shirt?			
In a Magazine?			
Other?			

Technology and the impact of early illustrations

The process of including illustration in print was complex. At first, pictures were hand engraved into woodcuts. These pictures were treated much as were letters for printing text—ink was rubbed onto the raised images, which were then pressed against a sheet of paper. Woodcuts produced such fuzzy images, however, that newspaper editors felt free to interchange woodcuts of different individuals. A reader might see a woodcut of Thomas Jefferson one week and the identical woodcut, this time said to be of John Adams, the following week.

Illustrations served a significant social and political role, and woodcuts in the form of political cartoons illustrated America's earliest newspapers. In 1754, Benjamin Franklin designed what became a famous cartoon, "Join, or Die." Published in the *Pennsylvania Gazette*, the illustration showed a snake divided into thirteen pieces, each engraved with the initials of one of the British colonies. The illustration represented Franklin's belief that if the colonies did not join together, they would remain forever under British rule. Although the cartoon was popular, it was another twenty years before colonists widely adopted Franklin's point of view.

During the mid-1800s, illustrated weeklies such as *Harper's* and *Leslie's* commissioned artists to make elaborate engravings from paintings, drawings, and photographs. The two-page illustrated spreads attracted audiences, despite the drawings' lack of dynamism. Newspaper and magazine editors also used car-

toons, which could be easily engraved. Thomas Nast of *The New York Times*, who first drew the Republican elephant and the Democratic donkey that now symbolize the two parties, solidified the genre during the nineteenth century. In 1922 the first Pulitzer Prize for editorial cartooning was awarded to Roland Kirby of the *New York World* in recognition of the importance of social and political satire.

■ Making photography into a mass medium

The search for illustration dates to classic Greece, when the Greeks used the *camera obscura* to project an image. The camera obscura was a completely dark room that had a tiny hole in one wall that focused an upside-down, reversed left-to-right image on the opposite wall or a white screen. Over the centuries the camera obscura was reduced to a small box, and a lens and mirror were added to better control the image.

Generating an image was not enough however. People wanted to be able to make the image permanent. By the 1700s, chemists knew that light would turn certain silver compounds dark, creating photographic images, but they could not control the process so that photographs could be viewed in normal light. In the early 1800s, Joseph Niepce and Louis Daguerre developed techniques to stop the exposure process once the satisfactory tones had been achieved. In 1841, W. H. Fox Talbot patented a process of fixing negative photographic images on paper; his 1844 book *The Pencil of Nature* was the first book to be illustrated with photographs. The first commercial photography studio opened in the United States in 1840, and Americans began sitting for their portraits. Artists also worked as landscape photographers.

Early cameras were bulky and expensive and required 4" by 5" glass plates, or larger, for negatives. The development of gelatin-based film on a roll in the 1880s meant that many exposures could be contained in a smaller camera box, leading the way for the consumer-oriented camera. In 1900, when Eastman Kodak Company introduced the Brownie camera at the astounding price of \$1, photography became a public art.

When a process using halftones was invented, toward the end of the nineteenth century, photographs could easily be reproduced with text. This process chemically etched raised dots on a metal plate. The halftone was inked and pressed on paper along with text. The density of the dots could vary to produce a flexible range of tones, as is needed to reproduce photographs.

SOCIAL IMPACT Within a decade, fast, high-powered presses could incorporate halftones with text at a relatively small expense. This altered the content of newspapers, making way for the comic pages, a new form of social and political commentary, as well as for entertainment.

Comics sections similar to those that appear today began in 1889, when the *New York World* used its new presses to add color to the Sunday comics. Competition for cartoonists and readers raged during the 1890s between Joseph Pulitzer's *World* and William Randolph Hearst's *New York Journal*. This was the famous "yellow journalism" period that developed sensational techniques and took its name from a comic strip entitled "The Yellow Kid." The "funny papers" expanded to the world of drama by the early 1920s with the addition of "Gas-

line Alley” and “Little Orphan Annie.” Adventure stories became a part of the comics with “Tarzan” in 1929.

ADDING COLOR Although color was added to Pulitzer’s *World* in 1893 by using presses that could print in color, creating photographs in color was more complicated. Finally, chemists designed a process that involved separate exposures of three layers of chemical emulsions. The three layers were placed over each other in **register** to create a negative that was then turned into a positive print. In 1935, when Kodak put these three layers of emulsion together on one film backing, modern color photography was born.

■ **Photojournalism: small camera technology and social reform**

Just as the Kodak box camera revolutionized public photography, the development of the 35-millimeter camera and fast film created new opportunities for photojournalism, an extension of the type of photography social reformers had used between 1880 and 1915 to document and fight the negative social effects of the industrial revolution.

In the 1890s swelling numbers of European immigrants created a huge labor force that had little power, and the manufacturers exploited men, women, and children in appalling working conditions. Ten-year-old children operated dangerous machinery for ten or twelve hours a day, six days a week.

Some journalists tried to expose these problems through articles and illustrations. Muckrakers, who often were magazine journalists, and their newspaper counterparts attacked corporations and fought for changes in labor, agricultural, and business laws. Jacob A. Riis and Lewis W. Hine photographed the plight of the poor and homeless to show what can happen to unskilled workers in an unregulated capitalist economic system.

In the 1920s social documentary photography was greatly enhanced with the introduction of the small Leica camera, made by E. Leitz of Germany. With the Leica, a photographer could work unnoticed while recording a scene. In addition, film became “faster,” needing less light—and less time—to record an image. These technological changes led to flourishing picture magazines, first in Germany, then England, and then the United States. Henry Luce’s *Life* and Gardner Cowles’ *Look* became showcases for photojournalists. Magazines that used high quality paper and printing processes benefited more than newspapers from the new technology. Until the development of **fast film** in the 1960s, **35 millimeter** film was too slow for newspapers and produced pictures that had a grainy look. So newspapers stuck with flashbulbs and large-format Speed Graphics, while general-interest magazines chronicled the Depression of the 1930s, World War II, the prosperous 1950s, and the early moments of the Civil Rights Movement.

The Depression created more hardship in the United States than any series of events since the Civil War, and by 1933 a quarter of the U.S. labor force was unemployed. Many people and events of the period were preserved in pictures because of the emphasis on photography as documentary, which became known as photojournalism.

Perhaps the most notable group of photographers during this time worked for Roy Stryker and the Farm Security Administration (FSA). Photographers such as Arthur Rothstein, Walker Evans, Dorothea Lange, and Gordon Parks pho-

tographed migrant farmers in California, African American sharecroppers in the South, drought stricken farmers in Oklahoma and Texas, and federal work projects throughout the country. The FSA photographers' records of that period demonstrate how effectively a camera can function as a sociological commentator and historical recorder.

Before joining the group, Lange had already established herself as a portrait and documentary photographer, particularly with her photographs of migrant labor camps in California. Stryker modeled his expectations of FSA photographers on Lange's earlier work.

Lange differed from the other photographers because she worked from her home in California, not from the FSA's Washington, D.C., office. She disagreed with Stryker about who should control the negatives produced by the FSA and who should print photographs. These conflicts led to Lange's being fired when the Department of Agriculture cut the FSA's budget at the end of 1939.²

Lange's strength as a photographer was her ability to capture the humanity of her subjects. They accepted her presence easily, and her pictures of them showed the viewer something of the universal in people. Her photograph entitled "Migrant Mother" is the most often published of all the FSA photographs. In March 1966, six months after her death, Lange became the first woman photographer to have a retrospective exhibition at the Museum of Modern Art.

Beginning in 1936 and continuing into the 1960s, *Life* magazine showcased the work of the country's premier photojournalists. The magazine, begun by Henry Luce, chronicled the latter years of the Depression and set the standard for war photography during World War II. Unlike photographers in previous wars, *Life* photographers, with their small cameras and fast film, could photograph moving bodies. They conveyed action, blood, effort, and grief, transporting readers to the battlefields of war.

■ Images and advertising

Consumer culture expanded during the 1920s, and advertising images played a significant role in the selling of products. Roland Marchand, in *Advertising the American Dream*, argues that in the 1920s, advertising "had become a prolific producer of visual images with normative overtones, a contributor to the society's shared daydreams." As the technology for reproducing images improved, advertisers used more and more pictures because of their flexibility and emotional impact. Marchand wrote that even at the height of the "testimonial craze," no advertiser would have claimed that God endorsed his product. However, a single ray of light from "a mysterious heavenly source might create a virtual halo around the advertised object without provoking the reader into outrage at the advertiser's presumption." Thus images could be powerful, yet subtle. Often, they served to preserve continuity—to connect the past to the present. In marketing motor oils and tires for popular automobiles of the 1920s, advertisers could picture the motorist traveling through "village America," the small town featuring as its most prominent item a slim church steeple. Thus modern products could be sold against a backdrop of a reassuring continuity of values.³ This use of images from a supposedly simpler time is still seen in advertising today.

In the 1950s the 130-year-old process of chemically producing images confronted the video age. In 1956, Ampex Corporation engineers demonstrated that moving images could be electronically recorded and reproduced, and in the mid-1970s, engineers introduced color video and lightweight cameras. The new technology affected how print and broadcast news was gathered and produced. It also created a new and popular consumer product: the ubiquitous videocassette recorder-player (VCR). Sony's Betamax and Matsushita's VHS systems, based on different technological designs, battled for consumer acceptance. By the end of the 1980s, VHS had become the dominant system, and Betamax disappeared.

Newspapers adopted **electronic photography** because of the ease of transmission, the ability to incorporate photographs into computerized page composition, and the speed with which a photograph can be put in the newspaper. Broadcast news teams could go into the field with lightweight cameras and produce good-quality videotape on the spot.

By the 1990s, convergence was apparent not only in technology, but also in the production of mass media content. Although the quality of camera and film quality varies, the same basic technology is used by professional photographers and the public. Broadcast and cable TV stations began to purchase videotapes of **spot news** events that individuals had made on their home videocameras. The professional and public roles of news gathering had become blurred.

Visual literacy

The growth of visual communication—and the possible blurring of public and professional roles—during the second half of the twentieth century raised a concern about manipulation of the audience. The concern is that the apparent realism of film and video could fool people into thinking that what they see on television is real. In response to this concern, the 1970s saw the development of a visual literacy movement. Visual literacy is “the ability to comprehend and create information that is carried and conveyed through imagery.”⁴ A visually literate person would understand how visual communication is created and how the images affect them.

The manipulation of images is not a new issue. Composite photographs used in newspapers during the 1890s caused people to question the validity of illustrations. In the 1920s, the use of visual images to persuade became controversial as well. A 1925 edition of Alfred Poffenberger's *Psychology in Advertising* urged advertisers to use pictorial appeals to fundamental emotions. Poffenberger argued that an advertisement that stimulated thought merely provoked argument. But pictures, he said, inspired belief.⁵

It was the emergence of television and VCR technology that caused visual literacy to develop as a field of instruction and research. Areas of concern include how people understand visual images that are different from reality, how people can learn to deal with visual aspects of the real world, how people can protect themselves from media manipulation of messages, and how visual images can be understood as art.⁶

Visual literacy applies to all forms of imagery, including photographs, video, film, paintings, and drawings. However, most concerns about visual literacy ad-

dress photographs, video, and film because these images are mass produced and have an impact on a wide audience. Media provides a **frame** for visual images. The frame limits what is seen and affects the meaning assigned to the image by viewers.

Television research shows that framing of images can alter viewers' perceptions of an event. Researchers sent a group of people to watch the 1952 Chicago parade in honor of General Douglas MacArthur. Another group watched the parade on television. The people who attended the parade reported a small crowd and a boring event. The television watchers saw what looked like crowds of people around MacArthur and an exciting parade. The difference resulted from the framing of the events by television. Including only the parts of the event that seemed exciting changed the impression of the parade.⁷

Once images start to move, editing of the motion becomes crucial in creating visual effects. For example, movie heroes often appear to jump from high places such as buildings. It seems that the actor jumped, but in most cases it was a stunt person. The sequence starts with a close-up of the actor jumping from a mock-up of the building roof. A long shot shows the stunt person falling onto a truck full of boxes, but the shot is too far away to see the person's face. The next shot shows the actor getting out of the boxes as if he had just landed. With editing, the film maker creates the impression that the actor actually jumped.

Of all the reasons to develop visual literacy, self-protection may be the most important, especially when children are concerned. For example, in television advertisements toys always work perfectly. The flying widget always goes straight and is easy to catch, and all the kids seem to toss it effortlessly. This impression is deliberate and is achieved by editing hours of videotape into a few seconds. An eight-year-old child will want all the toys because they appear to be easy to use and lots of fun. A child who learns visual literacy—or is taught to understand how and why advertisements are made—is not so easily persuaded to buy every toy that appears on the TV screen.

Television advertisements' efforts to manipulate have led to regulation of children's advertising content. For example, advertisers have to state whether toys are made to move with camera tricks. But not all tricks have to be revealed, and commercials often leave the wrong impressions about toys.

Educating people about visual communication will be increasingly important as images continue to dominate entertainment and advertising. The combining of video and computers makes manipulation of photographs easy. For example, *Sports Illustrated* published pictures of a football game between the University of Washington and the University of Miami—a game that never took place. The now defunct New York *Newsday* published a front-page photograph of ice skaters Tanya Harding and Nancy Kerrigan skating in a competition the day before the event took place. *National Geographic* magazine editors moved one of the Egyptian pyramids electronically to make a more aesthetically pleasing photograph. People often believe that a photograph is worth a thousand words, but they don't always know—or remember—that photographs can lie.

Market supply and demand

The printed media do not comprise a coherent market for illustration and photography. Rather, illustrations are created or supplied from within news organi-

zations and by a multitude of small graphic arts firms, photography companies, and other vendors. The demand for images comes from print and broadcast organizations and from other groups that produce print and video products for business or nonprofit purposes. The demand for images can be divided into several categories, such as demand for graphics, cartoons, comics, information graphics, and photography.

■ Graphics

Graphics encompass many forms of visual material. The term “graphics” comes from “graphic art,” which pertains “to painting, drawing, engraving, or any other art that expresses ideas by means of lines, marks, or characters impressed or printed on a surface.”⁸ The graphics of interest here are those that use form, line, and shapes to communicate to mass audiences. Advertisers use graphics to generate interest in a service or product. Sometimes these images can have social ramifications. For example, when R. J. Reynolds created a cartoon camel that smoked to promote Camel cigarettes, critics charged that the tobacco company was using images designed to attract children, thus promoting the product to those who are too young to understand the ill effects of smoking.

Graphics can be classified as illustrations and information graphics. *Illustrations* are pictures of people, things, or mental images. For example, television news stories about the U.S. Supreme Court are often accompanied by drawings of the court proceedings, since the Court does not allow cameras in the courtroom. *Information graphics* are devices that are used to illustrate numerical information. These include tables, graphs and charts in their many forms. This information can be put in text, but the graphic helps people to better understand the numbers and their implications.

COMICS AND POLITICAL CARTOONS. Although information graphics have proliferated in both print and broadcast media during the past fifteen years, comics and political cartoons are still the mainstay of newspaper graphics. More than 70 million people in the United States read newspaper comics and look at political cartoons every day. *Comics* are drawings that are provided primarily as entertainment for readers. *Political cartoons* are drawings that comment on political, social, and cultural events and the people who influence those events. Comics are aimed at the consumer market; political cartoons contribute to the marketplace of ideas.

It isn't always easy to tell the comics from the political cartoons. “Berry's World” is a comic strip that comments periodically on politicians. Perhaps the main difference between comics and political cartoons today is the constraint of the editorial page. A cartoon that is located on the editorial page almost always deals with social and political issues. Cartoons on the comics pages have more freedom to deal with whatever topics concern the cartoonist, political or not.

■ *Comics.* Any newspaper editor can explain the importance of comic sections to readers. A 1987 study found that 95 percent of all daily newspapers carried a separate and identifiable comics section on Sunday. Sunday comics were more common than sports sections and editorial pages.⁹ Another 1987 study found that 58 percent of newspaper readers read comics regularly. This

was greater than the percentage that regularly read sports, editorials, letters to the editor, food pages, and in-depth investigative reports.¹⁰

Syndicates collect the comics from cartoonists, distribute them to publications, collect a fee from the publications, and pay the cartoonists. Large syndicates, such as United Media and King Features, influence readership patterns through the comics they sell. The importance of comics and other syndicated material led to an antitrust suit in 1993. The *Daily Herald* of Arlington Heights, a Chicago suburb, sued the *Chicago Tribune* and *Chicago Sun-Times* in part because of the exclusive rights the two large metropolitan dailies had to such comics as “Peanuts” and “Doodlesbury.” The owners of the *Herald* wanted to enlarge its circulation area and believed that the absence of popular syndicated material in its pages would hinder this expansion. A federal district court acknowledged the importance of syndicated material to newspapers but ruled that exclusivity does not violate antitrust law.

Even though newspapers remain the main outlet for comic strips, highly successful comics have expanded from newspapers into other media. In just fifteen years, Jim Davis translated his “Garfield” comic strip into thirty books, a weekly television series, prime time television specials, videotapes, and a merchandising empire. Few people have escaped seeing a Garfield doll glaring at them from the rear window of a car. In 1995 the first exclusive cyberspace comic strip was created by Bill Holbrook. Entitled “Kevin and Kell,” the comic was picked up within the year by fifty forums located on CompuServe and on World Wide Web sites. Many other sites now contain comics.

■ **Political Cartoons.** Some political cartoons can be as entertaining as their comic-page cousins, but their primary goal is to express an opinion about some issue or person of political and social importance. Although most newspapers carry political cartoons, most cartoons are bought from syndicates; only the larger newspapers employ their own cartoonists.

Political cartoons and comics will no doubt continue to be important to newspapers, although their roles may become more flexible and more diverse. Traditionally, they have been drawn by white males, though one can expect that diversity will increasingly characterize this form of **satire**. The comics that tried to entertain the entire family, such as Charles Schultz’s “Peanuts,” will probably become less the norm, as cartoonists and comic creators target more specific segments of society.

INFORMATION GRAPHICS Illustrations faded in importance as film and video technology improved during the twentieth century. In the 1980s, however, illustrations regained some prominence as information graphics. The reemergence of graphics in newspapers, magazines, and television was the result of both technological changes and changes in journalism. Computers and **offset printing** technology—a photographic process that eliminated the need for raised letters—create higher-quality graphics at lower cost.

At the same time technology was changing, journalism expanded its traditional information-gathering techniques to include the use of social science research methods. Journalists supplemented interviews with statistics that could represent trends and the opinions of large groups of people. Journalists no longer depend just on individuals to comment on news; they also conduct sur-

veys and use other forms of quantitative data to tell people about society. Graphics are a way to make numbers easier to comprehend.

Maps, tables, and info-graphics are the three main types of graphics used in newspapers and magazines. *Maps* show locations and relative distances among geographic locations; they are used when the reader may not be familiar with a location. Figure 11.1 is an example of a map used as an illustration.

Tables present numbers in an orderly fashion; you have seen a several tables in this book. The numbers are organized in columns and rows with headings to make them easier to understand. Some tables simply organize masses of numbers, such as stock market tables that list thousands of stocks. Other tables allow readers to make comparisons among categories, such as how much time students spend with different media: film, books, magazines, radio, television, and newspapers.

Info-graphics present statistical information in a visual form. They differ from tables in that they use lines and forms to illustrate the numbers. The three basic graphic forms—the bar chart, line graph, and pie chart—have been used for more than a hundred years. A fourth type, the **chartoon**, a combination of a chart and a cartoon, was used extensively at *USA Today* during the 1980s. Chartoons were first called *pictographs* and used in Brinton's *Graphic Methods* in 1914.¹¹ For example, one chartoon had a picture of a small man for 1899 and a large man in 1911 to represent the increase in railroad passengers between these two years.¹² Chartoons were used extensively during the 1930s.

A *bar chart* uses bars to show trends or comparisons or contrasts. A *line graph* uses lines to show trends and to compare or contrast two elements of a trend. A *pie chart* uses wedge-shaped segments of a circle, resembling slices of a pie, to illustrated distributions among alternatives. It is particularly useful for showing proportions. The chartoon may combine one or more of these basic graphs with a drawing. Figure 11.2 shows examples of a bar chart, a pie chart, and a line graph.

IMPACT OF GRAPHICS The use of graphics boomed in the 1980s primarily because of offset printing and the use of computers. However, three other factors contributed to the spread of graphics at newspapers. First, the development of *USA Today* as a national paper provided a model for other papers. Second, the fact that the Gannett Company, which started *USA Today*, also owned more than eighty other daily newspapers reinforced the use of graphics around the country. Third, competition among dailies in larger markets resulted in more use of color and visuals, such as graphics, to make newspapers more appealing to readers, particularly in competition with television.

The growing use of graphics substantially increased the number of graphic artists in the newsroom and improved their salaries. In 1979 the Society of Newspaper Design started with 22 members; by 1991 it had 2,300 members. The salaries of graphic artists in the early 1990s ran 20 to 25 percent ahead of salaries of reporters and copy editors.

Affecting the staff of newspapers is not the same as having an impact on readers. Research on whether readers learn more with info-graphics than they do from text alone have shown varying results. However, no one disputes the impact on interest. Graphics increase readers' interest in the publication and in particular information.

Some people have been concerned that newspapers are replacing stories with graphics to be more like television. The fear is that all newspapers will emphasize brief stories, graphics, and color at the expense of in-depth journalism. These critics foresee all newspapers becoming like *USA Today*. More than ten years after the creation of *USA Today*, such fears have little basis. Not as many newspapers look like *USA Today* as critics think.¹³ In addition, *USA Today* has reduced its effort to resemble television and prints longer, more in-depth stories than it initially did.

Use of info-graphics has not been limited to print media. Television news has increased its use of illustration graphics and slogans as well. For example, “Terror in the Heartland” may be used as a repetitive caption for incidents such as the Oklahoma City bombing. Computer-generated graphics illustrate complex stories that may not have eye-catching video. Info-graphics may become even more important as television news budgets shrink in the 1990s.

The growth in use of graphics has added to what a print journalist needs to know. Reporters are expected to suggest ideas for photographs and graphics that will help readers to understand the story. Editors will have to learn how to better incorporate words and visual images to make the information more accessible to readers. Words in print are not dead, but they will not be the sole carrier of information in the future.

■ Photography

Photography seems quaint in the ever-expanding visual world of video and computers. However, still photographs remain popular because they have three characteristics: They freeze time, they have a low cost, and they are easy to carry and share. They also have a human appeal that is unsurpassed by any other type of illustration.

With a fast shutter speed, a photograph can stop one moment in a series of events, capturing the smiling face of a dancer, for example, and reveal the essence of all those events that compose a celebration. Henri Cartier-Bresson, an early twentieth century French photographer, called the photograph that showed an event's meaning the “decisive moment.”

Photographic equipment remains inexpensive in comparison to video equipment. A family can capture the events of their vacation for about \$50 to \$100 with photographs, compared to the hundreds of dollars needed for video equipment. The resulting photographs are easy to view and share. No equipment is necessary to look at pictures, and they fit easily in pockets and purses and can be sent cheaply and easily through the mail.

By the early 1990s, the amateur photography business had stalled. Camera purchases and film processing by casual photographers, who snap about 17 billion family photographs yearly in the United States, were not growing. To stimulate the industry and to make photography easier, Kodak, Nikon, Minolta, Canon, and Fuji joined to introduce a new photography system in 1996. The system is called the Advanced Photo System, although each company sells cameras under a different brand name.

The new system uses 24 millimeter film instead of 36 millimeter, and some cameras have computer chips to record times when photos were taken and a variety of technical information, such as light sensitivity. Cameras self-wind to reduce loading mistakes. The companies are hoping that the new cameras will be

attractive enough to encourage people to replace their old cameras and stimulate new interest in an old communication form.¹⁴

Photography can be classified in five categories: documentation, scientific photography, art, commercial photography, and photojournalism. The five forms of photography differ in purpose and in the relationship between the photographer and who pays for the photographer's services. Yet all five use similar technology to produce photographs.

Sometimes the categories converge. For example, when a photojournalist takes pictures that do not just record events but also communicate the deeper meanings of those events, photojournalism becomes art. It can also be documentation. Similarly, photographs in a newspaper, whether they are engagement pictures or photographs of a flood's devastation, become part of the history of a community.

DOCUMENTARY PHOTOGRAPHY Documentary photography involves recording the image of a person or event. Christmas pictures, portraits shot in a studio, or other family photos help people to recall the past. The photograph reduces the errors of memory. A thirty-year-old may remember himself as a cool kid in junior high until he sees the awkward-looking guy with braces and glasses in his eighth grade school photo. For better or worse, photographs connect people to their past.

The importance of family documentary photography is indicated by the size of the industry. People in the United States spend more than \$12 billion a year on amateur photography. Almost half of this goes toward film processing, and another third is spent on film and cameras.

Documentary photography also is crucial to the recording of social history. A 1991 PBS series on the Civil War by Ken Burns demonstrated the effectiveness of photographs as history. Burns's combining of photographs taken during the war with passages from letters and journals of the time, read aloud by actors, created a powerful record of events that had occurred 130 years before.

SCIENTIFIC PHOTOGRAPHY Photography is particularly useful to science because it controls time and motion. Stop action photography has been used extensively in science. Successful stop-action photography developed with improvements in camera shutter speeds—how long the shutter remains open—and in strobe flash equipment. Stop action allows the eye to detect configurations of people and animals in motion that would be undetectable otherwise.

Harold Edgerton designed a strong electronic strobe light in the early 1930s that allowed photographers to freeze the action of a wide range of objects, from bullets to drops of milk. His work contributed greatly to understanding the nature of objects that were too small and moved too fast for the human eye to examine. The camera flashes used by amateurs today developed from Edgerton's work.

ART PHOTOGRAPHY Art photography represents the individual artist's view of objects, people, and events. Although art need not have social connotations or even represent a recognizable object, it can take the form of social commentary. Alternatively, art can simply excite a viewer's imagination with abstract forms.

Although photography has long been used to create art, most art historians, museum curators, and the public only recently accepted it as an art form. Peo-

ple in the art world argued that the creative process of photography was too mechanical to be an art form. Painting and sculpture, some argued, created unique pieces of art. A photographic negative could generate thousands of prints. Photographers answered by pointing to artistic print making, such as **lithography**, that generated multiple copies of the same art work. The debate crystallized during the 1970s. Since then, recognition of art photography by important museums and the growing consumer demand for art photographs have settled the debate.

PHOTOJOURNALISM Photojournalism, which integrates words and photographs, attempts to explain people's behavior and the nature of the world. Photojournalism uses this integrated form to communicate photographically and report news to a mass audience. The form involves skilled editing and assumes that informing the public is essential.¹⁴

Photojournalism is capable of powerfully affecting an audience's interpretation of an event and often defines public memory. Certain photographs of the Kennedy assassinations, police dogs attacking civil rights activists, and the Saigon police chief shooting a Viet Cong soldier in the head politically defined a decade for the generation that came of age during the 1960s.

Photojournalism may be more critical to society than other forms of photography because its goal is to alter our vision of the world and it is mass distributed. Photojournalism opens up arenas of action and images that people would never see otherwise.

Video technology has diminished the role of photojournalism in society. Moving pictures of events, such as uncontrolled wildfires in California and flooding in the Midwest, often dominate people's memories. However, the ability of still photographs to capture the decisive moment keeps photography very much alive. In 1994, Kevin Carter won the Pulitzer Prize for feature photography with a picture of a vulture peering at a starving child who had collapsed on the way to a food center in the Sudan. This one still image summarized the horror of famine and political unrest.

COMMERCIAL PHOTOGRAPHY Commercial photographers take photographs as requested by a client. The clients use the photographs either for themselves, as in portrait photography, or to sell a product or service, as with advertising. The main difference between commercial photography and the other forms is that commercial photographers are more concerned with pleasing the client than with pleasing themselves.

Many commercial photographers specialize. An architect might hire a commercial photographer to take photographs of buildings. A portrait photographer runs a studio to photograph people and sell prints to them. A medical photographer takes pictures of medical procedures. An advertising photographer takes photographs to illustrate advertisements in magazines and newspapers.

Video

"Video" is both a noun and a verb—the "picture element of a televised image" and the process of recording images on videotape.¹⁶ Both concern the electronic storage and retrieval of images and sound. The dominant form of video recording is magnetic tape, but various forms of videodisk also are used.

The television industry developed video as a substitute for film. Video is easier to edit, doesn't require processing, is less expensive, and adapts to varied types of lighting. With video, television can be produced less expensively and in shorter amounts of time.

Nevertheless, film retains some advantages because it contains discrete photographic images moving at a rate that make the eye see movement. Video shown on a television screen is created by electronic beams that constantly move. Video never presents a still picture. Therefore film can present a wider range of colors and better handle darker tones. Video, on the other hand, often seems to have a "live" quality because its images look the same as live television images. Because of the subjective nature of vision, people disagree as to which form gives a greater feeling of three dimensions.¹⁷ These differences insure the permanence of both media, particularly when film is considered as an art form.

Initially, video images were one-way forms of communication. They were broadcast to or played by the audience and watched without interaction. But during the 1980s, sophisticated computer technology created *interactive video*. By integrating video and computers, viewers can now influence the content of what they watch. For example, people can manipulate games and stories.

Like still photography, video can be used for documentation, science, art, journalism, and commercial endeavors. Some uses have grown at a more rapid pace than others.

DOCUMENTARY VIDEO Documentary video grew rapidly during the 1990s as prices of consumer videocameras fell to less than \$800. Increasingly, families document vacations, birthdays, and holidays with video instead of still photography. Videocameras are still more expensive than still cameras, but videotapes are no more expensive than purchasing and developing film.

Video documentary also has become an important tool for historians, and many videos, including news footage, are being preserved by libraries as historical documents. Increasingly, amateur videographers with cheap, flexible **mini-cams** are producing video documentaries that find a place in news broadcasts.

SCIENCE VIDEO Video recordings create flexible, accurate records for scientists and provide a ready teaching tool. Scientists can observe and immediately view videotaped behavior of animals, allowing a quick comparison between scientists' notes and the behavior captured on video. Video's low cost and easy editing provides interesting and provocative classroom materials.

ART VIDEO Artists also have begun to explore video recordings as a form of expression. TV comedian Ernie Kovacs used the easy editing of video during the 1950s to create apples that fell up and submarines that surfaced in bathtubs. Terry Gilliam of *Monty Python's Flying Circus*, a BBC comedy show of the 1970s, combined drawings, paintings, photography, and video to create bizarre worlds where walking cats toppled cities and people popped out of other people's heads.¹⁸

Video art has taken several approaches. Video can be a way of combining abstract forms with vivid colors to make moving graphic abstractions. Another approach uses video to explore what people think of as reality. Artists play with words and alter time sequences to generate an imaginary world that runs by different physical laws. Some artists use video to make political and social satire.

JOURNALISM VIDEO Lightweight video equipment, quick editing and processing, and low cost made video an attractive option for television news organizations, which were among the earliest adopters of video. With a minicam and satellite time, any television news organization can cover any story on the earth.

Video also made ordinary people into amateur journalists and expanded local news coverage. The 1991 beating of Rodney King by Los Angeles police officers would have attracted little attention if some onlooker had not videotaped it and taken it to a TV station. This use of home video on television helped to fuel a national dialogue on racism and brutality.

COMMERCIAL VIDEO Video technology has been most extensively used in commercial applications. *Commercial application* includes home viewing of prerecorded tapes and disks and the use of video by companies for training and communications. For example, Chrysler Corporation estimates that it saved \$1.3 million by training 85,000 workers about hazardous substances with interactive video.¹⁹ Companies routinely save money by using videocameras and satellite transmission for videoconferences.

Video can also be used to teach in schools. A question can be faced on a computer screen; students may answer questions and get instant feedback. Such equipment is used to teach everything from journalism to medicine. Grammar quizzes are standard examples. The integration of computers and video on CD-ROM will increase this use of video during the next decade.

INTERNATIONAL IMPACT OF VIDEO Video technology empowers users of media at the expense of the gatekeepers who traditionally have controlled the flow of information. Viewers have gained more control over electronic images that enter their homes.

This ability to choose has changed exposure to video images throughout the world. A book that examined the first decade of VCRs found that video technology allows people to circumvent the control of media by repressive governments.²⁰ The world black market provides banned films to people whether their governments like it or not. These forbidden videos expose the viewers to ideas and images that they could not have seen otherwise.

Not everyone is pleased with this new freedom. Some critics argue that the spread of VCR technology is a form of cultural imperialism. Most available videos come from Western countries such as the United States, England, and France. Intellectuals in developing countries fear that these videos will have too much influence on native cultures, turning them into imitations of Western cultures. Another concern is the impact of video games on children. Some people believe that the many hours some children spent playing video games take too much time away from schoolwork and rob children of the ability to imagine things for themselves.

Early in 1995 the government of Iran reacted to the invasion of Western television by outlawing satellite dishes. The Iranian government feared that programs such as *Baywatch* would undermine Islamic values. Anyone who did not removing the antennas dishes them confiscated and faced a fine equal to \$1,000. However, VCRs are harder for government officials to identify than satellite dishes, so Iranians who are hungry for information from the outside world still have an option.²¹

Cultural Impact

Cracking the Photographic Barrier

For many years, racial minorities were excluded from working in media. Photography was no exception. However, a black photographer who was just beginning his career, Gordon Parks, contributed greatly to the success of a remarkable documentary photography project associated with the Farm Security Administration (FSA).

Parks worked as an intern for Roy Stryker, who as chief of the historical section of the FSA, assembled a group of photographers to document the social and economic environment of the United States during the latter part of the Great Depression. From 1935 until 1942, FSA photographers produced more than 270,000 photographs of people in the United States.

An important component of the FSA's success was giving a voice to a variety of groups within society, including African Americans. The collection of photographs about the Great Depression would have been incomplete without Parks' participation.

Parks' 1942 *Mrs. Ella Watson, Government Charwoman* illustrated the inequity of employment in the nation's capital. This series compli-

mented his other work, which included capturing scenes of poverty in Chicago's black neighborhoods. Parks later took photographs for the Office of War Information, and in 1949, he became a staff photographer for *Life* magazine.

His photographs showed the reality of African Americans' urban world, while those of other photographers failed. Parks succeeded because he was an excellent photographer and because his race gave him access and trust white photographers could not gain. Parks also composed music. Among his film credits are a biographical novel, *The Learning Tree*, and the film *Shaft*. Parks later became internationally famous as a photographer, writer, and film director. He served as a role model for the next generation of black photographers.

SOURCES: F. Jack Hurley, *Portrait of a Decade: Roy Stryker and the Development of Documentary Photography in the Thirties* (Baton Rouge, LA: Louisiana State University, 1972); Nicholas Natanson, *The Black Image in the New Deal: The Politics of FSA Photography* (Knoxville, TN: The University of Tennessee Press, 1992); and Gordon Parks, *To Smile in Autumn: A Memoir* (New York: W. W. Norton & Company, 1979).

*The Farm Security Administration photography project began first under the Resettlement Administration, which was renamed the FSA in 1937.

[profile]
[profile]

Ansel Adams

Documentary photography became more significant with the publication of *Life* and *Look* magazines starting in the mid-1930s. In 1936, James Agee claimed that the camera was the “central instrument of our time.”

During the Depression years, photographers and writers emphasized realism, portraying the faces—the human impact—of hard times. Some photographers, however, were taking a more modernistic approach, manipulating the process of photography from outlining the image to completing the print. The best-known of these modern art photographers was Ansel Adams.

It was Adams who, more than anybody, contributed to the public acceptance of photography as a fine art, wrote Alexander Theroux in a review of Jonathan Spaulding’s biography of the photographer. Adams exhaustively studied and experimented with all stages of making a photograph—film, lenses, filters, camera placement, exposure, and development. His art was not to duplicate reality but to interpret it.

When Adams was a boy in San Francisco, his parents en-

couraged him in the arts, especially music. He began playing the piano in 1914, when he was twelve, and later formed a professional group with a violinist and a dancer. When he was fourteen, Adams’s parents gave him a Kodak No. 1 Box Brownie camera in preparation for a four-week family vacation to Yosemite. The panoramic scenery left such an impression on him that he returned to Yosemite every year for the rest of his life. Wilderness was his inspiration. He was easily recognized, lugging his Graflex view camera, glass plates, and wooden tripod.

In his twenties, Adams met the American naturalist, John Muir, and became a member of the Sierra Club, which Muir had founded. In San Francisco Adams was good friends with poet Robinson Jeffers, a variety of musicians, artists, and photographers. A particular ensemble of friends formed an association called Group 64. Adams’s work eventually led to his famous showing at An American Place in New York in 1936 with Alfred Stieglitz, a leading force behind artistic photography.

Photographer Ansel Adams successfully combined visions of art and nature. When the tall, loud, crooked-nosed artist died in 1984, his collection included 40,000 pictures.

In his early eighties, Adams predicted that digital photography would eclipse anything we have now because of its high quality and definition. In April 1996, exclusive rights to Adams collection went to Bill Gates’s digital arts company Corbis, which will make money each time a digital reproduction of Adams work is used.

SOURCES: Michele Matassa Flores, “Into Cyberspace with Ansel,” *Seattle Times*, April 2, 1996, Section News, p. A1; Alexander Theroux, “The Nature of Ansel Adams,” *Chicago Tribune*, February 11, 1996, Section Tribune Books, p. 4.

Technology and Images in our lives *dateline*

<ul style="list-style-type: none"> ■ 1700s. Woodcuts are used to print drawings. 	<ul style="list-style-type: none"> ■ 1754. First political cartoon is published in America. 	<ul style="list-style-type: none"> ■ 1826. First permanent photograph is taken by Niepce. ■ 1841. Photograph images are preserved on paper. 	<ul style="list-style-type: none"> ■ 1861–65. America photographers document the Civil War. 	<ul style="list-style-type: none"> ■ 1880s. Halftone is invented for printing photographs. ■ 1888. Kodak invent the box camera. ■ 1889. First comics section is published. 		<ul style="list-style-type: none"> ■ 1920. Leica develops 35-millimeter camera.
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1400–1600s 1700 1800 1860 1880 1900 1920



<ul style="list-style-type: none"> ■ 1620. Pilgrims land at Plymouth Rock. ■ 1690. <i>Publick Occurrences</i> is published in Boston. 	<ul style="list-style-type: none"> ■ 1776. Revolutionary War 		<ul style="list-style-type: none"> ■ 1861–65. Civil War 	<ul style="list-style-type: none"> ■ 1892. Thomas Edison's lab develops Kinetoscope. 	<ul style="list-style-type: none"> ■ 1917–1918. World War I 	
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■ **1935.** Kodak develops color film for cameras.

■ **1936.** *Life* magazine begins publication.

■ **1950s.** TV takes advertising from photo magazines, such as *Life*.

■ **1960s.** Kodak invents fast, nongrainy 35-millimeter film.

■ **1970s.** Minicams are developed for video photography.

■ **1970s.** Photography is recognized as an art form.

■ **1970s.** VCR is developed.

■ **1970s.** Visual literacy movement begins.

■ **1970s.** Electronic still camera is developed.

■ **1980s.** CD-ROMs is invented.

■ **1980s.** Newspapers increase use of graphics and color.

■ **1990s.** Associated Press adopts electronic photography.

■ **1990s.** Consumers begin putting photographs on CD-ROM.

1930

1940

1950

1960

1970

1980

1990



■ **1930s.** The Great Depression

■ **1939.** TV is demonstrated at New York World's Fair.

■ **1941–45.** World War II

■ **1949.** First commercial electronic computer is produced.

■ **1970s.** VCR is developed.

■ **Late-1980s.** National Science Foundation assumes responsibility for Internet.

■ **1989–1991.** Cold War ends and Soviet states dissolve.

■ **1995.** Radio begins transmitting over Internet.



o no one's surprise, another Disney movie was a box-office

smash in 1995. But something was different this time. Computers had created the animation for the seventy-seven-minute *Toy Story*. As a result, the film had a three-dimensional look that is not found in most animation, and it may foreshadow what is to come.

Although audiences and critics marveled at the quality of the animation, Disney's management counts success in dollars. The film grossed about \$40 million during its first week, easily exceeding the

Computers and Images: The Economics of Animation

\$30 million that the movie cost to make. Computer animation has become commonplace in television commercials, but the cost issue had limited its application in full-length movies. The success of *Toy Story* suggests that this will change.

Will computers eventually replace animators? Not anytime soon. It took more than four years, 800,000 computer hours, and thirty computer-trained animators to complete *Toy Story*. However, as use of a

technology increases, costs decrease. In 1997, Disney began working on the sequel to *Toy Story*.

Images will continue to originate in people's imaginations, but increasingly, the road to communicating the images will run through computers.

SOURCE: David A. Kaplan, "High Tech in Toon Town," *Newsweek*, December 4, 1995: 54-56.

FIGURE 11.1

A Map as an Illustration

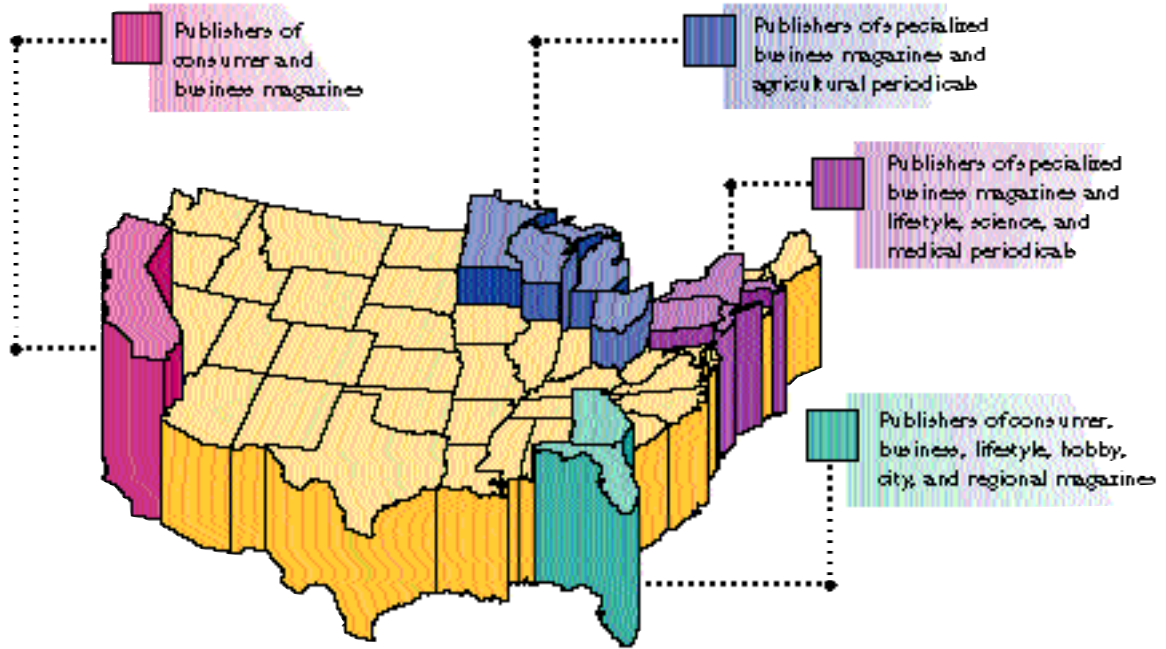
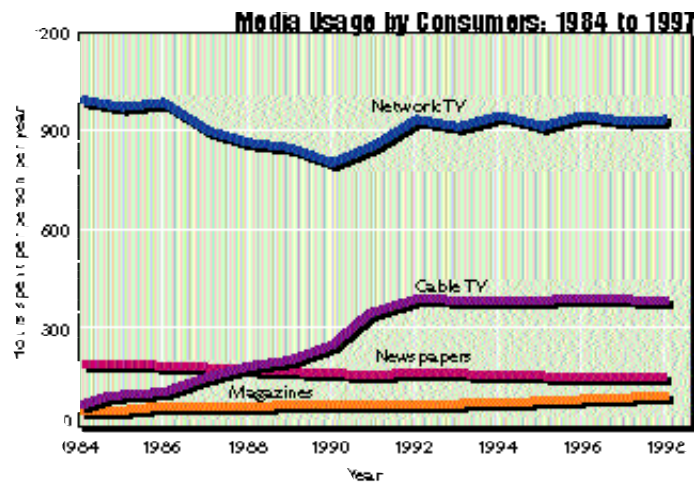
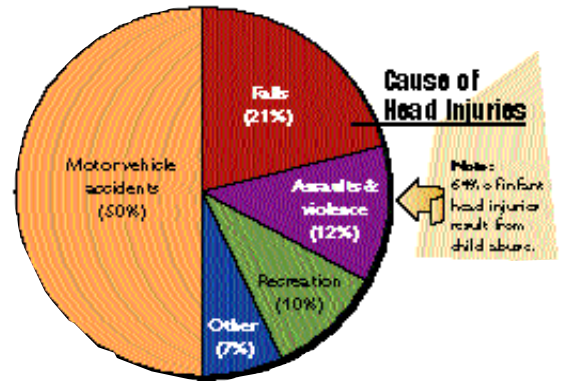
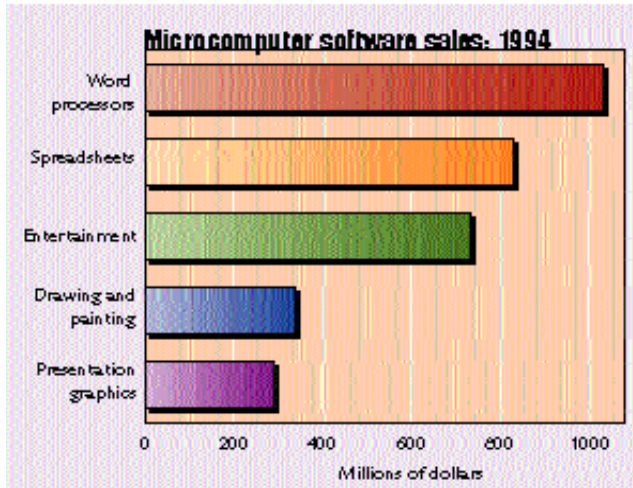


FIGURE 11.2

A Bar Chart, a Pie Chart, and a Line Graph as Illustrations



Converging technologies



RCA's VideoDisc: No Magic Here

The history of mass media can be told as a history of technological competition. VHS defeated Betamax for dominance of the VCR market; the 33 1/3 r.p.m. long-playing record won out over the shorter 45. In these two cases the battling technologies were similar; in other situations, entirely different technology systems compete for domination.

An example of competing video systems took place during the early 1980s when RCA developed and marketed its Selectavision VideoDisc. It was during this period that the videoplayer market became a key element of the film industry.

RCA Selectavision reached the consumer market in March 1981. The system had a twenty-pound player that

played a twelve-inch vinyl disk. The picture on the television set was sharper than broadcast TV and videotape images. It was marketed as bringing magic to the TV screen.

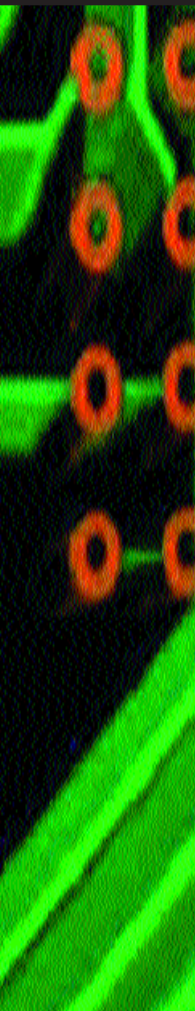
The RCA VideoDisc faced competition from Betamax and VHS videotape players, which had been on the market for about five years, and a handful of other videodisk systems. The first year, RCA spent \$20 million on advertising and sold only 100,000 players. Price cuts increased sales slightly the next year, but RCA ceased production of Selectavision in 1984. The company lost about \$580 million on the project.

Selectavision failed for several reasons. It could not record from television as the VCRs could. It played only prerecorded disks. In addition, the

RCA dealers were not enthusiastic about the videodisk, and the press generally criticized it for being unsophisticated.

From RCA's perspective, Selectavision failed, but from the consumer's perspective it served a useful purpose. It allowed consumers to compare videoplayer systems and to decide which one served them best. In addition, a small, but distinct, market remains for laser disks. Without comparison, people cannot evaluate well. Over time, marketplace trial and error form the basis for adopting technological advances that best serve consumers.

SOURCE: Margaret B. W. Graham, *RCA and the VideoDisc: The Business of Research* (Cambridge, England: The Cambridge University Press, 1986).



VIDEO AND THE MARKETPLACE Video technology initially developed in the 1960s as a better way of producing television programming. Video was faster and cheaper to use than film. IN the early 1980s, video technology made a splash in consumer markets, but another decade passed before adoption by consumers reached any great level. In 1981, only 4 percent of households had VCRs. By 1992, however, that figure had reached 78 percent, and it was expected to be 90 percent by 1997.²²

Obviously, photography and video serve the consumer market, but the technologies also serve the marketplace of ideas. The use of video and photography in television news, newspapers, and magazines provides information that generates ideas and debate.

Photography and video play a large role in the creation of advertisements, although the development of video technology and the VCR has allowed consumers to avoid commercial messages by fast forwarding through them. Movie videos carry product placement messages and advertisements for other movies.

Trends and innovation

Although electronic technology will become increasingly important in creating images for media, many of the forms that images take will show continuity with the past. Comics and political cartoons will continue to present the ideas of the individual artists who create them, though they may be delivered online rather than through print media. Online services will compete, just as newspapers do, to get the most popular cartoons on an exclusive basis.

Improvements in electronic cameras will continue to accelerate the trend away from chemical-based photography, especially for media professionals. Ease of editing and quick distribution of electronic images far outweigh any increased cost. As the technology becomes more widespread, costs will drop, and even small publications will be able to make the shift. Whether the public will make the shift quickly is harder to predict. Now anyone with a \$5 disposable camera can take pictures. Electronic photography requires a much greater initial investment. However, electronic cameras that shoot video and stills are becoming commercially available, and as prices drop, the combination may entice the public to invest. Digital photographs can be copied to a computer, where the image can be manipulated, than printed. As professionals and the public shift to electronic photography, however, chemical-based photography will remain a medium for artists who use the developing and printing process as an artistic method.

Video distribution also will change. Transmission of video over fiber-optic cables to computers and computerized television systems will become more common. Grandparents will receive the latest videos of their grandchildren through telephone lines instead of through the mail.

Although animation in films and television will continue to be popular, computer graphics may replace most of the older forms of animation. However, low labor costs in countries such as the Philippines will keep computers from immediately dominating the video and TV markets.

Images will increase in importance as global media expand. While the dissemination of text is limited by language differences among populations, pictures can cross cultures more easily. By combining flexibility of access with

emotional impact, images will continue to be powerful tools of international media for entertainment and education.

Summary

- Although visual communication has ancient forms, twentieth century technology has allowed it to become as versatile as written language.
- Photography, with an emphasis on people and events, lies at the heart of visual communication.
- In addition to photography, other forms of visual communication, such as drawing, comics, political cartoons, and information graphics inform, persuade, and comment on the passing social scene.
- The invention of videotape and videodisk opened new industries and ways of learning.
- Because visual communication does not require the ability to read and because visual images can be easily altered, visual literacy is critical for a society that relies heavily on visuals for its information.
- Electronic video technology has been adapted to still photography and will eventually replace the chemical photographic process.
- Information graphics make numerical information more interesting and easier to understand.
- Both still photography and video can be used for documentation, science, art, commerce, and photojournalism.
- Still photography continues to be an important visual form because it freezes motion and remains relatively inexpensive.
- Video technology has given people more control over the content they view on television screens and has increased their participation in creating content.

Sites for photography and graphics include sites of professional organizations, exhibits of material, and the history of the visual arts. The following are locations that provide information about the graphics professions and their histories.

American Institute of Graphic Arts www.aiga.org

This is the oldest professional association for graphic arts. The site contains information about the group and its services, which include education, professional practices, and business concerns.

National Press Photographers Association sunsite.unc.edu/nppa

This is an organization of photojournalists that provides educational programs and information about professional practices.

George Eastman House:
International Museum of Photography and Film www.it.rit.edu/~gehouse

This site contains information about the museum, library, and exhibits of the George Eastman House in Rochester, New York. The museum is one the best in the world for the history of photography.

Dast Library of Photography

www.daancris.com/~dast/



Navigating the Web

Photography and Graphics on the web

This site has extensive links to sites about books, newspapers, exhibits, and libraries where material about photography can be found.

Online Photography

www.wp.com/scinc/online.html

This online photography site of the Journal of Fine Art Photography carries articles about artists and photography and reviews a photographic products. It also has an exhibit area with the work of new and established art photographers.

■ Questions for review

1. What is a halftone?
2. How did photographs affect the content of newspapers during the latter half of the nineteenth century?
3. Why was the introduction of the Leica camera significant?
4. What is visual literacy?
5. Describe the similarities and differences of comics, political cartoons, and information graphics.

■ Issues to think about

1. Why are images significant elements of any news story?
2. What is the difference between photojournalism and documentary photography? How do these forms influence society?
3. How do images used in advertising reflect and shape society?
4. What is the significance of news organizations using home videos for spot news coverage?

■ Suggested Readings

Michael Carlebach, *The Origins of Photojournalism in America* (Washington, DC: Smithsonian Institute Press, 1992).

Paul Lester, *Photojournalism: An Ethical Approach* (Hillsdale, NJ: Lawrence Erlbaum Associates, 1991).

Beaumont Newhall, *The History of Photography: From 1839 to the Present* (New York: Museum of Modern Art, 1982).

Samuel A. Tower, *Cartoons and Lampoons: The Art of Political Satire* (New York: Julian Messner, 1982).

John Watkinson, *The Art of Digital Video*, 2nd ed. (Oxford, England: Focal Press, 1994)