

## PART ONE

# 1

Film is a young medium, at least compared to most other media. Painting, literature, dance, and theater have existed for thousands of years, but film came into existence only a little more than a century ago. Yet in this fairly short span, the newcomer has established itself as an energetic and powerful art form.

It's this aspect of film that we explore in this book. The chapters that follow show how creative people have used film to give us experiences that we value. We'll examine the principles and techniques that give film its power to tell stories, express emotions, and trigger ideas.

But this art has some unusual features we should note up front. More than most arts, film depends on complex technology. Without machines, movies wouldn't move, and filmmakers would have no tools. In addition, film art usually requires collaboration among many participants, people who follow well-proven work routines. Films are not only created but produced. Just as important, they are firmly tied to their social and economic context. Films are distributed and exhibited for audiences, and money matters at every step.

Chapter 1 surveys all these aspects of the filmmaking process. We start by considering film art in general, and we look at one film that illustrates how skillful and effective that art can be. The chapter goes on to examine the technology, the work practices, and the business side of cinema. All these components shape and sustain film as an art.

# Film Art and Filmmaking

# 1

## CHAPTER



# Film as Art: Creativity, Technology, and Business

**M**otion pictures are so much a part of our lives that it's hard to imagine a world without them. We enjoy them in theaters, at home, in offices, in cars and buses, and on airplanes. We carry films with us in our laptops and iPods. We press the button, and our machines conjure up movies for our pleasure.

For over a hundred years, people have been trying to understand why this medium has so captivated us. Films communicate information and ideas, and they show us places and ways of life we might not otherwise know. Important as these benefits are, though, something more is at stake. Films offer us ways of seeing and feeling that we find deeply gratifying. They take us through experiences. The experiences are often driven by stories, with characters we come to care about, but a film might also develop an idea or explore visual qualities or sound textures. A film takes us on a journey, offering a patterned experience that engages our minds and emotions.

It doesn't happen by accident. Films are *designed* to have effects on viewers. Late in the 19th century, moving pictures emerged as a public amusement. They succeeded because they spoke to the imaginative needs of a broad-based audience. All the traditions that emerged—telling fictional stories, recording actual events, animating objects or pictures, experimenting with pure form—aimed to give viewers experiences they couldn't get from other media. The men and women who made films discovered that they could control aspects of cinema to give their audience richer, more engaging experiences. Learning from one another, expanding and refining the options available, filmmakers developed skills that became the basis of film as an art form.

The popular origins of cinema suggest that some common ways of talking won't help us much in understanding film. Take the distinction between *art* and *entertainment*. Some people would say that blockbusters playing at the multiplex are merely "entertainment," whereas films for a narrower public—perhaps independent films, or festival fare, or specialized experimental works—are true art. Usually the art/entertainment split carries a not-so-hidden value judgment: art is high-brow, whereas entertainment is superficial. Yet things aren't that simple. As we just indicated, many of the artistic resources of cinema were discovered by filmmakers working for the general public. During the 1910s and 1920s, for instance, many films that aimed only to be entertaining opened up new possibilities for film editing. As for the matter of value, it's clear that popular traditions can foster art of high quality. Just as Shakespeare and Dickens wrote for a broad audience, much of the greatest 20th-century music, including jazz and the blues, was rooted in popular traditions. Cinema is an art because it offers filmmakers ways to design experiences for viewers, and those experiences can be valuable regardless of their pedigree. Films for audiences both small and large belong to that very inclusive art we call *cinema*.

Sometimes, too, people treat film *art* as opposed to film as a *business*. This split is related to the issue of entertainment, since entertainment generally is sold to a mass audience. Again, however, in most modern societies, no art floats free from economic ties. Novels good, bad, or indifferent are published because publishers expect to sell them. Painters hope that collectors and museums will acquire their work. True, some artworks are subsidized through taxes or private donations, but that process, too, involves the artist in a financial transaction. Films are no different. Some movies are made in the hope that consumers will pay to see them. Others are funded by patronage (an investor or organization wants to see the film made) or public monies (France, for instance, generously subsidizes film projects). Even if you decide to make your own digital movie, you face the problem of paying for it—and you may hope to earn a little extra for all your time and effort.

The crucial point is that considerations of money don't necessarily make the artist any less creative or the project any less worthwhile. Money can corrupt any line of business (consider politics), but it doesn't have to. In Renaissance Italy, painters were commissioned by the Catholic church to illustrate events from the Bible. Michelangelo and Leonardo da Vinci worked for hire, but it would be hard to argue that it hurt their artistry.

Here we won't assume that film art precludes entertainment. We won't take the opposite position either—claiming that only Hollywood mass-market movies are worth our attention. Similarly, we don't think that film art rises above commercial demands, but we also won't assume that money rules everything. Any art form offers a vast range of creative possibilities. Our basic assumption is that as an art, film offers experiences that viewers find worthwhile—diverting, provocative, puzzling, or rapturous. But how do films do that?

To answer that question, we'll go back a step and ask, Where do movies come from? Most basically, they come from three places. They come from the imagination and hard work of the filmmakers who create them. They come from an extraordinarily complex set of machines that capture and replay images. And they come from companies or individuals that pay for the filmmakers and the technology. This chapter examines the artistic, technological, and business sides of how films come into being.

## Artistic Decisions In Filmmaking

In *Day for Night*, French filmmaker François Truffaut plays a director making a movie called *Meet Pamela*. Crew members bring set designs, wigs, cars, and prop pistols to him, and we hear his voice telling us his thoughts: “What is a director? A director is someone who is asked questions about everything.”

Making a film can be seen as a long process of decision making, not just by the director but by all the specialists who work on his or her team. Early decisions come as the script is written and the various elements are designed. More decisions come daily during the actual filming, especially as unexpected problems or opportunities arise. Decisions continue up to the point where the director okays the last shot to be completed. These decisions could be as important as who plays the lead or as trivial as which buttons look best on a costume.

A great many decisions, however, do affect what we see and hear on the screen. There are the artistic choices made by the filmmakers. What lights will enhance the atmosphere of a love scene? Given the kind of story being told, would it be better to let the audience know what the central character is thinking or to keep him enigmatic? When a scene opens, what is the most economical, understandable way of letting the audience know the time and place? Which is more dramatic, to show an explosion or just have it heard from offscreen? The sum total of all such decisions culminates in a finished film.

Sometimes the decisions have to do with the business side of the production. What are some ways to save money? Which of the planned special effects being

### CONNECT TO THE BLOG

Film art comes from many places and eras. For a personal take on why it's important not to watch only recent English-language color movies, see “Subtitles 101,” at

[www.davidbordwell.net/blog/?p=361](http://www.davidbordwell.net/blog/?p=361).

done on a tight budget are more important and necessary? These decisions, too, affect what we see and here in the finished film. Other times the decisions are practical ones that won't affect the look or sound of the final film, as when a source of electricity has to be found to power the lights when a movie is shooting on location.

In this book, we'll be looking at two basic aspects of film art: form and style. **Form** is the sum of all the parts of the film, unified and given shape by patterns such as repetition and variation, story lines, and character traits (Chapters 2 and 3). **Style** is the way a film uses the techniques of filmmaking. Those techniques fall into four categories: (1) mise-en-scene, or the arrangement of people, places, and objects to be filmed (Chapter 4); (2) cinematography, the use of cameras and other machines to record images and sounds (Chapter 5); (3) editing, the piecing together of individual shots (Chapter 6); and (4) sound, the voices, effects, and music that blend on a film's audio track (Chapter 7). Throughout the book, we'll discuss how they can be patterned and combined to create movies that entertain us, inform us, and engage our imaginations.

The first time we watch a film, we usually don't know or think about the artistic decisions that were made during its production. For much of film history, most spectators never got a chance to learn much about the making of a specific movie. Today, however, DVD supplements offer "making of" documentaries and voice-over commentaries by the filmmakers. The Internet offers a vast array of clips, articles, and interviews about specific movies' creation. Let's examine how choices made by filmmakers lead to artistic results by looking at the production of a single movie.

## To See into the Night: Artistic Decisions in the Making of *Collateral*

Michael Mann's *Collateral* was released in 2004. It's a visually beautiful psychological crime thriller. Set in Los Angeles, it introduces Vincent (Tom Cruise), a mysterious man who hires a cab driver, Max (Jamie Foxx), to drive him to a series of appointments in the course of one night. When Max learns that those appointments are a series of killings, he struggles to break their bargain and escape. But Vincent forces him to carry on as an unwilling getaway driver. In the course of the evening, the two men spar verbally and gradually force each other to confront his flaws.

Mann and his crew made thousands of decisions during the making of *Collateral*. Here we'll look at five important choices: one that impacted the film's form and one apiece for our four categories of mise-en-scene, cinematography, editing, and sound.

Scriptwriter Stuart Beattie originally set *Collateral* in New York City. Max was to be portrayed as a loser, hiding from the world in his cab and getting little out of life. Vincent was to goad him about his failures until Max had finally had enough and stood up to him. Once Mann came on board as director, he made numerous changes. The setting was changed to Los Angeles. Max became less a loser and more a laid-back, intelligent man content to observe the world from behind a steering wheel and to interact with his passengers, endlessly delaying his plans to start his own limousine service. The story largely consists of this pair interacting, so Mann's decision to change Max's traits altered the nature of the conflict between them. Moments of reluctant mutual respect and even hints of friendship complicate their relationship. This more appealing Max becomes our point-of-view figure for most of the film. Unusually for a film about a professional killer, we don't see the first murder but stay with Max in the cab until the shocking moment when the body falls onto his cab roof.

The switch to Los Angeles profoundly affected many aspects of the film's style. For Mann, one of the attractions was that this tale of a random crossing of destinies took place almost entirely at night, from 6:04 p.m. to 4:20 a.m. He wanted to portray the atmospheric Los Angeles night, where haze and cloud cover reflect the artificial lights of the city back to the huge, flat grid of streets. According to one



of the cinematographers, Paul Cameron, “The goal was to make the L.A. night as much of a character in the story as Vincent and Max were.”

This was a major decision that created much of the film’s look. Mann was determined not to use any more artificial light than was absolutely necessary. He relied to a considerable degree on the existing street lights, neon signs, vehicle headlights, and other sources in the locations where filming took place. To achieve an eerie glow, his team came up with a cutting-edge combination of technologies.

**High-Definition Cinematography** Although Part Three will deal with mise-en-scene first, here we’re beginning with cinematography. That’s because certain choices about photographing *Collateral* were absolutely central to its final look and also dictated many other decisions.

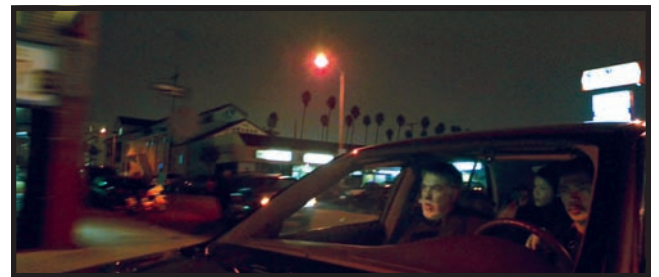
For many decades, traditional Hollywood productions employed cameras loaded with rolls of photographic film. For exterior scenes shot at night, large banks of specialized spot- and floodlights would pump enough illumination into the scene to register on the film stock. If not enough light was used, objects in dark areas would tend to go a uniform black.

Mann and his cinematographers decided to shoot extensive portions of *Collateral* on recently developed high-definition digital cameras. Those cameras could shoot on location with little or no light added to the scene (1.1). They could also capture and convey the distinctive night glow of Los Angeles. As Mann put it, “Film doesn’t record what our eyes can see at night. That’s why I moved into shooting digital video in high definition—to see into the night, to see everything the naked eye can see and more. You see this moody landscape with hills and trees and strange light patterns. I wanted that to be the world that Vincent and Max are moving through.” Cinematographer Dion Beebe enthused, “The format’s strong point is its incredible sensitivity to light. We were able to shoot Los Angeles at night and actually see silhouettes of palm trees against the night sky, which was very exciting” (1.2).

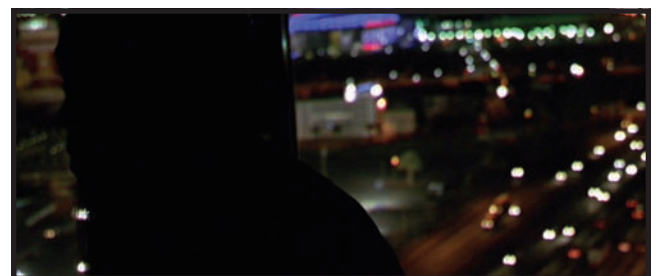
The filmmaking team pushed the digital cameras’ capabilities in one particularly dark scene, when Vincent stalks one of his victims in a law library with huge windows overlooking the cityscape. In several shots, the characters become visible only as black shapes outlined by the myriad lights behind them (1.3). As we strain to see who is where in each shot, the suspense is heightened.



**1.1** A digital camera filming in a dimly lit alley in *Collateral*. Here and in many other shots, the skyline of downtown Los Angeles figures prominently.



**1.2** An eerily beautiful cityscape, with a row of palm trees against a dark sky visible in a way that could only be achieved with digital cameras.



**1.3** Digital filming in extremely low lighting conditions. This technique creates suspense in this scene where Vincent tries to find his next victim. On regular photographic film, the background would go uniformly dark.

**Custom-Made Lights** Though digital cameras could pick up a great deal in dark situations, the audience needed to see the faces of the actors clearly. Much of the action takes place inside the cab as Max and Vincent drive around and talk. The filmmakers had to light the actors' faces, but they wanted the added illumination to be so low and diffuse that there would not seem to be any artificial light within the cab.

To create that effect, the filmmakers tried an innovative approach: electroluminescent display (ELD) panels. It's the same technology used to make the light-up backings of digital watches and cell phones, but it had never been employed in lighting units for filming. Flexible plastic panels of various sizes and shapes were custom-made for the production, all with Velcro backings that would attach to the seats and ceiling of the cab (**1.4**, **1.5**). These ELD panels could then be turned on in various combinations. Although they look bright in Figure 1.5, the effect on the screen was a soft glow on the actors. In a shot like Figure **1.6**, we might simply take it for granted that the light coming through the windows and the glow of the dashboard panel are all that shines on the characters. Such dim illumination on their faces allows the lights visible through the windows to be brighter than they are, helping to keep the city "as much of a character in the story as Vincent and Max were."

Here's a case where an artistic decision led to new technology. The filmmakers could have said, "We have various types of lights available. Which one would work best in the cab?" Instead, they realized that the type of dim illumination they wanted could not be achieved by existing lighting units. It was a problem, and one that the team went to considerable lengths to solve by ordering a new type of light made.

**Seamless Editing** As a thriller, *Collateral* contains several dynamic action scenes, including a spectacular car crash. The plan was for a cab going nearly 60 miles per hour to flip and then bounce and roll several times before coming to rest on its top. At that speed, the vehicle would have traveled hundreds of feet. The filmmakers had options about how to portray the crash onscreen. They could have put



**1.4** One of the ELD panels specially made for illuminating the cab interior.



**1.5** Several such panels attached to the back of a seat to shine on Tom Cruise as Vincent.



**1.6** The dim glow created by such lighting on the two main characters.

the camera in a single spot and had it swivel as the car rolled past, keeping it in the frame from the beginning of the accident to the end. That would have been a good idea if the scene showed us the crash through the eyes of an onlooker whose head turns to watch it. But there is no character looking on.

The filmmakers wanted to generate excitement by showing several shots of the car rolling, each taken from a different point along the trajectory of the crash. One possible approach would have been to have multiple cabs and execute numerous similar crashes, each time filmed by a single camera that would be moved between crashes from place to place to record the action from a new vantage. Such a procedure would have been very expensive, however, and no two crashes would have taken place in exactly the same way. Splicing together shots from each crash might have created discrepancies on the car's position, resulting in poor "matches on action," as we'll term this technique in Chapter 5.

Instead, the team settled on a technique commonly used for big action scenes. Multiple cameras were placed along the route of the crash, all filming at once (1.7). The economic benefits were that only one car had to be crashed and the high expense of keeping many crew members working on retakes was reduced. Artistically, the resulting shots allowed the editing team considerable flexibility to choose portions of any of the shots and splice them together to match the action of the car precisely (1.8, 1.9). The result is an exciting series of shots, each taken from farther along the path of the crash and keeping the cab in clear view.

**Music in Movements** Composers are fond of saying that their music for a film should serve the story so well that the audience doesn't notice it. For *Collateral*, Mann needed help from James Newton Howard to score the climax so as not build too quickly to a high pitch of excitement. According to Howard, "Michael was very clear about the climax taking place in three movements." "Movements" as an artistic term is usually applied to the parts of a symphony, a concerto, or a sonata. Thus



**1.7** On location after the execution of the car crash in *Collateral*, director Michael Mann surveys digital monitors displaying shots taken by multiple cameras covering the action.



**1.8** A seamless continuation of the cab's movement results as a shot taken from one camera shows the car flipping over, its hood flapping wildly, followed by a cut to . . .



**1.9** . . . another shot, taken from a camera placed on the ground and continuing the same movement, now with the vehicle hurtling directly toward the viewer. This particular camera was placed in a very thick metal case.



the idea was that the score for this last part of the film should play a major role in shaping the progression and rhythm of the action.

The climax involves Vincent trying to kill a character who is important to Max and Max trying frantically to save both himself and this other character. Howard and Mann called the first movement “The Race to Warn,” since Vincent gets ahead of Max in running to the building where the potential victim is located. Despite the fact that both men are running and the situation is suspenseful, Howard avoids very fast rhythms. He begins with long-held string chords over a deep, rumbling sound, then adds sustained brass chords with a strong beat accompanying them. The accompaniment is dynamic but doesn’t reach a high pitch of excitement.

The second movement, “The Cat and Mouse,” involves Vincent getting into the building, turning off the electricity, and stalking his victim in near darkness (1.3). Again, the chords are slow, with ominous undertones, dissonant glides, and, at a few points, fast, eerie high-string figures as Vincent nears his goal. During the most suspenseful moments in the scene, when Vincent and his prey are in the darkened room, strings and soft, clicking percussion accompany their cautious, hesitant movements.

Finally, there is a rapid chase sequence, and here Howard finally makes the music louder and faster, with driving tympani beats that ratchet up to a very quick rhythm as the danger grows. Once the final climactic events occur, the percussion ends, and slow, low strings create a sort of coda to accompany the final quiet shots.

As the making of *Collateral* demonstrates, the technological basis of filmmaking plays a crucial role in bringing the artistic plans of its makers into reality. With the recent proliferation of digital tools for production, filming teams have more choices than ever to make.

These decisions and many others that Mann and his team made during their work on *Collateral* affect our experience of the film. The unfamiliar look that the digital cameras and innovative lighting give Los Angeles may draw our attention to the settings and give us a more vivid sense of the world through which the characters move. The music accompanying the fast-chase/slow-stalking/fast-chase progression of the climax helps heighten the suspense and build the excitement.

## Mechanics of the Movies

Films are everywhere now, almost as widely available as print or music. But how do they get made in the first place? “Making a movie” means two very different things. First, people make films with machines. Anyone with a pen and paper can write a novel, and a talented kid with a guitar can become a musician. Movies require much more. Even the simplest home video camera is based on fiendishly complex technology. A major film involves elaborate cameras, lighting equipment, multi-track sound-mixing studios, sophisticated laboratories, and computer-generated special effects. Making a movie also involves businesses. Companies manufacture the equipment, other companies provide funding for the film, still others distribute it, and finally theaters or other venues present the result to an audience. In the rest of this chapter, we’ll consider how these two sides of making movies—technology and business—shape film as an art.

## Illusion Machines

Moving-image media such as film and video couldn’t exist if human vision were perfect. Our eyes are very sensitive, but they can be tricked. As anyone who has paused a DVD knows, a film consists of a series of *frames*, or still pictures. Yet we don’t perceive the separate frames. Instead, we see continuous light and movement. What creates this impression?

No one knows the full answer. Many people have speculated that the effect results from “persistence of vision,” the tendency of an image to linger briefly on



our retina. Yet if this were the cause, we'd see a bewildering blur of superimposed stills instead of smooth action. At present, researchers believe that two psychological processes are involved in cinematic motion: critical flicker fusion and apparent motion.

If you flash a light faster and faster, at a certain point (around 50 flashes per second), you see not a pulsating light but a continuous beam. A film is usually shot and projected at 24 still frames per second. The projector shutter breaks the light beam once as a new image is slid into place and once while it is held in place. Thus each frame is actually projected on the screen twice. This raises the number of flashes to the threshold of what is called *critical flicker fusion*. Early silent films were shot at a lower rate (often 16 or 20 images per second), and projectors broke the beam only once per image. The picture had a pronounced flicker—hence an early slang term for movies, “flickers,” which survives today when people call a film a “flick.”

*Apparent motion* is a second factor in creating cinema's illusion. If a visual display is changed rapidly enough, our eye can be fooled into seeing movement. Neon advertising signs often seem to show a thrusting arrow, but that illusion is created simply by static lights flashing on and off at a particular rate. Certain cells in our eyes and brain are devoted to analyzing motion, and any stimulus resembling movement apparently tricks those cells into sending the wrong message.

Apparent motion and critical flicker fusion are quirks in our visual system, and technology can exploit those quirks to produce illusions. Some moving-image machines predate the invention of film (1.10, 1.11). Film as we know it came into being when photographic images were first imprinted on strips of flexible celluloid.

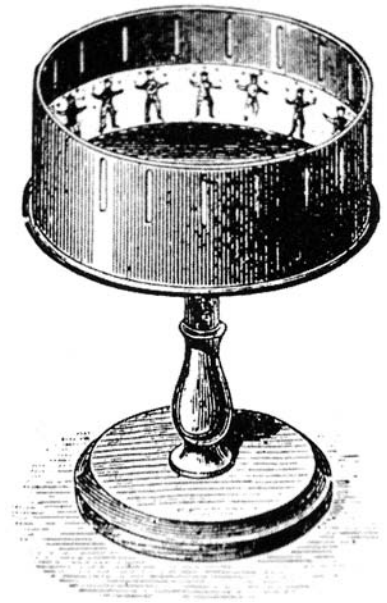
## Machines That Use Film

At all stages of a film's life, machines move the film strip one frame at a time past a light source. First, there is the *camera* (1.12). In a light-tight chamber, a drive mechanism feeds the unexposed motion picture film from a reel (a) past a lens (b) and aperture (c) to a take-up reel (d). The lens focuses light reflected from a scene onto each frame of film (e). The mechanism moves the film intermittently, with a brief pause while each frame is held in the aperture. A shutter (f) admits light through the lens only when each frame is unmoving and ready for exposure. The standard shooting rate for sound film is 24 frames per second (fps).

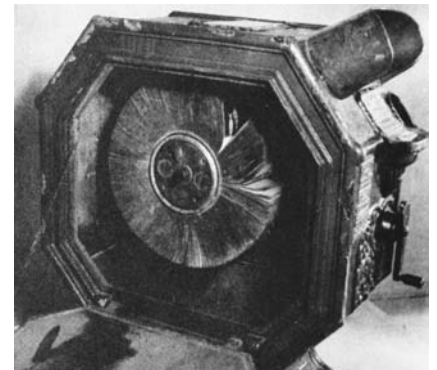
The projector is basically an inverted camera, with the light source inside the machine rather than in the world outside (1.13). A drive mechanism feeds the film from a reel (a) past a lens (b) and aperture (c) to a take-up reel (d). Light is beamed through the images (e) and magnified by the lens for projection on a screen. Again, a mechanism moves the film intermittently past the aperture, while a shutter (f) admits light only when each frame is pausing. As we've seen, the standard projection rate for sound film is 24 fps, and the shutter blocks and reveals each frame twice in order to reduce the flicker effect on the screen.

A feature-length film is a very long ribbon of images, about two miles for a two-hour movie. In most theaters, the projector carries the film at the rate of 90 feet per minute. In the typical theater, the film is mounted on one big platter, with another platter underneath to take it up after it has passed through the projector (1.14). In digital theatrical projection, the film is stored on discs.

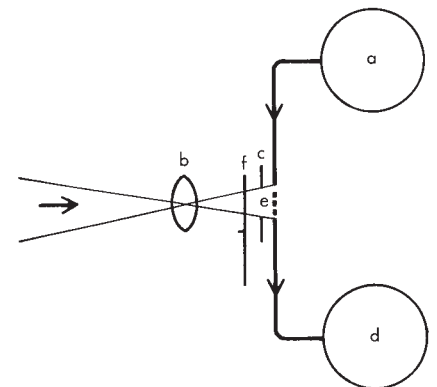
The film strip that emerges from the camera is usually a *negative*. That is, its colors and light values are the opposite of those in the original scene. For the images to be projected, a *positive* print must be made. This is done on another machine, the *printer*, which duplicates or modifies the footage from the camera. Like a projector, the printer controls the passage of light through film—in this case, a negative. Like a camera, it focuses light to form an image—in this case, on the unexposed roll of film. All printers are light-tight chambers that drive a negative or positive roll of film from a reel (a) past an aperture (b) to a take-up reel (c). At the same time, a roll of unexposed film (a', c') moves through the aperture (b), either



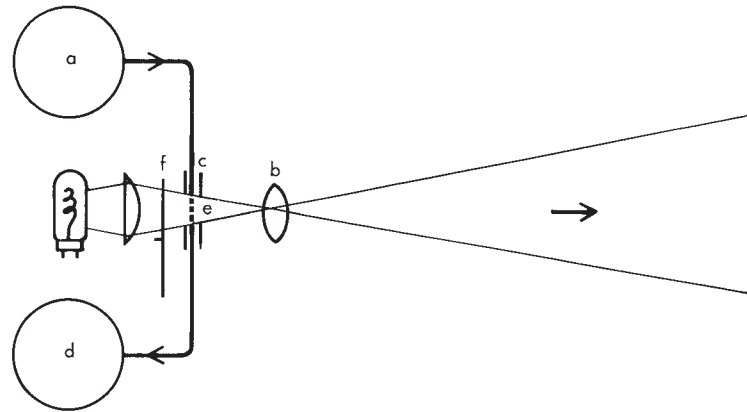
**1.10** The Zoetrope, which dates back to 1834, spun its images on a strip of paper in a rotating drum.



**1.11** The Mutoscope, an early-20th-century entertainment, displayed images by flipping a row of cards in front of a peephole.



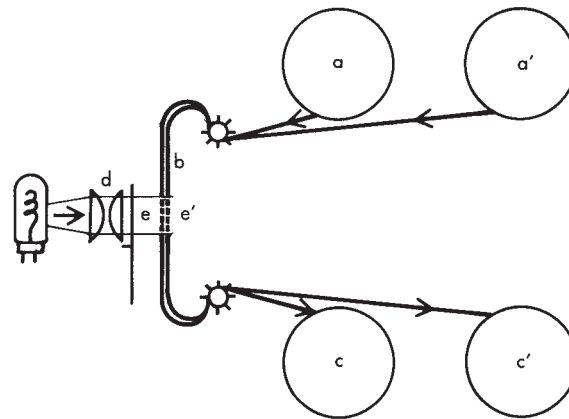
**1.12** The camera.



1.13 The projector.



1.14 Most multiscreen theaters use platter projection, which winds the film in long strips and feeds it to a projector (seen in the left rear). The film on the platters is an Imax 70mm print.



1.15 The contact printer.

intermittently or continuously. By means of a lens (d), light beamed through the aperture prints the image (e) on the unexposed film (e'). The two rolls of film may pass through the aperture simultaneously. A printer of this sort is called a *contact printer* (1.15). Contact printers are used for making work prints and release prints, as well as for various special effects.

Although the filmmaker can create nonphotographic images on the filmstrip by drawing, painting, or scratching, most filmmakers have relied on the camera, the printer, and other photographic technology.

If you were to handle the film that runs through these machines, you'd notice several things. One side is much shinier than the other. Motion picture film consists of a transparent acetate *base* (the shiny side), which supports an *emulsion*, layers of gelatin containing light-sensitive materials. On a black-and-white filmstrip, the emulsion contains grains of silver halide. When light reflecting from a scene strikes them, it triggers a chemical reaction that makes the crystals cluster into tiny specks. Billions of these specks are formed on each frame of exposed film. Taken together, these specks form a latent image that corresponds to the areas of light and dark in the scene filmed. Chemical processing makes the latent image visible as a configuration of black grains on a white ground. The resulting strip of images is the negative, from which positive prints can be struck.

Color film emulsion has more layers. Three of these contain chemical dyes, each one sensitive to a primary color (red, yellow, or blue). Extra layers filter out the light from other colors. During exposure and development, the silver halide crystals create an image by reacting with the dyes and other organic chemicals in the emulsion layers. With color negative film, the developing process yields an image that is opposite, or complementary, to the original color values: for example, blue shows up on the negative as yellow.

What enables film to run through a camera, a printer, and a projector? The strip is perforated along both edges, so that small teeth (called *sprockets*) in the machines can seize the perforations (sprocket holes) and pull the film at a uniform rate and smoothness. The strip also reserves space for a sound track.

The size and placement of the perforations and the area occupied by the sound track have been standardized around the world. So, too, has the width of the film strip, which is called the *gauge* and is measured in millimeters. Commercial theaters use 35mm film, but other gauges also have been standardized internationally: Super 8mm, 16mm, and 70mm (1.16–1.20).

Usually image quality increases with the width of the film because the greater picture area gives the images better definition and detail. All other things being equal, 35mm provides significantly better picture quality than does 16mm, and 70mm is superior to both. The finest image quality currently available for public screenings is that offered by the Imax system (1.21).

The sound track runs down along the side of the filmstrip. The sound track may be either *magnetic* or *optical*. In the magnetic type (1.20), one or more strips of magnetic recording tape run along the film's edges. During projection, the film's track is "read" by a sound head similar to that on a tape recorder. Magnetic tracks are nearly obsolete in theaters today.

Most filmstrips have an optical sound track, which encodes sonic information in the form of patches of light and dark running down along the frames. During production, electrical impulses from a microphone are translated into pulsations of light, which are photographically inscribed on the moving filmstrip. When the film is projected, the optical track produces varying intensities of light that are translated back into electrical impulses and then into sound waves. The optical sound track of 16mm film is on the right side (1.17), whereas 35mm puts an optical track on the left (1.18, 1.19). In each, the sound is encoded as *variable-area*, a wavy contour of black and white along the picture strip.

A film's sound track may be *monophonic* or *stereophonic*. The 16mm filmstrip (1.17) and the first 35mm film strip (1.18) have monophonic optical tracks. Stereophonic optical sound is registered as a pair of squiggles running down the left side (1.19). For digital sound, a string of dots and dashes running along the film's perforations, or between the perforations, or close to the very left edge of the frames provides the sound-track information. The projector scans these marks as if reading a bar code.





**1.16** Super 8mm has been a popular gauge for amateurs and experimental filmmakers. *Year of the Horse*, a concert film featuring Neil Young, was shot partly on Super 8.



**1.17** 16mm film is used for both amateur and professional film work. A variable-area optical sound track (p. 00) runs down the right side.



**1.18** 35mm is the standard theatrical film gauge. The sound track, a variable-area one (p. 00), runs down the left alongside the images.

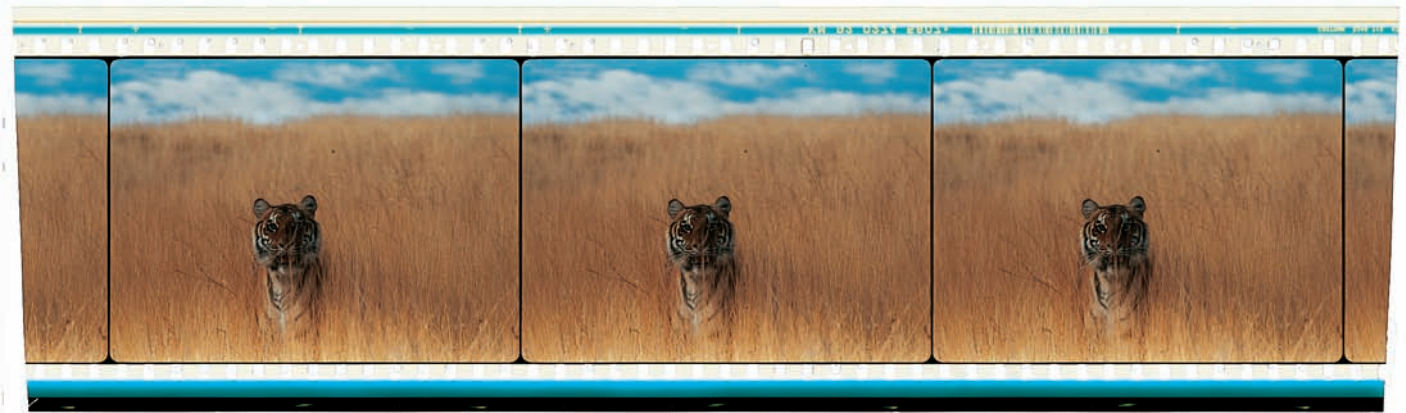


**1.19** In this 35mm strip from *Jurassic Park*, note the optical stereophonic sound track (p. 00), encoded as two parallel squiggles. The stripe along the left edge, the Morse code–like dots between the stereophonic track and the picture area, and the speckled areas around the sprocket holds indicate that the print can also be run on various digital sound systems.



**1.20** 70mm film, another theatrical gauge, was used for historical spectacles and epic action films into the 1990s. In this strip from *The Hunt for Red October*, a stereophonic magnetic sound track runs along both edges of the filmstrip.





**1.21** The Imax image is printed on 70mm film but runs horizontally along the strip, allowing each image to be 10 times larger than 35mm and triple the size of 70mm. The Imax film can be projected on a very large screen with no loss of detail.

It's odd to think that our memories of the films we love have their origins in something as inert-looking as a strip of perforated celluloid. With all their appeals to our emotions and imagination, movies depend on some very tangible materials and machines. Without them, the filmmaker would be as lost as a painter without paint. Much of the artistry we'll be examining in the chapters to come depends on how filmmakers choose to use the palette provided by technology.

## Machines That Use Digital Media

Digital cinema cameras gradually came into common use in the 1990s and early 2000s, about a hundred years after the initial spread of filmmaking. Some predicted that the digital revolution would soon make 35mm film obsolete. That didn't happen, because 35mm has many advantages that even high-end, high-definition (HD) video cannot duplicate.

Instead, a few filmmakers enthusiastically embraced HD, finding it cheaper, easier, and more flexible to use at every stage of production. Yet within the movie industry, most filmmakers have continued shooting on film, then taking advantage of digital tools for editing, special effects, and sound mixing.

In some ways, digital motion picture cameras are not that different from 35mm ones. They record scenes by using a lens to gather light. They have a viewer for the operator to frame the scene and controls to manipulate factors like the amount of light entering through the lens and the speed of recording. A casual observer probably couldn't tell the difference between a 35mm camera and a digital one. Indeed, manufacturers have tried to make digital cameras as familiar as possible to cinematographers reluctant to embrace the new technology. Some of these cameras can even use lenses made for traditional 35mm cameras.

The most important difference in a digital camera is the medium it records on. As the light passes through the lens, it hits a computer chip functioning as a sensor to convey visual information digitally, encoded as a complex series of 0's and 1's, onto digital tape, discs, memory cards, or hard drives. The material on these storage media can be loaded into computers after shooting ends, leaving the media free to be used again—thus eliminating the considerable cost of film stock. Even here, the recording unit that holds the tape and attaches to the camera looks something like a traditional film magazine that attaches to a 35mm camera (**1.22**).

As with film, there are different image formats of digital video (DV), and they are shot on different types of cameras. *Consumer* cameras are more or less the equivalent of Super 8mm. They give relatively low-resolution images and are mainly used by amateurs. These are the little cameras that fit in the palm of a hand



**1.22** The Panavision Genesis, which has been used on such films as *Superman Returns*. A recorder containing a digital tape cassette attaches to the rear or top. The tape can run for 50 minutes.

and are used to record a birthday party or a baseball game. Using consumer cameras, children can shoot and edit their own films with simple computer programs.

The next step up is the *prosumer* camera, comparable to 16mm. As the name implies, this type of camera appeals to both professionals and those amateurs enthusiastic enough to pay for a camera yielding better image quality. Independent filmmakers also use such cameras, which are cheaper than high-end ones but yield good enough results to show in festivals or sell on DVD.

Finally there are the professional HD digital cameras (1.22). These cameras have two big advantages over prosumer and consumer models: (1) they primarily use files with low or no compression, (2) they shoot at 24 fps. (Non-professional DV is shot at higher rates per second.) These factors make for higher image quality and ease of transfer onto 35mm film stock for release to theaters. Such cameras also have larger sensors behind the lenses, capturing higher-resolution images. Often these sensors are about the same size as a frame of 35mm film.

As with all digital technology, the storage capacity for digital files is constantly increasing. Digital recording capacities are measured in *pixels* (short for “picture elements”), the tiny dots that make up the electronic image on TVs and monitors. There are now four commonly used levels of resolution in professional digital recording: 720p, 1080p, 2K, and 4K. Since the information carried on each image increases both vertically and horizontally, each step up multiplies the resolution: 4K carries not twice, but four times the amount of information as 2K.

The 720p formula is used mainly in broadcast television and Internet distribution of HD video. George Lucas commissioned Sony to make a high-quality digital camera for *Star Wars: Episode II—Attack of the Clones*. It used the 1080p format, which has remained the most widely used standard in Hollywood. The digital camera Michael Mann used in making *Collateral* delivered 1080p images. (See 1.1.)

The company that introduced the first 4K camera, Red One, commissioned Peter Jackson to make a short, *Crossing the Line*, which was used in 2008 as a demonstration film at industry conventions. Steven Soderbergh used the same cameras for *Che* (2008), and the technology was quickly adopted. Many have claimed that 4K images are the equal in visual quality to those of 35mm.

Although research on and development of 6K systems is ongoing, it seems unlikely that film production will move beyond 4K in the near future. For one thing, digital exhibition has not spread widely, and most digital projectors are 2K or less. For another thing, beyond about the sixth row of a theater, the difference in detail between 2K and 4K is not visible to the human eye. Moreover, filming and project-



**1.23** In *Julien Donkey-Boy*, pixels and grain yield a unique texture, and the high contrast exaggerates pure colors and shapes to create a hallucinatory image.

ing at high resolution produces staggering quantities of data that need to be transferred, manipulated, and stored.

During the 1990s, low-budget filmmakers were drawn to the low costs and flexibility of DV. Lit by an experienced cinematographer, even consumer format video can look attractive, as in Spike Lee's *Bamboozled*, shot by Ellen Kuras. Perhaps most important, audiences don't notice shortcomings in image quality if the story is engrossing. Strong plots and performances helped carry *Chuck and Buck*, *Pieces of April*, *Personal Velocity: Three Portraits*, and other independent films shot on DV.

Some filmmakers have also seized upon DV's distinctive pictorial qualities. Lars von Trier's *Dancer in the Dark* uses saturated DV imagery to suggest the fantasy world of a young mother going blind. Harmony Korine shot *Julien Donkey-Boy* with mini-DV consumer cameras, transferred the footage to film, and reprinted it several times (1.23).

Some directors making big-budget films have embraced HD digital formats wholeheartedly. Lucas claimed that apart from creating spectacular special effects, using HD for *Attack of the Clones* and *Revenge of the Sith* saved millions of dollars. A comparable system was used for *Sin City*, which combined HD footage of the actors with graphic landscapes created in postproduction. Basing the entire project on digital technology allowed director Robert Rodriguez to edit, mix sound, and create special effects in his home studio in Austin, Texas. These two prominent directors thoroughly embraced the new format and vowed never to shoot on film again. Rodriguez declared, "I've abandoned film forever. You can't go back. It's like trying to go back to vinyl after you've got recordable DVD."

Within mainstream Hollywood filmmaking, however, these directors remain in the minority. The complexity of digital filming technology, the incompatibility among various makes of camera, and innovations in equipment have led many cinematographers and directors to stick with tried-and-true 35mm systems. They may also use both 35mm cameras and digital ones for the same film, exploiting the best capabilities of each. Despite shooting most of *Collateral* with digital cameras, for instance, Michael Mann chose 35mm for some interiors and for slow motion shots.

Some cinematographers dispute the notion that digital filmmaking saves money, citing extra time spent on the set solving glitches. Christian Berger, who shot Michael Haneke's *Caché*, complained, "We ended up using six cameras because they kept breaking, and we *still* had focus problems two or three times a day. . . . It all worked out in the end, but shooting digitally was definitely *not* cheaper for the producer."

The debate will no doubt continue, but for now, most directors and cinematographers are relying chiefly on film and turning to HD only for occasional scenes.

Most professional filmmaking, both 35mm and digital, is done on rented cameras. Older models continue to be available. The Viper model used for *Collateral* is still available, and 2K and 4K are not likely to make these obsolete. All yield an image of high enough quality to be acceptable to audiences when projected in theaters.

## Making the Movie: Film Production

Important as technology is, films are part of social institutions as well. Sometimes the social context is very intimate, as when a family records their lives on film to show friends and relations. But films that aim at the public enter a wider range of institutions. A movie typically goes through three phases: *production*, *distribution*, and *exhibition*. A group or company makes the film, a distribution company rents copies to theater chains, and local theaters exhibit the film. Later, the DVD version is distributed to chain stores or rental shops, and it's exhibited on TV monitors, computer screens, or portable displays. For video on demand and many amateur videos, the Internet serves as a distribution medium.

The whole system depends on having movies to circulate, so let's start by considering the process of production. Most films go through four distinct phases:

1. *Scriptwriting and funding*. The idea for the film is developed and a screenplay is written. The filmmakers also acquire financial support for the project.
2. *Preparation for filming*. Once a script is more or less complete and at least some funding is assured, the filmmakers plan the physical production.
3. *Shooting*. The filmmakers create the film's images and sounds.
4. *Assembly*. The images and sounds are combined in their final form. This involves cutting picture and sound, executing special effects, inserting music or extra dialogue, and adding titles.

### CONNECT TO THE BLOG

In "Do filmmakers deserve the last word?" we suggest why we should always be cautious in accepting claims filmmakers offer.

See [www.davidbordwell.net/blog/?p=1174](http://www.davidbordwell.net/blog/?p=1174).

The phases can overlap. Filmmakers may be scrambling for funding while shooting and assembling the film, and some assembly is usually taking place during filming. In addition, each stage modifies what went before. The idea for the film may be radically altered when the script is hammered out; the script's presentation of the action may be drastically changed in shooting; and the material that is shot takes on new significance in the process of assembly. As the French director Robert Bresson puts it, "A film is born in my head and I kill it on paper. It is brought back to life by the actors and then killed in the camera. It is then resurrected into a third and final life in the editing room where the dismembered pieces are assembled into their finished form."

### CONNECT TO THE BLOG

Aspiring filmmakers might want to check out our entry "The magic number 30, give or take 4."

See [www.davidbordwell.net/blog/?p=1300](http://www.davidbordwell.net/blog/?p=1300).

These four phases include many particular jobs. Most films that we see in theaters result from dozens of specialized tasks carried out by hundreds of experts. This fine-grained division of labor has proved to be a reliable way to prepare, shoot, and assemble large-budget movies. On smaller productions, individuals perform several roles. A director might also edit the film, or the principal sound recordist on the set might also oversee the sound mixing. For *Tarnation*, a memoir of growing up in a troubled family, Jonathan Caouette assembled 19 years worth of photographs, audiotape, home movies, and videotape. Some of the footage was filmed by his parents, and some by himself as a boy. Caouette shot new scenes, edited everything on iMovie, mixed the sound, and transferred the result to digital video. In making this personal documentary, Caouette executed virtually all the phases of film production himself.

## The Scriptwriting and Funding Phase

Two roles are central in this phase: producer and screenwriter. The tasks of the *producer* are chiefly financial and organizational. She or he may be an "independent"



producer, unearthing film projects and trying to convince production companies or distributors to finance the film. Or the producer may work for a distribution company and generate ideas for films. A studio may also hire a producer to put together a particular package.

The producer nurses the project through the scriptwriting process, obtains financial support, and arranges to hire the personnel who will work on the film. During shooting and assembly, the producer usually acts as the liaison between the writer or director and the company that is financing the film. After the film is completed, the producer will often have the task of arranging the distribution, promotion, and marketing of the film and of monitoring the paying back of the money invested in the production.

A single producer may take on all these tasks, but in the contemporary American film industry, the producer's work is further subdivided. The *executive producer* is often the person who arranged the financing for the project or obtained the literary property (although many filmmakers complain that the credit of executive producer is sometimes given to people who did little work). Once the production is under way, the *line producer* oversees the day-to-day activities of director, cast, and crew. The line producer is assisted by an *associate producer*, who acts as a liaison with laboratories or technical personnel.

The chief task of the *screenwriter* is to prepare the *screenplay* (or script). Sometimes the writer will send a screenplay to an agent, who submits it to a production company. Or an experienced screenwriter meets with a producer in a "pitch session," where the writer can propose ideas for scripts. The first scene of Robert Altman's *The Player* satirizes pitch sessions by showing celebrity screenwriters proposing strained ideas like "Pretty Woman meets *Out of Africa*." Alternatively, sometimes the producer has an idea for a film and hires a screenwriter to develop it. This approach is common if the producer has bought the rights to a novel or play and wants to adapt it for the screen.

The screenplay goes through several stages. These include a *treatment*, a synopsis of the action; then one or more full-length scripts; and a final version, the *shooting script*. Extensive rewriting is common, and writers often must resign themselves to seeing their work recast over and over.

Shooting scripts are constantly altered, too. Some directors allow actors to modify the dialogue, and problems on location or on a set may necessitate changes in the scene. In the assembly stage, script scenes that have been shot are often condensed, rearranged, or dropped entirely.

If the producer or director finds one writer's screenplay unsatisfactory, other writers may be hired to revise it. Most Hollywood screenwriters earn their living by rewriting other writers' scripts. As you can imagine, this often leads to conflicts about which writer or writers deserve onscreen credit for the film. In the American film industry, these disputes are adjudicated by the Screen Writers' Guild.

As the screenplay is being written or rewritten, the producer is planning the film's finances. He or she has sought out a director and stars to make the package seem a promising investment. The producer must prepare a budget spelling out *above-the-line costs* (the costs of literary property, scriptwriter, director, and major cast) and *below-the-line costs* (the expenses allotted to the crew, secondary cast, the shooting and assembly phases, insurance, and publicity). The sum of above- and below-the-line costs is called the *negative cost* (that is, the total cost of producing the film's master negative). In 2005, the average Hollywood negative cost ran to about \$60 million.

Some films don't follow a full-blown screenplay. Documentaries, for instance, are difficult to script fully in advance. In order to get funding, however, the projects typically require a summary or an outline, and some documentarists prefer to have a written plan even if they recognize that the film will evolve in the course of filming. When making a **compilation documentary** from existing footage, the filmmakers often prepare an outline of the main points to be covered in the voice-over commentary before writing a final version of the text keyed to the image track.

"A screenplay bears somewhat the same relationship to a movie as the musical score does to a symphonic performance. There are people who can read a musical score and 'hear' the symphony—but no two directors will see the same images when they read a movie script. The two-dimensional patterns of colored light involved are far more complex than the one-dimensional thread of sound."

— Arthur C. Clarke, collaborator on screenplay for *2001: A Space Odyssey*



**1.24** A page from the storyboard for Hitchcock's *The Birds*.

## The Preparation Phase

When funding is more or less secure and the script is solid enough to start filming, the filmmakers can prepare for the physical production. In commercial filmmaking, this stage of activity is called **pre-production**. The *director*, who may have come on board the project at an earlier point, plays a central role in this and later phases. The director coordinates the staff to create the film. Although the director's authority isn't absolute, he or she is usually considered the person most responsible for the final look and sound of the film.

At this point, the producer and the director set up a production office, hire crew and cast the roles, and scout locations for filming. They also prepare a daily schedule for shooting. This is done with an eye on the budget. The producer assumes that the separate shots will be made out of continuity—that is, in the most convenient order for production—and put in proper order in the editing room. Since transporting equipment and personnel to a location is a major expense, producers usually prefer to shoot all the scenes taking place in one location at one time. For *Jurassic Park*, the main characters' arrival on the island and their departure at the end of the film were both shot at the start of production, during the three weeks on location in Hawaii. A producer must also plan to shoot around actors who can't be on the set every day. Many producers try to schedule the most difficult scenes early, before cast and crew begin to tire. For *Raging Bull*, the complex prizefight sequences were filmed first, with the dialogue scenes shot later. Keeping all such contingencies in mind, the producer comes up with a schedule that juggles cast, crew, locations, and even seasons most efficiently.

During pre-production, several things are happening at the same time under the supervision of the director and producer. A writer may be revising the screenplay while a casting supervisor is searching out actors. Because of the specialized division of labor in large-scale production, the director orchestrates the contributions of several units. He or she works with the *set unit*, or *production design unit*, headed by a *production designer*. The production designer is in charge of visualizing the film's settings. This unit creates drawings and plans that determine the architecture and the color schemes of the sets. Under the production designer's supervision, an *art director* oversees the construction and painting of the sets. The *set decorator*, often someone with experience in interior decoration, modifies the sets for specific filming purposes, supervising workers who find props and a *set dresser* who arranges things on the set during shooting. The *costume designer* is in charge of planning and executing the wardrobe for the production.

Working with the production designer, a *graphic artist* may be assigned to produce a **storyboard**, a series of comic strip–like sketches of the shots in each scene, including notations about costume, lighting, and camera work (**1.24**). Most directors do not demand a storyboard for every scene, but action sequences and shots using special effects or complicated camera work tend to be storyboarded in detail. The storyboard gives the cinematography unit and the special-effects unit a preliminary sense of what the finished shots should look like. The storyboard images may be filmed, cut together, and played with sound to help visualize the scene. This is one form of *animatics*.

Computer graphics can take planning further. The process of **previsualization**, or “previz,” reworks the storyboards into three-dimensional animation, complete with moving figures, dialogue, sound effects, and music. Contemporary software can create settings and characters reasonably close to what will be filmed, and textures and shading can be added. Previsualization animatics are most often used to plan complicated action scenes or special effects (**1.25**). For *Star Wars: Episode III—Revenge of the Sith*, George Lucas's previsualization team created 6500 detailed shots, a third of which formed the basis for shots in the finished film. In addition, previsualization helps the director test options for staging scenes, moving cameras, and timing sequences.



1.25 Animated previsualization from *King Kong*.

## The Shooting Phase

Although the term *production* refers to the entire process of making a film, Hollywood filmmakers also use it to refer to the *shooting phase*. Shooting is also known as *principal photography*.

During shooting, the director supervises what is called the *director's crew*, consisting of these personnel:

- The *script supervisor*, known in the classic studio era as a “script girl.” (Today one-fifth of Hollywood script supervisors are male.) The script supervisor is in charge of all details of **continuity** from shot to shot. The supervisor checks details of performers' appearances (in the last scene, was the carnation in the left or right buttonhole?), props, lighting, movement, camera position, and the running time of each shot.
- The *first assistant director (AD)*, a jack-of-all-trades who, with the director, plans each day's shooting schedule. The AD sets up each shot for the director's approval while keeping track of the actors, monitoring safety conditions, and keeping the energy level high.
- The *second assistant director*, who is the liaison among the first AD, the camera crew, and the electricians' crew.
- The *third assistant director*, who serves as messenger for director and staff.
- The *dialogue coach*, who feeds performers their lines and speaks the lines of offscreen characters during shots of other performers.
- The *second unit director*, who films stunts, location footage, action scenes, and the like, at a distance from where principal shooting is taking place.

The most visible group of workers is the *cast*. The cast may include *stars*—well-known players assigned to major roles and likely to attract audiences. The cast also includes *supporting players*, or performers in secondary roles; *minor players*; and *extras*, those anonymous persons who pass by in the street, come together for crowd scenes, and occupy distant desks in large office sets. One of the director's major jobs is to shape the performances of the cast. Most directors spend a good deal of time explaining how a line or gesture should be rendered, reminding the actor of the place of this scene in the overall film, and helping the actor create a coherent performance. The first AD usually works with the extras and takes charge of arranging crowd scenes.

“If you wander unbidden onto a set, you'll always know the AD because he or she is the one who'll probably throw you off. That's the AD yelling, 'Places!' 'Quiet on the set!' 'Lunch—one-half hour!' and 'That's a wrap, people!' It's all very ritualistic, like reveille and taps on a military base, at once grating and oddly comforting.”

— Christine Vachon, independent producer, on assistant directors



On some productions, there are still more specialized roles. *Stunt artists* will be supervised by a *stunt coordinator*; professional dancers will work with a *choreographer*. If animals join the cast, they will be handled by a *wrangler*. There have been pig wranglers (*Mad Max Beyond Thunder Dome*), snake wranglers (*Raiders of the Lost Ark*), and spider wranglers (*Arachnophobia*).

Another unit of specialized labor is the *photography unit*. The leader is the *cinematographer*, also known as the *director of photography* (or *DP*). The cinematographer is an expert on photographic processes, lighting, and camera technique. We have already seen how important Michael Mann's two DPs, Dion Beebe and Paul Cameron, were in achieving the desired look for *Collateral* (pp. 000–00). The cinematographer consults with the director on how each scene will be lit and filmed (1.26). The cinematographer supervises the following:

- The *camera operator*, who runs the machine and who may also have assistants to load the camera, adjust and follow focus, push a dolly, and so on.
- The *key grip*, who supervises the *grips*. These workers carry and arrange equipment, props, and elements of the setting and lighting.
- The *gaffer*, the head electrician who supervises the placement and rigging of the lights.

Parallel to the photography unit is the *sound unit*. This is headed by the *production recordist* (also called the *sound mixer*). The recordist's principal responsibility is to record dialogue during shooting. Typically, the recordist uses a tape or digital recorder, several sorts of microphones, and a console to balance and combine the inputs. The recordist also tries to capture some ambient sound when no actors are speaking. These bits of room tone are later inserted to fill pauses in the dialogue. The recordist's staff includes the following:

- The *boom operator*, who manipulates the boom microphone and conceals radio microphones on the actors.
- The *third man*, who places other microphones, lays sound cables, and is in charge of controlling ambient sound.



**1.26** On the set of *Citizen Kane*, Orson Welles directs from his wheelchair on the far right, cinematographer Gregg Toland crouches below the camera, and actress Dorothy Comingore kneels at the left. The script supervisor is seated in the left background.





**1.27** Sculpting a model dinosaur for *Jurassic Park: The Lost World*. The model was scanned into a computer for digital manipulation.

Some productions also have a *sound designer*, who enters the process during the preparation phase and who plans a sonic style appropriate for the entire film.

A *visual-effects unit*, overseen by the *visual-effects supervisor*, is charged with preparing and executing process shots, miniatures, matte work, computer-generated graphics, and other technical shots (1.27). During the planning phase, the director and the production designer will have determined what effects are needed, and the supervisor consults with the director and the cinematographer on an ongoing basis. The visual-effects unit can number hundreds of workers, from puppet- and model-makers to specialists in digital compositing.

A miscellaneous unit includes a *makeup staff*, a *costume staff*, *hairdressers*, and *drivers* who transport cast and crew. During shooting, the producer is represented by a unit called the *producer's crew*. Central here is the *line producer*, who manages daily organizational business, such as arranging for meals and accommodations. A *production accountant* (or *production auditor*) monitors expenditures, a *production secretary* coordinates telephone communications among units and with the producer, and *production assistants* (or *PAs*) run errands. Newcomers to the film industry often start out working as production assistants.

All this coordinated effort, involving perhaps hundreds of workers, results in many thousands of feet of exposed film and recorded sound-on-tape. For every shot called for in the script or storyboard, the director usually does several takes, or versions. For instance, if the finished film requires one shot of an actor saying a line, the director may do several takes of that speech, each time asking the actor to vary the delivery. Not all takes are printed, and only one of those becomes the shot included in the finished film. Extra footage can be used in coming-attractions trailers and electronic press kits.

Because scenes seldom are filmed in story order, the director and crew must have some way of labeling each take. As soon as the camera starts, one of the cinematographer's staff holds up a *slate* before the lens. On the slate is written the production, scene, shot, and take. A hinged arm at the top, the clapboard, makes a sharp smack that allows the recordist to synchronize the sound track with the footage in the assembly phase (1.28). Thus every take is identified for future reference. There are also electronic slates that keep track of each take automatically and provide digital readouts.

In filming a scene, most directors and technicians follow an organized procedure. While crews set up the lighting and test the sound recording, the director rehearses the actors and instructs the cinematographer. The director then supervises the filming of a *master shot*. The master shot typically records the entire action and



**1.28** A slate shown at the beginning of a shot in Jean-Luc Godard's *La Chinoise*.



**1.29** For the climax of *Jurassic Park*, the actors were shot in the set of the visitor's center, but the velociraptors and the *Tyrannosaurus rex* were computer-generated images added later.

dialogue of the scene. There may be several takes of the master shot. Then portions of the scene are restaged and shot in closer views or from different angles. These shots are called *coverage*, and each one may require many takes. Today most directors shoot a great deal of coverage, often by using two or more cameras filming at the same time. The script supervisor checks to ensure that details are consistent within all these shots.

For most of film history, scenes were filmed with a single camera, which was moved to different points for different setups. More recently, under pressure to finish principal photography as quickly as possible, the director and the camera unit might use two or more cameras. Action scenes are often shot from several angles simultaneously because chases, crashes, and explosions are difficult to repeat for retakes. The battle scenes in *Gladiator* were filmed by 7 cameras, whereas 13 cameras were used for stunts in *XXX*. For dialogue scenes, a common tactic is to film with an A camera and a B camera, an arrangement that can capture two actors in alternating shots. The lower cost of digital video cameras has allowed some directors to experiment with shooting conversations from many angles at once, hoping to capture unexpected spontaneity in the performance. Some scenes in Lars von Trier's *Dancer in the Dark* employed a hundred digital cameras.

When special effects are to be included, the shooting phase must carefully plan for them. In many cases, actors will be filmed against blue or green backgrounds so that their figures can be inserted into computer-created settings. Or the director may film performers with the understanding that other material will be composited into the frame (1.29). If a moving person or animal needs to be created by computer, a specialized unit will use *motion capture*. Here small sensors are attached all over the body of the subject, and as that subject moves against a blank background or a set, a special camera records the movement (1.30, 1.31). Each sensor provides a point in a wire-frame figure on a computer. That image can then be animated and built up to a completely rendered person or animal to be inserted digitally into the film.

## The Assembly Phase

Filmmakers call the assembly phase **post-production**. (If something goes wrong, someone may promise to “fix it in post.”) Yet this phase does not begin after the shooting is finished. Rather, post-production staff members work behind the scenes throughout shooting.

Before the shooting begins, the director or producer probably hires an *editor* (also known as the *supervising editor*). This person catalogues and assembles the takes produced during shooting. The editor also works with the director to make creative decisions about how the footage can best be cut together.



**1.30** For *Iron Man*, Robert Downey Jr. performed in a motion-capture suit covered with sensors. Zoetrope, which dates back to 1834, spun its images on a strip of paper in a rotating drum.



**1.31** The same scene with computer animation partially added over his figure.

Because each shot usually exists in several takes, because the film is shot out of story order, and because the master-shot/coverage approach yields so much footage, the editor's job can be a huge one. A 100-minute feature, which amounts to about 9000 feet of 35mm film, may have been carved out of 500,000 feet of film. For this reason, postproduction on major Hollywood pictures often takes up to seven months. Sometimes several editors and assistants are brought in.

Typically, the editor receives the processed footage from the laboratory as quickly as possible. This footage is known as the *dailies* or the *rushes*. The editor inspects the dailies, leaving it to the *assistant editor* to synchronize image and sound and to sort the takes by scene. The editor meets with the director to examine the dailies, or if the production is filming far away, the editor informs the director of how the footage looks. Since retaking shots is costly and troublesome, constant checking of the dailies is important for spotting any problems with focus, exposure, framing, or other visual factors. From the dailies, the director selects the best takes, and the editor records the choices. To save money, “digital dailies” are often shown

*“A couple of guys in a coffee shop set out to write a gag; a couple of guys with a camera set out to film a gag; a couple of guys in an editing room set out to make sense of the trash that’s been dumped on their desks.”*

— David Mamet, director, *The Spanish Prisoner* and *Redbelt*

### SOME TERMS AND ROLES IN FILM PRODUCTION

The rise of packaged productions, pressures from unionized workers, and other factors have led producers to credit everyone who worked on a film. Meanwhile, the specialization of large-scale filmmaking has created its own jargon. Some of the most colorful terms are explained in the text. Here are some other terms that you may see in a film's credits.

**ACE:** After the name of the editor; abbreviation for the American Cinema Editors, a professional association.

**ASC:** After the name of the director of photography; abbreviation for the American Society of Cinematographers, a professional association. The British equivalent is the BSC.

**Additional photography:** Crew shooting footage apart from the *principal photography*, supervised by the director of photography.

**Best boy:** Term from the classic studio years, originally applied to the gaffer's assistant. Today film credits may list both a *best boy electric* and a *best boy grip*, the assistant to the key grip.

**Casting director:** Member who searches for and auditions performers for the film, and suggests actors for *leading roles* (principal characters) and *character parts* (fairly standardized or stereotyped roles). She or he may also cast *extras* (background or nonspeaking roles).

**Clapper boy:** Crew member who operates the clapboard (slate) that identifies each take.

**Concept artist:** Designer who creates illustrations of the settings and costumes that the director has in mind for the film.

**Dialogue editor:** Sound editor specializing in making sure recorded speech is audible.

**Dolly grip:** Crew member who pushes the dolly that carries the camera, either from one setup to another or during a take for moving camera shots.

**Foley artist:** Sound-effects specialist who creates sounds of body movement by walking or by moving materials across large trays of different substances (sand, earth, glass, and so on). Named for Jack Foley, a pioneer in postproduction sound.

to the producer and director, but since video can conceal defects in the original footage, editors check the original shots before cutting the film.

As the footage accumulates, the editor assembles it into a *rough cut*—the shots loosely strung in sequence, without sound effects or music. Rough cuts tend to run long—the rough cut for *Apocalypse Now* ran 7½ hours. From the rough cut, the editor, in consultation with the director, builds toward a *fine cut* or *final cut*. The unused shots constitute the *outtakes*. While the final cut is being prepared, a *second unit* may be shooting *inserts*, footage to fill in at certain places. These are typically long shots of cities or airports or close-ups of objects. At this point, titles are prepared, and further laboratory work or special-effects work may be done.

Until the mid-1980s, editors cut and spliced the *work print*, footage printed from the camera negative. In trying out their options, editors were obliged to rearrange the shots physically. Now virtually all commercial films are edited digitally. The dailies are transferred first to tape or disc, then to a hard drive. The editor enters notes on each take directly into a computer database. Such digital editing systems, usually known as *nonlinear* systems, permit random access to the entire store of footage. The editor can call up any shot, paste it alongside any other shots, trim it, or junk it. Some systems allow special effects and music to be tried out as well. Although nonlinear systems have greatly speeded up the process of cutting, the editor usually asks for a 35mm projection print of key scenes in order to check for color, details, and pacing.

As the editing team puts the footage in order, other members of the team work to manipulate the look of the shots via computer. If the footage has been shot on film, it is scanned frame by frame into computer files to create a *digital intermediate* (DI). The DI is manipulated in many ways, including changing its look through *digital color grading*. The color grader may work alone on a low-budget film or, on a larger one, supervise a group of assistants.



**Greenery man:** Crew member who chooses and maintains trees, shrubs, and grass in settings.

**Lead man:** Member of set crew responsible for tracking down various props and items of decor for the set.

**Loader:** Member of photography unit who loads and unloads camera magazines, as well as logging the shots taken and sending the film to the laboratory.

**Matte artist:** Member of special-effects unit who paints backdrops that are then photographically or digitally incorporated into a shot in order to suggest a particular setting.

**Model maker:** (1) Member of production design unit who prepares architectural models for sets to be built. (2) Member of the special-effects unit who fabricates scale models of locales, vehicles, or characters to be filmed as substitutes for full-size ones.

**Property master:** Member of set crew who supervises the use of all *props*, or movable objects in the film.

**Publicist, unit publicist:** Member of producer's crew who creates promotional material regarding the production. The publicist may arrange for press and television interviews with the director and stars and for coverage of the production in the mass media.

**Scenic artist:** Member of set crew responsible for painting surfaces of set.

**Still photographer:** Member of crew who takes photographs of scenes and behind-the-scenes shots of cast members and others. These photographs may be used to check lighting or set design or color, and many will be used in promoting and publicizing the film.

**Timer, color timer:** Laboratory worker who inspects the negative film and adjusts the printer light to achieve consistency of color across the finished product.

**Video assist:** The use of a video camera mounted alongside the motion picture camera to check lighting, framing, or performances. In this way, the director and the cinematographer can try out a shot or scene on tape before committing it to film.

For special effects, filmmakers turn to computer-generated imagery (CGI). Their tasks may be as simple as deleting distracting background elements or building a crowd out of a few spectators. George Lucas has claimed that if an actor blinked at the wrong time, he would digitally erase the blink. CGI can also create imagery that would be virtually impossible with photographic film (1.32). Computers can conjure up photorealistic characters such as Gollum in *The Lord of the Rings*. (See p. 000.) Fantasy and science fiction have fostered the development of CGI, but all genres have benefited, from the comic multiplication of a single actor in *Charlie and the Chocolate Factory* to the grisly realism of the digitally enhanced Omaha Beach assault in *Saving Private Ryan*. In *The Curious Case of Benjamin*



**1.32** In the chase through the airways of Coruscant in *Attack of the Clones*, the actor was shot against a blue or green screen, and the backgrounds and moving vehicles were created through CGI.

“[ADR for *Apocalypse Now*] was tremendously wearing on the actors because the entire film is looped, and of course all of the sound for everything had to be redone. So the actors were locked in a room for days and days on end shouting. Either they’re shouting over the noise of the helicopter, or they’re shouting over the noise of the boat.”

— Walter Murch, sound designer

*Button*, CGI substituted for make-up, allowing Brad Pitt and Cate Blanchett to plausibly portray their characters through youth to old age.

Once the shots are arranged in something approaching final form, the *sound editor* takes charge of building up the sound track. The director, the composer, the picture editor, and the sound editor view the film and agree on where music and effects will be placed, a process known as *spotting*. The sound editor may have a staff whose members specialize in mixing dialogue, music, or sound effects.

Surprisingly little of the sound recorded during filming winds up in the finished movie. Often half or more of the dialogue is rerecorded in postproduction, using a process known as *automated dialogue replacement (ADR)*. ADR usually yields better quality than location sound does. With the on-set recording serving as a *guide track*, the sound editor records actors in the studio speaking their lines (called *dubbing* or *looping*). Nonsynchronized dialogue such as the babble of a crowd (known in Hollywood as “walla”) is added by ADR as well.

Similarly, very few of the noises we hear in a film were recorded during filming. A sound editor adds sound effects, drawing on the library of stock sounds or creating particular effects for the film. Sound editors routinely manufacture footsteps, car crashes, pistol shots, and fists thudding into flesh (often produced by whacking a watermelon with an axe). In *Terminator 2*, the sound of the T-1000 cyborg passing through jail cell bars is that of dog food sliding slowly out of a can. Sound-effects technicians have sensitive hearing. One veteran noted the differences among doors: “The bathroom door has a little air as opposed to the closet door. The front door has to sound solid; you have to hear the latch sound. . . . Don’t just put in any door, make sure it’s right.”

Like picture editing, modern sound editing relies on computer technology. The editor can store recorded sounds in a database, classifying and rearranging them in any way desired. A sound’s qualities can be modified digitally—clipping off high or low frequencies and changing pitch, reverberation, equalization, or speed. The boom and throb of underwater action in *The Hunt for Red October* were slowed down and reprocessed from such mundane sources as a diver plunging into a swimming pool, water bubbling from a garden hose, and the hum of Disneyland’s air-conditioning plant. One technician on the film called digital sound editing “sound sculpting.”

During the spotting of the sound track, the film’s *composer* enters the assembly phase as well. The composer compiles cue sheets that list exactly where the music will go and how long it should run. The composer writes the score, although she or he will probably not orchestrate it personally. While the composer is working, the rough cut is synchronized with a *temp dub*—accompaniment pulled from recorded songs or classical pieces. Musicians record the score with the aid of a *click track*, a taped series of metronome beats synchronized with the final cut.

Dialogue, effects, and music are recorded on separate tracks, and each type of sound, however minor, will occupy a separate track. During the mixing, for each scene, the image track is run over, once for each sound, to ensure proper synchronization. The specialist who performs the task is the *rerecording mixer*, usually supervising a team of mixers. Each scene may involve dozens of tracks of individual sounds, which are all mixed together. Equalization, filtering, and other adjustment take place at this stage. The director typically oversees the final mixing session, where final adjustments to the sound result in the final mix. So many tracks are involved that the director often has the ability to change even the musical orchestration, eliminating instruments or raising the volume of certain sections of the orchestra. Once fully mixed, the master track is transferred onto 35mm sound-recording film, which encodes it as optical or digital information.

The film’s *camera negative*, which was the source of the dailies and the work print, is too precious to serve as the source for final prints. Traditionally, from the negative footage, the laboratory draws an *interpositive*, which in turn provides an *internegative*. The internegative is then assembled in accordance with the final cut, and it serves as the primary source of future prints. An alternative is to create a

*digital intermediate*. Here the negative is scanned digitally, frame by frame, at high resolution. The result is then recorded back to film as an internegative. The digital intermediate allows the cinematographer to correct color, remove scratches and dust, and add special effects easily.

Once the internegative has been created, the master sound track is synchronized with it. The first positive print, complete with picture and sound, is called the *answer print*. After the director, producer, and cinematographer have approved an answer print, *release prints* are made for distribution. Using a digital intermediate makes it possible to generate additional internegatives as old ones wear out, all without any wear on the original negative or interpositive.

The work of production does not end when the final theatrical version has been assembled. In consultation with the producer and the director, the postproduction staff prepares airline and broadcast television versions. For a successful film, a director's cut or an extended edition may be released on DVD. In some cases, different versions may be prepared for different countries. Scenes in Sergio Leone's *Once upon a Time in America* were completely rearranged for its American release. European prints of Stanley Kubrick's *Eyes Wide Shut* featured more nudity than did American ones, in which some naked couples were blocked by digital figures added to the foreground. Once the various versions are decided upon, each is copied to a master videotape or hard drive, the source of future versions. This video transfer process often demands new judgments about color quality and sound balance.

Many fictional films have been made about the process of film production. Federico Fellini's *8½* concerns itself with the preproduction stage of a film that is abandoned before shooting starts. François Truffaut's *Day for Night*, David Mamet's *State and Main*, Christopher Guest's *For Your Consideration*, and Tom DiCillo's *Living in Oblivion* all center on the shooting phase. The action of Brian De Palma's *Blow Out* occurs while a low-budget thriller is in sound editing. *Singin' in the Rain* follows a single film through the entire process, with a gigantic publicity billboard filling the final shot.

## Artistic Implications of the Production Process

Every artist works within constraints of time, money, and opportunity. Of all the arts, filmmaking is one of the most constraining. Budgets must be maintained, deadlines must be met, weather and locations are unpredictable, and the coordination of any group of people involves unforeseeable twists and turns. Even a Hollywood blockbuster, which might seem to offer unlimited freedom, is actually confining on many levels. Big-budget filmmakers sometimes get tired of coordinating hundreds of staff and wrestling with million-dollar decisions, and they start to long for smaller projects that offer more time to reflect on what might work best.

We appreciate films more when we realize that in production, every film is a compromise made within constraints. When Mark and Michael Polish conceived their independent film *Twin Falls Idaho*, they had planned for the story to unfold in several countries. But the cost of travel and location shooting forced them to rethink the film's plot: "We had to decide whether the film was about twins or travel." Similarly, the involvement of a powerful director can reshape the film at the screenplay stage. In the original screenplay of *Witness*, the protagonist was Rachel, the Amish widow with whom John Book falls in love. The romance and Rachel's confused feelings about Book formed the central plot line. But the director, Peter Weir, wanted to emphasize the clash between pacifism and violence. So William Kelley and Earl Wallace revised their screenplay to stress the mystery plot line and to center the action on Book and the introduction of urban crime into the peaceful Amish community. Given the new constraints, the screenwriters found a new form for *Witness*.

Some filmmakers struggle against their constraints, pushing the limits of what's considered doable. The production of a film we'll study in upcoming chapters,

*Citizen Kane*, was highly innovative on many fronts. Yet even this project had to accept studio routines and the limits of current technology. More commonly, a filmmaker works with the same menu of choices available to others. In directing *Collateral*, Michael Mann made creative choices about how to use digital cameras, low lighting levels, and script structure that other filmmakers working in 2004 could have made—except that Mann saw new ways of employing such techniques. His choices even led to experimentation with a new type of lighting device, the ELD panels for the cab interior. The overall result was a visual style that no other film had ever achieved, though others soon imitated it.

Everything we notice on the screen in the finished movie springs from decisions made by filmmakers during the production process. Starting our study of film art with a survey of production allows us to understand some of the possibilities offered by images and sounds. Later chapters will discuss the artistic consequences of decisions made in production—everything from storytelling strategies to techniques of staging, shooting, editing, and sound work. By choosing within production constraints, filmmakers create film form and style.

## Modes of Production

### Large-Scale Production

The fine-grained division of labor we've been describing is characteristic of *studio* filmmaking. A studio is a company in the business of manufacturing films. The most famous studios flourished in Hollywood from the 1920s to the 1960s—Paramount, Warner Bros., Columbia, and so on. These companies owned equipment and extensive physical plants, and they retained most of their workers on long-term contracts. Each studio's central management planned all projects, then delegated authority to individual supervisors, who in turn assembled casts and crews from the studio's pool of workers.

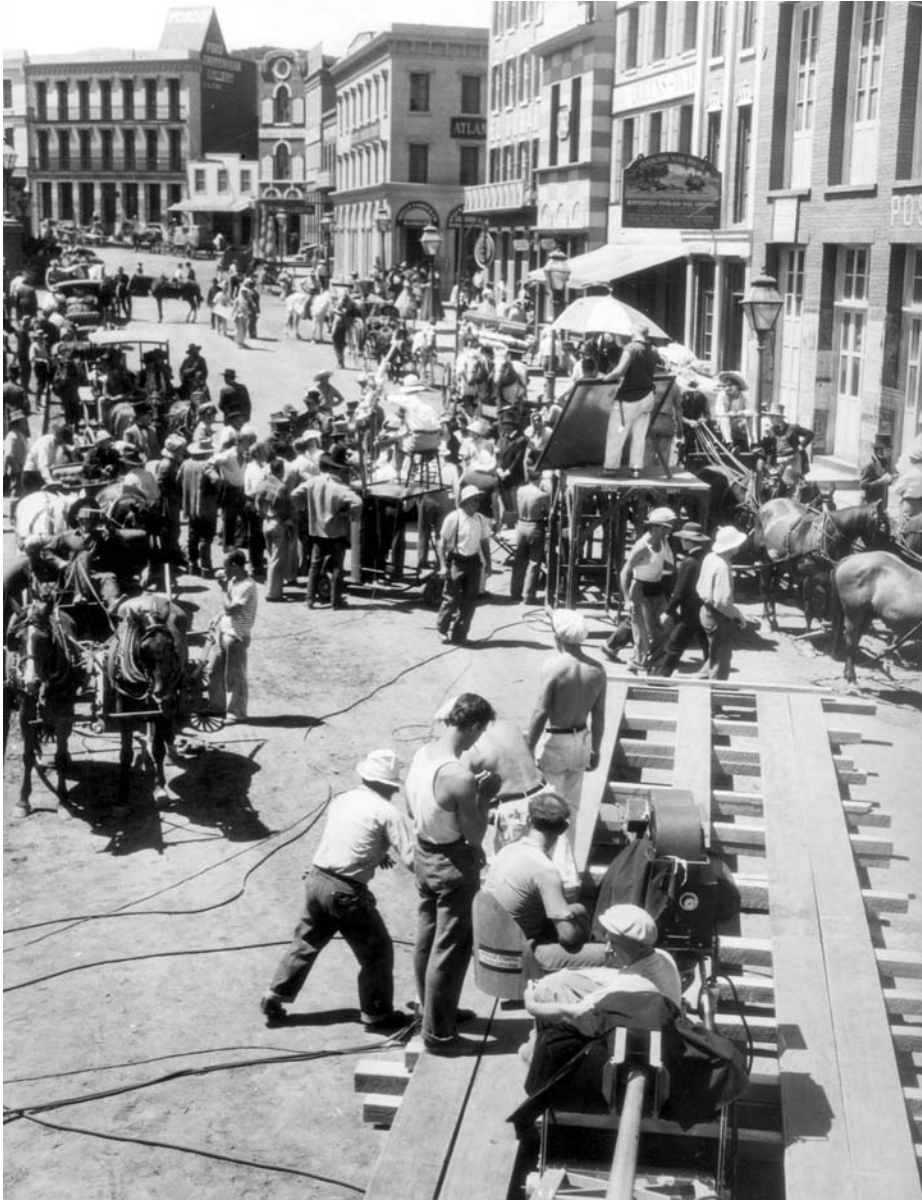
Organized as efficient businesses, the studios created a tradition of carefully tracking the entire process through paper records. At the start, there were versions of the script; during shooting, reports were written about camera footage, sound recording, special-effects work, and laboratory results; in the assembly phase, there were logs of shots catalogued in editing and a variety of cue sheets for music, mixing, looping, and title layout. This sort of record keeping has remained a part of large-scale filmmaking, though now it is done mostly on computer.

Although studio production might seem to resemble a factory's assembly line, it was always more creative, collaborative, and chaotic than turning out cars or TV sets is. Each film is a unique product, not a replica of a prototype. In studio filmmaking, skilled specialists collaborated to create such a product while still adhering to a "blueprint" prepared by management (1.33).

The centralized studio production system has virtually disappeared. The giants of Hollywood's golden age have become distribution companies, although they often initiate, fund, and oversee the making of films they distribute. The old studios had stars and staff under contract, so the same group of people might work together on film after film. Now each film is planned as a distinct package, with director, actors, staff, and technicians brought together for this project alone. The studio may provide its own soundstages, sets, and offices for the project, but in most cases, the producer arranges with outside firms to supply cameras, catering, locations, special effects, and anything else required.

Still, the detailed production stages remain similar to what they were in the heyday of studio production. In fact, filmmaking has become vastly more complicated in recent years, largely because of the expansion of production budgets and the growth of computer-based special effects. *Titanic* listed over 1400 names in its final credits.





**1.33** Studio production was characterized by a large number of highly specialized production roles. Here several units prepare a moving-camera shot for *Wells Fargo* (1937).

## Exploitation, Independent Production, and DIY

Not all films using the division of labor we have outlined are big-budget projects financed by major companies. There are also low-budget *exploitation* products tailored to a particular market—in earlier decades, fringe theaters and drive-ins; now, video rentals and sales. Troma Films, maker of *The Toxic Avenger*, is probably the most famous exploitation company, turning out horror movies and teen sex comedies for \$100,000 or less. Nonetheless, exploitation filmmakers usually divide the labor along studio lines. There is the producer’s role, the director’s role, and so on, and the production tasks are parceled out in ways that roughly conform to mass-production practices.

Exploitation production often forces people to double up on jobs. Robert Rodriguez made *El Mariachi* as an exploitation film for the Spanish-language video market. The 21-year-old director also functioned as producer, scriptwriter,

*“Deep down inside, everybody in the United States has a desperate need to believe that some day, if the breaks fall their way, they can quit their jobs as claims adjusters, legal secretaries, certified public accountants, or mobsters, and go out and make their own low-budget movie. Otherwise, the future is just too bleak.”*

—Joe Queenan, critic and independent filmmaker

## CONNECT TO THE BLOG

Studio films and independent ones aren't always that far apart, as we suggest in "Independent film: How different?"

See [www.davidbordwell.net/blog/?p=22](http://www.davidbordwell.net/blog/?p=22).

cinematographer, camera operator, still photographer, and sound recordist and mixer. Rodriguez's friend Carlos Gallardo starred, coproduced, and coscripted; he also served as unit production manager and grip. Gallardo's mother fed the cast and crew. *El Mariachi* wound up costing only about \$7000.

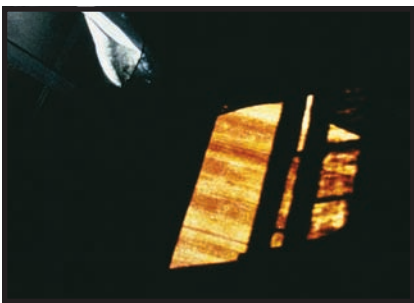
Unlike *El Mariachi*, most exploitation films don't enter the theatrical market, but other low-budget productions, loosely known as *independent* films, may. Independent films are made for the theatrical market but without major distributor financing. Sometimes the independent filmmaker is a well-known director, such as Spike Lee, David Cronenberg, or Joel and Ethan Cohen, who prefer to work with budgets significantly below the industry norm. The lower scale of investment allows the filmmaker more freedom in choosing stories and performers. The director usually initiates the project and partners with a producer to get it realized. Financing often comes from European television firms, with major U.S. distributors buying the rights if the project seems to have good prospects. For example, David Lynch's low-budget *The Straight Story* was financed by French and British television before it was bought for distribution by Disney. Danny Boyle's *Slumdog Millionaire* was made for about \$15 million and nearly went straight to DVD when Warner Bros. declined to release it. Art film distributor Fox Searchlight picked it up, and it became an unexpected critical and financial success. Roughly half of *Slumdog Millionaire* was shot on 35mm. The rest was done on 2K digital cameras, which are smaller and facilitated shooting in the crowded streets of Mumbai.

As we would expect, these industry-based independents organize production in ways very close to the full-fledged studio mode. Nonetheless, because these projects require less financing, the directors can demand more control over the production process. Woody Allen, for instance, is allowed by his contract to rewrite and reshoot extensive portions of his film after he has assembled an initial cut.

The category of independent production is a roomy one, and it also includes more modest projects by less well-known filmmakers. Examples are Victor Nuñez's *Ulee's Gold*, Phil Morrison's *Junebug*, and Miranda July's *Me and You and Everyone We Know*. Even though their budgets are much smaller than for most commercial films, independent productions face many obstacles (1.34). Filmmakers may have to finance the project themselves, with the help of relatives and friendly investors; they must also find a distributor specializing in independent and low-budget films. Still, many filmmakers believe the advantages of independence outweigh the drawbacks. Independent production can treat subjects that large-scale studio production ignores. No film studios would have supported Jim Jarmusch's *Stranger Than Paradise* or Kevin Smith's *Clerks*. Because the independent film does not need as large an audience to repay its costs, it can be more personal and controversial. And the production process, no matter how low-budget, still relies on the basic roles and phases established by the studio tradition.



**1.34** In making *Just Another Girl on the IRT*, independent director Leslie Harris used locations and available lighting in order to shoot quickly; she finished filming in just 17 days.



**1.35** In *The Riddle of Lumen*, Stan Brakhage turned shadows and everyday objects into vivid distant patterns.

## Small-Scale Production

In large-scale and independent production, many people work on the film, each one a specialist in a particular task. But it is also possible for one person to do everything: plan the film, finance it, perform in it, run the camera, record the sound, and put it all together. Such films are seldom seen in commercial theatres, but they are central to experimental and documentary traditions.

Consider Stan Brakhage, whose films are among the most directly personal ever made. Some, such as *Window Water Baby Moving*, are lyrical studies of his home and family (1.35). Others, such as *Dog Star Man*, are mythic treatments of nature; still others, such as *23rd Psalm Branch*, are quasi-documentary studies of war and death. Funded by grants and his personal finances, Brakhage prepared, shot, and edited his films virtually unaided. While he was working in a film laboratory, he also developed and printed his footage. With over 150 films to his credit,

Brakhage proved that the individual filmmaker can become an artisan, executing all the basic production tasks.

The 16mm and digital video formats are customary for small-scale production. Financial backing often comes from the filmmaker, from grants, and perhaps from obliging friends and relatives. There is very little division of labor: the filmmaker oversees every production task and performs many of them. Although technicians or performers may help out, the creative decisions rest with the filmmaker. Experimentalist Maya Deren's *Meshes of the Afternoon* was shot by her husband, Alexander Hammid, but she scripted, directed, and edited it and performed in the central role (1.36). Amos Poe made his lengthy, evocative experimental film *Empire II* by placing a small digital camera in a window of his Manhattan apartment and exposing single frames in bursts at intervals over an entire year (1.37). Poe edited the film himself, manipulated the images digitally, and assembled the sound track from existing songs and original music by Mader.

Such small-scale production is also common in documentary filmmaking. Jean Rouch, a French anthropologist, has made several films alone or with a small crew in his efforts to record the lives of marginal people living in alien cultures. Rouch wrote, directed, and photographed *Les Maîtres fous* (1955), his first widely seen film. Here he examined the ceremonies of a Ghanaian cult whose members lived a double life: most of the time they worked as low-paid laborers, but in their rituals, they passed into a frenzied trance and assumed the identities of their colonial rulers.

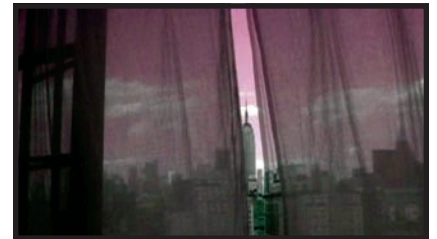
Similarly, Barbara Koppel devoted four years to making *Harlan County, U.S.A.*, a record of Kentucky coal miners' struggles for union representation. After eventually obtaining funding from several foundations, she and a small crew spent 13 months living with miners during the workers' strike. During filming, Koppel acted as sound recordist, working with cameraman Hart Perry and sometimes also a lighting person. A large crew was ruled out not only by Koppel's budget but also by the need to fit naturally into the community. Like the miners, the filmmakers were constantly threatened with violence from strikebreakers (1.38).

Sometimes small-scale production becomes *collective* production. Here, instead of a single filmmaker shaping the project, several film workers participate equally. The group shares common goals and makes production decisions democratically. Roles may also be rotated: the sound recordist on one day may serve as cinematographer on the next. A recent instance is the Canadian film *Atanarjuat: The Fast Runner*. Three Inuits (Zacharias Kunuk, Paul Apak Angilirq, and Paul Qulitalik) and one New Yorker (Norman Cohn) formed Igloolik Isuma Productions in 1990. After making several video shorts and a television series, the group composed a screenplay based on an oral tale about love, murder, and revenge. With funding from television and the National Film Board, cast and crew spent six months shooting in the Arctic, camping in tents and eating seal meat. "We don't have a hierarchy," Cohn explained. "There's no director, second, third or fourth assistant director. We have a team of people trying to figure out how to make this work." Because of the communal nature of Inuit life, the Igloolik team expanded the collective effort by bringing local people into the project. Some had to relearn traditional skills for making tools and clothes from bone, stone, and animal skins. "The Inuit process is very horizontal," Cohn explained. "We made our film in an Inuit way, through consensus and collaboration." Showcasing the strengths of digital Beta video (1.39), *Atanarjuat: The Fast Runner* won the prize for best first film at the 2002 Cannes Film Festival. That, said Cohn, convinced people "that a bunch of Eskimos from the end of the world could be sophisticated enough to make a movie."

Small-scale production allows the filmmakers to retain tight control of the project. The rise of digital video formats has made small-scale production more visible. *The Gleaners and I* (see 5.42), *The Yes Men*, *Encounters at the End of the World*,



**1.36** In *Meshes of the Afternoon*, multiple versions of the protagonist were played by the filmmaker, Maya Deren.



**1.37** For *Empire II*, Amos Poe digitally manipulated this tantalizing glimpse of the Manhattan skyline, making it lyrical.



**1.38** In *Harlan County, U.S.A.*, the driver of a passing truck fires at the crew.

#### CONNECT TO THE BLOG

For more on Poe's *Empire II*, plus a link to his website.

See [www.davidbordwell.net/blog/?p=1709](http://www.davidbordwell.net/blog/?p=1709).





**1.39** The hero of *Atanarjuat: The Fast Runner* pauses in his flight across the ice.

and other recent releases indicate that the theatrical market and festival circuit have room for works made by single filmmakers or tiny production units.

The introduction of consumer and prosumer digital cameras and affordable software for computer post-production has led to the rise of “do it yourself” (DIY) filmmaking. Individuals or small groups of amateurs can make their own films and share them over the Internet via YouTube and other websites. Perhaps the most prominent DIY film is Arin Crumley and Susan Buice’s *Four Eyed Monsters*, a filmed reenactment of the couple’s unconventional romance. Although it was shown in a few theaters and at some festivals, the film’s main distribution was via a self-published DVD. The filmmakers promoted it in Second Life, on YouTube, and on their own website. *Four Eyed Monsters* ultimately receiving screenings on the Independent Film Channel, which also published a new edition of the DVD.

## Artistic Implications of Different Modes of Production

We categorize films on the basis of how they were made. We can distinguish a *documentary* film from a *fiction* film on the basis of production phases. Usually, the documentary filmmaker controls only certain variables of preparation, shooting, and assembly. Some variables (such as script and rehearsal) may be omitted, whereas others (such as setting, lighting, and behavior of the figures) are present but often uncontrolled. In interviewing an eyewitness to an event, the filmmaker typically controls camera work and editing but does not tell the witness what to say or how to act. For example, there was no script for the documentary *Manufacturing Consent: Noam Chomsky and the Media*. Filmmakers Mark Achbar and Peter Wintonick instead shot long interviews in which Chomsky explained his ideas. The fiction film, in contrast, is characterized by much more control over the preparation and shooting phases.

Similarly, a *compilation* film assembles existing images and sounds that provide historical evidence on a topic. The compilation filmmaker may minimize the shooting stage and create a story from archival footage. For *The Power of Nightmares*, Adam Curtis gathered newsreel and television footage, television commercials, and clips from fiction films to track the rise of fundamentalist politics and religion after World War II.

One more kind of film is distinguished by the way it’s produced. The *animated* film is created frame by frame. Images may be drawn directly on the film strip, or the camera may photograph drawings or three-dimensional models, as in the *Wallace and Grommit* movies. *Corpse Bride* was created without using motion picture cameras; instead, each frame was registered by a digital still camera and transferred to film. Today most animated films, both on theater screens and on the Internet, are created directly on computer with imaging software.



**Production and Authorship** Production practices have another implication for film as an art form. Who, it is often asked, is the “author,” the person responsible for the film? In individual production, the author must be the solitary filmmaker—Stan Brakhage, Louis Lumière, you. Collective film production creates collective authorship: the author is the entire group. The question of authorship becomes difficult to answer only when asked about large-scale production, particularly in the studio mode.

Studio film production assigns tasks to so many individuals that it is often difficult to determine who controls or decides what. Is the producer the author? In the prime years of the Hollywood system, the producer might have had nothing to do with shooting. The writer? The writer’s script might be completely transformed in shooting and editing. So is this situation like collective production, with group authorship? No, because there is a hierarchy in which a few main players make the key decisions.

Moreover, if we consider not only control and decision making but also individual style, it seems certain that some studio workers leave recognizable and unique traces on the films they make. Cinematographers such as Gregg Toland, set designers such as Hermann Warm, costumers such as Edith Head, choreographers such as Gene Kelly—the contributions of these people stand out within the films they made. So where does the studio-produced film leave the idea of authorship?

Most people who study cinema regard the director as the film’s primary “author.” Although the writer prepares a screenplay, later phases of production can modify it beyond recognition. And although the producer monitors the entire process, he or she seldom controls moment-by-moment activity on the set. It is the director who makes the crucial decisions about performance, staging, lighting, framing, cutting, and sound. On the whole, the director usually has most control over how a movie looks and sounds.

This doesn’t mean that the director is an expert at every job or dictates every detail. The director can delegate tasks to trusted personnel, and directors often work habitually with certain actors, cinematographers, composers, and editors. In the days of studio filmmaking, directors learned how to blend the distinctive talents of cast and crew into the overall movie. Humphrey Bogart’s unique talents were used very differently by Michael Curtiz in *Casablanca*, John Huston in *The Maltese Falcon*, and Howard Hawks in *The Big Sleep*. Gregg Toland’s cinematography was pushed in different directions by Orson Welles (*Citizen Kane*) and William Wyler (*The Best Years of Our Lives*).

During the 1950s, young French critics applied the word *auteur* (author) to Hollywood directors whom they felt had created a distinctive approach to filmmaking while working within the Hollywood studio system. Soon American critics picked up the “auteur theory,” which remained a central idea for film academics and students. Now you will occasionally read reviews or see spots on television that use the term, which has become a common term for a well-respected director.

Today well-established directors can control large-scale production to a remarkable degree. Steven Spielberg and Ethan and Joel Coen can insist on editing manually, not digitally. Both Robert Altman and Martin Scorsese dislike ADR and use much of the on-set dialogue in the finished film. In the days of Hollywood’s studio system, some directors exercised power more indirectly. Most studios did not permit the director to supervise editing, but John Ford would often do only one take of each shot. Precutting the film “in his head,” Ford virtually forced the editor to put the shots together as he had planned.

Around the world, the director is generally recognized as the key player. In Europe, Asia, and South America, directors frequently initiate the film and work closely with scriptwriters. In Hollywood, directors usually operate on a freelance basis, and the top ones select their own projects. For the most part, it is the director who shapes the film’s unique form and style, and these two components are central to cinema as an art.

*“The thing that makes me sad is that there’s tons of kids that I meet all the time . . . who don’t know anything about film history. . . . The number who couldn’t say that Orson Welles directed Citizen Kane was staggering. . . . They were infatuated with the business and the glamour of the business, and not filmmaking.”*

— Stacy Sher, producer, *Pulp Fiction* and *Erin Brockovich*

CONNECT TO THE BLOG  
Screenwriters often take issue with this idea, but we defend it in “Who the devil wrote it? (Apologies to Peter Bogdanovich).”

See [www.davidbordwell.net/blog/?p=41](http://www.davidbordwell.net/blog/?p=41).

## Bringing the Film to the Audience: Distribution and Exhibition

We've spent some time considering film production because that is where film art begins. What of the other two phases of filmmaking? As in production, money plays a significant role in both distribution and exhibition. We'll see as well that these phases have effects on film art and viewers' experiences of particular films.

### Distribution: The Center of Power

Distribution companies form the core of economic power in the commercial film industry. Filmmakers need them to circulate their work; exhibitors need them to supply their screens. Europe and Asia are home to some significant media companies, but six Hollywood firms remain the world's major distributors. The names are familiar: Warner Bros., Paramount, Walt Disney/Buena Vista, Sony/Columbia, Twentieth Century Fox, and Universal.

These firms provide mainstream entertainment to theaters around the world. The films they release account for 95 percent of ticket sales in the United States and Canada, and about half of the international market. In world capitals, the majors maintain branch offices that advertise films, schedule releases, and arrange for prints to be made in local languages (either dubbing in the dialogue or adding subtitling). With vigorous marketing units in every region, the majors can distribute non-U.S. films as well as Hollywood titles. For example, Hayao Miyazaki's popular animated films (*Spirited Away*, *Howl's Moving Castle*) are distributed on video by Disney's Buena Vista arm—even in Miyazaki's homeland of Japan.

The major distributors have won such power because large companies can best endure the risks of theatrical moviemaking. Filmmaking is costly, and most films don't earn profits in theatrical release. Worldwide, the top 10 percent of all films released garner 50 percent of all box office receipts. The most popular 30 percent of films account for 80 percent of receipts. Typically, a film breaks even or shows a profit only after it has been released on cable, satellite, and home video.

In the United States, theater owners bid for each film a distributor releases, and in most states, they must be allowed to see the film before bidding. Elsewhere in the world, distributors may force exhibitors to rent a film without seeing it (called *blind booking*), perhaps even before it has been completed. Exhibitors may also be pressured to rent a package of films in order to get a few desirable items (*block booking*).

Once the exhibitor has contracted to screen the film, the distributor can demand stiff terms. The theater keeps a surprisingly small percentage of total box office receipts (known as the *gross* or *grosses*). One standard arrangement guarantees the distributor a minimum of 90 percent of the first week's gross, dropping gradually to 30 percent after several weeks. These terms aren't favorable to the exhibitor. A failure that closes quickly will yield almost nothing to the theater, and even a successful film will make most of its money in the first two or three weeks of release, when the exhibitor gets less of the revenue. Averaged out, a long-running success will yield no more than 50 percent of the gross to the theater. To make up for this drawback, the distributor allows the exhibitor to deduct from the gross the expenses of running the theater (a negotiated figure called the *house nut*). In addition, the exhibitor gets all the cash from the concession stand, which may deliver up to 70 percent of the theater's profits. Without high-priced snacks, movie houses couldn't survive.

Once the grosses are split with the exhibitor, the distributor receives its share (the *rentals*) and divides it further. A major U.S. distributor typically takes 35 percent of the rentals as its distribution fee. If the distributor helped finance the film, it takes another percentage off the top. The costs of prints and advertising are deducted as well. What remains comes back to the filmmakers. Out of the proceeds,

"Selling food is my job. I just happen to work in a theater."

— Theater manager in upstate New York

#### CONNECT TO THE BLOG

Every Monday, the weekend box-office figures are news, but what do they mean? We add some nuance in "What won the weekend? or how to understand box-office figures."

See [www.davidbordwell.net/blog/?p=21](http://www.davidbordwell.net/blog/?p=21).

the producer must pay all *profit participants*—the directors, actors, executives, and investors who have negotiated a share of the rental returns.

For most films, the amount returned to the production company is relatively small. Once the salaried workers have been paid, the producer and other major players usually must wait to receive their share from video and other ancillary markets. Because of this delay, and the suspicion that the major distributors practice misleading accounting, powerful actors and directors may demand “first-dollar” participation, meaning that their share will derive from the earliest money the picture returns to the distributor.

**Majors and Minors** The major distributors all belong to multinational corporations devoted to leisure activities. For example, Time Warner owns Warner Bros., which produces and distributes films while also controlling subsidiary companies New Line Cinema, Picturehouse, and Warner Independent Pictures. In addition, Time Warner owns the Internet provider America On Line. The conglomerate owns broadcast and cable services such as CNN, HBO, and the Cartoon Network; publishing houses and magazines (*Time*, *Life*, *Sports Illustrated*, *People*, and DC Comics); music companies (Atlantic, Elektra); theme parks (Six Flags); and sports teams (the Atlanta Braves and the Atlanta Hawks). Since distribution firms are constantly acquiring and spinning off companies, the overall picture can change unexpectedly. In late 2005, for instance, DreamWorks SKG, a production company that was strongly aligned with Universal, was purchased by Paramount. In 2008, DreamWorks announced that it was leaving Paramount to become an independent company distributing through Universal, before abruptly revealing in early 2009 that its distribution partner would instead be Disney.

Independent and overseas filmmakers usually don't have access to direct funding from major distribution companies, so they try to presell distribution rights in order to finance production. Once the film is finished, they try to attract distributors' attention at film festivals. In 2005, after strong reviews at the Cannes Film Festival, Woody Allen's *Match Point* was picked up for U.S. distribution by DreamWorks SKG. In the same year, the South African production *Tsotsi* won the People's Choice Award at the Toronto International Film Festival, and its North American rights were bought by Buena Vista.

Specialized distributors, such as the New York firms Kino and Milestone, acquire rights to foreign and independent films for rental to art cinemas, colleges, and museums. As the audience for these films grew during the 1990s, major distributors sought to enter this market. The independent firm Miramax generated enough low-budget hits to be purchased by the Disney corporation. With the benefit of Disney's funding and wider distribution reach, Miramax movies such as *Pulp Fiction*, *Scream*, *Shakespeare in Love*, and *Hero* earned even bigger box-office receipts. Sony Pictures Classics funded art house fare that sometimes crossed over to the multiplexes, as *Crouching Tiger, Hidden Dragon* did. More recently, Fox Searchlight released a film that Warner Bros. had turned down, and it achieved popular and critical success with *Slumdog Millionaire*.

By belonging to multinational conglomerates, film distributors gain access to bank financing, stock issues, and other sources of funding. Branch offices in major countries can carry a film into worldwide markets. Sony's global reach allowed it to release 11 different sound track CDs for *Spider-Man 2*, each one featuring artists familiar in local territories. Just as important, media conglomerates can build *synergy*—the coordination of sectors within the company around a single piece of content, usually one that is “branded.” *Batman* and *The X-Files* are famous instances of how the film, television, publishing, and music wings of a firm can reinforce one another. Every product promotes the others, and each wing of the parent company gets a bit of the business. One film can even advertise another within its story (1.40). Although synergy sometimes fails, multimedia giants are in the best position to take advantage of it.

#### CONNECT TO THE BLOG

One example of how such a change affects the rest of the industry is discussed in our entry on the absorption of New Line Cinema into Warner Bros. in 2008—“Filling the New Line gap.”

See [www.davidbordwell.net/blog/?p=2983](http://www.davidbordwell.net/blog/?p=2983).

“Our underlying philosophy is that all media are one.”

—Rupert Murdoch, owner of News Corp. and Twentieth Century Fox



**1.40** In *Lethal Weapon*, as Murtaugh and Riggs leave a hot-dog stand, they pass in front of a movie theater advertising *The Lost Boys*, another Warner Bros. film (released four months after *Lethal Weapon*). The prominence of Pepsi-Cola in this shot is an example of *product placement*—featuring well-known brands in a film in exchange for payment or cross-promotional services.

Distributors arrange release dates, make prints, and launch advertising campaigns. For big companies, distribution can be efficient because the costs can be spread out over many units. One poster design can be used in several markets, and a distributor who orders a thousand prints from a laboratory will pay less per print than the filmmaker who orders one. Large companies are also in the best position to cope with the rise of distribution costs. Today, the average Hollywood film is estimated to cost around \$70.8 million to make and an additional \$35.9 million to distribute.

The risky nature of mass-market filmmaking has led the majors to two distribution strategies: *platforming* and *wide release*. With platforming, the film opens first in a few big cities. It's then gradually expanded to theaters around the country, though it may never play in every community. If the strategy is successful, anticipation for the film builds, and it remains a point of discussion for months. The major distributors tend to use platforming for unusual films, such as *Munich* and *Brokeback Mountain*, which need time to accumulate critical support and generate positive word-of-mouth. Smaller distributors use platforming out of necessity, since they can't afford to make enough prints to open wide, but the gradual accumulation of buzz can work in their favor, too.

In wide release, a film opens at the same time in many cities and towns. In the United States, this requires that thousands of prints be made, so wide release is available only to the deep-pocketed major distributors. Wide release is the typical strategy for mainstream films, with two or three new titles opening each weekend on 2000–4000 screens. A film in wide release may be a midbudget one—a comedy, an action picture, a horror or science fiction film, or a children's animated movie. It may also be a very big-budget item, a *tentpole* picture such as *War of the Worlds* or the latest Harry Potter installment.

Distributors hope that a wide opening signals a “must-see” film, the latest big thing. Just as important, opening wide helps recoup costs faster, since the distributor gets a larger portion of box office receipts early in the run. But it's a gamble. If a film fails in its first weekend, it almost never recovers momentum and can lose money very quickly. Even successful films usually lose revenues by 40 percent or more every week they run. So when two high-budget films open wide the same weekend, the competition is harmful to all. Companies tend to plan their tentpole release dates to avoid head-to-head conflict. On the weekend in May 2005 when the final installment of Fox's *Star Wars* saga opened on nearly 3700 U.S. screens, other distributors offered no wide releases at all. *Episode III—Revenge of the Sith* grossed nearly \$160 million in four days.

#### CONNECT TO THE BLOG

With help from some colleagues, we examine the recent phenomenon of movie franchises and defend the idea in “Live with it! There'll always be movie sequels. Good thing, too.”

See [www.davidbordwell.net/blog/?p=836](http://www.davidbordwell.net/blog/?p=836).



Wide releasing has extended across the world. As video piracy spread, distribution companies realized the risks of opening wide in the United States and then waiting weeks or months before opening overseas. By then, illegal DVDs and Internet downloads would be available. As a result, U.S. companies have begun experimenting with *day-and-date* releasing for their biggest tentpole pictures. *Matrix: Revolutions* opened simultaneously on 8000 screens in the United States and 10,000 screens in 107 other countries. In a stroke of showmanship, the first screening was synchronized to start at the same minute across all time zones.

**Selling the Film** The distributor provides not only the movie but a publicity campaign. The theater is supplied with a *trailer*, a short preview of the upcoming film. Many executives believe that a trailer is the single most effective piece of advertising. Shown in theaters, it gets the attention of confirmed moviegoers. Posted on an official movie website, YouTube, and many fan sites, a trailer gains mass viewership.

Publicists run press junkets, flying entertainment reporters to interview the stars and principal filmmakers on-set or in hotels. “Infotainment” coverage in print and broadcast media or online build audience awareness. A “making of” documentary, commissioned by the studio, may be shown on cable channels. A prominent film’s premiere creates an occasion for further press coverage (1.41). For journalists, the distributor provides electronic press kits (EPKs), complete with photos, background information, star interviews, and clips of key scenes. Even a modestly budgeted production such as *Waiting to Exhale* had heavy promotion: five separate music videos, star visits to Oprah Winfrey, and displays in thousands of bookstores and beauty salons. *My Big Fat Greek Wedding* cost \$5 million to produce, but the distributors spent over \$10 million publicizing it.

In 1999, two young directors found their target audience by creating a website purporting to investigate sightings of the Blair Witch. “The movie was an extension of the website,” noted a studio executive. When *The Blair Witch Project* earned over \$130 million in the United States, distributors woke up to the power of the Internet. Now every film has a web page, enticing viewers with plot information,

#### CONNECT TO THE BLOG

Recently, fan events like Comic-Con have provided a new way for Hollywood distributors to publicize popular films directly to moviegoers, as we discuss in “Comic-Con 2008, Part 2.”

See [www.davidbordwell.net/blog/?p=2710](http://www.davidbordwell.net/blog/?p=2710).



**1.41** A press conference held at Te Papa Museum in Wellington, New Zealand, as part of the December 1, 2003, world premiere of *The Lord of the Rings: The Return of the King*.

#### CONNECT TO THE BLOG

Even Oscar races become the subject of considerable publicity. For one gimmick a studio used to promote the award chances of *There Will Be Blood*, check out “I drink your Oscar promo.”

See [www.davidbordwell.net/blog/?p=1959](http://www.davidbordwell.net/blog/?p=1959).

## CONNECT TO THE BLOG

Internet sites are no guarantee of success. We speculate on why in “Snakes, no, Borat, yes. Not all Internet publicity is the same.”

See [www.davidbordwell.net/blog/?p=269](http://www.davidbordwell.net/blog/?p=269).

star biographies, games, screen savers, and links to merchandise. Distributors have realized that web surfers will eagerly create “viral marketing” if they’re allowed to participate in getting the word out. Fan sites such as Harry Knowles’s Ain’t It Cool News can publicize upcoming films through steady leaks and exclusive access. On-line contests can harvest email addresses for promotion of products and other films. Building on the thriving *Lord of the Rings* web culture, Peter Jackson sent nearly 90 Production Diaries of *King Kong* to a fan site, and they were later released as an elaborate boxed set of DVDs. Wireless communication became the next logical step, with trailers downloaded to cell phones and text-messaging campaigns such as that for *Cry Wolf*.

*Merchandising* is a form of promotion that pays back its investment directly. Manufacturing companies buy the rights to use the film’s characters, title, or images on products. These licensing fees defray production and distribution costs, and if the merchandise catches on, it can provide the distributor with long-term income from an audience that might never have seen the film. Although *Tron* did poorly in theatrical release in 1982, the *Discs of Tron* video game became a popular arcade attraction. Today nearly all major motion pictures rely on merchandising, if only of a novelization or a sound track CD, but children’s films tend to exploit the gamut of possibilities: toys, games, clothing, lunch boxes, and schoolbags. There were *Shrek* ring tones, bowling balls, and hospital scrubs. The basis for George Lucas’s entertainment empire came from his retention of the licensing rights for *Star Wars* merchandise.

A similar tactic is *cross-promotion*, or *brand partnering*, which allows a film and a product line to be advertised simultaneously. The partner companies agree to spend a certain amount on ads, a practice that can shift tens of millions of dollars in publicity costs away from the studios. MGM arranged for the stars of the James Bond film *Tomorrow Never Dies* to appear in advertisements for Heineken, Smirnoff, BMW, Visa, and Ericsson. The five partner companies spent nearly \$100 million on the campaign, which publicized the film around the world. As payback, the film included scenes prominently featuring the products. For *Shrek 2*, several companies committed to cobranded ads, including Burger King, Pepsi-Cola, General Mills, Hewlett-Packard, and Activision. Baskin-Robbins stores featured cardboard stand-up figures of Shrek, Donkey, and Puss-in-Boots grouped around a giant “Shrek’s Hot Sludge Sundae.” The U.S. Postal Service was drawn into the act, stamping billions of letters with a postmark featuring Shrek and Donkey. Less mainstream fare has relied on cross-promotion too. Starbucks filled its stores with posters, coffee cup sleeves, and other promotional material for *Akeelah and the Bee*. The documentary *Hoop Dreams* was promoted by Nike and the National Basketball Association.

## Exhibition: Theatrical and Nontheatrical

We’re most familiar with the exhibition phase of the business, the moment when we pay for a movie ticket or drop in a DVD or download a movie. *Theatrical* exhibition involves screening to a public that pays admission, as in commercial movie houses. Other theatrical sites are city arts centers, museums, film festivals, and cinema clubs. *Nontheatrical* exhibition includes all other presentations, such as home video, cable and satellite transmissions, and screenings in schools and colleges.

Public movie exhibition, however, centers on the commercial theater. Most theaters screen wide releases from the major distributors, while others specialize in foreign-language or independent films. In all, the theatrical moviegoing audience is not a colossal one. In the United States, admissions average around 30 million per week, which sounds like a huge number until we realize that the weekly television audience numbers about 200 million. Only about a fifth of the population visits movie theaters regularly.

The most heavily patronized theaters belong to chains or circuits, and in most countries, these circuits are controlled by a few companies. Until the 1980s, most theaters housed only one screen, but exhibitors began to realize that several

GUS VAN SANT: *Your films have dominated the museum circuit in America—Minneapolis, Columbus . . .*

DEREK JARMAN: *Yes, Minneapolis in particular. That’s where the films have actually had their life. They’ve crept into the student curriculum—which is a life. And now they go on through video. I never really feel shut out.*

—Gus Van Sant, director, interviewing Derek Jarman, independent filmmaker

## Movies on Screens: A 2007 Profile of International Theatrical Exhibition

*Worldwide production of theatrical motion pictures: 5039 features*

*Worldwide attendance: 7.1 billion admissions*

*Worldwide number of screens: 147,207*

*Worldwide box-office gross receipts: \$26 billion*

*USA box-office receipts: \$8.84 billion*

*Western Europe box-office receipts: \$7.5 billion*

*Japan box-office receipts: \$1.69 billion*

### Countries and Numbers of Screens

**Highest:** USA 38,974; China 36,112; India 10,189; France 5398; German 4832; Spain 4296; Italy 4071; Mexico 3936; UK 3596; Japan 3221

**Lowest:** Luxembourg 24; Oman 19; Azerbaijan 17; Algeria 10

### Screens per Million People

**Highest:** Iceland 156

**Lowest:** India 9.2

**Others:** USA 129; Sweden 115; Spain 95; Australia 95; Canada 91; UK 59; China 27; Japan 25; Russia 19

### Average Ticket Prices

**Highest:** Norway \$12.80; Denmark \$12.47; Switzerland \$12.17; Sweden \$11.71

**Lowest:** Peru \$1.79; Bolivia \$1.67; Philippines \$1.61; India \$0.53

**Others:** UK \$10.12; Australia \$8.87; France \$8.16; Canada \$7.70; USA \$6.82

### Domestic Films' Share of Box-Office Revenues Abroad

**Highest:** China, 54.5%; Japan, 47.7%; South Korea, 44.6%

**Lowest:** Austria, 1.9%; Lithuania, 2.6%; Portugal, 2.7%

**Others:** Italy, 31.7%; Mexico, 13.2%; Latvia, 5.4%

Source: *Screen Digest*

screens under one roof could reduce costs. The multiplex theater, containing 3 or more screens, and the megaplex, with 16 or more, lured far bigger crowds than a single-screen cinema could. Centralized projection booths and concession stands also cut costs. The boom in building multiplexes allowed exhibitors to upgrade the presentation, offering stadium seating, digital sound, and in some cases Imax and 3D. Multiplexes can also devote occasional screenings to niche markets, as when live opera broadcasts are shown digitally or a weekly morning matinee is aimed at women with babies. Multiplexes are now the norm in North America, Europe, and parts of Asia, with snacks adjusted to local tastes—popcorn and candy nearly everywhere, but also beer (in Europe) and dried squid (in Hong Kong).

The United States is the most lucrative theatrical market, contributing 32 percent of global box office receipts. (See chart.) By nation, Japan comes in second, chiefly because ticket prices are very high. Western European and Asian-Pacific countries follow. Providing about 25 percent of the global box office, western Europe (including the United Kingdom and the Nordic countries) is the most important regional

CONNECT TO THE BLOG  
Why cater to mothers and babies? We investigate in “Women and children first.”

See [www.davidbordwell.net/blog/?p=2917](http://www.davidbordwell.net/blog/?p=2917).

market outside North America. For these reasons, filmmakers around the world aim for distribution in these prosperous countries.

The less significant markets are Latin America, eastern Europe, mainland China, India, the Middle East, and Africa. The multiplex strategy has been the wedge opening up these territories. They have few screens per head of population, and entrepreneurs have launched ambitious multiplex projects in Russia, China, and Latin America. Hollywood distributors see overseas multiplexes as a golden opportunity. By investing in theaters overseas, they are guaranteed an outlet for their product. (U.S. antitrust law blocks them from owning theaters at home.) Historically, Hollywood distributors have withheld films from many countries when the local ticket prices were too low to yield much profit. In 2000, the average ticket price in the Philippines hovered around 70¢; in India, 20¢. As underdeveloped countries expanded their middle class, comfortable multiplexes began to attract upscale viewers who wouldn't visit aging single-screen cinemas. By 2007, thanks largely to multiplex expansion, the global average ticket price was \$3.73, an all-time high.

In 1999, four of the 3126 theaters in which *Star Wars: Episode I—The Phantom Menace* played had digital projectors. Those four made headlines, though, and many people predicted that theaters would steadily convert to digital. The advantages were obvious. The thousands of 35mm prints needed for such a wide release cost an enormous amount, and the shipping costs were a burden to distributor and theater alike. Films delivered to theaters on compact hard drives would be far cheaper. With no film to thread, high-paid projectionists would be eliminated; a theater manager could press buttons to start showings, no matter how many screens a theater had. No scratches or dust would accumulate on the print.

The obstacle was that outfitting a single screen with digital projection would cost \$150,000 or more, while 35mm projectors cost only around \$30,000—and many theaters already had projectors that would last for years. The rate of conversion to digital was slower than expected, and the Hollywood studios pressed reluctant exhibitors hard, offering rental discounts. Producers like Jeffrey Katzenberg of DreamWorks Animation and director like James Cameron wanted to work exclusively in 3D, which required digital projectors. In mid-2008, when the scope of the world financial crisis was beginning to become apparent, only 4847 screens of the total 38,159 in the United States had converted to digital projection. The severe economic downturn slowed the changeover even further. In 2009, Katzenberg had to abandon his plan to release *Monsters vs. Aliens* on over 5000 3D screens. He had to settle for about 2000.

Although films are shown in venues like museums, archives, and film clubs, the most important theatrical alternative to commercial movie houses has become the *film festival*.

The first major annual film festival was held in Venice in 1938, and although it had to be suspended during World War II, it was revived afterwards and endures today. Festivals were mounted in Cannes, Berlin, Karlovy Vary, Moscow, Edinburgh, and many other cities. Today there are thousands of festivals all over the world—some large and influential, such as the Toronto Film Festival, and others aimed primarily at bringing unusual films to local audiences, such as the Wisconsin Film Festival in Madison. Some festivals promote specific genres, such as the Brussels International Festival of Fantastic Film, or specific subject matter, such as the New York Gay and Lesbian Film Festival.

Occasionally, such festivals show major Hollywood films. In 2006, *The Da Vinci Code* was the opening-night presentation at the Cannes International Film Festival. Usually, however, the focus is on less mainstream cinema. Some festivals, like those in Cannes and Pusan, South Korea, include markets where such films can find distributors. The International Film Festival Rotterdam even helps finance films made in developing countries. Not all festivals award prizes, but the bigger ones that do—most notably Cannes, Venice, and Berlin—can draw attention to films that might otherwise get lost among the hundreds of movies circulating among festivals.

#### CONNECT TO THE BLOG

The Cannes Film Festival is the biggest of them all. We review an excellent history of it in “Cannes: Behind the art, hype, and politics.”

See [www.davidbordwell.net/blog/?p=931](http://www.davidbordwell.net/blog/?p=931).



Festivals offer a distribution and exhibition outlet for films that might never be picked up for release beyond their country of origin. For example, during the mid-1980s, festival programmers were drawn to new and exciting work coming from Iran. Even without much exhibition in theaters, the films of Abbas Kiarostami, Mohsen Makhmalbaf, and their compatriots became major attractions at festivals. Their high profiles led to occasional films being given commercial distribution in Europe and North America. Although festival screenings didn't make films profitable, the Iranian government sponsored such works as a way for the country and its culture to gain a higher profile internationally.

Passing from festival to festival becomes a mode of distribution for many films, which are sometimes promoted by the stars or directors in question-and-answer sessions. If a film fails to find a theatrical distributor, it may go straight to DVD and to screenings on specialized cable channels, such as the Sundance Channel and the Independent Film Channel in the United States.

Film festivals offer "theatrical" exhibition, since most of them show films in local theaters and sell tickets. At the two-week Palm Springs International Film Festival, for example, one nine-screen multiplex, a three-screen one, an auditorium in a local museum, and one in a community arts center all participate in the festival.

*"I've come to realize that my festival run is my theatrical run."*

— Joe Swanberg, independent film director,  
*Hannah Takes the Stairs*

## Ancillary Markets: Taking Movies Beyond the Theater

When a film leaves theatrical distribution, it lives on. Since the late 1970s, video has created a vast array of ancillary markets, and these typically return more money than the theatrical release. Distributors carefully plan the timing of their video release, putting the film first on airline flights and hotel television systems, then on pay-per-view TV, then on DVD release, and eventually on network broadcast, satellite and cable stations, and cable reruns. Video has proved a boon to smaller distributors, too. Foreign and independent films yield slim theatrical returns, but video markets can make these items profitable.

With only a fifth of Americans being regular moviegoers, television, in one form or another, has kept the theatrical market going. During the 1960s, the U.S. television networks began supporting Hollywood production by purchasing broadcast rights to the studios' output. Lower-budget filmmakers depended on sales to European television and U.S. cable outlets. Television created an important nontheatrical market for films, one that film studios have exploited ever since.

When videocassette rentals became popular in the 1980s, studios were initially convinced that their business would suffer. It didn't. During the 1990s, worldwide film attendance increased significantly. In 1997, when the DVD format was introduced, consumers embraced it eagerly. The disc was portable, took up less storage space than a VHS tape, and offered superior picture and sound quality. It could be played on tabletop players, portable players, game consoles, and computers. It encouraged families to install home theaters with big-screen TVs and multiple speakers. And it was widely available. In the United States, the Wal-Mart chain became the main purveyor of DVDs, accounting for over a third of all sales. Again, despite studio fears, even the arrival of the DVD failed to draw people away from theaters.

The major U.S. studios started their own home entertainment divisions to sell DVDs. Because the discs cost less than VHS tapes to create, the studios reaped huge rewards. In 2007, the major U.S. studios earned about \$9.6 billion worldwide in theaters, whereas home video sales and rentals yielded \$24 billion. Most of the video income came from DVD sales, which yield much higher profits to studios than rentals do.

Today the DVD market sustains most of the world's theatrical filmmaking. Yet movie theaters remain central to the exhibition system. A theatrical screening focuses public interest. Critics review the film, television and the press publicize it, and people talk about it. The theatrical run is the film's launching pad, usually determining how successful it will be in ancillary markets. Theatrical hits may account for as much as 80 percent of a video store's or an Internet service's rentals.

CONNECT TO THE BLOG  
Have DVDs changed the way movies tell their stories? Not much, we argue in "New media and old storytelling"

See [www.davidbordwell.net/blog/?p=827](http://www.davidbordwell.net/blog/?p=827).

Even though the worldwide audience grew during the 1990s, most of the growth was in new markets. U.S. and European attendance showed signs of dwindling slowly. Commercial theaters were competing with home theaters, video games, and Internet entertainment. Since the early 2000s, exhibitors have worried especially about shrinking windows—the time between a film’s theatrical release and its release on DVD and other platforms. The concern is that if the DVD comes out too soon after the theatrical run, people will simply wait for the DVD. Some small distribution firms are experimenting with simultaneously releasing a film to theaters, on DVD, and on cable television, a practice that would eliminate the window that protects the exhibitors.

One lure that exhibitors are using to keep audiences loyal is building Imax screens in multiplexes and showing studio tentpole pictures in that immersive format. *The Polar Express*, *Chicken Little*, and other releases earned a large portion of their returns in Imax and in Imax 3-D. Entries in the Harry Potter and Batman series also play in both Imax and regular theaters. Higher ticket prices benefit exhibitor and film studio alike.

Apart from using the Internet to promote films, Hollywood sells DVDs through online merchants like Amazon.com. These offer a far wider choice of titles than a bricks-and-mortar store, and courier delivery reaches remote parts of the United States and other countries where such stores did not exist. DVD rentals could also be profitable if handled online through Netflix, which offers unlimited rentals for a subscription fee. The big rental chains like Blockbuster have established similar programs in addition to walk-in stores.

The next step for the studios has been to eliminate the cost of physical copies by selling movies as downloads or renting them as streaming video. As broadband access increases in capacity and more people acquire high-speed connections, films of any length can be made available online. Video on demand promises huge profits, and digital encryption can be used to prevent consumers from copying films. The distributors’ aim is to create a system depending less on buying or renting an object than on purchasing a service.

To further this goal, Netflix has expanded its service, added its “Watch Instantly” feature. As part of customers’ monthly fee, they gain access to streaming-video copies of movies at near-DVD quality. Instead of the lengthy wait necessary in downloading a feature film to own, viewers can begin watching the video within a minute but are not able to save or burn a copy. Apple also has a service through its iTunes store, renting access to streaming video of films on PCs, Macs, iPhones, and iPods. Recent movies are available a month after their DVD release, with older titles available for a lower fee.

Despite the swift success of the format, DVDs caused distributors some worries as well. The discs were easy to copy and manufacture in bulk, so piracy took off worldwide. A bootleg DVD of a Hollywood movie could sell for as little as 80¢ in China. Moreover, with nearly 60,000 titles available at the end of 2005, shelf space was at a premium, so discount chains dumped slow-moving titles into bargain bins. DVD retail prices began to drop. The distributors hoped that a new format, the high-definition DVD, would block piracy and recharge the market, coaxing viewers into buying their favorite titles yet again. In the long run, they hoped, consumers would start to bypass packaged media. Far better to purchase films online and, using a convergence device such as XBox 360 or PlayStation, watch them on the family television monitor. But then the movie theater would be even more jeopardized.

Home video in all its varieties brings commercial films into the home. A major additional type of nontheatrical exhibition arises from movies made by amateurs and by aspiring filmmakers. Most of these are shared over the Internet on YouTube and other sites. Some filmmakers, however, want to show their work before a live audience.

To meet that desire, festivals of DIY films have arisen, including the DIY Film Festival, based in Los Angeles and traveling to other cities. Another started in 2001, when 10 small teams of filmmakers in Washington, DC, accepted a challenge to make a short film in 48 hours. All the completed shorts would be screened as a

#### CONNECT TO THE BLOG

Many movies are available on the Internet, for legal or illegal downloading. That doesn’t mean every movie ever made will someday be online. We talk about why with two restoration experts in “The celestial multiplex.”

See [www.davidbordwell.net/blog/?p=595](http://www.davidbordwell.net/blog/?p=595).

#### CONNECT TO THE BLOG

For thoughts on watching movies on iPods, see “Area man lives in fear that attractive woman will ask what’s on his iPod.”

See [www.davidbordwell.net/blog/?p=40](http://www.davidbordwell.net/blog/?p=40).

#### CONNECT TO THE BLOG

We talk about bootleg DVD covers in “Our first anniversary, with a note on the unexpected fruits of film piracy.”

See [www.davidbordwell.net/blog/?p=1351](http://www.davidbordwell.net/blog/?p=1351).

program immediately after the deadline. The result was the 48 Hours Film Project, which has offered similar challenges annually in an increasing number of cities, totaling over 70 by 2009. More informally, the Kino movement began in 1999 in Montréal with the slogan “Do well with nothing, do better with little, and do it right now!” The movement consists of local chapters in about 50 cities internationally. These typically meet once a month to screen their members’ latest films.

With the spread of small-format video capacity to cell phones and the availability of cheap post-production software, more people can shoot moving images with no training. Much of what they shoot remains raw footage. It may be shown to friends or family and then erased. Handheld personal music devices have added video screens, so that movies can be viewed on the go. Digital technology has made nontheatrical film viewing more casual and omnipresent than ever.

## Artistic Implications of Distribution and Exhibition

Grosses, synergy, ticket prices, and movies on video game consoles might seem very remote from issues of film as an art. Yet film is a technological medium usually aimed at a broad public, so the ways in which movies are circulated and shown can affect viewers’ experiences. Home video turns viewing into a small-group or individual activity, but seeing a film in a packed theater yields a different response. Comedies, most people feel, seem funnier in a theater, where infectious laughter can ripple through a crowd. Filmmakers are aware of this difference, and they try to pace comedies slowly enough that crowd laughter doesn’t drown out a key line.

Video distribution and exhibition have created new choices in the realm of storytelling. Until the 1980s, people couldn’t rewatch a movie whenever they wished. With videotape and, especially DVDs, viewers can pore over a film. Bonus materials encourage them to rerun the movie to spot things they missed. Some filmmakers have taken advantage of this opportunity by creating *puzzle films* like *Memento* and *Donnie Darko*, which fans scrutinize for clues to plot enigmas (1.42, 1.43). Video versions can complicate the theatrical release version, as the extra ending of *The Butterfly Effect* does. Some interactive DVD movies permit the viewers to choose how the plot develops. The DVD of Greg Marks’s *11:14* allows you to enter parallel story lines at various points, in effect recasting the film’s overall form.

As the Internet becomes a more common platform for distribution, we should expect variations in narrative form. Short-form storytelling is already at home online, in cartoons and comedy. Events like the festivals run by the 48 Hour Film Project also encourage the making of short films, especially given the assumption that most of the films will later be posted on the Internet. We’re likely to find movies designed specifically for mobile phones; television series like *24* are already creating “mobisodes” branching off the broadcast story line. The web is the logical place for interactive films that use hyperlinks to amplify or detour a line of action.

Marketing and merchandising can extend a theatrical film’s story in intriguing ways. The *Star Wars* novels and video games give the characters more adventures and expand spectators’ engagement with the movies. The *Memento* website hinted at ways to interpret the film. The *Matrix* video games supplied key information for the films’ plots, while the second movie in the trilogy sneaked in hints for winning the games. As a story world shifts from platform to platform, a multimedia saga is created, and viewers’ experiences will shift accordingly. *Matrix* viewers who’ve never played the games understand the story somewhat differently from those who have.

Style can be affected by distribution and exhibition, as is evident in image size. From the 1920s through the 1950s, films were designed to be shown in large venues (1.44). A typical urban movie house seated 1500 viewers and boasted a screen 50 feet wide. This scale gave the image great presence, and it allowed details to be seen easily. Directors could stage dialogue scenes showing several characters in the frame, all of whom would be prominent (1.45). In a theater of that time, a tight close-up would have had a powerful impact.

### CONNECT TO THE BLOG

In this age of new media, have movies lost their importance to audiences? Some would say yes, but we argue against that idea in “Movies still matter.”

See [www.davidbordwell.net/blog/?p=475](http://www.davidbordwell.net/blog/?p=475).

Have Hollywood films declined in popularity internationally? Again, we don’t believe it, as we explain in “World rejects Hollywood blockbusters!?”

See [www.davidbordwell.net/blog/?p=458](http://www.davidbordwell.net/blog/?p=458).

“The *Matrix* is entertainment for the age of media convergence, integrating multiple texts to create a narrative so large that it cannot be contained within a single medium.”

— Henry Jenkins, media analyst

### CONNECT TO THE BLOG

For some pictures of a spectacularly restored movie palace, see “A tale of 2—make that 1 and 1/3 screens,” at

[www.davidbordwell.net/blog/?p=3941](http://www.davidbordwell.net/blog/?p=3941).



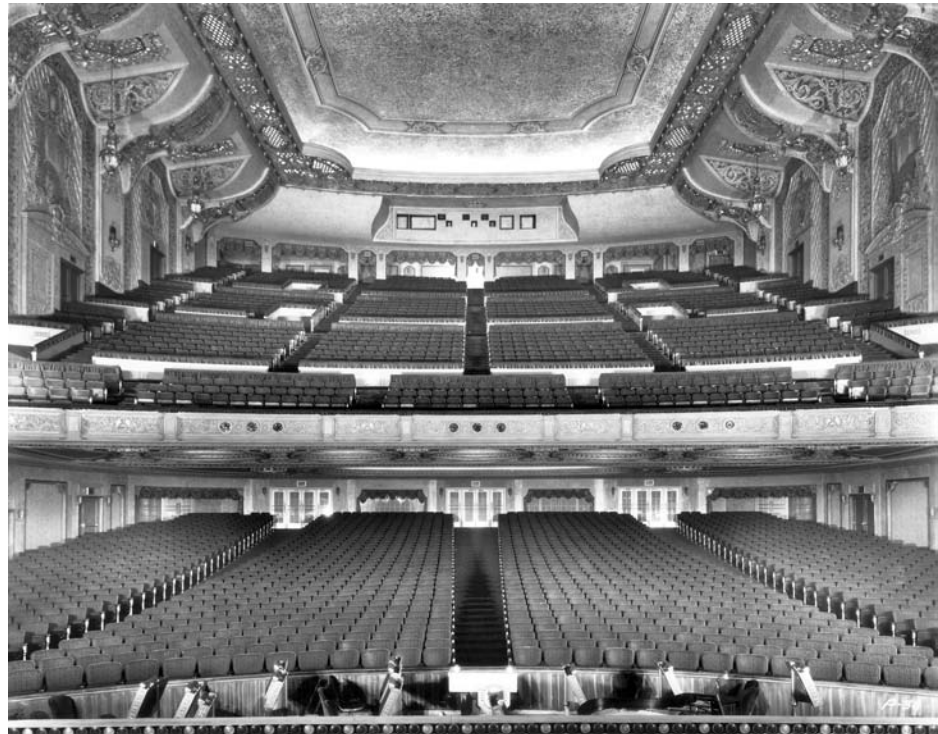
**1.42** In *Magnolia*, the extraordinary meteorological event at the climax is predicted by the recurring numerals 82, referring to chapter and verse in the biblical book of Exodus.



**1.43** In *Magnolia*, the figure 82 appears as coils in the rooftop hose.



**1.44** The interior of the Paramount Theater in Portland, Oregon, built in 1928. Capacity was 3000 seats, at a time when the city population was about 300,000. Note the elaborate decoration on the walls and ceilings, typical of the “picture palaces” of the era.





When television became popular in the 1950s, its image was rather unclear and very small, in some cases only 10 inches diagonally. Early TV shows tended to rely on close shots (1.46), which could be read easily on the small monitor. In the 1960s and 1970s, movie attendance dropped and theaters became smaller. As screens shrank, filmmakers began to rely more on close-ups in the TV manner. This tendency has continued until today. Although modern multiplex screens can be fairly large, audiences have become accustomed to scenes that consist chiefly of big faces (1.47). Now that most films are viewed on video, and many will be watched on handheld devices, it seems likely that commercial films will continue to treat conversation scenes in tight close-ups. In this respect, technology and exhibition circumstances have created stylistic constraints. Yet some contemporary filmmakers have stuck to the older technique (1.48), in effect demanding that audiences view their films on a large theater screen.

There's also the matter of image proportions, and here again, television exhibition exercised some influence. Since the mid-1950s, virtually all theaters have shown films on screens that were wider than the traditional TV monitor. For decades, when movies were shown on television, they were cropped, with certain areas simply left out (1.49–1.51). In response, some filmmakers composed their shots to include a “safe area,” placing the key action in a spot that could fit snugly on the television screen. This created subtle differences in a shot's visual effects



**1.47** *Red Eye*: Extreme close-ups of actors' faces are common in modern cinema, due partly to the fact that most viewing takes place on video formats.



**1.48** In *Flowers of Shanghai*, director Hou Hsiao-hsien builds every scene out of full shots of several characters. The result loses information on a small display and is best seen on a theater screen.



**1.45** On the large screen of a picture palace, all the figures and faces in this shot from *The Thin Man* (1934) would have been quite visible.



**1.46** *Dragnet* (1953): Early television relied heavily on close-ups because of the small screen size.

“Not until seeing [North by Northwest] again on the big screen did I realize conclusively what a gigantic difference screen size does make. . . . This may be yet another reason why younger people have a hard time with older pictures: they've only seen them on the tube, and that reduces films' mystery and mythic impact.”

— Peter Bogdanovich, director, *The Last Picture Show* and *Mask*

**CONNECT TO THE BLOG**  
We explore another peril of watching films on video—logos superimposed on films—in “Bugs: the secret history.”  
See [www.davidbordwell.net/blog/?p=3296](http://www.davidbordwell.net/blog/?p=3296).



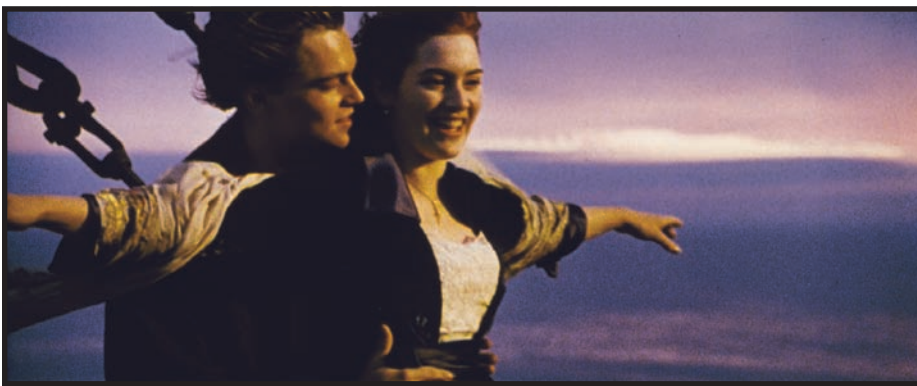
**1.49** In Otto Preminger's *Advise and Consent*, a single shot in the original . . .



**1.50** . . . becomes a pair of shots in the television version . . .



**1.51** . . . thus losing the sense of actors simultaneously reacting to each other.



**1.52** As Rose, the heroine of *Titanic*, feels the exhilaration of “flying” on the ship’s prow, the strongly horizontal composition emphasizes her outstretched arms as wings against a wide horizon.



**1.53** In the video version, nearly all sense of the horizontal composition has disappeared.

**(1.52, 1.53).** Relying on the safe area often encouraged filmmakers to employ more *singles*, shots showing only one player. In a wide-screen frame, a single can compensate for the cropping that TV would demand **(1.54)**.

Today most cable and DVD versions of films are *letterboxed*. Dark bands at the top and bottom of the screen approximate the film’s theatrical proportions. The great majority of filmmakers approve of this, but Stanley Kubrick preferred that video versions of some of his films be shown “full frame.” This is why we’ve reproduced the shots from *The Shining* (2.7, 2.8) full-frame, even though nobody who watched the movie in a theater saw so much headroom. Almost no commercial theaters can show films full-frame today, but Jean-Luc Godard usually composes his shots for that format; you couldn’t letterbox **1.55** without undermining the composi-

“What about a mobile version of every film? Maybe in the future there will be four versions—film, TV, DVD, and mobile. No one knows yet.”

— Arvind Ethan David, managing director of multimedia company Slingshot



**1.54** *Catch Me If You Can*: As with many modern wide-screen films, the essential information on screen left would fit within a traditional television frame. Still, cropping this image would lose a secondary piece of information—the pile of take-out food cartons that implies that Agent Hanratty has been at his desk for days.



**1.55** A very dense shot from the climax of Godard's *Detective*. Although Godard's films are sometimes cropped for theater screenings and DVD versions, the compositions show to best advantage in the older, squarer format.



**1.56** *Angel Face* as rendered on an incorrectly set widescreen television monitor.

tion. In these instances, distribution and theatrical exhibition initially constrained the filmmakers' choices, but video versions expanded them.

The introduction of widescreen TV sets has created a new problem for film images. The screens of traditional sets had a 4:3 ratio, partly because a lot of programming either consisted of old films or was shot on film. Widescreen TVs may be fine for recent films, but older material can suffer—including TV shows originally made to fit standard sets. A widescreen TV image has an aspect ratio of 16:9. If we multiply a 4:3 ratio by three, we get 12:9. So the widescreen image is a third wider than the standard one. Some sets have controls to adjust the ratio and allow black bands on the sides to provide “windowboxing,” the vertical equivalent of letterboxing. But if there's no windowboxing, the picture is stretched horizontally, so that people and objects look squashed (**1.56**). Many viewers do not know how to change the ratio, and some video monitors make it difficult to correct the problem.

Even product placement offers some artistic opportunities. We're usually distracted when a Toyota truck or a box of Frosted Flakes pops up on the screen, but *Back to the Future* cleverly integrates brands into its story. Marty McFly is catapulted from 1985 to 1955. Trapped in a period when diet soda didn't exist, he asks for a Pepsi Free at a soda fountain, but the counterwoman says that it's not free—he'll have to pay for it. Later, buying a bottle of Pepsi from a vending machine, Marty tries frantically to twist off the cap, but his father-to-be George McFly casually pops it off at the machine's built-in opener. Pepsi soft drinks weave through the movie, reasserting Marty's comic inability to adjust to his parents' era—and perhaps stirring some nostalgia in viewers who remember how bits of everyday life have changed since their youth.

CONNECT TO THE BLOG  
Jean-Luc Godard's films present special challenges to the projectionist and DVD producer, as we show in “Godard comes in many shapes and sizes.”

See [www.davidbordwell.net/blog/?p=1592](http://www.davidbordwell.net/blog/?p=1592).



## SUMMARY

---

The art of film depends on technology, from the earliest experiments in apparent motion to the most recent computer programs. It also depends on people who use that technology, who come together to make films, distribute them, and show them. As long as a film is aimed at a public, however small, it enters into the social dynamic of production, distribution, and exhibition. Out of technology and work

processes, filmmakers create an experience for audiences. Along the way, they inevitably make choices about form and style. What options are available to them? How might filmmakers organize the film as a whole? How might they draw on the techniques of the medium? The next two parts of this book survey the possibilities.

## WHERE TO GO FROM HERE

---

### The Making of *Collateral*

Our case study of *Collateral*'s production derives in part from the making-of supplement, "City of Night: The Making of *Collateral*." This 39-minute documentary covers the decisions about filming on HD-video, about lighting the interior of the taxi, and about the three-movement musical track that accompanies the climax. This and some short films on the actors rehearsing and on the special effects of the final sequence appear in the two-disc DVD set (DreamWorks Home Entertainment #91734; this DVD was issued only in a letterboxed version).

Jay Holben's *American Cinematographer* article "Hell on Wheels" (pp. 40–51 in the August 2004 issue) deals in greater detail with the cameras used in the production and with the lighting. David Goldsmith describes the original version of the script, set in New York City, in "*Collateral*: Stuart Beattie's Character-Driven Thriller," *Creative Screenwriting*, 11, 4 (2004): 50–53. Two online articles that deal with the film's filmmaking choices and style are Bryant Frazer's "How DP Dion Beebe Adapted to HD for Michael Mann's *Collateral*," on the website of the International Cinematographers Guild (n.d.), [www.cameraguild.com/interviews/chat\\_beebe/beebe\\_collateral.html](http://www.cameraguild.com/interviews/chat_beebe/beebe_collateral.html), and Daniel Restuccio's "Seeing in the Dark for *Collateral*: Director Michael Mann Re-invents Digital Filmmaking" (August 2004), [findarticles.com/p/articles/mi\\_m0HNN/is\\_8\\_19/ain6171215/pg\\_1](http://findarticles.com/p/articles/mi_m0HNN/is_8_19/ain6171215/pg_1).

### The Illusion of Cinematic Motion

For about 80 years, writers on film have maintained that the reason we see movement in movies is due to "persistence of vision." Today, no researcher into perception is likely to accept this explanation. Several optical processes are involved, but as we indicate on p. 000, the two most prominent are flicker fusion and apparent motion. More specifically, the stimuli in a film instantiate "short-range" apparent motion, in which small-scale changes in the display trigger activity in different parts of the visual cortex. Filmic motion takes place in our brain, not on our retina. For an explanation of

these ideas, and a thorough critique of the traditional explanation, see Joseph and Barbara Anderson, "The Myth of Persistence of Vision Revisited," *Journal of Film and Video*, 45, 1 (Spring 1993): 3–12. It is available online at [www.uca.edu/org/ccsmi/ccsmi/classicwork/myth%20revisited.htm](http://www.uca.edu/org/ccsmi/ccsmi/classicwork/myth%20revisited.htm).

### Film's Roots in Technology

André Bazin suggests that humankind dreamed of cinema long before it actually appeared: "The concept men had of it existed so to speak fully armed in their minds, as if in some platonic heaven" (*What Is Cinema?* vol. 1 [Berkeley: University of California Press, 1967], p. 17). Still, whatever its antecedents in ancient Greece and the Renaissance, the cinema became technically feasible only in the 19th century.

Motion pictures depended on many discoveries in various scientific and industrial fields: optics and lens making, the control of light (especially by means of arc lamps), chemistry (involving particularly the production of cellulose), steel production, precision machining, and other areas. The cinema machine is closely related to other machines of the period. For example, engineers in the 19th century designed machines that could intermittently unwind, advance, perforate, advance again, and wind up a strip of material at a constant rate. The drive apparatus on cameras and projectors is a late development of a technology that had already made feasible the sewing machine, the telegraph tape, and the machine gun. The 19-century origins of film, based on mechanical and chemical processes, are particularly evident today, since we've become accustomed to electronic and digital media.

On the history of film technology, see Barry Salt's *Film Style and Technology: History and Analysis* (London: Starword, 1983); and Leo Enticknap, *Moving Image Technology: From Zoetrope to Digital* (London: Wallflower, 2005). Douglas Gomery has pioneered the economic history of film technology: For a survey, see Robert C. Allen and Douglas Gomery, *Film History: Theory and Practice* (New York: Knopf, 1985). The most comprehensive reference book on the subject is Ira Konigsberg, *The Complete Film Dictionary* (New York: Penguin, 1997). An entertaining



appreciation of film technology is Nicholson Baker's "The Projector," in his *The Size of Thoughts* (New York: Vintage, 1994), pp. 36–50. Brian McKernan provides an overview of the introduction and development of digital technology in *Digital Cinema: The Revolution in Cinematography, Post-production, and Distribution* (New York: McGraw-Hill, 2005).

## Film Distribution and Exhibition

For comprehensive surveys of the major "content providers" today, see Benjamin M. Compaine and Douglas Gomery, *Who Owns the Media? Competition and Concentration in the Mass Media Industry* (Mahwah, NJ: Erlbaum, 2000); Barry R. Litman, *The Motion Picture Mega-Industry* (Boston: Allyn & Bacon, 1998); and Edward S. Herman and Robert W. McChesney, *The Global Media: The New Missionaries of Global Capitalism* (London: Cassell, 1997).

Edward J. Epstein offers an excellent overview of the major distributors' activities in *The Big Picture: The New Logic of Money and Power in Hollywood* (New York: Random House, 2005). Douglas Gomery's *The Hollywood Studio System: A History* (London: British Film Institute, 2005) traces the history of the distributors, showing their roots in vertically integrated studios, which controlled production and exhibition as well.

On moviegoing, see Bruce A. Austin, *Immediate Seating: A Look at Movie Audiences* (Belmont, CA: Wadsworth, 1988); Gregory A. Waller, ed., *Moviegoing in America: A Sourcebook in the History of Film Exhibition* (Oxford: Blackwell, 2002); and Richard Maltby, Melvyn Stokes, and Robert C. Allen, eds., *Going to the Movies: Hollywood and the Social Experience of Cinema* (Exeter: University of Exeter Press, 2007). Douglas Gomery's *Shared Pleasures: A History of Moviegoing in America* (Madison: University of Wisconsin Press, 1992) offers a history of U.S. exhibition.

## Stages of Film Production

A very good survey of production is Stephen Asch and Edward Pincus's *The Filmmaker's Handbook* (New York: Plume, 1999). For the producer, see Paul N. Lazarus III, *The Film Producer* (New York: St. Martin's Press, 1991) and Lynda Obst's acerbic memoir, *Hello, He Lied* (New York: Broadway, 1996). Art Linson, producer of *The Untouchables* and *Fight Club*, has written two entertaining books about his role: *A Pound of Flesh: Perilous Tales of How to Produce Movies in Hollywood* (New York: Grove Press, 1993) and *What Just Happened? Bitter Hollywood Tales from the Front Line* (New York: Bloomsbury, 2002). The details of organizing preparation and shooting are explained in Alain Silver and Elizabeth Ward's *The Film Director's Team: A Practical Guide for Production Managers, Assistant Directors, and All Filmmakers* (Los Angeles: Silman-James, 1992). For a survey of directing, see Tom Kingdon, *Total Directing: Integrating Camera and Performance in*

*Film and Television* (Beverly Hills, CA: Silman-James, 2004). Many "making-of" books include examples of storyboards; see also Steven D. Katz, *Film Directing Shot by Shot* (Studio City, CA: Wiese, 1991). On setting and production design, see Ward Preston, *What an Art Director Does* (Los Angeles: Silman-James, 1994). Norman Hollyn's *The Film Editing Room Handbook* (Los Angeles: Lone Eagle, 1999) offers a detailed account of image and sound editing procedures. Computer-based methods are discussed in Gael Chandler, *Cut by Cut: Editing Your Film or Video* (Studio City, CA: Michael Wiese, 2004). A wide range of job titles, from Assistant Director to Mouth/Beak Replacement Coordinator, is explained by the workers themselves in Barbara Baker, *Let the Credits Roll: Interviews with Film Crew* (Jefferson, NC: McFarland, 2003).

Several books explain how independent films are financed, produced, and sold. The most wide-ranging are David Rosen and Peter Hamilton, *Off-Hollywood: The Making and Marketing of Independent Films* (New York: Grove Weidenfeld, 1990), and Gregory Goodell, *Independent Feature Film Production: A Complete Guide from Concept Through Distribution*, 2d ed. (New York: St. Martin's Press, 1998). Billy Frolick's *What I Really Want to Do Is Direct* (New York: Plume, 1997) follows seven film-school graduates trying to make low-budget features. Christine Vachon, producer of *Boys Don't Cry* and *Far from Heaven*, shares her insights in *Shooting to Kill* (New York: Avon, 1998). See also Mark Polish, Michael Polish, and Jonathan Sheldon, *The Declaration of Independent Filmmaking: An Insider's Guide to Making Movies Outside of Hollywood* (Orlando, FL: Harcourt, 2005).

In *How I Made a Hundred Movies in Hollywood and Never Lost a Dime* (New York: Random House, 1990), Roger Corman reviews his career in exploitation cinema. A sample passage: "In the first half of 1957 I capitalized on the sensational headlines following the Russians' launch of their Sputnik satellite. . . . I shot *War of the Satellites* in a little under ten days. No one even knew what the satellite was supposed to look like. It was whatever I said it should look like" (pp. 44–45). Corman also supplies the introduction to Lloyd Kaufman's *All I Needed to Know about Filmmaking I Learned from the Toxic Avenger: The Shocking True Story of Troma Studios* (New York: Berkeley, 1998), which details the making of such Troma classics as *The Class of Nuke 'Em High* and *Chopper Chicks in Zombie-town*. See as well the interviews collected in Philip Gaines and David J. Rhodes, *Micro-Budget Hollywood: Budgeting (and Making) Feature Films for \$50,000 to \$500,000* (Los Angeles: Silman-James, 1995).

John Pierson, a producer, distributor, and festival scout, traces how *Clerks*; *She's Gotta Have It*; *sex, lies, and videotape*; and other low-budget films found success in *Spike, Mike, Slackers, and Dykes* (New York: Hyperion Press, 1995). Emanuel Levy's *Cinema of Outsiders: The Rise of American Independent Film* (New York: New York University Press, 1999) provides a historical survey. The early

history of an important distributor of independent films, Miramax, is examined in Alissa Perren, “sex, lies and marketing: Miramax and the Development of the Quality Indie Blockbuster,” *Film Quarterly* 55, 2 (Winter 2001–2002): 30–39.

We can learn a great deal about production from careful case studies. See Rudy Behlmer, *America’s Favorite Movies: Behind the Scenes* (New York: Ungar, 1982); Aljean Harmetz, *The Making of “The Wizard of Oz”* (New York: Limelight, 1984); John Sayles, *Thinking in Pictures: The Making of the Movie “Matewan”* (Boston: Houghton Mifflin, 1987); Ronald Haver, “A Star Is Born”: *The Making of the 1954 Movie and Its 1985 Restoration* (New York: Knopf, 1988); Stephen Rebello, *Alfred Hitchcock and the Making of “Psycho”* (New York: Dembuer, 1990); Paul M. Sammon, *Future Noir: The Making of “Blade Runner”* (New York: HarperPrism, 1996); and Dan Auiler, “Vertigo”: *The Making of a Hitchcock Classic* (New York: St. Martin’s, 1998). John Gregory Dunne’s *Monster: Living off the Big Screen* (New York: Vintage, 1997) is a memoir of eight years spent rewriting the script that became *Up Close and Personal*. Many of Spike Lee’s productions have been documented with published journals and production notes; see, for example, “Do The Right Thing”: *A Spike Lee Joint* (New York: Simon & Schuster, 1989). For the independent scene, Vachon’s *Shooting to Kill*, mentioned above, documents the making of Todd Haynes’s *Velvet Goldmine*.

## Moviemakers Speak

Collections of interviews with filmmakers have become common in recent decades. We will mention interviews with designers, cinematographers, editors, sound technicians, and others in the chapters on individual film techniques. The director, however, supervises the entire process of filmmaking, so we list here some of the best interview books: Peter Bogdanovich, *Who the Devil Made It* (New York: Knopf, 1997); Mike Goodrich, *Directing* (Crans-Prés-Céligny, 2002); Jeremy Kagan, *Directors Close Up* (Boston: Focal Press, 2000); Andrew Sarris, ed., *Interviews with Film Directors* (Indianapolis: Bobbs-Merrill, 1967); and Gerald Duchovnay, *Film Voices: Interviews from Post Script* (Albany: SUNY Press, 2004). Paul Cronin has collected the writings of Alexander Mackendrick in *On Filmmaking* (London: Faber & Faber, 2004). Mackendrick was a fine director and a superb teacher, and the book offers incisive advice on all phases of production, from screenwriting (“Use coincidence to get characters into trouble, not out of trouble”) to editing (“The geography of the scene must be immediately apparent to the audience”). See also Laurent Tirard, *Moviemakers’ Master Class: Private Lessons from the World’s Foremost Directors* (New York: Faber & Faber, 2002). Some important directors have written books on their craft, including Edward Dmytryk, *On Screen Directing* (Boston: Focal Press, 1984); David Mamet, *On Directing Film* (New York: Penguin, 1992); Sidney Lumet,

*Making Movies* (New York, Knopf, 1995); and Mike Figgis, *Digital Filmmaking* (New York: Faber & Faber, 2007).

Rick Lyman had the intriguing idea of asking a director or performer to choose a film and comment on it as it was screening. The results are in *Watching Movies: The Biggest Names in Cinema Talk About the Films That Matter Most* (New York: Henry Holt, 2003). See also Mark Cousins’s *Scene by Scene: Film Actors and Directors Discuss Their Work* (London: Laurence King, 2002).

## Screenwriting and Rules

In mass-production filmmaking, the screenwriter is expected to follow traditional storytelling patterns. For several decades, Hollywood has called for scripts about strong central characters who struggle to achieve well-defined goals. According to most experts, a script ought to have a three-act structure, with the first-act climax coming about a quarter of the way into the film, the second-act climax appearing about three-quarters of the way through, and the climax of the final act resolving the protagonist’s problem. Writers will also be expected to include *plot points*, twists that turn the action in new directions.

These formulas are discussed in Syd Field, *Screenplay: The Foundations of Screenwriting* (New York: Delta, 1979); Linda Seger, *Making a Good Script Great* (New York: Dodd, Mead, 1987); and Michael Hauge, *Writing Screenplays That Sell* (New York: HarperCollins, 1988). Kristin Thompson has argued that many finished films have not three but four major parts, depending on how the protagonist defines and changes important goals. See her *Storytelling in the New Hollywood: Understanding Classical Narrative Technique* (Cambridge, MA: Harvard University Press, 1999). See also David Bordwell, *The Way Hollywood Tells It: Story and Style in Modern Movies* (Berkeley: University of California Press, 2006). Older but still useful books on screenwriting are Eugene Vale, *The Technique of Screenplay Writing* (New York: Grosset & Dunlap, 1972), and Lewis Herman, *A Practical Manual of Screen Playwriting for Theater and Television Films* (New York: New American Library, 1974).

Filmmaker J. J. Murphy identifies and examines the distinctive conventions of independent screenplay writing in *Me and You and Memento and Fargo: How Independent Screenplays Work* (New York: Continuum, 2007).

Roger Ebert provides an entertaining collection of overworked storytelling conventions in *Ebert’s Little Movie Glossary* (Kansas City: Andrews & McMeel, 1994). Learn about “The Fallacy of the Talking Killer” and “The Moe Rule of Bomb Disposal.”

## Small-Scale Production

There are few studies of artisanal and collective film production, but here are some informative works. On Jean Rouch, see Mick Eaton, ed., *Anthropology—Reality—*

*Cinema: The Films of Jean Rouch* (London: British Film Institute, 1979). The makers of *Harlan County, U.S.A.* and other independent documentaries discuss their production methods in Alan Rosenthal, *The Documentary Conscience: A Casebook in Film Making* (Berkeley: University of California Press, 1980). Maya Deren's work is analyzed in P. Adams Sitney, *Visionary Film: The American Avant-Garde, 1943–2000*, 3rd ed. (New York: Oxford University Press, 2002). Stan Brakhage ruminates on his approach to filmmaking in *Brakhage Scrapbook: Collected Writings* (New Paltz, NY: Documentext, 1982). For information on other experimentalists, see Scott MacDonald, *A Critical Cinema: Interviews with Independent Filmmakers* (Berkeley: University of California Press, 1988), and David E. James, *Allegories of Cinema: American Film in the Sixties* (Princeton, NJ: Princeton University Press, 1989).

Collective film production is the subject of Bill Nichols, *Newsreel: Documentary Filmmaking on the American Left* (New York: Arno, 1980), and Michael Renov, "Newsreel: Old and New—Towards an Historical Profile," *Film Quarterly* 41, 1 (Fall 1987): 20–33. Collective production in film and other media is discussed in John Downing, *Radical Media: The Political Experience of Alternative Communication* (Boston: South End Press, 1984).

The DIY movement has largely been fostered on the Internet. For the DIY Film Festival, see its homepage, [www.diyconvention.com/](http://www.diyconvention.com/). The 48 Hour Film Project is here: [www.48hourfilm.com/](http://www.48hourfilm.com/). Many of the films can be found on the website or on YouTube, where a search on either "DIY film" or "48 Hour Film Project" yields thousands of results. For a list of the cities that hold screenings of locally made 48 Hour films, see [en.wikipedia.org/wiki/48\\_Hour\\_Film\\_Project](http://en.wikipedia.org/wiki/48_Hour_Film_Project). New Zealand has created its own version, 48Hours; see [www.48hours.co.nz](http://www.48hours.co.nz). Films from this festival can be found at YouTube by searching "48 Hour New Zealand."

## Production Stills Versus Frame Enlargements

A film may live in our memory as much through photographs as through our experiences of the movie. The photograph may be a copy of a single frame taken from the finished film; this is usually called a *frame enlargement*. Most movie photographs we see in books and magazines, however, are *production stills*, images shot by a still photographer on the set.

Production stills are usually photographically clearer than frame enlargements, and they can be useful for studying details of setting or costume. But they differ from the image on the filmstrip. Usually, the still photographer rearranges and relights the actors and takes the shot from an angle and distance not comparable to that shown in the finished film. Frame enlargements therefore offer a much more faithful record of the finished film.

For example, both **1.57** and **1.58** have been used to illustrate discussion of Jean Renoir's *Rules of the Game*. In

1.57, a production still, the actors have been posed for the most balanced composition and the clearest view of all three. It is not, however, faithful to the finished film. The actual shot from the film is shown in 1.58. The frame enlargement shows that the composition is looser than that of the production still. The frame enlargement also reveals that Renoir uses the central doorway to suggest action taking place in depth. Here, as often happens, a production still does not capture important features of the director's visual style.

Virtually all of the photographs in this book are frame enlargements.



**1.57** A production still from Renoir's *The Rules of the Game*.



**1.58** A frame from *The Rules of the Game*.



## Websites

### General Reference

**www.imdb.com/** A basic reference for films, people, and companies worldwide. The Power Search is particularly helpful. Not infallible, so double-check on other sites.

**www.afi.chadwyck.com/** The American Film Institute catalogue of U.S. motion pictures. Offers detailed film-by-film information, including extensive plot synopses. Proprietary site accessed through libraries.

**www.fii.chadwyck.com/** A Film Index International site containing bibliographical information about films and people. Accessed through libraries.

For a description of two useful podcasts on filmmaking and the movie industry, see “Movies on the radio,” at [www.davidbordwell.net/blog/?p=902](http://www.davidbordwell.net/blog/?p=902).

### On the Film Industry

**www.cjr.org/tools/owners/** The *Columbia Journalism Review* site on media conglomerates, with up-to-date lists of holdings.

**www.boxofficemojo.com/** Lists U.S. and international gross receipts for current films, as well as records of films released in previous decades.

**www.indiewire.com/** Provides current information on U.S. independent cinema.

**www.wis-kino.com/kino.htm/** Offers links to the worldwide Kino movement.

**www.aintitcoolnews.com/** A popular film fansite hosted by Harry Knowles.

**www.mpa.org/** The official site of the major distribution companies, with heavy emphasis on antipiracy activities.

**www.natoonline.org/** The official site of the National Association of Theatre Owners, with some statistics.

For a description of two useful podcasts on filmmaking and the movie industry, see “Movies on the radio,” at [www.davidbordwell.net/blog/?p=902](http://www.davidbordwell.net/blog/?p=902).

## Recommended DVDs

*Sunday Morning Shootout: Best of Season 1.* Peter Bart, editor of *Variety*, and Peter Guber of Mandalay Pictures discuss current industry trends. Our marginal quotation from Stacy Sher comes from the third disc in this set.

## Recommended DVD Supplements

Before laser discs and DVDs, making-of documentaries weren't common, but some documentaries on older films have been put together using modern cast and crew interviews, finished footage, still photography, and other material. Excellent examples of these include “The Making of *American Graffiti*,” “The Making of *Jaws*,” “The Making of *Amadeus*,” “Guns for Hire: The Making of *The Magnificent Seven*,” and “Destination Hitchcock: The Making

of *North by Northwest*.” The supplements for *Alien* are grouped in “preproduction,” “production,” and “postproduction” sections, and a particularly good example of a screen test (Sigourney Weaver) is included. “The Making of *20,000 Leagues Under the Sea*” is one of several supplements on the DVD for that film, making it an unusually thorough treatment of an older film (1954).

Once the laser disc and especially the DVD age began, supplements came to be a part of the filmmaking process, with on-set footage and interviews planned in advance. A good early example is “The Making of *Jurassic Park*,” with its accompanying supplements. As the popularity of DVD supplements became apparent, longer and more systematic supplements were concocted. An outstanding example is “The Hundred Days” documentary for *Master and Commander*. The extended-edition DVDs for *The Lord of the Rings* raised the bar for in-depth coverage, with two supplemental discs for each entry in the trilogy.

Supplements often include storyboard images as galleries. Director Ridley Scott trained in painting and design, and some of the impressive storyboard images that he created for *Alien* are covered in its supplements. The “Story” section of *Toy Story*'s documentaries shows scenes of a storyboard artist explaining the action to the main filmmakers, with the sketches shown side-by-side with his presentation. Later the storyboard images are compared with the final images.

Many making-ofs stick to the most prominent parts of filmmaking: design, musical composition, casting. Occasionally, however, unusual aspects of the process receive coverage. Take animal wrangling. Horses are the obvious topic, and the “Home of the Horse Lords” track of the *Lord of the Rings: The Return of the King* deals with them. “Inside the Labyrinth,” a making-of for *The Silence of the Lambs*, includes a moth wrangler. One of the funniest of such segments must be “Attack of the Squirrels” on the *Charlie and the Chocolate Factory* DVD.

Some unusual supplements include an unconventional production diary for the independent film *Magnolia* and an evocative 8-minute compilation, “T2: On the Set,” of footage from the shooting of *Terminator 2: Judgment Day*. “The Making of *My Own Private Idaho*” demonstrates well how cost-cutting can be done on a low-budget indie.

As previsualization becomes more common, DVD supplements are beginning to include selections: “Previsualization” on the *War of the Worlds* disc (where the animatics run in split screen, beside finished footage), animatics for each part of *The Lord of the Rings*, and the “Day 27: Previsualization” entry in *King Kong: Peter Jackson's Production Diaries*, as well as a featurette on previz, “The Making of a Shot: The T-Rex Fight” (including the scene in 1.26).

The marketing of a film seldom gets described on DVD, apart from the fact that trailers and posters come with most discs. There are rare cases of coverage of the still photographer making publicity shots on-set: “Taking Testimonial Pictures” (*A Hard Day's Night*) and “Day 127: Unit Photog-



raphy” (*King Kong: Peter Jackson’s Production Diaries*). The same two DVDs include “Dealing with ‘The Men from the Press,’” an interview with the Beatles’ publicist, and “Day 53: International Press Junket,” where *King Kong*’s unit publicist squires a group of reporters around a working set.

In general, the *King Kong: Peter Jackson’s Production Diaries* discs deal with many specifics of filmmaking and distribution that we mention in this chapter: “Day 25: Clapperboards,” “Day 62: Cameras” (where camera operators working on-set open their machines to show how they work), “Day 113: Second Unit,” and “Day 110: Global Partner Summit,” on a distributors’ junket.

Agnès Varda includes a superb film-essay on the making of *Vagabond* in the French DVD, which bears the original title *Sans toit ni loi*. (Both the film and the supplements have English subtitles.) Director Varda’s charmingly personal making-of covers the production, marketing, and showcasing of *Vagabond* at international film festivals. Varda also prepared an affectionate making-of featurette about her husband Jacques Demy’s 1967 *Young Girls of Rochefort*, which is available on the British Film Institute’s DVD release.

*Hellboy II: The Golden Army* has a lengthy making-of documentary, “*Hellboy: In Service of the Demon*,” that touches on most phases of production. *Pirates of the Caribbean: Dead Man’s Chest* has two detailed, surprisingly candid supplements: “Charting the Return,” on preproduction, and “According to Plan,” on principal photography. *The Golden Compass* has a series of short documentaries that are more interesting than their bland titles suggest. “Finding Lyra Belaqua” traces the casting process rather than simply showing audition tapes; “The Launch” deals briefly with press junkets and even interviews a junket producer. Other useful making-ofs are “Deciphering Zodiac” (*Zodiac*) and “I Am Iron Man” (*Iron Man*).

For more details on some of the supplements we have recommended in *Film Art*, see “Beyond praise: DVD supplements that really tell you something,” at [www.davidbordwell.net/blog/?p=1339](http://www.davidbordwell.net/blog/?p=1339), and “Beyond praise 2: More DVD supplements that really tell you something,” at [www.davidbordwell.net/blog/?p=4004](http://www.davidbordwell.net/blog/?p=4004). On the DVD of *The Da Vinci Code*, discussed in that entry, see “Another little *Da Vinci Code* mystery,” at [www.davidbordwell.net/blog/?p=224](http://www.davidbordwell.net/blog/?p=224). Further entries in this series will be added occasionally.