Is it possible in the early twenty-first century to distinguish between social realities and the media forms that represent them? From North American and European urban centers such as Los Angeles and Paris to transborder locations such as the frontier between Hong Kong and South China, digital images and imaging technologies increasingly facilitate cultural expression, communication, and everyday social interaction. Images and the screens that frame them seem every day to be more complexly saturated with text, detailed pictures, and color, to offer more information faster, and to call us to look more routinely than ever before. The social worlds most of us inhabit are filled with things designed to be seen or to be used in ways that involve looking. Every conceivable surface, from our car dashboards to our telephones, seems to hold potential as a site on which to put a visual screen.

We negotiate the world through visual culture, whether we are sighted or have low vision that requires adaptive or assistive technologies, and whether we live in urban spaces saturated with surfaces covered in advertisements and signs or remote places in which we depend on our screens to connect with “the world.” Our lives are increasingly dominated by the visual and by communication technologies (both wired and wireless) that allow for the global circulation of ideas, information, and politics. Ideas and information circulate globally in visual forms, and images play a central role in political conflict and meaning. We are thus at a moment in history in which the visual matters more than ever, as representation, as information, as politics, as provocation, as forms of play and entertainment, and as both a connecting force and a source of conflict around the world.

Practices of Looking provides an overview of a range of theories about how we engage in looking in everyday ways, how we understand a wide array of visual media, and how we use images to express ourselves, to communicate, to experience pleasure, to feel, and to learn. The term “visual culture” encompasses many media forms ranging from fine art to popular film and television to advertising to visual data in fields such as the sciences, law, and medicine. This book explores the following questions: What does it mean to study these diverse forms together? How do shared understandings of these various forms of visual culture emerge? How does meaning circulate through diverse visual forms, and how has the visual impacted our societies? We feel that it is important to consider visual culture as a complex and
richly varied whole for an important reason: when we have an experience with a particular visual medium, we draw on associations with other media and other areas of our lives informed by visual images. For example, when we watch a television show, the meanings and pleasure we derive from it might be drawn, consciously or unconsciously, from associations with things we have seen in movies, works of art, or advertisements. The experience of viewing a medical ultrasound image might evoke emotions or meanings more typically associated with viewing photographs. Playing video games is connected to watching films, and the practice of circulating digital images via e-mail and the World Wide Web borrows from practices of image exchange through photograph albums and slide shows. Our visual experiences do not take place in isolation; they are enriched by memories and images from many different aspects of our lives.

Despite this cross-fertilization of visual forms, our cultures tend to rank different areas of visual culture according to systems of supposed quality and importance. For many decades, colleges and universities offered courses on the fine arts but did not consider popular media such as movies and television to be worthy of serious academic study. Today, in contrast, many art historians include photography, computer animation, mixed media, installation, and performance art among the practices they study. At the same time other fields, some of them new, have taken up a broader range of media forms. Since the 1950s, scholars in the field of communication have written important studies of radio, television, print media, and now the Internet. The disciplines of cinema, television, and media studies, which were instituted in the 1960s and 1970s, have helped us to consider how movies, television programs, and the Web have contributed to changes in culture over the course of this century. These fields have established the value of studying popular forms of visual media. The field of science and technology studies has encouraged the study of visual technologies and the use of images in areas outside the arts and entertainment, such as the sciences, law, and medicine. Cultural studies, an interdisciplinary field that emerged in the late 1970s, has offered many ways of thinking about the study of both popular culture and the seemingly mundane uses of images in our daily lives. One of the aims of cultural studies is to provide viewers, citizens, and consumers with the tools to gain a better understanding of how visual media help us make sense of our society. Looking at images across disciplines can help us to think about the interrelatedness of different kinds of visual media. In the course of reading this book, the reader will encounter ideas drawn from cultural studies, cinema and media studies, communication, art history, sociology, science studies, and anthropology.

What is visual culture? Culture has been famously characterized by theorist Raymond Williams as one of the most complex words in the English language. It is an elaborate concept, the meaning of which has changed over time. Traditionally, culture was equated with the “fine” arts: classic works of painting, literature, music, and philosophy. The philosopher Matthew Arnold defined culture in the eighteenth century as the “best that has been thought and said” in a society, something
reserved for an elite, educated, discerning audience. If one uses the term this way, a famous work by Michelangelo or a composition by Mozart would represent the epitome of culture. Culture is something cultivated in people through exposure to and education about quality. The idea of “high” culture formerly was implicit in definitions of culture, followed by the notion that culture can be separated into the categories of high (fine art, classical painting, literature) and low (television, popular novels, comic books). As we explore further in chapter 2, high versus low was the traditional way of framing discussions about culture through most of the twentieth century, with high culture widely regarded as quality culture and low culture as its debased counterpart.

The term culture, in what is known as the “anthropological definition,” refers to a “whole way of life,” meaning a broad range of activities geared toward classifying and communicating symbolically within a society. Popular music, print media, art, and literature are some of the classificatory systems and symbolic means of expression and communication through which humans organize their lives. So too are sports, cooking, driving, relationships, and kinship. This definition, which emphasizes culture as sets of everyday and pervasive activities, allows for an understanding of mass and popular forms of classification, expression, and communication as legitimate aspects of culture.

In this book, we are defining visual culture as the shared practices of a group, community, or society through which meanings are made out of the visual, aural, and textual world of representations and the ways that looking practices are engaged in symbolic and communicative activities. Here, we are indebted to the foundational ideas of twentieth-century British theorist Raymond Williams and the work of British cultural studies scholar Stuart Hall. Williams and Hall both have argued that culture is not so much a set of things (television shows or paintings, for example) as a set of processes or practices through which individuals and groups come to make sense of things, including their own identities within and even against or outside the group. Culture is produced through complex networks of talking, gesturing, looking, and acting, through which meanings are exchanged between members of a society or group. Objects such as images and media texts come into play in this network of exchange not as static entities traded or consumed but as active agents that draw us to look and to feel or speak in particular ways. Hall states, “It is the participants in a culture who give meaning to people, objects, and events. . . . It is by our use of things, and what we say, think and feel about them—how we represent them—that we give them a meaning.” We take this concept a step further by asserting that just as we humans give meaning to objects, so too do the objects we create, gaze on, and use for communication or simply for pleasure have the power to give meaning to us as well in the dynamic interaction of social networks. The exchange of meaning and value between people, on the one hand, and the objects and technologies in their worlds, on the other, is interactive and dynamic. This means that artifacts such as images and imaging technologies have politics and agency.
It is important to keep in mind that in any group that shares a culture (or set of processes through which meaning is made), there is always a range of meanings and interpretations “floating about,” so to speak, with regard to any given issue or object at any given time. Culture is a process, not a fixed set of practices or interpretations. For example, three different viewers of the same advertisement who share a general view of the world may differently interpret the ad’s meaning based on their respective experiences and knowledge. These people may share the same culture but still subject the image to different interpretive processes. These viewers may then talk about their responses, influencing one another’s subsequent views. Some viewers might argue more convincingly than others; some might be regarded as having more authority than others. In the end, meanings are produced not in the minds of individual viewers so much as through a process of negotiation among individuals within a particular culture and between individuals and the artifacts, images, technologies, and texts created by themselves and others. Interpretations, then, are as effective as the visual artifacts (such as advertisements or films), industries, and producers that generate them in influencing a culture’s or a group’s shared worldview. Our use of the term culture throughout this book emphasizes this understanding of culture as a fluid and interactive process—a process grounded in multimodal and multisensory social practices, not solely in images, texts, or interpretations.

Practices of Looking is concerned with those aspects of culture that are manifested in visual form or that are organized in a way that invites looking—paintings, drawings, prints, photographs, film, television, video, digital images, animation, graphic novels and comic books, popular culture, news images, entertainment, advertising, images as legal evidence, and science images. We feel that visual culture is something that should be understood in an analytical way, not only by art historians and other “image specialists” but also by all of us who increasingly encounter a startling array of images and invitations to look in our daily lives. At the same time, many theorists of visual culture have argued that foregrounding the visual in visual culture does not mean separating images from writing, speech, language, or others modes of representation and experience. Images often are integrated with written words or sounds, as in much contemporary art and in the history of advertising. Our goal is to set out some of the theories that can help us to understand how images function in a broader cultural sphere and how looking practices inform our lives beyond our perception of images per se.

This book, in its first edition, took as its distant inspiration John Berger’s classic book, Ways of Seeing. Published in 1972, Ways of Seeing was a model for the examination of images and their meanings across such disciplinary boundaries as media studies and art history. Berger’s work was groundbreaking in bringing together a range of theories, from Walter Benjamin’s concept of mechanical reproduction to Marxist theory, in order to examine images from the history of art and advertising. We pay homage to many of the strategies of that book in updating such an approach to visual culture in the contemporary theoretical and media context. The terrain of
images and their trajectories has become significantly more complex since Berger wrote his book, as have the theoretical concepts that we use as tools. Technological changes have made possible the movements of images throughout the globe at much greater speed. The economic context of postindustrial capitalism has enabled a blurring of many previously understood boundaries between cultural and social realms such as art, news, and commodity culture. The mix of styles in postmodernism has aided in producing a context of image circulation and cross-referencing that prompts this kind of interdisciplinary approach.

The approaches of Practices of Looking can thus be understood in several different ways. One approach is to use theories to study images themselves and their meanings as texts. This is a primary, yet not the only, approach to understanding the dynamics of looking. It allows us to examine what images tell us about the cultures in which they are produced. A second approach is to look at the modes of responding to visuality, as represented in studies of spectators or audiences and their psychological and social patterns of looking. In this approach, the emphasis shifts from images and their meanings to viewers' practices of looking and the various and specific ways people regard, use, and interpret images. Some of these approaches concern theorizing an idealized viewer, such as the cinematic spectator; others involve considering what actual viewers do with popular culture texts through studies of reception. A third approach considers how media images, texts, and programs move from one social arena to another and circulate in and across cultures, which is especially relevant in light of the escalation of globalization since the mid-twentieth century. This approach looks at the institutional frameworks that regulate and sometimes limit the circulation of images, as well as the ways in which images change meaning in different cultural contexts. In these approaches, this book offers a set of tools, some drawn from the critical theory of the late twentieth century, that can be used in deciphering and re-deploying visual media, and to analyze how and why we have come to rely so heavily on visual forms to make meaning in almost all aspects of our lives.

By the beginning of the 1990s, scholars working on the theory of visual culture had become aware that critical theory was in a crisis. Critical theory refers to a set of models or systematic frameworks developed in the late twentieth century across fields including sociology, literature, linguistics, and philosophy to describe, explain, and critique phenomena or experience in the world. Critical theorists drew from structuralism, phenomenology, Marxism, feminism, and psychoanalysis, approaches well represented in this book. Theory was seen to be in crisis by the end of that century because the writing associated with it was not providing the kind of explanatory power or impetus to social change desired by many of its authors. Critiquing something does not necessarily change it, nor does it describe social conditions adequately. Some postmodern theorists, many of whom rejected the term theory itself, began to propose ways of writing and thinking about culture that did not have the same coherence or unity of approach but that, rather, allowed for movement and
change beyond what had been imaginable within the framework of current social conditions.

*Practices of Looking* shares with these postmodern writers the idea that theory, and getting theory exactly right, cannot in itself provide adequate understanding and impetus to change. We therefore set forth a plurality of theories in this book, some older and some more recent, as a kind of toolbox for critical thinking and for action with regard to how we look and how we make and use things in the realm of the visual in our everyday worlds. There is no single method or approach that we advocate in this book. Rather, we offer here a range of concepts through which one might pursue ideas to arrive at new ways of engaging with the visual in the social worlds in which we interact.

We therefore encourage you to use this book interactively with other texts and other media in your everyday lives. Go out in the world to museums, community centers, and consumer environments and look at the ways visuality comes into play. Look at how looking practices are enacted around you. When you go to your clinic for health care, notice how and when looking and visual representation come into play in your course of treatment. Notice how and when looking is off limits. Do not just read the news; watch the news with full attention to how it is composed, framed, and edited. Watch others watching the news. Try to discern not only what is shown but also what news is not shown. Studying visual culture is not only about seeing what is shown. It is also about seeing how things are shown and seeing what we are not shown, what we do not see—either because we do not have sight ability, because something is restricted from view, or because we do not have the means for understanding and coming to terms with what is right before our eyes.

*Practices of Looking* is organized into ten chapters that address cultural ways of looking in relationship to knowledge and power, considering visual culture across various media and cultural spheres. Chapter 1, “Images, Power, and Politics,” introduces many of the themes of the book, such as the concept of representation, the role of photography, the relationship of images to ideology, the basic concept of semiotics, and the ways in which we make meaning from and award value to images. It is one of the central tenets of this book that meaning does not reside within images but is produced at the moment that they are consumed by and circulate among viewers. Thus chapter 2, “Viewers Make Meaning,” focuses on the ways that viewers produce meaning from images, discusses the concept of ideology in more depth, and explores the complex dynamics of appropriation, incorporation, and cultural production in contemporary image culture. In chapter 3, “Modernity: Spectatorship, Power, and Knowledge,” we step back to examine the foundational aspects of modernity and theories of power and spectatorship. This chapter explores the concept of the modern subject, as well as the concept of the gaze, in both psychoanalytic theory and theories of power. Here we examine the ways that images can be used as elements of discourse, institutional power, and categorization.
Chapters 4 and 5 map out theories of images throughout the history of representation and situate them in relation to contemporary image culture. Chapter 4 is the most art historical of the chapters. "Realism and Perspective: From Renaissance Painting to Digital Media" explores the history of realism in representation and maps out the history of technologies of seeing, such as perspective, from the Renaissance to contemporary image practices and game culture. This chapter analyzes the concept of realism in art from Egyptian art to photography to digital image culture in relation to the development of perspective and challenges to perspective's dominance in image conventions. Chapter 5, "Visual Technologies, Image Reproduction, and the Copy," takes a similar historical approach to the history of visual technologies, such as the development of photography and cinema, and concepts of reproduction that have dominated visual analysis. We also examine the political and legal issues raised by image reproduction from the nineteenth century to digital image culture. Chapter 5 includes discussion of images and intellectual property, an issue of increasing importance in the twenty-first century era of digital reproducibility.

In chapter 6, "The Media in Everyday Life," we turn to the history of concepts of mass media, tracing critiques of the media throughout the twentieth century and concepts of propaganda and the public sphere. This chapter addresses how the Web and digital media have dramatically changed the forms and institutions of the media to the extent that the term mass media has lost its currency. We examine concepts of the democratic potential of media, media flows, and national and global media events. Chapter 7, "Advertising, Consumer Cultures, and Desire," focuses on the role of the visual in the development of and social impact of consumer culture. This chapter discusses theories of ideology and semiotics as tools for understanding the strategies used in advertising images and examines the marketing of coolness and the reconfiguring of consumer culture it has entailed.

In chapter 8, "Postmodernism, Indie Media, and Popular Culture," we look at the central concepts of postmodern theory and at a range of styles in contemporary art, popular culture, and advertising that can be seen as postmodern. We discuss postmodern strategies of reflexivity, pastiche, parody, and the politics of postmodernism as a philosophical concept. Chapter 9, "Scientific Looking, Looking at Science" returns to many of the concepts of photographic truth discussed earlier in the book to look at the relationship of images to evidence and the role of images in science. This chapter begins with the history of how science has been depicted as a form of theater and analyzes the politics of imaging the body's interior, the meanings created by new medical imaging technologies, and the marketing of science in pharmaceutical ads. The final chapter, chapter 10, "The Global Flow of Visual Culture," looks at the ways in which images travel in the contemporary context of globalization. This chapter examines the role that images have played in the concept of the global, how popular culture has become increasingly global in its circulation and content, and the impact of globalization on art production and exhibition. It looks at the conditions within and across societies in a globalizing economy in which the
distribution of visual technologies is remarkably wide ranging but radically uneven. The book concludes with an extensive glossary of many terms used in the book.

Practices of Looking aims to engage with a broad range of issues of visual culture by examining how images gain meaning in many cultural arenas, from art and commerce to science and the law; how they travel through different cultural arenas and in distinct cultures; and how they are an integral and important aspect of our lives. Culture matters; and images matter, to how we live our lives in relation to others and the politics of meaning in the world today.

Notes


Further Reading

Images, Power, and Politics

Every day, we engage in practices of looking to make sense of the world. To those of us who are blind or have low vision, seeing and visuality are no less important than they are to those of us who are sighted, because the everyday world is so strongly organized around visual and spatial cues that take seeing for granted. Looking is a social practice, whether we do it by choice or compliance. Through looking, and through touching and hearing as means of navigating space organized around the sense of sight, we negotiate our social relationships and meanings.

Like other practices, looking involves relationships of power. To willfully look or not is to exercise choice and compliance and to influence whether and how others look. To be made to look, to try to get someone else to look at you or at something you want to be noticed, or to engage in an exchange of looks entails a play of power. Looking can be easy or difficult, pleasurable or unpleasant, harmless or dangerous. Conscious and unconscious aspects of looking intersect. We engage in practices of looking to communicate, to influence, and to be influenced. Even when we choose not to look, or when we look away, these are activities that have meaning within the economy of looking.

We live in cultures that are increasingly permeated by visual images with a variety of purposes and intended effects. These images can produce in us a wide array of emotions and responses. We invest the visual artifacts and images we create and encounter on a daily basis with significant power—for instance, the power to conjure an absent person, the power to calm or incite to action, the power to persuade or mystify, the power to remember. A single image can serve a multitude of purposes, appear in a range of settings, and mean different things to different people.
This image of women and schoolchildren looking at a murder scene in the street dramatically draws our attention to practices of looking. The photograph was taken by Weegee, a self-taught photographer of the mid-twentieth century whose real name was Arthur Fellig. The name Weegee is a play on the board game called Ouija, because he showed up at crime scenes so quickly that it was joked he must have supernatural psychic powers. He was known for his hard-core depictions of crime and violence in the streets of New York. Weegee listened to a police radio he kept in his car in order to arrive at crime scenes quickly, then, while onlookers watched, he would develop the photographs he took in the trunk of his car, which was set up as a portable darkroom.

"A woman relative cried...but neighborhood dead-end kids enjoyed the show when a small-time racketeer was shot and killed," states the caption accompanying this image, titled "The First Murder," in Weegee’s 1945 publication Naked New York. On the facing page is displayed a photograph of what the children saw: the
dead body of a gangster. In *The First Murder*, Weegee calls attention to both the act of looking at the forbidden scene and the capacity of the still camera to capture heightened fleeting emotion. The children are gawking at the murder scene with morbid fascination, ignoring the bawling relative. As viewers, we look with equal fascination on the scene, catching the children in the act of looking, their eyes wide with shock and wonder. We also witness the woman crying. Her eyes are closed, as if to shut out the sight of her dead relative. Near her another woman, the only other adult in the photograph, lowers her eyes, averting her look in the face of something awful. This is an adult practice that serves as a counterpoint to the children’s bold first look at murder to which the title draws our attention.

The role of images in providing views of violence, and of voyeurism and fascination with violence, is countered by a history of using images to expose the devastating aspects of violence. One particularly graphic historical example of this use of images was the wide circulation of an image of Emmett Till, a boy who was murdered during the beginning of the civil rights movement in the United States. Till, a 14-year-old young black man from Chicago, was visiting relatives in a small Mississippi town in August 1955. In the context of the strict codes of Jim Crow segregation, he allegedly whistled at a white woman. In retaliation for this act, he was kidnapped by white men, tortured (his eye gouged out), beaten, and shot through the head, then thrown into the Tallahatchie River with a gin mill tied to his neck with barbed wire. Till’s mother, recognizing the power of visual evidence, insisted on holding an open-casket funeral. She allowed his corpse to be photographed so everyone could see the gruesome evidence of violence enacted upon her son. The highly publicized funeral, which brought 50,000 mourners, and the graphic photograph of Till’s brutalized body (fig. 1.3), which was published in *Jet* magazine, were major catalysts of the nascent civil rights movement. This image showed in shockingly graphic detail the violence that was enacted on a young black man for allegedly whistling at a white woman. It represented the violent oppression of blacks in the time period. In this image, the power of the photograph to provide evidence of violence and injustice is coupled with the photograph’s power to shock and horrify.
Representation

*Representation* refers to the use of language and images to create meaning about the world around us. We use words to understand, describe, and define the world as we see it, and we also use images this way. This process takes place through systems such as language that are structured according to rules and conventions.

A language has a set of rules about how to express and interpret meaning. So do the systems of representation used in painting, drawing, photography, cinema, television, and digital media. Although these systems of representation are not languages, they are in some ways like language systems and therefore can be analyzed through methods borrowed from linguistics and semiotics.

Throughout history, debates about representation have considered whether representations reflect the world as it is, mirroring it back to us through mimesis or imitation, or whether we construct the world and its meaning through representations. In this book, we argue that we make meaning of the material world through understanding objects and entities in their specific cultural contexts. This process of understanding the meaning of things in context takes place in part through our use of written, gestural, spoken, or drawn representations. The material world has meaning and can be "seen" by us only through representations. The world is not simply reflected back to us through representations that stand in for things by copying their appearance. We construct the meaning of things through the process of representing them. Although the concept of mimesis has a long history, today it is no longer accepted that representations are mere copies of things as they are or as the person who created them believes they ought to be.

The distinction between the idea of reflection, or mimesis, and representation as a construction of the material world can be difficult to make. The still life, for instance, has been a favored genre of artists for many centuries. One might surmise that the still life is motivated by the desire to reflect, rather than make meaning of, material objects as they appear in the world. In this still life, painted in 1765 by French painter Henri-Horace Roland de la Porte, an array of food and drink is carefully arranged on a table and painted with attention to each minute detail. The objects, such as the fruit, the bowl and cup, and the wooden tabletop, are rendered with close attention to light and detail. They seem so lifelike that one imagines one could touch them. Yet, is this image simply a reflection of this particular scene,
rendered with skill by the artist? Is it simply a mimetic copy of a scene, painted for the sake of showing us what was there? Roland de la Porte was a student of Jean-Batiste-Siméone Chardin, a French painter who was fascinated with the style of the seventeen-century Dutch painters, who developed techniques of pictorial realism more than a century before the advent of photography. The seventeenth- and eighteenth-century still life ranged from paintings that were straightforwardly representational to those that were deeply symbolic. This painting includes many symbols of rustic peasant life. It invokes a way of living even without the presence of human figures. Elements such as food and drink convey philosophical as well as symbolic meanings, such as the transience of earthly life through the ephemeral materiality of basic, humble foods. The fresh fruits and wildflowers evoke earthy flavors and aromas. The crumbs of cheese and the half-filled carafe conjure the presence of someone who has eaten this simple meal.

In 2003, artist Marion Peck produced this painting, *Still Life with Dralas*, in the style of the Roland de la Porte still life. Drala is a term used in Buddhism to refer to energy in matter and the universe. Peck, a contemporary pop surrealist painter, interprets Roland de la Porte’s still life to contain a kind of anthropomorphic energy in the rendering of the fruit and the dishes and glassware, which she brings to life with comic little faces. The painting holds an abundance of looks. Each tiny grape contains an eyeball. The conventions of painting used in the eighteenth-century work are understood to convey realism according to the terms of that era. In Peck’s contemporary painting, the genre of the still life is subject to a kind of reflexive interpretation that humorously animates and makes literal its meanings, emphasizing possible metaphysical values.

**FIG. 1.4**
Henri-Horace Roland de la Porte, *Still Life*, c. 1765
FIG. 1.5
Marion Peck, Still Life With Dralas, 2003

FIG. 1.6
René Magritte, The Treachery of Images (This is Not a Pipe) [La Trahison des images (Ceci n'est pas une pipe)], 1928–29

contained in the original painting's symbolism. Here, we want to note that these paintings produce meanings through the ways that they are composed and rendered, and not just in the choices of objects depicted.

We learn the rules and conventions of the systems of representation within a given culture. Many artists have attempted to defy those conventions, to break the rules of various systems of representation, and to push the boundaries of definitions of representation. This painting, by the Belgian Surrealist artist René Magritte,
comments on the process of representation. Entitled *The Treachery of Images* (1928–1929), the painting depicts a pipe with the line in French, "This is not a pipe." One could argue, on the one hand, that Magritte is making a joke, that of course it is an image of a pipe that he has created. However, he is also pointing to the relationship between words and things, as this is not a pipe itself but rather the representation of a pipe; it is a painting rather than the material object itself. Magritte produced a series of paintings and drawings on this theme, including *The Two Mysteries* (1966), a painting in which a pipe is rendered ambiguously as floating in space either behind, in front of, or just above a painting of a pipe, with the same witty subscript, propped on an easel. Here, we have two pipes—or rather, two drawings of the same pipe—or a painting of a pipe and a painting of a painting of a pipe and a subscript identifying it. French philosopher Michel Foucault elaborated on Magritte's ideas by exploring these images' implied commentary about the relationship between words and things and the complex relationship between the drawing, the paintings, their words, and their referent (the pipe). One could not pick up and smoke this pipe. So Magritte can be seen to be pointing out something so obvious as to render the written message absurd. He highlights the very act of labeling as something we should think about, drawing our attention to the word "pipe" and the limits of its function in representing the object, as well as the limits of the drawing in representing the pipe. Magritte asks us to consider how labels and images produce meaning yet cannot fully invoke the experience of the object. Negations, Foucault explains, multiply, and the layers of representation pile on one another to the point of incoherence. As we stop to examine the process of representation in this series by Magritte, we can see how the
most banal and everyday, sensible uses of representation can so easily fall apart, can be simply silly. In many of his other visual works, Magritte demonstrated that between words and objects one may create new relations and meanings through juxtaposition and changing contexts.

Magritte's painting is famous. Many artists have played off of it. The cartoon artist Scott McCloud, in his book Understanding Comics, uses Magritte's Treachery of Images to explain the concept of representation in the vocabulary of comics, noting that the reproduction of the painting in his book is a printed copy of a drawing of a painting of a pipe, and following this with a hilarious series of pictograms of icons such as the American flag, a stop sign, and a smiley face, all drawn with disclaimers attached (this is not America, this is not law, this is not a face). The digital theorist Talan Memmott, in a work of digital media called The Brotherhood of the Bent Billiard, offers a "hypermediated art historical fiction" about Magritte's Treachery and the generations of textual and visual interpretations it spawned. Book One of The Brotherhood traces the development of the pipe as an emblem from its first appearance in a painting of 1926 to the famous works reproduced here. In Memmott's piece, Magritte's image play with meaning and representation is the impetus for the production of a reauthored narrative of Magritte that is an opportunity for considering meaning and representation in the era of digital imaging. Memmott describes his work as a "narrative hack" of the complex system of allegories and symbols built up over Magritte's career, referred to as his "symbolic calculus." As these examples all make clear, today we are surrounded by images that play with representation, unmasking our initial assumptions and inviting us to experience layers of meanings beyond the obvious or the apparent real or true meaning.

The Myth of Photographic Truth

Throughout its history, photography has been associated with realism. But the creation of an image through a camera lens always involves some degree of subjective choice through selection, framing, and personalization. It is true that some types of image recording seem to take place without human intervention. In surveillance videos, for instance, no one stands behind the lens to determine what and how any particular event should be shot. Yet even in surveillance video, someone has programmed the camera to record a particular part of a space and to frame that space in a particular way. In the case of many automatic video and still-photography cameras designed for the consumer market, aesthetic choices such as focus and framing are made as if by the camera itself, yet in fact the designers of these cameras also made decisions based on social and aesthetic norms and standards concerning elements such as depth of focus and color. These selections are invisible to the user—they are black-boxed, relieving the photographer of the need to make various formal decisions. It remains the photographer who frames and takes the image, not the camera itself. Yet, despite the subjective aspects of the act of taking a picture, the aura of machine objectivity clings to mechanical and electronic images. All camera-generated images,
be they photographic, cinematic, electronic, or digital, bear the cultural legacy of still photography, which historically has been regarded as a more objective practice than, say, painting or drawing. This combination of the subjective and the objective is a central tension in our regard of camera-generated images.

Photography, the technique in which light rays reflecting off objects pass through a lens and register an imprint on a medium such as silver halide film (or, in the case of digital photography, a digital chip), was developed in Europe during the mid-nineteenth century, when concepts of positivist science held sway. Positivism, a philosophy that emerged in the mid-nineteenth century, holds that scientific knowledge is the only authentic knowledge and concerns itself with truths about the world. In positivism, the individual actions of the scientist came to be viewed as a liability in the process of performing and reproducing experiments, as it was thought that the scientist’s own subjective actions might influence the outcome or skew the objectivity of the experiment. Hence, in positivism, machines were regarded as more reliable than unaided human sensory perception or the hand of the artist in the production of empirical evidence. Photography seemed to suit the positivist way of thinking because it is a method of producing representations through a mechanical recording device (the camera) rather than the scientist’s subjective eye and hand (using pencil to sketch a view on paper, for example). In the context of positivism, the photographic camera could be understood as a scientific tool for registering reality more accurately.

Since the mid-nineteenth century, there have been many arguments for and against the idea that photographs are objective renderings of the real world that provide unbiased truth. Some advocates of photography held that cameras render the world in a perspective that is detached from a subjective, particular human viewpoint because the conventions of the image are for the most part built into the apparatus. Others emphasized the role of the photographer in the subjective process of choosing, composing, lighting, and framing scenes. These debates have taken on new intensity with the introduction of digital imaging processes. A photograph is often perceived to be an unmediated copy of the real world, a trace of reality skimmed off the very surface of life, and evidence of the real. Photographs have been used to prove that someone was alive at a particular time and place in history. For instance, after the Holocaust, some survivors sent photographs to their families from whom they had long been separated as an affirmation that they were alive.

The French theorist Roland Barthes famously noted that the photograph, unlike a drawing, offers an unprecedented conjunction between what is here now (the image) and what was there then (the referent, or object, thing, or place). This conjunction relies on a myth of photographic truth. When a photograph is introduced as documentary evidence in a courtroom, it is often presented as if it were incontrovertible proof that an event took place in a particular way and in a particular place. As such, it is perceived to speak the truth in a direct way. Barthes used the term studium to describe this truth function of the photograph. The order of the studium also refers to the photograph’s ability to invoke a distanced appreciation for what the image holds. At the same time, the truth-value of photography has been the focus of skepticism
and debate, in contexts such as courtrooms, about the different "truths" that images can tell and the limits of the image as evidence. That is why we refer to photographic truth as a myth. The contestation of truth in photographs has come into question with special urgency with the more increasing use since the 1990s of digital editing software, which allows photographs to be manipulated with much greater ease than ever before. Barthes referred to photographic truth as myth not because he felt that photographs do not tell the truth but because he regarded truth as always culturally inflected, never pure and uninfluenced by contextual factors. For Barthes, there is no singular truth to be identified outside the myths or ideologies of cultural expression.

Photographs are also objects in which we invest deep emotional content. They are one of the primary means through which we remember events, conjure up the presence of an absent person, and experience longing for someone we have lost or someone we desire but whom we have never seen or met. They are crucial to what we remember, but they can also enable us to forget those things that were not photographed. Photographs are objects that channel affect in ways that often seem magical. Roland Barthes once wrote that photographs always indicate a kind of mortality, evoking death in the moments in which they seem to stop time. Barthes coined the use of the term punctum to characterize the affective element of those certain photographs that pierce one's heart with feeling. The meaning of photographs can thus be seen as somewhat paradoxical in that they can be emotional objects through the punctum, or the emotionally piercing quality, yet they can also, through the effect of the studium, serve as banal traces of the real, documentary evidence of something that simply has happened. Photographic meaning derives precisely from this paradoxical combination of affective and magical qualities and the photograph's cultural status as cold proof. Artist and theorist Allan Sekula proposes: "photographs achieve semantic status as fetish objects and as documents. The photograph is imagined to have, depending on its context, a power that is primarily affective or a power that is primarily informative. Both powers reside in the mythical truth-value of the photograph."

It is an additional paradox of photography that, although we know that images can be ambiguous and are easily manipulated or altered, particularly with the help of digital technology, much of the power of photography still lies in the shared belief that photographs are objective or truthful records of events. Our awareness of the subjective nature of imaging is in constant tension with the legacy of objectivity that clings to the cameras and machines that produce images today, even as the increasing availability of digital imaging software makes the alteration of photographs both easy and widespread.

The images created by cameras can be simultaneously informative and expressive. This photograph was taken by Robert Frank while he was traveling around the United States from 1955 to 1957 on two Guggenheim fellowships awarded to him to document American life at every strata. Eighty-three photographs selected from 687 rolls of film (more than 20,000 photographs) he took over two years were published as The Americans, a photographic essay with an introduction by the Beat poet Jack
Kerouac. The photograph reproduced here documents passengers on a segregated city trolley in New Orleans—a white matron looking suspicious, a white boy in his Sunday best, a black man looking mournful. As a factual piece of evidence about the past, it records a particular moment in time in the racially segregated American South of the 1950s. Yet, at the same time, this photograph, titled *Trolley—New Orleans* (1955), does more than document these particular facts. For some viewers, this image is moving insofar as it connotes a culture on the precipice of momentous change, evoking powerful emotions about the history of segregation and the racial divide in America encapsulated in this chance look into the windows of a passing trolley. The picture was taken just as laws, policies, and social mores concerning segregation began to undergo radical changes in response to civil rights activism and, in particular, to the United States Supreme Court’s 1954 *Brown v. Board of Education* ruling against segregation and the Montgomery bus boycott of 1955–1956, which followed Rosa Parks’s famous refusal to move to the back of the bus (a few months after the publication of the Emmett Till image we discussed earlier). In Frank’s photograph, the faces of the passengers each look outward with different expressions, responding in different ways to their lives, their journey. It is as if the trolley itself represents the passage of history, and the expressive faces of each passenger frozen in a fleeting moment of transit here foreshadow the ways in which each one will confront and perform his or her place in the history that will ensue. The trolley riders seem to be held for one frozen, pivotal moment within the vehicle, a group of strangers thrown together to
journey down the same road that would become so crucial to American history, just as the civil rights era in the South brought together strangers in a political journey toward major social change.

Thus this photograph is valuable both as an empirical document of what has been and as an expressive, symbolic vehicle of what was at that moment and what would soon be. The power of the image derives not only from its status as photographic evidence of this exact moment in time but also from its powerful evocation of the personal and political struggles of the era that encompasses this moment. The photograph thus has the capacity both to present evidence and to evoke a magical or mythical quality that moves us beyond specific empirical truths.

In *Trolley—New Orleans*, as in all images, we can discern multiple levels of meaning. Roland Barthes uses the terms *denotative* and *connotative* to describe different kinds and levels of meaning produced at the same time and for the same viewers in the same photograph. An image can denote certain apparent truths, providing documentary evidence of objective circumstances. The denotative meaning of the image refers to its literal, explicit meaning. The same photograph may connotate less explicit, more culturally specific associations and meanings. Connotative meanings are informed by the cultural and historical contexts of the image and its viewers’ lived, felt knowledge of those circumstances—all that the image means to them personally and socially. As we noted, this Robert Frank photograph denotes a group of passengers on a trolley. Yet clearly its meaning is broader than this simple description. This image connotes a collective journey of life and race relations in the American South in the 1950s. A viewer’s cultural and historical knowledge that 1955 is the same year in which the Montgomery bus boycotts took place and that the photograph was taken shortly after the *Brown v. Board of Education* desegregation ruling potentially contributes to the photograph’s connotative messages. The dividing line between what an image denotes and what it connotes can be ambiguous, and connotative meanings can change with changes in social context and over time. It can be argued that all meanings and messages are culturally informed—that there is no such thing as a purely denotative image. The two concepts, denotation and connotation, can be useful, however, because they help us to think about the ways in which images both function narrowly to signify literal, denoted meanings and also go beyond that to connote culturally and contextually specific meanings.

We have been discussing the myth of photographic truth. Roland Barthes used the term *myth* in a slightly different way to refer to the cultural values and beliefs that are expressed through connotation. For Barthes, myth is the hidden set of rules and conventions through which meanings, which are specific to certain groups, are made to seem universal and given for a whole society. Myth thus allows the connotative meaning of a particular thing or image to appear to be denotative, literal, or natural. For instance, Barthes argued that a French advertisement for a particular brand of Italian sauce and pasta is not simply presenting a product but is engaging in, as well as helping to produce, a myth or stereotype about Italian culture—the
concept of “Italianicity.” This connoted message, wrote Barthes, is not for Italians but is specifically for a French audience, for whom the advertisement fosters a particular romanticized sense of what constitutes true Italian culture. Similarly, one could argue that contemporary representations of beauty (ultra-thin bodies, for example) promote the idea that certain body types and shapes are universally regarded as attractive. These standards constitute a myth in Barthes’s terms (what some feminist critics have described as the feminine beauty myth) because they are historically and culturally constructed, not given or “natural.” We all “know” this body to be the standard of beauty when we see it, not because it is simply naturally true that such bodies are objectively more beautiful than other types but because the connotative message has become so widely incorporated as to seem obvious and natural. In this way, denotative meanings can help to feed the production of connotative meaning, and connotative meanings can become more explicit and generic.

Barthes’s concepts of myth and connotation are particularly useful in examining notions of photographic truth. Context influences our expectations and uses of images with respect to their truth-value. We do not, for example, bring the same expectations about the representation of truth to advertisements or film images that we view in a movie theater that we do to newspaper photographs or television news images. Significant differences among these forms include their relationship to time—does the image document something happening now, as television sometimes does, or is the event past?—and their ability to be widely reproduced. Whereas conventional photographs and films need to be developed and printed before they can be viewed and reproduced, the electronic nature of television images means that they are instantly viewable and can be transmitted around the world live, and the immediate realization of digital images makes them instantly available. Liveness and immediacy can contribute to the truth-value of an image. As moving images, cinematic and television images are combined with sound and music in narrative arrangements. Their meaning often lies in the sense we make of the sequence of images as they compose an overall story and the relationship of the image to sound, which we understand as having been produced and designed. We know better than to look for empirical evidence in fiction film images.

Similarly, the cultural meanings of and expectations about computer and digital images are different from those of conventional photographs. Because digital computer images can easily be made to look like conventional analog photographs, people who produce them sometimes play with the conventions of photographic realism. For example, an image generated exclusively by computer graphics software can be made to appear to be a photograph of actual objects, places, or people, when in fact it is a simulation, that is, it does not represent something in the real world. There is no expectation, in digital imaging, of the camera “having been there” to document something that really happened, which we see here and now in the image. Digital simulations of photographs imitate photographs of real phenomena using mathematical formulas translated into visual coordinates that approximate
photographic conventions of space. The difference resides in the fact that the process of producing a digital image does not require that the referent (the actual object, person, or place) is present or even that the referent exists. In addition, digital imaging software programs can be used to modify or rearrange the elements of a “realistic” photograph, erasing elements or introducing features that were not really there at the time of the picture’s taking or suggesting events that in fact did not happen—such as staging a diplomatic handshake by combining photographs taken of two world leaders at different times and places or morphing the faces of famous women into a composite of conventions of beauty, as the photographer and artist Nancy Burson has done. In this 1982 image, Burson used early digital technologies to make a composite of images of Bette Davis, Audrey Hepburn, Sophia Loren, Grace Kelly, and Marilyn Monroe, famous beauties of the 1950s, juxtaposed with a composite of stars of the 1980s (Jane Fonda, Jacqueline Bisset, Diane Keaton, Brooke Shields, and Meryl Streep). Together these two images evoke the idea that different looks are favored and become the standard in different eras. Moreover, there is no one ideal beauty. Rather, our standards derive from a range of types. Yet certain notions of beauty are standardized, such as whiteness, symmetry, and full lips. Widespread use of digital imaging technologies since the 1990s has dramatically altered the status of the photograph relative to truth claims, particularly in the news media. Digital imaging thus can be said to have partially eroded the public’s trust in the camera image as evidence, even as the truth-value of the photograph clings to digital images. The meaning of an image and our expectations of that image are thus tied to the technology through which it is produced, even if that technology has undergone radical change, as photography has since the 1990s. We discuss this issue further in chapter 5.

Images and Ideology

To explore the meaning of images is to recognize that they are produced within dynamics of social power and ideology. Ideologies are systems of belief that exist
within all cultures. Images are an important means through which ideologies are produced and onto which ideologies are projected. When people think of ideologies, they often think in terms of propaganda—the crude process of using false representations to lure people into holding beliefs that may compromise their own interests. This understanding of ideology assumes that to act ideologically is to act out of ignorance. In this particular sense, the term ideology carries a pejorative cast. However, ideology has come to be understood as a much more pervasive, mundane process in which we all engage and about which we are all for the most part aware, in some way or other. In this book, we define ideologies as the broad but indispensable shared sets of values and beliefs through which individuals live out their complex relations in a range of social networks. Ideologies are widely varied and intersect at all levels of all cultures, from religions to politics to choices in fashion. Our ideologies are diverse and ubiquitous; they inform our everyday lives in often subtle and barely noticeable forms. One could say that ideology is the means by which certain values—such as individual freedom, progress, and the importance of home—are made to seem like natural, inevitable aspects of everyday life. Ideology is manifested in widely shared social assumptions not only about the way things are but also about the way things should be. Images and media representations are some of the forms through which we engage or enlist others to share certain views or not, to hold certain values or not.

Practices of looking are intimately tied to ideology. The image culture in which we live is an arena of diverse and often conflicting ideologies. Images are elements of contemporary advertising and consumer culture through which assumptions about beauty, desire, glamour, and social value are both constructed and lived. Film and television are media through which we see reinforced certain familiar ideological constructions such as the value of romantic love, the norm of heterosexuality, nationalism, or traditional concepts of good and evil. The most important aspect of ideologies in the modernist period was that they appeared to be natural or given, rather than part of a system of belief that a culture produces in order to function in a particular way. Ideologies were thus, like Barthes’s concept of myth, connotations that appear to be natural. As we move forward through the postmodern period, the idea that media representations naturalize ideologies becomes displaced by the idea that images are on par with and at play with naturalized ideologies. In an era of media saturation, images do not naturalize ideas as models of experience so much as they serve as parallel entities with experience.

Visual culture is thus not just a representation of ideologies and power relations but is integral to them. Ideologies are produced and affirmed through the social institutions that characterize a given society, such as the family, education, medicine, the law, the government, and the entertainment industry, among others. Ideologies permeate the world of entertainment. They also permeate the more mundane and everyday realms of life that we do not usually associate with the word culture: science, education, medicine, law. All are deeply informed by the ideologies of the particular social institutions as they intersect with ideologies of a given culture’s
religious and cultural realms. Though we tend to think of images in association with culture and the arts, all of these everyday institutions and areas of life use images. Images are used, for example, for the categorization and classification of peoples for identification, as evidence of disease in medical screening and diagnosis, and as courtroom evidence. Shortly after photography was developed in Europe in the early nineteenth century, private citizens began hiring photographers to make individual and family portraits. Portraits often marked important moments such as births, marriages, and even deaths (the funerary portrait was a popular convention). One widespread early use of photography was to incorporate the image into a carte de visite, or visiting card. These small cards were used by many middle- and upper-class people in European-American societies as calling cards featuring photographic portraits of themselves. In addition, in the late nineteenth century there was a craze of purchasing carte de visites of well-known people, such as the British royal family. This practice signaled the role that photographic images would play in the construction of celebrity throughout the twentieth century.

This carte de visite of U.S. General George Custer, which was taken in the 1860s, shows Custer’s image and signature, with the salutation “Truly Yours.” On the reverse side is the name of the photo studio. Thus in the carte de visite, the photographic portrait, sometimes accompanied by a signature, was a means to affirm individuality, and it demonstrated one of the ways that photography was integrated into bourgeois life and its values in the nineteenth century. Sekula writes that photography developed quickly into a medium that functioned both honorifically (for example, in the case of portraiture) and repressively (in the case of the use of photography for the cataloging of citizens, police photographs, and the use of photographs to discern qualities such as pathology or deviance in human subjects).³

Photographs were widely regarded from the beginning as tools of science and of public surveillance. Astronomers spoke of using photographic film to mark the movements of the stars. Photographs were used in hospitals, mental institutions, and prisons to record and study populations, in hopes that they could be classified and tracked over time. Indeed, in rapidly growing urban industrial centers, photographs quickly became an important way for police and public health officials to monitor urban populations perceived to be growing not only in numbers but also in rates of crime and social deviance.

What is the legacy of this use of images as a means of managing and controlling populations today? Portrait images, like fingerprints, are frequently used as personal identification—on passports, driver’s licenses, credit cards, and identification cards in schools, in the welfare system, and in many other social institutions. Photographs are a primary medium of evidence in the criminal justice
system. We are accustomed to the fact that most stores, banks, and public places are outfitted with surveillance cameras. Our daily lives are tracked not only through our credit records but also through camera records of our movements. On a typical day of work, errands, and leisure, the activities of people in cities are recorded, often unbeknownst to them, by surveillance cameras. Often these images stay within the realm of identification and surveillance, where they go unnoticed by most of us, and are stored unviewed. But sometimes their venues change and they circulate in the public realm, where they acquire new meanings.

This happened in 1994, when the former football star O. J. Simpson was arrested as a suspect in a notorious murder case. Simpson’s image had previously appeared only in sports media, advertising, and celebrity news media. He was rendered a different kind of public figure when his portrait, in the form of his police mug shot, was published on the covers of Time and Newsweek magazines. The mug shot is a common use of photography in the criminal justice system. Information about all arrested people, whether they are convicted or not, is entered into the system in the form of personal data, fingerprints, photographs and sometimes even DNA samples. The conventions of the mug shot were presumably familiar to most people who saw the covers of Time and Newsweek. The conventions of framing and composition alone connote to viewers a sense of the subject’s deviance and guilt, regardless of who is thus framed; the image format has the power to suggest the photographic subject’s guilt. Simpson’s mug shot seemed to be no different from any other in this regard.

Whereas Newsweek used the mug shot as it had been initially photographed, Time heightened the contrast and darkened Simpson’s skin tone in its use of this image on the magazine’s cover, reputedly for “aesthetic” reasons. Interestingly, Time magazine’s publishers do not allow this cover to be reproduced (we reproduce the Newsweek version here). What ideological assumptions might be said to underlie these uses of the same image? Critics charged that Time was following the historical convention of using darker skin tones to connote evil and to imply guilt. For instance, in motion pictures made during the first half of the twentieth century, when black and Latino performers appeared, they were most often cast in the roles of villains. This convention tied into the lingering ideologies of nineteenth-century racial science, in which it was proposed that certain bodily forms and attributes,
including darker shades of skin, indicated a predisposition toward social deviance. Though this view was contested in the twentieth century, darker skin tones nonetheless continued to be used as literary, theatrical, and cinematic symbols of evil (as they have been for centuries). Hollywood studios even developed special makeup to darken the skin tones of Anglo, European, and light-skinned black and Latino performers to emphasize a character’s evil nature. In this broader context, the darkening of Simpson’s skin tone cannot be seen as a purely arbitrary or aesthetic choice but rather an ideological one. Although the magazine cover designers may not have intended to evoke this history of media representations, we live in a culture in which the association of dark tones with evil and the stereotype of black men as criminals still circulate. In addition, because of the codes of the mug shot, it could be said that by simply taking Simpson’s image out of the context of the police file and placing it in the public eye, Time and Newsweek influenced the public to see Simpson as a criminal even before he had been placed on trial. In 1995, the announcement of the verdict in which Simpson was acquitted by a jury was reportedly watched by more than half of the U.S. population (he was later found liable in a civil trial).

As this example shows, the meaning of images can change dramatically when those images change social contexts. Today, the contexts in which images circulate have become infinitely more complex than they were even in the mid-twentieth century. Digital images taken on cell phones are e-mailed to websites, video shot by people of their daily lives is easily uploaded to Web media sites, Web cameras track people’s lives and display them directly on websites, and photographs and videos of private moments can circulate rapidly on the Web and via e-mail, all then potentially seen by millions. This means that any given image or video clip might be displayed in a short period of time in many very different contexts, each of which might give it different inflections and meanings. It also means, to the dismay of many politicians and celebrities, that once images are set loose in these image distribution networks, they cannot be fully retrieved or regulated. The legal regulation of this circulation of images through copyright and fair use laws is an issue we consider in chapter 5.

How We Negotiate the Meaning of Images

We use many tools to interpret images and create meanings with them, and we often use these tools of looking automatically, without giving them much thought. Images are produced according to social and aesthetic conventions. Conventions are like road signs: we must learn their codes for them to make sense, and the codes we learn become second nature. Company logos operate according to this principle of instant recognition, counting on the fact that the denotative meaning (the swoosh equals Nike) will slide into connotative meanings (the swoosh means quality, coolness) that will boost sales. We decode images by interpreting clues pointing to intended, unintended, and even merely suggested meanings. These clues may be formal elements such as color, shades of black and white, tone, contrast, composition, depth,
perspective, and style of address to the viewer. As we saw in the case of the tonal rendering of O. J. Simpson’s mug shot, seemingly neutral elements such as tone and color can take on cultural meanings. We also interpret images according to their socio-historical contexts. For example, we may consider when and where the image was made and displayed or the social context in which it is presented. Just as Simpson’s mug shot took on new meanings when taken out of police records and reproduced on the cover of popular magazines, so an image appearing as a work of art in a museum takes on quite a different meaning when it is reproduced in an advertisement. We are trained to read for cultural codes such as aspects of the image that signify gendered, racial, or class-specific meanings.

Thus image codes change meaning in different contexts. For instance, the representation of smiles has meant many things throughout history. The Mona Lisa, for instance, is famous in part for her smile, which is understood to be enigmatic, hiding some kind of secret. The “smiley face” that emerged in the 1960s has largely been understood as a symbol of happiness. This symbol, which proliferated on buttons and T-shirts, also inspired the common emoticon practice of using punctuation in e-mail to signify a smile :). Yet what a smile means depends on context. Is the little blond boy in The First Murder smiling or grimacing, and how does the context help us to determine the meaning of his expression? Chinese artist Yue Minjun creates paintings that evoke “symbolic smiles” and that make reference to the images and sculptures of laughing Buddha and comment with irony on the smile as a mask. The smiles in Minjun’s paintings seem to rise from anxiety, stretched across faces in painful caricature, connoting the irony, folly, and artificial sincerity of everyday life. We can infer these connotations from his painting titled BUTTERFLY (fig. 1.13), with its exaggeration of the smiles, the distorted faces, the horned heads, the strange and naked red bodies, here juxtaposed with colorful butterflies. Yet we can also learn more about those connotations by finding out about the artist, whose work is considered to be part of a Chinese art movement of cynical realism, and references to both modern and traditional China and the legacy of the laughing Buddha. Whereas the Buddha is laughing in contentment, Minjun’s figures seem to be smiling in agony. These are very different smiles from the smiley face or the smile of the Mona Lisa.

Our discussion of the differing meaning of smiles draws from the concepts of semiotics. Every time we interpret an image around us (to understand what it signifies), whether consciously or not, we are using the tools of semiotics to understand its significance, or meaning. The principles of semiotics were formulated by the American logician, scientist, and philosopher Charles Sanders Peirce in the late nineteenth century and the Swiss linguist Ferdinand de Saussure in the early twentieth century. Both proposed important linguistic theories that were adapted in the middle of the twentieth century for use in image analysis. Saussure’s writing, however, has had the
most influence on the theories of structuralism that inform the ways of analyzing visual culture discussed in this book. Language, according to Saussure, is like a game of chess. It depends on conventions and codes for its meanings. At the same time, Saussure argued, the relationship between a word (or the sound of that word when spoken) and things in the world is arbitrary and relative, not fixed. For example, the words dog in English, chien in French, and hund in German all refer to the same kind of animal; hence the relationship between the words and the animal itself is dictated by the conventions of language rather than by some natural connection. It was central to Saussure’s theory that meanings change according to context and to the rules of language.

Charles Sanders Peirce (whose name is pronounced “purse”) introduced the idea of a science of signs shortly before Saussure. Peirce believed that language and thought are processes of sign interpretation. For Peirce, meaning resides not in the initial perception of a sign or representation of an object but in the interpretation of the perception and subsequent action based on that perception. Every thought is a sign without meaning until a subsequent thought (what he called an interpretant) allows for its interpretation. For example, we perceive an octagonal red sign with the letters STOP inscribed. The meaning lies in the interpretation of the sign and subsequent action (we stop).
Saussure’s ideas about language were adapted by theorists, from Barthes to film theorists, for use in the interpretation of visual representational systems. Peirce’s concepts have been used for visual analysis as well. In applying semiotics to film, theorists emphasized that film involves a set of rules or codes that function in some ways like a language. There have been many revisions of the application of semiotics to images, but it nonetheless remains an important method of visual analysis. We choose to concentrate in this book on the model of semiotics introduced by Barthes (as we discussed earlier) and based on Saussure, because this system offers a clear and direct way to understand the relationship between visual representations and meaning.

In Barthes’s model, in addition to the two levels of meaning of denotation and connotation, there is the sign, which is composed of the signifier—a sound, written word, or image—and the signified, which is the concept evoked by that word or image. In the familiar smiley face icon, the smile is the signifier, and happiness is the signified. In the Minjun painting reproduced here, the smile is the signifier, and anxiety is the signified. The image (or word) and its meaning together (the signifier and signified together) form the sign.

Image/sound/word = Signifier  
Meaning = Signified

For Saussure, signifier is the entity that represents, and sign is the combination of the signifier and what it means. As we have seen with these two different images of smiles, an image or word can have many meanings and constitute many signs in Saussure’s use of that term. The production of a sign is dependent on social, historical, and cultural context. It is also dependent on the context in which the image is presented (in a museum gallery or a magazine, for instance) and on the viewers who interpret it. We live in a world of signs, and it is the labor of our interpretation that makes the signifier—signified relationship fluid and active in the production of signs and meaning.

Often the meaning of an image is predominantly derived from the objects within the frame. For instance, old Marlboro advertisements are well known for their equation of this cigarette brand with masculinity: Marlboro (signifier) + masculinity (signified) = Marlboro as masculinity (sign). The cowboy is featured on horseback or just relaxing with a smoke, surrounded by natural beauty evocative of the unspoiled American West. These advertisements connote rugged individualism and life on the American frontier, when men were "real" men. The Marlboro Man embodies a romantic ideal of freedom that stands in contrast to the more confined lives of most everyday working people. It is testimony to the power of these ads to create the sign of Marlboro as masculinity (and the Marlboro Man as connoting a lost ideal of masculinity) that many contemporary Marlboro ads dispense with the cowboy altogether and simply show the landscape, in which this man exists by implication. This ad campaign also testifies to the ways in which objects can become gendered through advertising. It is a little-known fact that Marlboro was marketed as a "feminine" cigarette (with lipstick-red-tipped filters) until the 1950s, when the Marlboro Man made
his first appearance. Indeed, the Marlboro Man has long been appropriated as a camp icon in gay male culture. In 1999, the well-known huge Marlboro Man billboard on Sunset Strip in Hollywood was taken down and replaced by an antismoking billboard that mocked this icon of buff masculinity. The Marlboro Man has been invoked in many antismoking ads to create new signs for smoking, such as Marlboro Man = loss of virility or smoking = disease, as this antismoking ad does.

Our understanding of the Marlboro ad and its spoof is dependent on our knowledge that cowboys are disappearing from the American landscape, that they are cultural symbols of a particular ideology of American expansionism and the frontier that began to fade with urban industrialization and modernization. We bring to these images cultural knowledge of the changing role of men and the recognition that it indicates a fading stereotype of masculine virility. Clearly, our interpretation of images often depends on historical context and the viewers' cultural knowledge—the conventions the images use or play off of, the other images they refer to, and the familiar figures and symbols they include. As conventions, signs can be a kind of shorthand language for viewers of images, and we are often incited to feel that the relationship between a signifier and signified is "natural." For instance, we are so accustomed to identifying a rose with the concept of romantic love and a dove with peace that it is difficult to recognize that their relationship is constructed rather than natural. We can see how Barthes's model can be useful in examining how images construct meanings. Moreover, the very fact that the sign is divided into a signifier and a signified allows us to see that a variety of images can convey many different meanings.

Peirce worked with a somewhat different model in which the sign (which for him is the word or image, not the relationship between word or image and object) is distinguished not only from the interpreted meaning (the interpretant) but also from the object itself. Peirce's
work has been important for looking at images because of the distinctions that he makes between different kinds of signs and their relationship to the real. Peirce described three kinds of signs or representations: iconic, indexical, and symbolic. In Peirce’s definition, iconic signs resemble their object in some way. Many paintings and drawings are iconic, as are many comics, photographs, and film and television images.

We can see iconic signs at work in Marjane Satrapi’s autobiographical graphic novel, Persepolis, which was the basis for a 2007 animated film. Persepolis is the story of Satrapi’s growing up in Iran during the time of the Iranian Revolution. Her personal life is caught up in the violent changes in Iranian society. In this image, she depicts herself as a young girl who with her classmates has been obliged to wear a veil to school. The simplicity of Satrapi’s style creates iconic signs of the young women and their veils—we know how to read these images, in Peirce’s terms, because they resemble what they are representing. In stark black and white, the veils command visual attention within the frame. Satrapi uses visual repetition and framing to depict the homogenizing visual effect of the girls’ veils, as well as to mark herself as an individual (in a separate frame). These strategies of framing, motif, and the flattening of space (here, the girls are situated against a blank background) are used to depict character and psychological states of mind. The girls’ hands are all folded in unison, making clear how they must conform in the school environment (and by implication in the society). Yet their facial expressions establish from this first page that they are all responding in different ways (annoyance, dejection, compliance) to the demand that they wear the veil and conform.

The cultural meaning of the veil is highly complex. Its depiction as an artifact of oppression, as we see here in Satrapi’s image, has been countered by a politics of appropriating the veil as a means of affirming one’s Muslim identity in the Islamic diaspora. For instance, the Spirit21 blog (www.spirit21.co.uk) presented, in 2007, a series of cartoons that comment on the politics of the veil in Britain, where
former Prime Minister Tony Blair and his wife Cherie had spoken out against the wearing of the veil in British streets, stating that it constituted a security matter. One cartoon shows Blair delivering a speech and offering to take a question from “the woman in the black veil” in an audience filled with women wearing identical black veils, invoking the more familiar image of a room full of men wearing the standard business uniform of the black suit. The veil is referenced here as icon not of oppression but of the new Muslim woman who participates in civic life and who publicly signifies her cultural identity through a uniform that connotes belonging and respect.

Unlike iconic signs in comics, which typically resemble their objects, symbolic signs, according to Peirce, bear no obvious relationship to their objects. Symbols are created through an arbitrary (one could say “unnatural”) alliance of a particular object and a particular meaning. For example, languages are symbolic systems that use conventions to establish meaning. There is no natural link between the word cat and an actual cat; the convention in the English language gives the word its significance. Symbolic signs are inevitably more restricted in their capacity to convey meaning in that they refer to learned systems. Someone who does not speak English can probably recognize an image of a cat (an iconic sign), whereas the word cat (a symbolic sign) will have no obvious meaning.

It is Peirce’s discussion of images as indexical that is most useful in visual culture study. Indexical signs as discussed by Peirce involve an “existential” relationship between the sign and the interpretant. This means that they have coexisted in the same place at some time. Peirce uses as examples the symptom of a disease, a pointing hand, and a weathervane. Fingerprints are indexical signs of a person, and photographs are also indexical signs that testify to the moment that the camera was in the presence of its subject. Indeed, although photographs are both iconic and indexical, their cultural meaning is derived in large part from their indexical meaning as a trace of the real.

The creation of signs semiotically is usually the result of a combination of factors in an image,

FIG. 1.16
Land Rover ad, 2007
and this means that meaning is often derived through the combination of text and image. This is particularly the case in advertising, public service advertising, and political posters, in which the combination of text and image can be used to direct the viewer's interpretation to a particular meaning through a kind of double take—the image first looks a certain way and then changes meaning with the addition of the text. It is important to the indexical meaning of most advertisements that they use photographs to construct their messages. In that photographs always carry with them the connotation of photographic truth yet are also a primary source of fantasy, they provide important dual meanings in many advertisements. However, text functions in ads to shape the commodity signs of the image, to rein in and limit the meaning of the image in some way. This Land Rover ad (fig. 1.16) uses text, which suggests that the car can be new as well as classic, to shape how viewer-consumers will see the image of the car itself. Other slogans could have guided the meaning of the image in other ways to consider the tank-like aspect of the car or its massive size. A parody of the ad could use text to play off this aspect of the car, pointing to the company's role as a military vehicle supplier. Contemporary advertising, with its complex combinations of words, photographs, drawing, sound, and television images, deploys all three kinds of signs designated by Peirce to construct selling messages, including not only indexical photographs and symbolic text but also iconic signs in the forms of drawings and graphs. It is important to keep in mind that Peirce's system allows us to see the cultural weight that is given to photographs—as indexical signs, as traces of the real, photographs are awarded a particular sense of authenticity in relation to other signs.

FIG. 1.17
Vincent van Gogh, Irises, 1889
The Value of Images

The work of detecting social, cultural, and historical meanings in images often happens without our being aware of the process and is part of the pleasure of looking at images. Some of the information we bring to reading images has to do with what we perceive their value to be in a culture at large. This raises the question: What gives an image social value? Images do not have value in and of themselves; they are awarded different kinds of value—monetary, social, and political—in particular social contexts.

In the art market, the value of a work of art is determined by economic and cultural factors, including collecting by art institutions such as museums and by private collectors. This painting of irises by Vincent van Gogh (fig. 1.17) achieved a new level of fame in 1991 when it was sold for an unprecedented price of $53.8 million to the Getty Museum in Los Angeles. Other paintings have since sold for even more extraordinary amounts. In 2006, the private sale of the American abstract expressionist Jackson Pollock’s 1948 painting titled No. 5 brought its seller $140 million. In each case, the painting in itself does not inherently contain or reveal its monetary value; rather, this is information we bring to an interpretation of it through such factors as changes in the art market and contemporary taste with regard to the style of a past period. Why was the Pollock worth so much money in 2006? Why was the van Gogh worth so much in 1991? Beliefs about a work’s authenticity and uniqueness, as well as about its aesthetic style, contribute to its value. The social mythology that surrounds a work of art or its artist can also contribute to its value. Van Gogh’s Irises is considered authentic because it has been proven that it is an original work by van Gogh, not a copy, though the market for his work has been fraught with counterfeits. Van Gogh’s work is valued because it is believed to be among the best examples of the innovative modern painting style of impressionism, which was adapted by van Gogh in a more expressionist approach during the late nineteenth century. The myths that surround van Gogh’s life and work also contribute to the value of his works. Most of us know that van Gogh was often unhappy and mentally unstable, that he cut off his ear, and that he committed suicide. We may know more about his life than we know about the technical and aesthetic judgments made by art historians about his work. We may also be aware that Pollock drank and died at age forty-four in a tragic crash while driving under the influence and that he painted his most famous works by walking around huge canvases, dripping paint from a can and brush in gestures that resulted in abstract, nonfigurative globs and lines. Although some of it is extraneous to the artwork itself, this biographical information contributes to the work’s value—partly insofar as it plays into the stereotype or myth of the creative artist as a sensitive figure whose artistic talent is not taught but rather is a “natural” form of creativity that can border on madness and is released in the graphic form of the painting.
The van Gogh gains its economic value in part through cultural determinations concerning what society judges to be important in assessing works of art. It is regarded as authentic because it bears the artist’s signature and has been verified by art historians who pay close attention to authentication of the work of this artist because he was posthumously subject to a major case of forgery. The press surrounding the forgeries and their discovery heightened the reputation of the artist and made his works even more valuable. The artist has international fame and notoriety that go beyond the work itself to include not only his personality and life history but also the life of his works as they are bought, sold, copied illicitly, and legally reproduced in books and videos. Finally, van Gogh’s technique is regarded as unique and superior among other works of the period. Part of our recognition of its value has to do simply with its stature within institutions such as museums, art history classes, and art auctions. One way that value is communicated is through the mechanisms of art display.

We sometimes know a work of art is important because it is encased in a gilded frame. This convention has become something of a joke, with everything from low brow art (a contemporary genre of painting that appropriates the aesthetics of 1950s, 1960s, and 1970s popular iconography) to advertising appropriating the gilded frame as an ironic reference to the object in the frame as (anything but) high culture. We might assume that a work of art is valuable simply because it is on display in a prestigious museum or is displayed in a special way, as is the case with the Mona Lisa by Leonardo da

FIG. 1.18
Mona Lisa on display in the Louvre
FIG. 1.19
Van Gogh's Irlles on a coffee mug

Vinci, which is displayed in a climate-controlled room behind bulletproof glass to protect it from any potential vandals among the six million or so people who view it annually (vandals had doused the painting with acid and thrown a rock at it in 1956). Although the fine art object may be valued because it is unique, it may be valued also because it can be highly marketable as an item reproduced for popular consumption. For example, van Gogh's paintings have been reproduced endlessly on posters, postcards, coffee mugs and T-shirts. Ordinary consumers can own a copy of the highly valued originals. We discuss this aspect of image reproduction further in chapter 5.

As images are increasingly easy to generate and reproduce electronically, the values traditionally attributed to them have changed. In any given culture, we use different criteria to evaluate various media forms. Whereas we evaluate paintings according to the criteria of uniqueness, authenticity, and market values, we may award value to television news images, for instance, on the basis of their capacity to provide information and accessibility to important events. The value of a television news image lies in its capacity to be transmitted quickly and widely to a vast number of geographically dispersed television screens and that of the digital news image lies in it being instantly distributable to newspapers and websites.

Image Icons

This image of the lone student at Tiananmen Square has value as an icon of worldwide struggles for democracy precisely because of the meaning of this historical event and because many students lost their lives in the protests. Here, we use the term icon in a general sense, rather than in the specific sense used by Peirce that we discussed earlier. An icon is an image that refers to something outside of its individual components, something (or someone) that has great symbolic meaning for many people. Icons are often perceived to represent universal concepts, emotions, and meanings. Thus an image produced in a specific culture, time, and place might be interpreted as having broader meaning and the capacity to evoke similar responses across all cultures and in all viewers.

The television news image of the student protest at Tiananmen Square in Beijing in 1989 can be said to be a valuable image, although the criteria for its value have
nothing to do with the art market or the monetary value of any particular print of this photograph. The value of this image is based in part on its capturing of a special moment (it depicts a key moment in an event during which media coverage was restricted) and the speed with which it was transmitted around the world to provide information about that event (at a historical moment when the Web did not yet exist as a forum for image circulation). Its value is also derived from its powerful depiction of the courage of one student before the machinery of military power. This photograph achieved worldwide recognition, becoming an icon of political struggles for freedom of expression. Whereas its denotative meaning is simply a young man standing before a tank, its connotative and iconic meaning is commonly understood to be the importance of individual actions in the face of injustice and the capacity of one individual to stand up to forces of power. This image thus has value not as
FIG. 1.22
Raphael, The Small Cowper Madonna, c. 1505

a singular image (once broadcast, it was not one image but millions of images on many different TV sets and newspapers, though it was censored in China) but through its speed of transmission, its informative value, and its political statement. We can say that it is culturally valuable because it makes a statement about human will and the potential of resistance, and as such it has become an icon. It is not incidental that the image achieves this iconic status through the depiction not of the many thousands of protesters at Tiananmen Square but through the image of one lone individual. As Robert Hariman and John Lucaites explain in No Caption Needed, the iconicity of the image derives in part from its simplicity, from the fact that the events seems to take place in a deserted public space (there is actually a crowd outside the frame) and that the image is viewed from a modernist perspective that affords a distance to the viewer. They argue that the image of the lone individual potentially limits the political imagination within a liberal framework of individualism. The iconic status of the Tiananmen Square image has resulted in a broad array of remakes of the image.
The simplicity of the image of the protestor confronting tanks emerged in the protests against the oppression of Tibet in the months before the 2008 Summer Olympics in Beijing, in which a simple pictograph (in Peirce’s terms, an iconic sign) of a tank and a civilian invokes the famous photograph of Tiananmen Square. Here, the protestors have effectively combined the iconic sign of the Olympic rings with the iconic sign of the tank and student to put their protest in historical context.

Image icons are experienced as if universal, but their meanings are always historically and contextually produced. Consider the example of the image of mother and child that is so ubiquitous in Western art. The iconography of the mother and child is widely believed to represent universal concepts of maternal emotion, the essential bond between a mother and her offspring, and the importance of motherhood throughout the world and human history. The sheer number of paintings with this theme throughout the history of art attests not simply to the centrality of the Madonna figure in Christianity but also to the idea that the bond between mother and
child represented in images like these is universal and natural, not culturally and historically specific and socially constructed.

To question the assumptions underpinning this concept of the universal would mean to look at the cultural, historical, and social meanings that are specific in these images. There is an increased understanding that these concepts of the universal were actually restricted to specific privileged groups. Icons do not represent individuals, nor do they represent universal values. Thus the mother and child motif present in these two paintings by Italian painter Raphael and Dutch painter Joos van Cleve can be read not as evidence of universal ideals of motherhood but as an indicator of specific cultural values of motherhood and the role of women in Western culture in the sixteenth century, particularly in Europe. In both paintings, there are particular image codes at work—both infants are depicted as naked with adult-like faces, and the woman’s maternal figures are shapely in the conventions of sixteenth-century Europe. Whereas the Madonna of Raphael’s painting looks out of the frame in an almost detached way, the van Cleve Madonna is nursing and reading, surrounded by an array of symbolic objects. Furthermore, these images situate these figures within particular cultural landscapes. Raphael’s Madonna before an Italian landscape and van Cleve’s before an elaborate Dutch vista. The closer we look at these two images, the more culturally and historically specific they appear.

It is in relationship to this tradition of Madonna and child paintings that more recent images of women and children gain meaning. For instance, this famous photograph, *Migrant Mother*, by Dorothea Lange depicts a woman, also apparently a mother, during the California migration of the 1930s. This photograph is regarded as an iconic image of the Great Depression in the United States. It is famous because it evokes both the despair and the perseverance of those who survived the hardships of that time. Yet the image gains much of its meaning from its implicit reference to the history of artistic depictions of women and their children, such as Madonna and child images, and its difference from them. This mother is anxious and distracted. Her children cling to her and burden her thin frame. She looks not at her children but outward as if toward her future—one seemingly with little promise. This image derives its meaning largely from a viewer’s knowledge of the historical moment it
represents. At the same time, it makes a statement about the complex role of motherhood that is informed by its place in the iconic tradition.

This photograph has historically specific meanings, yet in many ways its function as an icon allows it to have meanings that go beyond that historical moment. Lange took the image while working on a government documentation project funded by the Farm Security Administration. With other photographers, she produced an extraordinary archive of photographs of the Great Depression in the United States in the 1930s. Lange was one of a small number of women photographers who worked on the project, and the story of her taking of this image is legendary in the history of photography. She took five pictures of this woman and her children. The one reproduced here shows the family’s surrounding context the least. Years later, researchers tracked down the woman depicted in the image, who was still living in relative poverty in California, not having benefited in the least from the wide dissemination of her image as an icon. It is the close framing of this image that allows it to emerge as not just an image of one mother with her children but as an icon of maternal devotion and perseverance.  

People themselves can be image icons. For example, Marilyn Monroe was a pop icon of the 1950s and 1960s, a star who was regarded as the embodiment of female glamour. Her wavy blond hair, open smile, and full figure were stereotypical components of an American...
beauty ideal. What counts as glamorous or sexy changes over time and across cultures, as Burson's beauty composites, which we discussed earlier, suggest. The preference for full-bodied women was replaced in the late twentieth century by an idealization of the thin, athletic body. Pop artist Andy Warhol, who made works about postwar consumer culture, mass manufacture, and commercial reproduction, worked with an iconic photograph of Marilyn Monroe that was familiar to virtually the entire nation. He printed multiple versions of this same image in a colorful grid. This print, *Marilyn Diptych* (fig. 1.25), comments not only on the star's iconic status as a glamorous figure but also on the role of the star as media commodity—as a product of the entertainment industry. Marilyn the icon can be infinitely reproduced for mass consumption, thanks to the technologies of photography and commercial printing. Warhol's work emphasizes one of the most important aspects of contemporary imaging technologies: they offer us the capacity to reproduce images many times and in different contexts, thereby changing their meaning and altering their value—and that of the objects or people they represent—as commodities. In this work, the multiple images of Monroe emphasize that cultural icons can and must be mass distributed in order for the star herself to have mass appeal. These copies do not refer back to the original so much as they indicate the endless reproducibility of Monroe as a product to be consumed in many forms.

To call an image an icon raises the question of context. For whom is this image iconic and for whom is it not? These images of motherhood and of glamour are specific to particular cultures at particular moments in time. One could regard them as indicators of the cultural values attributed to women throughout history and the restrictive roles to which women have been relegated (mother or sex symbol, virgin or vamp). Images have divergent meanings in different cultural and historical contexts. When, for instance, Benetton produced this advertisement in the 1990s
of a black woman nursing a white child, a range of interpretations were possible. This advertisement was published throughout Europe, but magazines in the United States refused to run it. The image can be understood in the history of images of mother and child, although its meaning is contingent on the viewer’s assumption, on the basis of the contrast of their skin color, that this woman is not the child’s biological mother but its caretaker. In the United States this image carried the troubling connotation of the history of slavery and the use of black women slaves as wet nurses to breast-feed the white children of slave owners. Thus the intended meaning of this image as an icon of an idealized interracial mother-child relationship is not easily conveyed in a context in which the image’s meanings are overdetermined by historical factors. Similarly, the classical art history image of Madonna and child may not serve as an icon for motherhood in non-Christian cultures but rather as an example of specifically Western and particularly Christian beliefs.

Pop star Madonna gained notoriety by combining and playing off of one another the religious iconography of the Madonna and the sexual iconography of Marilyn Monroe. Madonna borrowed and reworked the elements of both these cultural icons. At various points in her career, Madonna assumed Monroe’s blonde hair color and 1940s clothing styles. In this image, we can see the 1990 incarnation of Madonna’s Marilyn appropriation, here on her Blonde Ambition Tour, wearing a signature blonde wig and campy corset. Through these acts of cultural appropriation, Madonna acquired the power of these icons (of Madonna and Marilyn) while reflecting ironically on their meaning in the popular culture of the 1980s and 1990s.

In 2003, the San Francisco painter Isabel Samaras took the mother and child iconography into the realm of nonhuman species. In Behold My Heart, Samaras depicts a scene from the 1971 film Escape from the Planet of the Apes, in which Zira, the talking chimpanzee scientist who studied (and lobotomized, neutered, and spayed) humans in the 1968 film Planet of the Apes, cradles lovingly to her breast the child she will be forced to abandon after she is stigmatized and ostracized on the discovery of her experiments, sacrificing her own life for his survival. As in the 1525
Virgin and Child (fig. 1.23), a book sits open before the pair, and a backdrop of landscaped foliage reminiscent of backdrops in a Renaissance painting extends behind the curtain backdrop that frames them. Caesar, the baby monkey—who will grow up to become a revolutionary hero in later films of the series and is credited as being the first ape to say no to a human—fingers hieroglyphic-like markings on a leather plate strapped to his mother's cloaked bosom. The film series, widely regarded as a campy parable of racial oppression and resistance, is here invoked as a pop surrealist expression of the iconography of maternal relations. Here, the politics of species is a displaced site for articulating a critique of the politics of race in an age dominated by a revival of biological ways of understanding culture.
Although parody and irony have appeared to be dominant modes of image production and interpretation in the late twentieth and early twenty-first centuries, they are not the only modes invoked in popular culture. Take the example of Britney Spears, yet another female performer who achieved the status of cultural icon at a young age. Spears is the eighth best-selling musical artist in American musical history. Having established herself as one of the most successful American female pop vocalists by the age of twenty in 2000, she put aside her career in 2005 to give birth to the first of her children, announcing that she would dedicate herself to her role as mother. In 2005, a New York gallery unveiled a sculpture by Daniel Edwards titled *Monument to Pro-Life*. It depicts Spears nude, her body splayed on a bearskin rug, belly pushed down and hips thrust upward to reveal the crowning skull of a child emerging from her pelvis. This image of the female pop star turned mother was directly reminiscent of the role that Madonna took on as a young pop star in the 1980s and 1990s. However, whereas Madonna’s use of the referent of the virgin mother was highly ironic, parodic, and rife with appropriations of beauty codes and standards of bygone years, Britney’s performance of motherhood (and Edwards’ depiction of it) seemed to be without any intended irony. Both her decision to change roles and the appropriation of her by the pro-life movement seemed to be in earnest. The irony emerged later when, in 2007, Spears lost custody of her children in a trial that was closely paralleled by media stories revealing her heavy partying, drug use, and psychiatric treatment, and when, in 2008, her 16-year-old sister Jamie
Lynn Spears, star of Nickelodeon’s Zoey 101, shocked millions of young fans by ending the season with a real-life pregnancy, then embracing life as a teen mom in rural Mississippi. The meanings of Britney Spears as a maternal figure change, then, with changing events that bring new connotations to older images. Although Britney’s media coverage has characterized her life as fraught with ironies, Britney herself did not use irony as a political and creative tool, as did her predecessor, Madonna.

Britney images offered yet another level of meaning when fan Chris Crocker, an infamous figure on YouTube, appeared in an emotionally charged two-minute video self-production, demanding of his very large viewing audience (he has received upwards of ten million hits), with tears in his eyes, “how f***** dare anyone out there make fun of Britney after all she’s been through?” Crocker, an established young gay YouTuber from Eastern Tennessee, lambasted the media for shamelessly making money from Britney’s difficult life circumstances. Rather than critiquing Britney and everything she personifies, as an earlier generation of media-savvy youth might have done, Crocker attempted to protect her right to a public existence free of judgment and criticism. Does Crocker’s response suggest that we have entered into a postcritical era of visual culture? It is interesting, as a postscript, to note that Crocker’s career received a big boost with this defense of his idol, with invitations to appear on talk shows and even a well-known star of television and film (Family Guy’s Seth Green) posting his own YouTube send-up of the Crocker performance, replete with mascara and tears.

To chart this representation of mother and child from sixteenth-century painting to the performance of the Madonna by a pop star to the widely viewed homemade video of a fan posted on a website demonstrates many aspects of the complexity of contemporary visual culture and the codes and signs through which cultural meaning is produced. These codes build on one another, incorporating these historical legacies of image codes at the same time that they rework, play off, and recode them.

To interpret images is to examine the assumptions that we and others bring to them at different times and in different places and to decode the visual language that they “speak.” All images contain layers of meaning that include their formal aspects, their cultural and sociohistorical references, the ways they make reference to the images that precede and surround them, and the contexts in which they are displayed. Reading and interpreting images is one way that we, as viewers, contribute to the process of assigning value to the culture in which we live. Practices of looking, then, are not passive acts of consumption. By looking at and engaging with images in the world, we influence the meanings and uses assigned to the images that fill our day-to-day lives. In the next chapter, we examine the many ways that viewers create meaning when they engage in looking.
Notes


2. See Michel Foucault, This Is Not a Pipe, with illustrations and letters by René Magritte, trans. and ed. James Harkness (Berkeley: University of California Press, 1983).


Further Reading


Throughout this book, we have emphasized the ways that images and ways of looking in certain contexts affect how we look across a range of social arenas. We have stressed that our experiences and interpretations of images are never singular, discrete events but are informed by a broader set of conditions and factors. The term visual culture encompasses a wide range of forms, from fine art to popular film and television to advertising to visual data in fields that we tend to think of as distinct from culture—the sciences, law, and medicine, for example. Because scientific imagery often comes to us with confident authority behind it, in the form of images made by experts, we may assume these images are objective representations of knowledge, whether we view them through the popular media or through professional publications. But as we show in this chapter, scientific images and looking practices are as dependent on cultural context and culturally informed interpretation as images from popular culture, art, and the news.

Scientific looking does not occur in isolation from other cultural contexts, although society may have some stake in seeing science as a separate social realm, less encumbered by ideology or cultural meaning. The idea that science is a separate social realm, dedicated to discovering laws of nature unaffected by ideologies or politics, has been a myth surrounding the hard sciences. Scholarship in science studies of the past few decades has shown, however, that scientific knowledge depends on social, political, and cultural meanings and that what kind of science is practiced and rewarded is a highly political issue. Using Michel Foucault’s term, we can analyze how the discourses of science, like all discourses, change over time, allowing for new subject positions to emerge and new ways of speaking about science to come into being.
It is crucial to our inquiry that we see scientific images as integral to the production and meanings of images in popular culture, art, advertising, and the law. Although scientific images carry with them particularly strong meanings (as evidence of the real or truth, for example), they are also aesthetic objects. Take, for instance, this image from 1896 of the first X-ray taken of a hand in England. The image was a technological achievement yet is nonetheless aesthetically pleasing. The hand seems to be a shadow here, evoking not only its form and the bones within it but also a sense of presence of the body and the meaning of hands as a symbol of individuality. The soft tones of the image give it an ethereal quality, evoking a hand from the past.

Since the origins of photography in the early nineteenth century, scientific and medical images and imaging methods have been important aspects of the history and development of photography, motion picture film, and digital media. It is an interesting paradox that although photographs have played an important role in experimental practice, as well as in the production of scientific, medical, and legal evidence, cameras are still banned as means of documentation in U.S. courts of law. With the rise of computers and digital imaging in the late twentieth century, images and visual inscriptions of data became more important aspects of conducting experiments, rendering information, and communicating ideas in science and medicine. The rise of technologies such as X-ray, CT (computed tomography) or CAT (computerized axial tomography) and PET (positron emission tomography) scanning, ultrasound, and MRI (magnetic resonance imaging) throughout the twentieth century leads us to suggest that there was a worldwide shift toward the visual means of representing knowledge and evidence in science and a growth in the area of expert images—images we understand to make sense within specialized terms legible to trained professionals who can read their codes. Continuing the previous century's scientific interest in developing instruments such as the microscope and methods such as anatomical dissection, twentieth-century scientists developed technologies for seeing even in cases in which the object or process under study is not easily visualizable or not understood to have optical properties.

"Seeing the unseen" is a motif that has recurred throughout the long history of science and medicine. This motif was newly energized with the introduction of digital imaging and rendering techniques at the end of the twentieth century. Think of ultrasound imaging in medicine, in which sound waves are used to measure the
boundaries of interior soft-tissue structures and the resulting measurements are
translated into moving images, or the practice of using computer animation to visu-
ally represent the speed and trajectory of sound waves in physics. In these examples,
acoustic events and data are represented in visual images. Here we encounter
another paradox concerning imaging technologies in science and medicine: some
of what we look at in scientific and medical imaging is not what we would typi-
cally consider to be within the domain of the visual. Visualization has escalated to
encompass the acoustic and tactile world with the increased availability of digital
rendering and display mechanisms. The increased use of visualization processes and
visual images to represent all sorts of sensory information has changed not only how
scientists pursue knowledge but also what scientists seek to know. In other words,
knowledge—its objects and its processes—has changed with this shift toward the
visual in ways of knowing the world.

British theorist of science and medicine Nikolas Rose proposes that in the
twenty-first century, we have come to know life through a biomedical paradigm,
and we have begun to experience our bodies at the scale of the molecular, a scale
we cannot exactly see but which we conceptualize through systems of scientific
representation such as genetic code. It is at the molecular level that we understand
and engineer life itself in the twenty-first century.¹ We see this reflected in sci-
cific representations of molecules and genes depicting forms or aspects of life. We
also experience life on an everyday level as something that can be managed and
lived at the molecular level. For example, we understand our diseases in terms of
their molecular structures and genetic bases. We understand that drug therapies
work in our systems on a molecular level. Research into areas such as stem cells
and nanotechnology (working with matter at an ultrasmall scale) suggests a shift
in the scale through which we understand life to be organized and managed on
an everyday basis. Visualization and imaging technologies provide a crucial set of
tools for structuring knowledge about life at this molecular level. It is not easy for
us to perceive life at this minute level without technologies designed to bring to
light that which cannot be seen by the unaided eye. These new means of visual-
zizing and understanding the body are organized through a network of metaphors.
Thus concepts of the body as genetic code are related to concepts of the body as
molecular, which are in turn related to concepts of the body within the framework
of the digital, as something that can be modified, reworked, and transformed at
the cellular level. These systems are both literal, describing ways of knowing the
body, and metaphorical, helping to shape new ways of imagining the self as a lived,
material entity. Whereas before, anatomy and physiology may have organized our
way of seeing the body in terms of essential structure or as a system fundamen-
tally in motion, now we see the body as a multiplicity of tiny oscillating units that
play off one another in a network, units that we cannot see or control but which
can recombine through covalent bonds, driven by charges and impulses, or driven
by forces such as environment, pharmaceuticals, or imaging systems such as MRI
(which is based on the idea of capturing a register of the decay time of proton spin). Not only is the body understood to be organized through these units in motion, but it is also understood to be changeable at this level of detail and specificity, with drug and genetic therapies, for example.

Thus it is important to keep in mind that science and culture are always mutually engaged. Indeed, science is a set of cultures, and its practices are culturally specific. Science intersects with other areas of knowledge and culture and draws on those systems in its day-to-day practices. In this chapter, we consider the various ways that images come into play both in scientific practices and in media appropriations of scientific methods and approaches. We put forward the view that ways of scientific looking are culturally specific and are always caught up in other cultural practices of looking. We begin with a discussion of how human bodies have been imagined in the history of science and medicine and then discuss more contemporary examples.

**The Theater of Science**

The anatomy of the body has been a topic of representation and source of interest for artists throughout many centuries. As we noted in chapter 4, the Renaissance was a period during which art and science were seen as parallel points of inquiry. Art historian Erwin Panofsky wrote that the rise of anatomy was integral to Renaissance art. Nowhere was this more evident than in the work of Leonardo da Vinci, who performed more than thirty dissections in his lifetime. Panofsky notes that as the science of anatomy became established, “painter-anatomists” depicted the bodies being dissected.² It is important to note that Leonardo’s prominence throughout history as an artist who used scientific methods and whose work and identity became icons of science is due in part to the overlap of science and art in his work. Da Vinci’s famous image of the human figure, *Vitruvian Man*, which was created around 1487, is a representation of the proportions of man based on the treatise *De Architectura* by
the Roman architect Vitruvius, which made reference to the relationship of geometry to ideal human proportions. The artist saw the human body as a microcosm of the universe. In depicting the figure within a circle and a square, the image is largely thought to convey da Vinci’s concept that the body exists within both the material realm (symbolized by the square) and the spiritual realm (represented by the circle). *Vitruvian Man* is a world-renowned image from the history of art that has since come to symbolize practices of medicine and health. It is widely reproduced as a symbol of the interrelationship of the human body to laws of mathematics and structure in nature.

Representations of the practices of science and medicine throughout history have retained much of this fascination with anatomy. The sense that one can understand the body by cutting into it, physically or virtually, and exposing its organs to visual inspection has remained strong in medicine and science. As we discuss later in this chapter, the development of modern techniques for imaging the body’s interior, such as X-ray, CT scan, and MRI, replace the paradigm of anatomical knowledge through physical dissection with the belief that the body can be known through representational systems that allow us to see through the body’s skin into its interior. But prior to these scientific developments, the practice of actually seeing the body’s interior was limited to dissection and anatomical science. José van Dijck proposes that these imaging practices, from anatomy to X-ray to endoscopy to digital scans, construct a transparent body, a body that the image appears to render more visible yet which in the process only becomes more complex. In early modern society, many dissections (of animals and humans) were performed publicly. Anatomy theaters were, from the sixteenth century onward, a form of spectacle through which anatomists attempted not only to educate but also to entertain their audiences of colleagues, students, and lay spectators. In these theaters, the practice of science was presented as a wonder and a view into the mysterious borderland between life and death.

The anatomy theater of Leiden in the Netherlands, which was built in 1596, was an important site for this kind of theatrical practice of anatomy. In this print, the theater is represented with a dissection underway at the central table, surrounded by animal skeletons and onlookers. This image is both a representation of the anatomy theater and a symbolic rendering of its interactions of animal and human forms and between the living spectators and the skeletal forms that inhabit the space. The Leiden theater was widely known and a popular site for visitors, so much so that guidebooks to the collection of anatomical
specimens held there were created in the late 1600s. The theater and Anatomy Hall included arrangements of skeletons that were intended to convey moral messages about the deceased, most of whom were criminals whose bodies the physicians had dissected in the theater. Such moralizing displays were justified by the status of these corpses as former criminals.4 Van Dijck notes that it was the anatomist, rather than the cadaver, who was the actor and focal point of the anatomical theater.5

One of the most famous historical images of anatomy is Rembrandt’s The Anatomy Lesson of Dr. Nicolaes Tulp, painted in 1632. In this painting, the observers attending the annual public dissection at the Amsterdam Guild of Surgeons gaze on both the corpse and a medical textbook which lies to the right. The main focal point of the painting is not simply the corpse (that of Aris the Kid, a criminal hanged earlier that day) and the exposed arm on which Dr. Tulp, the Amsterdam city anatomist, begins his dissection, but also on the gazes of the onlookers. This image opens up depictions of the theater of science to our observation of the pleasures and fascinations of the observers of such displays. The image is, in fact, a composite that Rembrandt created from his own observations. Rembrandt cast the face of the dead man in shadow (umbra mortis) to suggest death. Such a painting is thus not simply a document of the practice of science in its time, it is also a portrait of the social relations around that practice, with the inclusion of important figures of Amsterdam society in the painting as a means to affirm their social standing against the body of a social outcast.

A fascination with the dead body and an association of morbidity and crime would become a central feature of the visual spectacle of modernity. As Vanessa Schwartz writes, the Paris morgue became the site of spectacular displays in the late nineteenth century when certain types of dead bodies, in particular those of children who drowned in the Seine River or the body of a dismembered woman, were put on display. Hundreds of thousands of Parisians came to see these corpses as if the morgue were a kind of free theater. The morgue photographed the unidentified dead whose bodies had decomposed, but they also put unidentified bodies on display for public view in the exhibition room, creating a spectacle that commentators compared to the pleasures of viewing goods in department store windows. As Schwartz notes, “To many observers, the morgue simply satisfied and reinforced the desire to look…. One newspaper put it simply: ‘people go to the morgue to see.”’ We are reminded of the Weegee photograph, The First Murder, discussed in chapter 1. As the
spectacle of the morgue became too infamous, the Paris police closed it down for public consumption, but not before the morgue officials had begun to create wax replicas of the corpses, a practice that would give rise to the city's wax museums.

The desire to look into and upon the body is also a part of the fascination with the emerging practice of surgery in the late nineteenth century. One of the most famous American realist paintings of the nineteenth century is Thomas Eakins's *The Gross Clinic* (1875). It depicts Dr. Samuel Gross at age seventy in a fancy black coat, presiding in a theater-like setting at the Jefferson Medical College. Dr. Gross is at the center of the composition and he is brightly lit, surrounded by assistants and by figures in the shadowy background. But the body under surgical intervention draws our attention. Surgery was not practiced at this time in a sterile environment, but rather in an open setting with onlookers (Eakins would create another painting, *The Agnew Clinic*, in 1889, that shows a surgical theater that is more brightly lit and clean). Eakins was a key figure of nineteenth-century realism, and the painting is often admired for its realistic depiction of the surgical theater, with the bloodied hands of the doctors as the focal point of the work. At the time, the painting was considered to be shocking (Gross's bloodied right hand holds a scalpel), and the painting was rejected for the 1876 Centennial Exhibition. It has since been analyzed from many perspectives, including a psychoanalytic one that considers the painting's dynamic of gazes and the ambiguous gender status of the patient on the table. At the center of these discussions about the painting is the question of how to interpret the woman on the left of the painting, who may be a relative or perhaps the mother of the patient. She responds to what she sees differently from the professional men, who exhibit clinical distance. She expresses emotional distress, recoiling from the scene and hiding her face (like the woman in fig. 1.1) in order to obliterates the view that the others in the painting so eagerly take in. She is, as Michael Fried argues, the surrogate for the viewer who both wants to look and is overcome by the spectacle. We can also see behind her Eakins sitting and calmly drawing the spectacle around him. The painting is thus a portrait of our simultaneous revulsion and fascination with the body and
its interior at the same time that it is emblematic of the tradition of likening bold acts of looking to heroic acts of healing.

With the development of photography in the early nineteenth century and the development of technologies to see into the body, beginning with the X-ray in 1895, the relationship of images to science becomes one of providing evidence of the body's interior and cataloguing the body into types. Yet the relationship of anatomy to imaging has not faded into the past. In fact, two recent manifestations of the imaging of anatomy have demonstrated that the early practices of anatomy theaters retain a visual power: the Visible Human Project and the Body Worlds exhibition. Each raises the same kinds of questions that traditional anatomy has raised, and each makes evident the powerful desire for the transparent body.

The Visible Human Project (VHP) is a venture funded by the U.S. government and created at the Center for Human Simulation at the University of Colorado, Boulder. It involves taking two bodies, the Visible Male and the Visible Female, and creating digital images of them essentially slice by slice. The bodies were frozen and then literally sliced, and those slices were then digitally photographed to create a virtual body of each. The final images were then placed on public view on the website of the project in the mid-1990s and are available on CD. Proponents of the project saw it as a valuable educational tool that can supplement if not take the place of standard anatomical dissection. Inevitably, of course, this project of scientific images has complex cultural meanings, and questions have arisen about the ethics involving the bodies used for the project. The corpse used to make the Visible Male turned out to be that of a death row inmate who donated his body to the project in exchange for execution by lethal injection instead of the electric chair.9

The widely seen Body Worlds exhibition is another contemporary example of medical display, this time of actual dead bodies that have undergone a preservative process called plastination and that are put on display in various poses in an exhibition that has traveled the world. Gunther von Hagens, the notorious director of the Body Worlds project (and its Institute of Plastination in Germany) assumes the role of both a scientist and an artist, fashioning himself in the image of the late German artist Joseph Beuys to the point that he has been referred to as “die Leichen Beuys” (“the cadaver Beuys”).10 Von Hagens actually performed a public anatomical dissection in London in 2002, thus situating himself quite specifically in the history of the public anatomical theater. Von Hagens’s project has been highly controversial. He has been accused of using the cadavers of Chinese prisoners, which his organization denies, although they are unable to verify the origin of the earlier Chinese corpses that they used. This resulted in the demand by the New York State Attorney General’s Office in 2008 that the exhibition state that it could not verify whether some specimens were from victims who were tortured or executed in Chinese prisons. Hagens’s process of bodily plastination has also been debated on moral grounds. The displays of the exhibit not surprisingly tend to affirm traditional
gender stereotypes, with male figures in active scenarios, such as a soccer game, and the female figures shown in traditional states, such as pregnancy. The figures are posed with their layers of flesh pulled back to reveal organs, nerves, blood vessels, and muscle tissue. Some are posed to reference well-known art historical images. The Body Worlds project is disturbing not only because it involves the transformation and display of actual bodies but also because it transgresses particular categories of art and science display. As van Dijck notes in The Transparent Body, the project transgresses the boundaries between body and model, organic and synthetic, object and representation, fake and real, authentic and copy, and human and posthuman. In addition, the exhibition, like many of the other sets of images we have discussed here, bridges art and science and science and entertainment. It is this interrelationship between art, science, and popular consumption that underlies our discussion in this chapter. The desire to see art and science, or popular culture and science, as separate has a long history in Western philosophy, yet scientific images almost always beg the question of whether these domains can ever really be kept absolutely separate.

Images as Evidence: Cataloguing the Body

The images we have been discussing follow a trajectory from symbolic and allegorical representations of science to realist modes of representing science in action. Scientific images have also played an important role as evidence in science and medicine. The photograph has played a particularly important role as evidence in this regard. Mechanical and electronic image-producing systems, such as photography and motion picture film, television, computer graphics, and digital photography, bear the legacy of positivism, a philosophical belief that true and valid knowledge about the world is knowledge derived from objective scientific method. Positivism was advanced by the philosopher Auguste Comte in the mid-nineteenth century at about the same time that photography gained popularity. Forms of positivism gained ground in the twentieth century, informing a broader ideology in which thinkers questioned the validity of subjective reasoning and the soundness of philosophical and spiritual metaphysics as means of understanding and explaining the world. Positivism has informed such fields as law, medicine, journalism, and the social sciences in cases in which practitioners favor objective study and measurement as means of more clearly perceiving reality without the subjective bias of empirical looking and thereby advancing progress, knowledge, and justice in the world. The photographic camera was regarded, in a positivist view, as a useful tool for mechanically observing, measuring, and studying the real world in a manner that could check, balance, or correct the errors introduced by subjective human perception.

The notion of photographic truth, as we noted in chapter 1, hinges on the ideas that the camera is an objective device for capturing reality and that it can render this
objectivity despite the subjective vision of the person using the camera. The photographic image is thus, in its more positivist uses and contexts, regarded as an entity that is less burdened with the intentions of its maker than hand-rendered representations and is believed to offer the potential for revealing facts and truths. Yet, as we have seen, photographic images are nonetheless subjective cultural and social artifacts. Despite the black-boxing (hiding away inside the device) of their mechanisms, photographs require their producers to make subjective and culturally informed decisions, such as framing, composition, lighting, contextual display, and captioning. The easy manipulation and combination of digital images only takes these qualities of analog images further. Much of the meaning of camera-generated images is derived from the combination of the camera's persistent reputation for capturing reality with a high degree of objectivity and the photograph's capacity to evoke a sense of wonder through its capacity to make visible that which is difficult to see. This was done, in some cases, by freezing in time events that are so fleeting that they would be missed by the unaided eye, by magnifying small objects or by telescopically drawing closer objects outside the range of unaided vision, or by rendering nonoptical events into visual artifacts (images of sound waves, for example). Such photographs can be experienced as both magical and truthful at once.

With its emergence in the nineteenth century, photography was immediately seen as a powerful medium for science and medicine. It was taken up by scientists in laboratories and in the field and by physicians in medical hospitals and clinics and was integrated into existing medical optical devices. Photographs in these contexts provided visual records of phenomena and experiments. They were used to document diseases, to perform diagnoses, and to record and graphically represent scientific data. In modernity, the idea of seeing farther and better, beyond the capacity of the unaided human eye, had tremendous currency; in modern thought, to see is to know. The camera was imagined by some to be an objective aid to vision, if not an instrument with which to see the unseen, invisible aspects of the world. Every aspect of the physical world was subject to this expanded optical model of the gaze. Photographers took cameras up in hot-air balloons to photograph aerial views that few had seen before, much as astronauts would later do in their explorations of space and the moon. Scientists attached photographic cameras to microscopes to magnify views of structures too small for the unaided human eye to see. X rays, introduced to medicine as a diagnostic medium in the 1890s, offered a new vision of the interior of the living human body. At the time of their introduction, X rays were widely regarded as wondrous because they provided views of a previously unseen dimension of the body in its living state. At the same time, they were received with awe and fear because of the skeleton's iconographic association with death. The microscopic and interior aspects of the body were just some of the frontiers that photography helped to traverse in the positivist era. The idea of the image or the imaging instrument as that which helps us see more, better, or further than the human eye continues to be a theme in scientific discourse in the twenty-first century. As we
have noted, the development of photography launched a new era of scientific image-making focusing on bodily exteriors, interiors, and specimens (microscopic studies of tissue or blood, for example). In this section we discuss the use of photographs of the bodily exterior as a means of classifying people. In the following sections, we discuss the cultural and social implications of imaging inside the body.

Photography's use in systems set up to classify people is an important aspect of the history of photography. Modern systems of scientific taxonomy introduced in the eighteenth century by the Swedish botanist Carl Linnaeus grouped animals in a manner that did away with the subjectivity and arbitrariness of descriptive names alone. Linnaeus introduced a dual system that divided animals according to generic (genus) and specific (species) names. The Linnaean system grouped species according to an ideal morphology (shape). Taxonomists, or classifiers, who built on the Linnaean system of nomenclature in the natural sciences placed animals into more specific categories, such as class, family, and subspecies. They did not simply name and group animals on an even playing field. Rather, they ranked them according to a larger worldview that emphasized evolution and development. A taxonomic scheme reflects an evolutionary history (a phylogeny) from simpler to more complex, advanced forms. These schemas could be used to show or to predict how interbreeding within a species resulted, or may result, in changes due to the selective or random breeding in or breeding out of traits within the type.

The classification of humans was also of great interest during the nineteenth century, not only within the emergent field of human biology but also among public institutions charged with the function of providing services and managing humans. In the nineteenth century, as Foucault has explained, institutions charged with the management of populations divided their charges according to nomenclatures, such as the poor and the infirm, the feeble-minded, and criminals. These institutions—charity homes, hospitals, prisons—documented and classified the many human subjects who passed through their doors as a means of managing people in institutions rather than in private homes or the public spaces of communities. To feed and clothe an institutionalized population, the prevailing ideology stated, one must know how many and what age, size, and kinds of individuals are present. The desire to keep track of these burgeoning institutionalized populations stemmed in part from an emerging understanding among managers of these institutions that classificatory systems could be used as a means of social organization and control. These practices are key features of what Foucault called biopower.

The regard of the camera as an objective recording device made it a logical tool for managers to turn to in documenting and classifying the many residents of their institutions. In asylums for what was known as the feeble-minded, for example, photographic documentation was used to study individual cases and then classify residents into groups on the basis of empirically visible features thought to signify distinct mental disease states. Prisons managers used photographs not only to identify and classify the physical features of general criminal types but also to create
identification records for each individual subject. The photographs were also useful in identifying repeat offenders. They supplemented forensic techniques such as fingerprinting (introduced in the nineteenth century) and preceded biometric scanning and DNA identification profiles (introduced in the late twentieth century). In the criminal justice system, the photograph (or today the DNA “biological photocopy”) is a tool for getting at the truth of individual identity, used in the hope of eliminating the problems of failing to identify or misidentifying repeat offenders. The visual categorization of people according to types, and according to specific identity-linked characteristics, became common practice in hospitals, mental institutions, and government agencies by the end of the nineteenth century, and many of these institutions continue to employ photography as a tool for cataloguing subjects, diseases, and citizens into the twenty-first century.

The practice of using drawings and photography to catalogue types according to the body’s morphology, or shape, and appearance initially drew on the now-discredited technique of phrenology, popular between 1820 and 1850, and craniology, a slightly later phenomenon of the nineteenth century. Practitioners of phrenology, craniology (or craniometry), and physiognomy believed that the outward physical human body, and most particularly the cranium and the facial features, could be read for signs of temperament, moral capacity, health, or intelligence. Craniology is the nineteenth century science of skull measurement and tactile and visual analysis deployed to establish racial taxonomies for comparing the skulls of different races. Natural scientists used craniology to make claims about the supposed superiority of people of European or Anglo descent, and to try to show that people of African or Asian descent have more recent evolutionary ties to primates. The use of these sciences of physical measurement and assessment by touch and sight was largely motivated by the racist agendas of colonial societies, which deployed science to justify their subjugation of nonwhite peoples, whom they claimed to be incapable of
self-determination because of their supposed developmentally lower levels of intelligence, well-being, and so on. Physiognomy—interpreting the outward appearance and configuration of the body, and the face in particular—was popular prior to the 1900s, as represented in the work of Barthélemy Cocles who, in his Physiognomonia of 1533, went so far as to claim that the eyelashes of men signify inward sentiments such as pride and audacity. Understanding human-kind to be categorizable into different racial groups and physical types was a central drive of nineteenth-century science. As we can see in this 1850 chart of the “Principal Varieties of Mankind,” these systems typically placed the white European male in the center, with other racial types at the periphery.

Physiognomists used photography as a tool to refine this sort of physical representation, measurement, and classification in ways that were also familiar in everyday life. Contemporary readers of Sherlock Holmes may puzzle over the line uttered by Morarity, who, on meeting Sherlock Holmes, observes: “You have less frontal development than I should have expected.” This comment reflects the sentiment, popular at the time, that the outward appearance of the face and the formation of the skull could be read for signs of inner intelligence, breeding, and moral standing. These qualities were also thought to be linked to racial type. In The Races of Man, a popular nonfiction book written in 1862 by John Beddoe, who would become a president of the Anthropological Institute, it is stated that there is a difference, both physical and intellectual, between those in Britain with protruding jaws and those with less prominent jaws. The Irish, Welsh, and the lower classes were among those with protruding jaws and a corresponding lower state of intelligence, Beddoo argued, whereas men of genius had less prominent jaws. Beddoo developed what he called an Index of Nigressence, a system of morphological classification on the basis of which he proposed that the Irish were closer than the English to the so-called Cro-Magnon man and thus had links with what he called the “Africanoid” races, which he regarded as lower in the evolutionary scale. In Beddoo’s writing, we can see how a visual “science” of the body can be used to support a deeply racist cultural ideology. A modernist interpretation of craniology, phrenology, and physiognomy would tell us that these were pseudosciences, mere cultural ideology, and not true science. These practices produced myths, not facts about human life. A postmodern interpretation would take this analysis a step further to say that all science, including the most advanced contemporary practices, offer knowledge that is no less cultural, no less informed by ideology. This is not to say that the findings and claims of contemporary
are false, but that they are determined by current social thinking, and by the national, political, and economic contexts of the scientific practice. This relativist view of science was the subject of intense debate and critique in the 1990s, when authors, including Paul Gross and Norman Levitt in their 1994 book *Higher Superstition*, famously defended older ideals of truth and certainty, attacking the postmodern view that knowledge is socially constructed and contextual.

Craniology, phrenology, and other sciences of categorization were related to the science of eugenics, which was devoted to the practice of both studying and controlling human reproduction as a means of improving the human race. Eugenics was founded by Sir Francis Galton, author of a number of books, including the influential title *Hereditary Genius* (1869). In the eugenic view, not all races were deemed worthy of reproducing; that is, eugenics was guided by the belief that certain types and races should not breed in order to eliminate their traits from humankind. Galton, who was British, used measurement and the new method of statistics to “read” medical and social pathology off the surface of the body, and to analyze and compare traits. The frontispiece that appears in his 1883 *Inquiries into Human Faculty* shows us photographs of criminals, prostitutes, and people with tuberculosis. He was interested in producing a visual archive of types he regarded as deviant—types that deviated from norms of social behavior and mental and physical health. Galton even went so far as to make composite portraits of various people thought to have a given condition (see the superimposition of portraits of different people with consumption in the frontispiece reproduced here).

He thought that these composites would better represent the general type of a category of people. His typologies, divided according to race, social deviance, and physical and mental pathology, were interlinked in troubling ways, suggesting that certain biological populations were more or less prone to illness and/or social deviance than other types. This idea would feed into racist eugenic political programs such as Nazism in Germany that used scientific discourse to justify genocide (the killing off of an ethnically or culturally linked group of people who are believed to constitute a genetically distinct group).
Simultaneously, photographic categorization was used as a practice to establish criminality as a trait linked to particular bodily characteristics such as a low forehead or narrow ("beady") eyes. In nineteenth-century Paris, police official Alphonse Bertillon created a system of measurement (or anthropometry) to identify the body types of criminals. Bertillon used photographs of subjects from the side and front as a means to identify what he saw as criminal characteristics, thus creating the first modern-day mug shots. He created a vast archive of cards containing photographs of individuals measured against a system of types and anthropometric descriptions. Allan Sekula writes that "the projects of Bertillon and Galton constitute two methodological poles of the positivist attempts to define and regulate social deviance.... Both men were committed to technologies of demographic regulation." Bertillon's system of anthropometry was used widely as a form of identification of faces and features such as ears before fingerprints became a more common source of identification at the turn of the century.

This kind of image cataloguing was used not only in the regulation of people caught up in the criminal justice system; it also quickly became a common practice in the nineteenth century to photograph hospital patients and people with particular medical conditions. As Foucault noted, the practices of organizing people in social institutions such as prisons and hospitals tend to be similar. In both prisons and hospitals, images were used to establish visual markers of what was considered to be normal and abnormal, and those markers were thus also in turn used to identify supposed criminal or sickly types. For instance, Cesare Lombroso, an Italian psychology and medical law professor, was convinced, like Bertillon, that criminality was biologically rooted, and he used photographs to classify physical traits of the criminal. In the mid-nineteenth century, Guillaume Duchenne de Boulogne, a French physician, used photographs to document experiments in which he applied electronic shock to subjects' faces in order to create a system for understanding facial expression. Duchenne's aim was to establish the universality of human expression, and photography was an essential tool in his project. In fig. 9.12, the subject is placed before the camera for a mug shot. In such a project we can see the power of the desire to catalogue and to create a map of human expressions alongside that of physical types.
Ironically, Duchenne's subjects were not really feeling the emotions they seem to model. Rather, Duchenne was administering electric shocks to their facial muscles, forcing them to perform expressions we tend to assume spontaneously when feeling certain emotions. (One can surmise that the emotion these people probably felt was fear about being subject to electrical shock.)

The role of performance in medical study of this period is clearly evident in the now famous photographs and drawings of hysterical patients made in the late nineteenth century under the French neurologist Jean-Martin Charcot. This neurologist and his students and colleagues devoted themselves to the analysis of hysteria, a diagnostic category no longer in use but popular among neurologists of that period to describe a mysterious sequence of bodily symptoms they observed among their patients. Hysteria was a diagnosis given most often to women who were considered overly emotional and who performed episodes of dramatic behaviors and complained of unusual, sometimes fleeting physical symptoms (minor pains and pressures, loss of sensation) that neurologists believed to be psychogenic (to have a psychological rather than physical cause). At the Salpêtrière, the mental institution Charcot directed, neurologists kept those diagnosed with hysteria apart from others and conducted a battery of visual studies of these women in various stages of their hysterical episodes. These studies included observation of live performances by women who were provoked to fall into hysterical outbursts on cue before audiences of doctors and trainees and the photographing of women under hypnosis, as well as drawing from life and sequential photographs documenting the appearance of the body as these women passed through different phases of dance-like outbursts followed by collapse into exhaustion. Charcot and his colleagues believed that empirical observation was the key to knowledge, and saw the photograph as an ideal means of extending one's ability to observe and analyze. It was a common practice for them to hypnotize patients and then to photograph the gestures that they performed under suggestion. This woman (in fig. 9.13), for instance, acts surprised while in a hypnotic state.
In all of these images, the sense that the photograph creates an empirical trace of abnormalities and disorders is key to its use. The camera was, in these settings, a scientific tool for constituting groups of people as other (meaning different from the socially accepted norm). This use of the camera was prevalent not only in the medical and biological sciences but also in the social sciences, such as anthropology. In fig. 9.14, taken in the late nineteenth century, the photograph is embedded in the discourses of medicine and race, as well as in the discourse of colonialism. This image of an Asian man, posed against a grid while holding his braid, is an example of the use of anthropometry to support claims about qualitative and developmental differences among races. This man’s nudity is coded within a discourse of science that establishes him as an object for cool and dispassionate study by scientists, not to be explicitly appreciated in a sexual or aesthetic manner. The grid imposed over the figure suggests that the image is meant to be used to determine how this body compares to physical norms and standards of size and proportion. The photograph does not invite the viewer to regard the man it depicts as an individual but rather to “measure him up,” to see the physical differences that set him apart as a type from those whose measurements fit within accepted cultural standards and norms.

Looking back at photographic studies that use systems of observation and measurement, now discredited as both racist and unscientific helps us to consider the ways in which contemporary ideas about “truth” in scientific practices are the product of particular discourses at a given moment in history. The meanings we assign to that which is visible and measurable change, but we nonetheless rely on these meanings to make claims about universal facts and truths concerning bodies and the qualities and abilities we perceive them to possess. The critique of empirical observation has led us to recognize the ideological limits of such claims about seeing and its relationship to facts and to knowledge. Yet, even with this critique of empirical realism, aspects of these early scientific practices underlie current practices such as the application of facial recognition technologies for security purposes. Systems developed for use in airports, border crossings, and other sites of heightened security use electronic technologies to map the face as a series of interconnected points. As communication scholar Kelly Gates points out, contemporary biometric technology finds its precedent in the problematic sciences like physiognomy and craniology which suggest that one’s moral character might be inherent in one’s genes and might also be visible in one’s physical
form and appearance. These technologies are used to support the practice of racial profiling, which has been subject to strong criticism for its assumptions about the link between racial or ethnic identity and moral tendencies.15

Imaging the Body’s Interior: Biomedical Personhood

As we have noted, the integration of photography into the practices of science and medicine and the dominance of the narrative of science as seeing into new realms would be realized in powerful ways with nineteenth-century image techniques, such as X ray, that allowed the body’s interior to be visually rendered, and in the development of twentieth-century technologies of digital and magnetic imaging. Here science promotes the concept of images seeing truths beyond the human eye and giving humankind insight into the mysteries of the body. Like the anatomy theaters, the images of the body’s interior have clinical meaning, allowing for new knowledge about the body’s organs and functions that is inseparable from the cultural meanings they generate. Thus these images help to shape the meaning of the body in ways that tell us a great deal about ideology, gender identity, and concepts of disease.

The process through which images change meaning according to variations in context, presentation, textual narrative, and visual reframing is well illustrated in the history of the X-ray image. When X rays, a form of ionizing radiation, were introduced as a tool in medical diagnosis in the late 1890s, the public responded with curiosity and fear. An X-ray image is produced by exposing the body to ionizing radiation and allowing the waves that pass through the body to register on a photographic plate or screen. Because the rays do not penetrate bone as readily as soft tissue, the X-ray image provides a relatively clear depiction of the skeleton and variations in bone density.

These images suggested to those who saw them for the first time in the X-ray’s early years that the technique gave its practitioners superhuman visual powers, allowing them optically to invade the private space of the body. This fantasy took on an erotic cast, as seen in the work of some illustrators who made humorous cartoons, such as this one from 1934 which dramatizes the fantasy of a male cameraman using the rays to peer through women’s clothing and flesh.

Ultrasound images provide another example of a kind of medical looking that has been invested with public meaning and in which cultural desires are made explicit. Sonography, the process of imaging the internal structures of an object by measuring and recording the reflection of high-frequency sound waves that are passed through it, was introduced to medicine experimentally
in the early 1960s and became a cornerstone of diagnostic medical imaging by the 1980s. Whereas X rays create images of dense structures (such as bones) and involve the use of potentially harmful ionizing radiation, ultrasound allows doctors to discern softer structures and (debatably) does not damage tissue.

Ultrasound provides an instructive example of how visual knowledge is highly dependent on factors other than sight. We tend to think of the ultrasound image as a kind of window into the body through which we see structures previously unseen and unknown. But in fact ultrasound involves the visual only in the last instance, almost as an afterthought to a process that is markedly lacking in any aspect of visuality. Ultrasound had its foundation in military sonar devices designed to penetrate the ocean with sound waves and measure the waves reflected back as indicators of distance and location of objects. In this technique, sound is utilized not for hearing or communication per se but as an abstract means of deriving measurements. The data measurements of sound waves acquired through sonar are computed to assemble a record of object location and density in space, but this record need not be visual. It could take the form of a chart, a graph, a picture, or a series of numbers. The data derived from sonography is analyzed with computers and translated into graphic images or three-dimensional objects. Paradoxically, sonography is a "sound" system that involves neither hearing nor the production of noise per se. It is because there exists a cultural preference for the visual that ultrasound's display capabilities have been adapted to conform to the conventions of photography and video and not to the standards of, say, the graph or the numerical record.

Ultrasound has been used widely in obstetrics, in which practitioners had long sought means to image the fetal body, tracking its development and identifying abnormalities, without placing the fetus or the pregnant woman at risk. However, less than a decade into the sonogram's use in obstetrics, studies began to show that pregnancy outcomes were only minimally affected by the use of the technique in routine prenatal care; that is, there was little evidence that the technique offered any clear benefits with regard to outcomes. Rates for prenatal ultrasound use doubled in Britain in the 1980s despite this lack of evidence and of official mandates supporting its use. Why was this imaging technique so popular among obstetricians and their patients, and why does its use continue in the routine monitoring of normal pregnancies?

One answer is that the fetal sonogram serves a purpose beyond medicine; in other words, the fetal sonogram is not simply a scientific or medical image. It is also an image with deep cultural, emotional, and even, for some, religious meaning. It is worth noting that the history of prenatal images includes a long history of imagining the fetus or embryo to be a person in the womb. Indeed, even Leonardo da Vinci created realistic images of fetuses, possibly based on his studies of newborn babies. As we have noted before, images can change social roles and be used in new contexts, as with art in advertisements and police photos on news magazine covers. The medical image of the fetal sonogram became a cultural rite of
passage in which women and their families get their first “portrait” of the child-to-be in sonogram form. Future parents relate to the sonographic image, pinning it up on the refrigerator and showing it to coworkers at the office as one would display a first baby picture. Sonograms now routinely turn up as the first image in a baby book. Similarly, clinical medical images are increasingly viewed by patients as they are created. Beginning in the 1990s, patients undergoing ultrasound and endoscopic procedures (in which a tiny fiber-optics camera is passed into narrow orifices and channels to record a moving image of the interior) were able to view their procedures in real time, and it is sometimes the case that patients are given copies of the tape or an image to take home. Medical images such as ultrasounds and MRIs have also been integrated into nonmedical advertisements to signify special care of the body or to evoke the authority of scientific knowledge in a given practice. The role of the fetal sonogram as an icon of one’s imagined future family is evident in this 1990 advertisement that plays on Volvo’s reputation as the safe family car. This advertisement features a fetal sonogram with the message “something inside you is telling you to buy a Volvo.” It appeals to an imagined maternal desire to protect the fetus, while also playing on cultural anxieties about women’s bodies not being safe enough spaces for the fetus without the help of a technological safeguard. It is the image of this partly formed “child,” through its persuasive address as icon of family, that “tells” the viewer she must conform to cultural messages about the woman’s obligation to minimize fetal risks. Here the fetus not only resembles a large child, but is also positioned as if in the driver’s seat, thus drawing a parallel between intrauterine and car safety.

The idea that women visually bond with their future children through the image of the sonogram has circulated in obstetrical discourse since the early 1980s and prompted the claim, reported in one study, that the sonogram may encourage women who are ambivalent about their pregnancies to choose not to terminate them. In other words, the image is understood to have the power to encourage future mothers to experience emotional bonding with their future children more powerfully than textual descriptions or graphic abstractions of the fetus ever could. This has sparked a debate among cultural analysts and medical practitioners, and it remains a vexed issue in part because the boundaries between the medical and the personal
image are blurred. However, one point of agreement is that in the case of the fetal sonogram the biomedical image takes on the aura of a portrait. The sonogram is a document of the fetus's status as a social being (a real person) and not just a biological entity waiting to become a person. We do not often hear accounts of people bonding with, say, an X ray or a bone scan, seeing it as a personal portrait. The fetal image has evoked a kind of response more typically associated with a family photograph or home video, giving it a status that goes beyond that of a medical record.

This view of the sonogram as a social document helps to award to the fetus the status of personhood (and a place in family and community) more typically attributed to the infant after birth. In this sense, sonograms serve a nonmedical cultural function that justifies the technique's use. The concept of a fetus as a person has been a central factor in legal cases that have allowed the fetus to be represented in legal terms by adults who feel they may speak on its behalf and who are pitted against the wishes or rights of the pregnant woman who may, for example, seek abortion, or who may require medical treatment that can place the fetus at risk. In these cases, the concept of fetal personhood has been introduced in legal, religious, and social settings in arguments that in some cases have pitted the rights claimed for the fetus as an autonomous person against the legal rights of the mother to determine the fate of her own body and health. The image of the fetus thus acquires meanings beyond its most literal medical meanings in obstetrical screening and diagnosis.

This complex set of factors has fueled political debates about fetal images since 1965, when Life magazine published on its cover a photograph widely mistaken to be a depiction of a living fetus. The photograph was one of a series by the Swedish science photographer Lennart Nilsson, whose popular book A Child is Born depicted fetuses at various stages of gestational development until birth. Nilsson's earliest fetal photographs were enhanced and modified shots of specimens; yet they were often mistaken for photographs of living fetuses taken in utero. This image is accompanied by the caption, "Living 18-Week-Old Fetus," yet inside the magazine readers are informed that "the embryos shown on the following pages have been surgically
removed for a variety of reasons.” Thus this is an image of a fetus that has been removed for medical reasons from the body of its mother, not a living fetus. Nilsson’s technical strategies included rendering the color photographs in golden and orange tones, suggesting warm flesh and flowing blood, and staging the specimens in poses suggesting infant gesture and behavior. The misperception of these earliest images as depictions of life was also fed by Life magazine’s featuring, in the same year, a cover story about the “control of life,” announcing a “profound and astonishing revolution” in biology after which medical science would produce “superbabies” with improved minds and bodies. This cover featured a woman undergoing a fetal ultrasound, with the fetal head visible in a small, grainy black-and-white image on the monitor depicted at the corner of the photograph. These images, along with Nilsson’s book, present scientific imaging as evidence of the control over and improvement of human life. The central narrative of these images is that medical photography and other forms of interior biomedical imaging are evidence of nothing short of a miracle in modern culture. The “miracle” refers both to control over human reproduction and development but also, by implication, to scientific imaging—the fact that the photographic camera can actually capture evidence of this mastery over life. Nilsson would continue to develop his techniques, and in the 1990s he would use endoscopic technologies to create images of fetuses that were actually living in the womb, producing images of live fetuses at seven weeks of development.

Some feminist critics of science have noted that Nilsson’s images do more than provide compelling images of fetuses. They also have the effect of erasing the mother. Taken when many of the actual fetuses photographed were actually nonliving specimens outside the womb, these images depict fetuses as if alive and floating in space, as if they are not actually within the body of a woman. The fetus in fig. 9.17 is set against a background that evokes the stars in the broader universe. Just a few years later, filmmaker Stanley Kubrick would evoke this image in his 1968 cult film, 2001: A Space Odyssey, which featured a fetus floating in space as a metaphor for the cyclical nature of human existence. The fetus seems mystical in these images. Moreover, it is awarded personhood through the image process itself. Hence it has been argued that these images, along with ultrasound images, provided the emotional and political means for the rights and interests of the fetus to be seen in opposition, in medical and legal terms, to the rights and interests
of its mother. It is thus not accidental that images of the fetus have become central icons in the debate over abortion in the United States. The compelling idea of fetal personhood that is projected onto the sonogram has provided powerful fodder for the anti-abortion movement. This was made clear in 1984 with the release of the videotape *The Silent Scream*, in which Bernard Nathanson, a physician and former abortion provider, mounts a case against the practice of abortion through visual tactics, showing what he describes as real-time ultrasound images of a twelve-week-old “unborn child,” an abortion, and aborted fetuses. Nathanson explicitly states that the sonogram’s moving image convinced him to change his political stance because it led him to believe he was seeing a “living unborn child” and not a mere fetus.

*The Silent Scream* provides many examples of the manipulation of images to demonstrate certain “truths.” A rebuttal tape made by Planned Parenthood of King County, Seattle, in 1985 reveals that in *The Silent Scream* Nathanson consistently used images and models of fetuses older than the stage under discussion to give the impression, for example, that a first-trimester fetus is physically fully developed. In attempting to show that the fetus “sensed danger” with the insertion of instruments used in abortion, Nathanson sped up the real-time ultrasound image to make the fetus appear agitated and seem to throw back its head in a “silent scream,” something Planned Parenthood assures us the fetus does not have the developmental capacity to do. In their rebuttal tape, Planned Parenthood experts show viewers the “real-time” footage again to demonstrate how the empirical truth is in fact staged. Techniques used by Nathanson, the Planned Parenthood experts suggest, are deceptive and manipulative because they influence our interpretation through language and manipulations of size and time scales. Whereas *The Silent Scream* banks on viewers’ faith in the power of images to reveal the truth, the rebuttal makes the argument that images can seduce people into believing things that are not true. Yet history demonstrates that the simple process of debunking an image is not enough to defuse its power to make viewers believe it holds a particular truth. Images generate strong emotional responses, whether or not we are aware that they are manipulated. The prevalence of ultrasound suggests that people are moved by its images whether or not these images are always medically useful. Doctors and clients construct narratives about fetal personhood despite what is known to be true about fetal life and development.

**Vision and Truth**

Underlying images of the body’s interior is a tension between the idea that truth is self-evident in the surface appearance of things and the contrasting idea that truth lies hidden in internal structures or systems of the body that scientific representational techniques can uncover. The belief that the truth lies beneath the surface and
needs to be seen to be fully understood has prevailed in Western culture since the
time of the Greeks. It is common in contemporary culture to regard looking inside
someone as a means of seeing their "true" identity.

The idea that bodily truth can be made visible was a topic of particular interest
to French philosopher Michel Foucault in his book Birth of the Clinic. This account
of the creation of hospital-based teaching and research in 1790s France is pertinent
to discussions of science and visuality, though its particular focus is the clinic.
Foucault describes the replacement of traditional methods of diagnosis of reading
the surface symptoms of an illness by the practice of anatomical dissection and
looking for empirical evidence beyond the physical surfaces of the body. In chapter
3, we discussed the institutional gaze identified by Foucault in terms of surveillance
and inspection. He was also interested in the identification of signs and symptoms,
specifically how the "medical gaze" elicited truths hidden within bodies rather than
through direct self-evidence of pathology. Dissection rejected older ideas about
where to look for the truth, but it still adhered to an ideology of visual truth in which
it was assumed that all a doctor had to do was gaze into the depths of the body for
its truth to be revealed.

In the rise of the natural sciences in the nineteenth century and in biomedici-
cine today, vision is understood as a primary avenue to knowledge, and sight takes
precedence over the other senses as a primary tool in the analysis and ordering of
living things. Hence an ultrasound image taken by a doctor will be perceived as
more reliable than a woman's description of her bodily sensations of pregnancy—or
what has been termed "felt evidence." Foucault identifies the introduction of a new
(clinical) regime of knowledge in which vision plays a distinctive role in our regard
of bodies and subjects. At the same time, vision can play different roles in contem-
poraneous regimes of truth; there is not one but multiple medical and scientific ways
of looking.

The looking Foucault describes is crucially linked to other activities that give
meaning to what vision uncovers: experimenting, measuring, analyzing, and order-
ing, for example. These are the activities that separate the idea of appearances as
self-evident from the analytical clinical gaze Foucault describes. The paradox of the
clinical gaze and its legacy is that vision may predominate, but it is nonetheless
dependent on other sensory and cognitive processes. This paradox becomes all the
more pronounced as we move into the twenty-first century and the age of the digi-
tal image.

During the last decades of the twentieth century, biomedicine introduced a
broad range of imaging technologies such as MRIs, CAT scans, ultrasound, and fiber
optics, in addition to the historical technology of X rays, to produce images of the
body's interior. Increasingly, digital rather than analog technology is being used to
map the body, and this means in turn that cultural concepts of the body have begun
to reflect concepts of the digital. The history of imaging the body's interior has been,
as we have noted, not simply a history of medical and scientific investigation but also a history in which the body is constructed through aesthetic choices and image-enhancing techniques. Scale is enormously important in our reading of many of these images, in particular those images that use microscopic lenses to envision the body’s cells that are invisible to the human eye. Here, again, Lennart Nilsson has been a key figure. Nilsson’s images, published in books with titles such as The Body Victorious, The Incredible Machine, Behold Man, and Life, use the technology of electron microscopy to depict the body as a series of landscapes. Indeed, it can be said that the history of microscopic photography has been about representing the body as a kind of landscape that can be discovered and claimed like a foreign land. This effect is heightened by the use of color to highlight and distinguish different parts of the body, yet such colorization has the effect of making the body appear unnatural. Here, images of the body’s interior evoke the tradition of the sublime, in which landscape painting and photography have evoked transcendence of the real. There is no doubt that such images evoke awe and wonder and offer all kinds of visual pleasure. At the same time, the decontextualization inherent in the images and the changes in scale due to the enlargement of microscopic elements both have the effect of making these images of bodies seem otherworldly. The anthropologist Emily Martin, in her book Flexible Bodies, which is a study of the metaphors of conquest and power through which we describe the human immune system, interviewed people about their responses to these kinds of images of the body’s interior and found that, although people marveled at the techniques of the images, most were ambivalent about seeing them as representative of their own bodies.

The kinds of advances in imaging technologies that allow photographers such as Nilsson to photograph the minute elements of the body are paralleled by the development of tools for scanning the body’s interior, such as MRIs and computed tomography. Until the late twentieth century, routine medical imaging was limited to X rays. It is now commonplace for medical practitioners to use MRIs, sonograms, CT scans, and PET scans to read soft tissue and organs within the body. These images are central to how the physical body is understood and interpreted by medical professionals and how people experience their own bodies when they see these images. Of these images, brain scans appear to hold the most cultural
power, given that the brain appears to be the most elusive and complex of the human organs. Science studies scholar Joseph Dumit notes, in his book *Picturing Personhood*, that PET scans of the brain have quite regularly circulated in popular media as visual evidence of particular kinds of mental states and disorders. Dumit is careful to note that what such images mean to experts is quite complex, but in their colored renditions of brain activity, they appear to tell the public something visually about normalcy and abnormality. Dumit notes that as early as 1983, *Vogue* magazine ran an image of three PET scans of brains that were labeled Normal, Schizo, and Depressed, thus demonstrating the ease with which such images are deployed to designate "brain-types." As Dumit notes, such images are much more effective in demonstrating abnormalities than they are in establishing norms, yet in the case of mental illnesses, it is much easier to diagnose patients using traditional psychiatric evaluative techniques than to read an image of the brain. However, precisely because of the positivist legacy of machine imaging, brain scans carry enormous power to suggest the "facts" of brain disorders. They have thus been introduced in legal contexts to affirm, for instance, the mental disorder of a defendant, and judges have taken a variety of tactics to mediate their powerful effect as evidence of brain function. Just as with the electron microscopic images of the body as a kind of landscape, these images are often colorized (both as part of the imaging process and to enhance the view of the brain) in ways that render the brain an aesthetic object. The effect of these images can be seen as a contemporary outgrowth of the nineteenth-century imaging technologies that were deployed specifically to
visually demarcate abnormalities. Thus this antidrug ad from the National Institute on Drug Abuse uses PET scans to visually demonstrate the difference between a "normal" brain and a brain on the drug Ecstasy. Given the complexity of PET scans and how what they measure changes over time, there are many arguments one could make about how this image sets up too easy a contrast here to make its point. However, it is precisely because the image is coded as evidence that the ad carries the power potentially to persuade someone to consider not using Ecstasy.

Imaging Genetics

As we have noted throughout this chapter, the modes of image making that define the body and its interior are central not only to medical practices of diagnosis but also to how the body is perceived to function and to have meaning. Thus the image of the body as a set of digital slices (as in the Visible Human Project), as readable through brain scans, or as biometrically unique, as in biometrics, all contribute to a sense of the body not only as readable but also as malleable and transformable. This Dow Human Element ad, from an extensive 2007 campaign, sells the idea that in the chart of chemical elements there is also a human element. The campaign imagines each person as an element in the Periodic Chart of Elements, with a corresponding number. The ad copy reads, "a world that includes the Human Element along with hydrogen, oxygen, and the elements, is a very different world indeed." The body is seen

FIG. 9.21
Plain Brain/Brain after Ecstasy, National Institute on Drug Abuse 25th Anniversary poster, using PET scans as a scare tactic

FIG. 9.22
Dow Human Element ad, 2006

AND JUST LIKE THAT, THE LAWS OF CHEMISTRY CHANGE. A world that includes the Human Element, along with hydrogen, oxygen and the other elements, is a very different world indeed. Suddenly, chemistry is put to work solving human problems. Bonds are formed between aspirations and commitments. And the energy released from reactions fuels a boundless spirit that will make the planet a safer, cleaner, more comfortable place for generations to come. A world that welcomes change is about to meet the element of change: the Human Element.
body is seen as coded by science, as elemental, and as something that can be easily segmented and atomized.

One of the key influences in these scientific and postmodern concepts of the body has been the Human Genome Project (HGP), a global scientific endeavour which aims to create a complete genetic "map" of the human genome. Genetics captured the scientific and popular imagination at the end of the twentieth century. Beginning in the 1990s, genetics has become the scientific field that scientists and the public turned to for clues about the origins of everything from smoking to schizophrenia, from cancer to criminal behavior. With the rise of specialties such as gene therapy, genetic counseling, and genetic testing and the focus on the HGP and its mapping of the human genome, genetics has become the primary paradigm through which the human body is imagined. Genetic science is not simply about identifying the genes that constitute the human chromosome, it is also about identifying genes linked to disease, behavior, physical appearance, and a host of other conditions and factors. Genetic therapy understands genes as they relate to medical aberrations and pathologies. Just as nineteenth-century scientific practices of measurement were used to shore up ideologies of racial difference, gene therapy is used to map differences among human subjects and has the potential to be used to designate those who are outside the "norm" in troubling ways. Echoing Foucault, science studies scholars Dorothy Nelkin and Susan Lindee explain that with the shift to a genetic model, "Images of pathology have moved from gross to hidden body systems. Once blacks were portrayed with large genitalia and women with small brains. Now the differences are in their genes." Genetics has thus emerged as a new and potentially problematic marker of biological and cultural difference, taking the place of nineteenth-century physiognomy and craniology. We now "see" at the molecular and genetic levels.

The appeal of the genetic model of the body lies in part in its rendering of the body as a kind of accessible digital map, something easily decipherable, understandable, and containable—a body that is seemingly less mysterious than the body that is popularly conceived and individually experienced. The Human Genome Project is presented as the means through which the body's potential for disease can be remapped and restructured and as the beginning of what has been called a new era of medical science, the "age of the genome." The map of the genome, which was fully sketched out in an initial stage by 2003, has resulted in the identification of 1,800 disease genes and provided the basis for more than 1,000 genetic tests for human conditions. The HapMap project was begun in 2005 to map the full spectrum of genetic diseases. (In a procedure that is typical of medical protocols, the volunteers whose DNA was used for the project are deliberately anonymous, in ways that are reminiscent of the bodies used for anatomy.) José van Dijck notes that the metaphor of the "mapping" of the genome carried with it the implication of a frontier terrain, with scientists cast as explorers like Lewis and Clark. Popular discussion of the HGP employs not only the language of blueprints,
instructions, and codes but also the metaphors of "treasure hunts," "pioneer adventures," and images that invoke colonial expeditions, with analogies made between Columbus and the HGP scientists.\textsuperscript{23} It is important to note that metaphors about science are not simply ways of talking; they are constitutive of what science sees, and they affect how scientific practices are conducted and understood inside and outside the lab. These metaphors are not the constructions of a misguided media that fails to "see" science accurately. Rather, they are the chosen metaphors of geneticists themselves, who adopt these models to describe their own work. The HGP has been characterized by scientists and the media as the culmination of modern science in its potential for control over the human body: it is thus not incidental that the project regularly uses Leonardo da Vinci's Vitruvian Man, which we discussed earlier, on its publications and brochures, as if that image signaled the beginning of science with the HGP its ultimate outcome.

References to the Renaissance abound in genetics in ways that reveal underlying narratives about reproduction, replication, and the alliance of art and science. In these analogies, the Renaissance is perceived to be an era of immense movement forward in human creativity and fine art, and the current era of biotechnology is seen, by analogy, to be equally historically important. These connections are encapsulated in this 1995 ad for a Du Pont DNA labeling kit that is called Renaissance. Here, the ad appropriates Andy Warhol's work, \textit{Thirty Are Better Than One} (1963), which is composed of numerous copies of the Mona Lisa, to refer to the replication qualities of the product. The image is effective, yet it carries many unintended ironies. Science studies scholar Donna Haraway has written of this ad, "without attribution, Du Pont replicates Warhol replicates da Vinci replicates the lady herself. And Renaissance\textsuperscript{TM} gets top billing as the real artist because it facilitates replicability."\textsuperscript{24} It is, of course, a further irony that Du Pont trademarked the Renaissance product name, thus claiming intellectual property rights for the name of an historical epoch to sell the idea of reproduction.

In earlier epochs of science, we have shown, practices of looking were central to discriminatory systems claiming to be objective knowledge systems. The identification of visible and measurable differences in skin tone and color and body shape and size were (and still are) means through which stereotypes are
constructed and discriminatory practices are carried out and justified. Today, these appearance-related markers of natural difference are supplemented or replaced by the supposedly more accurate sign of the invisible gene as a marker of difference. We now live in a “reality” we understand to exist at the molecular, invisible level. But when the marker of difference is invisible to us, are the marker and difference itself taken out of the realm of our influence and debate? As an invisible marker, genetic code seems more fixed and more factual, far from the field of discourse, outside of historical context and the social field of power and knowledge. If differences are genetically determined and therefore immutable (except perhaps through gene therapies or drug treatments), it becomes easy to imagine that socialization may not be responsible for or effective in changing differences of mental capacity, physical skill, and other attributes of human beings. For instance, a genetic argument could be used to claim that criminals commit crime because they are genetically predisposed to do so, hence we need not waste money on programs designed to improve their social environments. The mapping of genes has raised the specter of a world in which people could be discriminated against by insurance companies and other institutions simply because of their genetic makeup, and laws are now being enacted to protect against this eventuality. The existence of the genetic map in and of itself presents a kind of empirical knowledge, however limited, that has through its very existence the capacity to trump other kinds of ways of framing disease and difference (leaving out environmental factors, for instance). Importantly, the concept of the body that we gain through the genetic model is one of mutability, as genetic science not only to identify genes but also to change them has become a primary engine of scientific research. This research is not only about potentially changing disease-causing genes but also about changing appearance and cognitive abilities—the genes for skin color have been identified, for instance. The specter of pharmaceutical companies applying for patents on such genetic information has not quelled concerns that the age of the genome will replicate many of the discriminatory sciences of eugenics and create new models for the norm.

The production of images in genetic science carries with it the wonder of microscopic images that have, as we have noted, the effect of rendering the body as a kind of landscape. In this image, color coding to denote different chromosomes has the effect of turning microscopic chromosomes into playful creatures that look like pieces of candy. It is also the case that images of DNA sequences, rendered here to look like colorful ladders, sometimes include the icon of the mouse, invoking projects such as the HGP which have focused on the relationship

FIG. 9.24
Human chromosomes, colored for animation, 2005
of mouse genomes (sequenced in 2002) to human genomes. Because mice have almost the same set of genes as humans, they have been used extensively in gene research. Haraway writes that this resulted, in 1990, in the development of OncoMouse™, the first patented animal, developed by Harvard Medical School and licensed to Du Pont. OncoMouse is a "transgenic" mouse whose genetic makeup is useful for studying cancer. As Haraway notes, the patenting of an animal, whose "natural habitat" is the laboratory, is emblematic of the complex border crossings found in biotechnology, between biology and technology, and between species.

The Digital Body

The image of the genetic body is also an image of the digital body, at once a body of microscopic entities, a set of bits that is mutable and plastic, easily combined and reassembled. These concepts of the body are aligned with concepts of the postmodern body that we discussed in chapter 8. The visual technique of morphing, for instance, makes it difficult to distinguish between one person and another, thus collapsing the boundaries between bodies that were once considered inviolable. Morphing techniques are sometimes used to make statements about universal humanity and the blending together of races; they also contribute to sense of the body as mutable and changeable. These morphed images recall the nineteenth-century composite photographs of Sir Francis Galton, which we described earlier. Fig. 9.25 shows one of the first widely circulated images using morphing digital technologies. This is the cover of a special issue of Time magazine devoted to "The New Face of America: How Immigrants Are Shaping the World's First Multicultural Society." Time presented a computer-generated composite of racial types, represented in a portrait of a young woman with dark hair and eyes and a medium skin tone. "Take a good look at this woman," the cover sidebar reads. "She was created by a computer from a mix of several races." The image was produced with Morph 2.0, the same software package used in the production of Terminator 2: Judgment Day (1991) and the legendary 1991 Michael Jackson video, Black or White. It is a computer composite that is 15 percent Anglo-Saxon, 17.5 percent Middle Eastern, 17.5 percent African, 7.5 percent Asian, 35 percent Southern European, and 7.5 percent Hispanic. Whereas Galton's composites presented types in hopes of breeding out those racial types deemed inherently pathological as part of eugenic science, Time's composite suggests an amalgamation of races that appears to embrace a more multicultural future society, but one that is idealized in a genericized version of youthful female beauty.

The problems inherent in this tacit view of the new face of America as a stereotypically beautiful face become evident when we recall, as American literature
scholar Sue Schweik has written, the “Ugly Laws” that remained on the books in some cities of the United States, such as Chicago, as late as the mid-1970s, with the last arrest under these laws made in 1974. The Ugly Laws forbade the public appearance of people with “unsightly” or “disgusting” appearances—people “diseased, maimed or mutilated,” relegating these individuals to the hidden interiors of homes and institutions or to freak shows where they could be ogled as scientific and medical oddities, poorly paid for submitting their bodies to this sort of objectification. Whereas in some cases individuals with differences deemed ugly were ostracized and devalued, in others they were regarded as harboring special inner intellectual, moral, or spiritual powers. The latter was true for Joseph Merrick, the British man of the Victorian era who was the subject of a film by the director David Lynch. He was known as “the Elephant Man” due to his extreme facial and bodily malformations (he had a condition called Proteus syndrome). After years during which he was maltreated and exploited in workhouses for the poor and circus sideshows, he was befriended by a prominent doctor and the princess of Wales, who ushered him into Victorian London’s high society, where he became a kind of cult figure admired and revered among the upper classes for the fine mind and soul his malformed body was believed to harbor.

The beauty in the “New Face of America” image is specifically coded within the science of genetics, the codes of the digital, and the cultural meanings of multiculturalism—here, beauty is precisely the mix of ethnicities and genes, the blending of difference. The visual culture of computer graphics aids fantasies of the forging of new peoples and new worlds in imagined and emergent genetic specialties such as cloning and selective breeding. As the Time article reveals, “Little did we know what we wrought. As onlookers watched the image of our new Eve begin to appear on the computer screen, several staff members promptly fell in love. This is a love that must forever remain unrequited.” But, as Evelyn M. Hammonds argues, the “Face of America” cover story enacts both a fear of racial mixing and a fantastic construction of a generic woman of color. Stereotypic racial typologies remain in place as this attractive, idealized woman of color becomes an icon reflecting the unattainable desires of those who brought her to life on the screen. Although one might think of this woman as a person, she is a virtual person, with no referent in the real world. Composite photography had long been in use in forensics and criminal identification, and the digital software of morphing and composites was partly an outcome
of this sort of practice. Visual constructions such as the “New Face of America,” then, are not simply benign imaginings. They can serve as material “blueprints” for the scientific and social practices that they invoke, including selective breeding. They make these practices seem natural, easy, and inevitable.

Artist Nancy Burson has been a major force in the development of morphing not only in the art world but also in the crossover between art, science, and the broader culture. In the late 1980s, Burson was instrumental in developing computer software that contributed to the ability to make portrait images “age”—that is, to create a virtual rendering of the person as he or she could be predicted to look many years after the photograph was taken. This technique was an important breakthrough in locating missing persons and criminals, and images with “age progression” are now commonly circulated on flyers of those who are missing (in particular missing children). Burson’s composite photographs and virtual renderings suggest some of the ways that the visual cultures of art and science are not as distinct as one might think. In the late 1990s, Burson created a series that commented on the legacy of physiognomy. Her series Craniofacial is composed of portraits of people with facial anomalies. Rather than taking these portraits in clinical, context-stripped settings and poses so common in the institutional imaging of aberrant facial structures, Burson shows us these faces in intimate, everyday settings emphasizing the routine normalcy of those deemed physically anomalous. Burson’s Human Race Machine (2000) is a project that allows participants to visualize themselves as being of different races. She writes, “the concept of race is not genetic, but social. The Human Race Machine allows us to move beyond difference and arrive at sameness.” If we compare the “New Face of America” and Burson’s Human Race Machine to the early categorization charts of Bertillon and Galton, we can see the ways in which these overriding concepts of difference and sameness have guided not only the sciences of human classification but also humanitarian concepts governing the connections between humans.
Contemporary imaging techniques such as morphing are indicators not only of the changing concepts of the postmodern, digital body but also of the relationship between the body and technology. One of the primary concepts for thinking about the relationship of the body and technology is the idea of the cyborg. A cyborg, or cybernetic organism, defines an entity that is part technology and part organism. The cyborg has its roots in early computer science and with the science of cybernetics, founded by Norbert Wiener in the postwar period, as a science that integrated communications theory and control theory. Cybernetics sees the human mind, the human body, and the world of automated machines and systems as having the common denominator of control and communication and proposes that the fundamental nature of the human organism can be reduced to an organizational pattern. The term cyborg was first proposed by Manfred Clynes and Nathan Kline in 1960 to describe “self-regulating man-machine systems,” which they were exploring in relation to the rigors of space travel, with fundamental aspects of feedback and homeostasis. Early computer scientists were thus working with the idea that man-made devices could be incorporated into the human body’s regulatory feedback chains as a “participatory” stage of evolution with the desire for a “new and better being.” Since the 1980s, the cyborg has been theorized as an identity that has emerged in the context of technoculture, a posthuman identity that represents the breaking down of traditional boundaries between body and technology and organism and machine. It was prominently theorized by Donna Haraway in her famous 1985 essay “The Cyborg Manifesto” as a means to think about the transformation of subjectivity in a late capitalist world of science, technology, and biomedicine. Rather than suggesting that subjects experience technology solely as an external and oppressive force, Haraway wrote of the body-technology relationship as one filled with potential for imagining and building new worlds, potentially both liberatory and potentially threatening. There are, of course, people whom we might think of as literal cyborgs, people who have prosthetics and electronic devices embedded within their bodies, seemingly at one with technological devices. Much contemporary work in cyborg theory postulates that we are all, to a certain extent, cyborgs, given our complex bodily relationships with technology; for example, that our interaction with our computers, iPods, and cell phones means that we experience technologies as inseparable from our bodies. As this Hewlett-Packard ad shows, technologies are often sold to us with the promise that they will function as extensions of our bodies (as Marshall McLuhan once predicted), and these technologies are imagined to be integrated within our very eyes and vision. More recent work in the concept of the body-machine relationship develops on Haraway’s point that we both fear and revere science and technology, enjoying
its benefits while remaining cautious about the economic, political, environmental, social, and emotional impacts of new technologies on the social worlds in which they are introduced and on which they draw for their raw material.

Visualizing Pharmaceuticals

Since the mid-1990s many countries, including the United States, have allowed direct-to-consumer advertising for prescription drugs. Advertising has become one of the ways in which consumer-patients receive information about medication choices. Direct-to-consumer (DTC) advertising, as this area of marketing is called, speaks directly to consumers, even though they can only purchase such a drug with a doctor’s prescription. This kind of marketing has generated debates about advertising ethics and the logic of promoting drugs outside a medical context. Proponents point to surveys showing that most medical professionals feel that these ads have a positive effect in motivating patients to be active in their health care decisions. A similar argument can be made about the vast amount of medical information now available to people via the Web. Yet there is also significant concern that DTC ads make drugs seem better than they actually are.

If we consider DTC in relation to the history of images of science and medicine, and if we use the tools of cultural analysis to read their ideological messages, we can see the ways in which they construct particular kinds of subjects. The aim of these ads is, quite simply, to sell drugs and their continued use, and they do so by speaking to consumers as potentially abnormal and diseased subjects. Thus we could say that these ads interpellate consumers as subjects in need of chemical modification, as outside the norm, as subjects whose modification through the consumption of pharmaceuticals will aid them in becoming happier, more normal, and more fulfilled. It is thus a common convention in these ads, such as this Effexor ad, to have checklists that consumers might easily feel interpelated by (here, a checklist for the symptoms of depression). It is important to note that the aim of such an ad is to motivate a consumer to seek out such a drug remedy by asking (if not demanding) that their doctor provide access to it. In this ad, vague symptoms that might be considered normal responses to the strains of everyday life (stress, sadness, and trouble sleeping) are followed rhetorically and visually within the ad by the suggestion to “ask your doctor” to prescribe this product.

It is the convention of DTC ads that they offer abstract kinds of promises through the use of images of people in posttreatment states of being. By law, those ads that are indicated (meaning that they discuss the conditions that the drug is designated to treat)
are required to provide information about the potential negative side effects of those drugs. This often results in advertising texts that are comedically at cross-purposes, with soft-focus images of smiling people accompanied by small text that discusses horrifying potential effects. Nonindicated ads are not required to do this, but they are also not allowed to mention the conditions they are indicated for, thus creating ads that are abstract and mysterious, featuring feel-good situations with little concrete information. In general, DTC ads do not feature images of people taking drugs or receiving medical treatments, and they display a dominance of images of people looking happy and content in casual, leisure situations or making short, vague testimonials about how good they feel. In this Lunesta ad, the image of a contented person rising from his bed with a magical butterfly flying over him is used to sell a sleeping pill. Such an ad promises not only the capacity to sleep but also the transformative quality of such a drug to turn someone into a new kind of person, in this case, a “morning person.” It is useful to remember Raymond Williams’s well-known analysis of advertising as a “magic system” that transforms ordinary, material products into objects that promise a magical transformation.\textsuperscript{31} DTC ads explicitly speak to consumers about the magical transformation that these drugs will provide for them. That there are risks in selling drugs this way is a key point in criticisms of DTC ads. For instance, the very popular drug Vioxx, which was used to treat arthritis and other muscular pain, had a very successful DTC campaign using former skating champion Dorothy Hamill to extol its transformative potential. When the Food and Drug Administration reported, in 2004, that Vioxx max have contributed to the deaths of almost twenty-eight thousand users, it was rapidly withdrawn from the market by its manufacturer Merck. Creating consumers for pharmaceuticals, which is what DTC ads do, thus involves a level of risk beyond that of most advertising.

In chapter 7, we noted that ads sell not only a product. They also sell something larger: a lifestyle, a national ideology, capitalism, or consumerism itself. Like other types of ads, DTC ads are not just about selling drugs as a normal, everyday part of our lives. They are also about selling science, medicine, and their institutions as essential aspects of our everyday existence and not just as places we might turn to for help during periods of illness. As Joseph Dumit puts it, the medicated citizen has become the norm. We are offered “drugs for life,” that is, drugs that we may use
every day for prolonged periods (such as Effexor or Prozac) to maintain a sense of normalcy, and not simply drugs to help us recover from sickness. It is a key aim of DTC ads, for instance, to both encourage consumers to continue to use certain medications and to remind consumers to take their medication. The benefit to pharmaceutical companies in keeping consumers on drugs “for life” is clear. Going on a drug for life, or for an indefinite period of years, means participation in a consumer market for life, and not for the relatively brief period from illness to recovery.

In the 2000s nonprofit health advocacy groups found canny ways to use corporate marketing and advertising not only to generate consumer health awareness but also to promote charity revenues. These strategies involve linking particular brands and products to a cause. In the Clean for the Cure campaign, Oreck Corporation, a manufacturer of cleaning appliances, donates fifty dollars to Susan G. Komen for the Cure® (a division of the nonprofit Komen Breast Cancer Foundation) for each purchase of its pink logo-emblazoned Special Edition Oreck XL Ultra vacuum. The charity benefits from donations and exposure through ads; the corporation benefits from the image of benevolence conferred by association with the charitable cause; and the consumer benefits from the good feeling of supporting an important cause while consuming. The vacuum, traditionally a tool of women’s unpaid domestic labor, can be seen as an ironic vehicle for this message about empowering women.

The visual culture of the business of medicine and pharmaceutical companies extends beyond the advertising of products to consumers. Public debate over the role of pharmaceutical companies in relation to the business of health and the ongoing health care crisis in the United States has produced competing kinds of images. During the postmodern period, artists have been quite active in the production of images and media texts questioning the ties between private corporate interests and national health care. Artist-activists, most notably in the era of AIDS, have produced images and media texts that address concerns about patients’ rights, the role and structure of corporate science in health care, and the role of the media in reporting on scientific advances in health care. In chapter 2, we discussed the innovative use of posters to raise public awareness of facts about HIV/AIDS during a period when public officials in areas most hard-hit by the epidemic gave the issue little funding and attention. The work of ACT UP (AIDS Coalition to Unleash Power) in the
and medicine were not working to get out the message. ACT UP used images as an integral aspect of their provocative public interventions that aimed to get mainstream media to pay attention to the AIDS crisis. ACT UP used images such as this one, distributed as posters and stickers, to shock the public in the urban cityscape into thinking about the presence of people with AIDS, the inaction of the government in addressing the growing health crisis, and the role of pharmaceutical companies in the crisis. The visual culture of AIDS activism was one of the most transformative and effective interventions by nonscientists in the culture of science in the twentieth century, setting the model for activism in science in the twenty-first century.

As the images discussed in this chapter demonstrate, science is not created in a vacuum or in a world that is separate from social and cultural meaning. A cross-fertilization of ideas and representations exists between science and culture, and representations of science in popular media have a reciprocal influence on how scientists do science. Similarly, as we have shown, scientific images have cultural meanings that govern not only how they are produced and for what purpose but also how they are interpreted and gain cultural value. From the image of the anatomist at work to the photograph that makes a fetus appear to be alive to the MRIs and microscopic images that render the body into an aestheticized landscape to ads that sell science, the visual culture of science makes clear that the realms of science, culture, and politics are all intertwined.

Notes


19. See Petchesky, "Fetal Images," and Stabile, "Shooting the Mother."


25. *Haraway, Modest_Witness@Second_Millenium*, 79.


Further Reading


