People inscribe their histories, beliefs, attitudes, desires and dreams in the images they make.

Robert Hughes, Art Critic
Realism and Formalism

Even before 1900, movies began to develop in two major directions: the **realistic** and the **formalistic**. In the mid-1890s in France, the Lumière brothers delighted audiences with their short movies dealing with everyday occurrences. Such films as *The Arrival of a Train* (4–4a) fascinated viewers precisely because they seemed to capture the flux and spontaneity of events as they were viewed in real life. At about the same time, Georges Méliès (pronounced mel-yez) was creating a number of fantasy films that emphasized purely imagined events. Such movies as *A Trip to the Moon* (4–4b) were typical mixtures of whimsical narrative and trick photography. In many respects, the Lumières can be regarded as the founders of the realist tradition of cinema, and Méliès of the formalist tradition.

Realism and formalism are general rather than absolute terms. When used to suggest a tendency toward either polarity, such labels can be helpful, but in the end they're just labels. Few films are exclusively formalist in style, and fewer yet are completely realist. There is also an important difference between realism and reality, although this distinction is often forgotten. Realism is a particular style, whereas physical reality is the source of all the raw materials of film, both realistic and formalistic. Virtually all movie directors go to the photographable world for their subject matter, but what they do with this material—how they shape and manipulate it—is what determines their stylistic emphasis.

Generally speaking, realistic films attempt to reproduce the surface of reality with a minimum of distortion. In photographing objects and events, the filmmaker tries to suggest the richness of life itself. Both realist and formalist film directors must select (and hence, emphasize) certain details from the chaotic sprawl of reality. But the element of selectivity in realistic films is less obvious. Realists, in short, try to preserve the illusion that their film world is unmanipulated, an objective mirror of the actual world. Formalists, on the other hand, make no such pretense. They deliberately stylize and distort their raw materials so that no one would mistake a manipulated image of an object or event for the real thing. The stylization calls attention to itself: It's part of the show.

We rarely notice the style in a realistic movie because the artist tends to be self-effacing, invisible. Such filmmakers are more concerned with *what's* being shown rather than how it's manipulated. The camera is used conservatively. It's essentially a recording mechanism that reproduces the surface of tangible objects with as little commentary as possible. Some realists aim for a rough look in their images, one that doesn't prettify the materials with a self-conscious beauty of form. “If it's too pretty, it's false,” is an implicit assumption. A high premium is placed on simplicity, spontaneity, and directness. This is not to suggest that these movies lack artistry, however, for at its best, the realistic cinema specializes in art that conceals its artistry.

Formalist movies are stylistically flamboyant. Their directors are concerned with expressing their subjective experience of reality, not how other people might see it. Formalists are often referred to as **expressionists**, because their self-expression is at least as important as the subject matter itself. Expressionists are often concerned with spiritual and psychological truths, which they feel can be conveyed best by distorting the surface of the material world. The camera is used as a method of commenting on the subject matter, a way of emphasizing its essential rather than its objective nature. Formalist movies have a high degree of manipulation, a stylization of reality.

Most realists would claim that their major concern is with **content** rather than **form** or technique. The subject matter is always supreme, and anything that distracts from the content is viewed with suspicion. In its most extreme form, the realistic cinema tends toward documentary, with its emphasis on photographing actual events and people (1–3). The formalist cinema, on the other hand, tends to emphasize technique and expressiveness. The most extreme example of this style of filmmaking is found in the **avant-garde** cinema (1–7). Some of these movies are totally abstract; pure forms (that is, nonrepresentational colors, lines, and shapes)
Realism and Formalism. Critics and theorists have championed film as the most realistic of all the arts in capturing how an experience actually looks and sounds, like this thrilling re-creation of a ferocious battle at sea during the Napoleonic Wars. A stage director would have to suggest the battle symbolically, with stylized lighting and off-stage sound effects. A novelist would have to re-create the event with words, a painter with pigments brushstroked onto a flat canvas. But a film director can create the event with much greater credibility by plunging the camera (a proxy for us) in the middle of the most terrifying ordeals without actually putting us in harm’s way. In short, film realism is more like “being there” than any other artistic medium or any other style of presentation. Audiences can experience the thrills without facing any of the dangers. As early as 1910, the great Russian novelist Leo Tolstoy realized that this fledgling new art form would surpass the magnificent achievements of nineteenth-century literary realism: “This little clinking contraption with the revolving handle will make a revolution in our life—in the life of writers. It is a direct attack on the old methods of literary art. This swift change of scene, this blending of emotion and experience—it is much better than the heavy, long-drawn-out kind of writing to which we are accustomed. It is closer to life.”

Gold Diggers of 1933 presents us with another type of experience entirely. The choreographies of Busby Berkeley are triumphs of artifice, far removed from the real world. Depression-weary audiences flocked to movies like this precisely to get away from everyday reality. They wanted magic and enchantment, not reminders of their real-life problems. Berkeley’s style was the most formalized of all choreographers. He liberated the camera from the narrow confines of the proscenium arch, soaring overhead, even swirling among the dancers, and juxtaposing shots from a variety of vantage points throughout the musical numbers. He often photographed his dancers from unusual angles, like this bird’s-eye shot. Sometimes he didn’t even bother using dancers at all, preferring a uniform contingent of good-looking young women who are used primarily as semiabstract visual units, like bits of glass in a shifting kaleidoscope of formal patterns. Audiences were enchanted.

1–1a MASTER AND COMMANDER: THE FAR SIDE OF THE WORLD (U.S.A., 2003) directed by Peter Weir. (20th Century Fox/Universal)

1–1b GOLD Diggers OF 1933 (U.S.A., 1934) choreographed by Busby Berkeley, directed by Mervyn LeRoy. (Warner Bros.)
Critics and scholars categorize movies according to a variety of criteria. Two of the most common methods of classification are by style and by type. The three principal styles—realism, classicism, and formalism—might be regarded as a continuous spectrum of possibilities, rather than airtight categories. Similarly, the three types of movies—documentaries, fiction, and avant-garde films—are also terms of convenience, for they often overlap. Realistic films like *Paradise Now* (1–4) can shade into the documentary. Formalist movies like *The Seventh Seal* (1–6) have a personal quality suggesting the traditional domain of the avant-garde. Most fiction films, especially those produced in America, tend to conform to the classical paradigm. Classical cinema can be viewed as an intermediate style that avoids the extremes of realism and formalism—though most movies in the classical form lean toward one or the other style.

The emotional impact of a documentary image usually derives from its truth rather than its beauty. Davis’s indictment of America’s devastation of Vietnam consists primarily of TV newsreel footage. This photo shows some Vietnamese children running from an accidental bombing raid on their community, their clothes literally burned off their bodies by napalm. “First they bomb as much as they please,” a Vietnamese observes, “then they film it.” It was images such as these that eventually turned the majority of Americans against the war. Fernando Solanas and Octavio Getino, Third Cinema filmmakers, have pointed out, “Every image that documents, bears witness to, refutes, or deepens the truth of a situation is something more than a film image or purely artistic fact; it becomes something that the System finds indigestible.” Paradoxically, in no country except the United States would such self-damning footage be allowed on the public airwaves—which are controlled, or at least regulated, by governments. No other country has a First Amendment, guaranteeing freedom of expression. *(BBS Productions/Rainbow Releasing)*

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**1–2 Classification chart of styles and types of film.**

**1–3 HEARTS & MINDS**

(U.S.A., 1975) directed by Peter Davis.

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constitute the only content. Most fiction films fall somewhere between these two extremes, in a mode critics refer to as classical cinema (1–5).

Even the terms *form* and *content* aren’t as clear-cut as they may sometimes seem. As the filmmaker and author Vladimir Nilsen pointed out: “A photograph is by no means a complete and whole reflection of reality; the photographic picture represents only one or another selection from the sum of physical attributes of the object photographed.” The form of a shot—the way in which a subject is photographed—is its true content, not necessarily what the subject is perceived to be in reality. The communications theorist Marshall McLuhan pointed out that the content of one medium is actually another medium. For example, a photograph (visual image) depicting a man eating an apple (taste) involves two different mediums: Each communicates information—content—in a different way. A verbal description of the photograph of the man eating the apple would involve yet another medium (language), which communicates information in yet another manner. In each case, the precise information is determined by the medium, although superficially all three have the same content.

The great French critic André Bazin noted, “One way of understanding better what a film is trying to say is to know how it is saying it.” The American critic Herman G. Weinberg expressed the matter succinctly: “The way a story is told is part of that story. You can tell the same story badly or well; you can also tell it well enough or magnificently. It depends on who is telling the story.”
Classical cinema avoids the extremes of realism and formalism in favor of a slightly stylized presentation that has at least a surface plausibility. Movies in this form are often handsomely mounted, but the style rarely calls attention to itself. The images are determined by their relevance to the story and characters, rather than a desire for authenticity or formal beauty alone. The implicit ideal is a functional, invisible style: The pictorial elements are subordinated to the presentation of characters in action. Classical cinema is story oriented. The narrative line is seldom allowed to wander, nor is it broken up by authorial intrusions. A high premium is placed on the entertainment value of the story, which is often shaped to conform to the conventions of a popular genre. Often the characters are played by stars rather than unknown players, and their roles are sometimes tailored to showcase their personal charms. The human materials are paramount in the classical cinema. The characters are generally appealing and slightly romanticized. The audience is encouraged to identify with their values and goals.  

(Columbia Pictures)
The formalist cinema is largely a director's cinema: We're often aware of the personality of the filmmaker. There is a high degree of manipulation in the narrative materials, and the visual presentation is stylized. The story is exploited as a vehicle for the filmmaker's personal obsessions. Formalists are not much concerned with how realistic their images are, but with their beauty or power. The most artificial genres—musicals, sci-fi, fantasy films—are generally classified as formalist. Most movies of this sort deal with extraordinary characters and events—such as this mortal game of chess between a medieval knight and the figure of Death. This style of cinema excels in dealing with ideas—political, religious, philosophical—and is often the chosen medium of propagandistic artists. Its texture is densely symbolic: Feelings are expressed through forms, like the dramatic high-contrast lighting of this shot. Most of the great stylists of the cinema are formalists.  

In the avant-garde cinema, subject matter is often suppressed in favor of abstraction and an emphasis on formal beauty for its own sake. Like many artists in this idiom, Belson began as a painter and was attracted to film because of its temporal and kinetic dimensions. He was strongly influenced by such European avant-garde artists as Hans Richter, who championed the “absolute film”—a graphic cinema of pure forms divorced from a recognizable subject matter. Belson's works are inspired by philosophical concepts derived primarily from Asian religions. For example, this image could represent a stylized eyeball, or it could be seen as a Mandala design, the Tibetan Buddhist symbol of the universe. But these are essentially private sources and are rarely presented explicitly in films themselves. Form is the true content of Belson's movies. His animated images are mostly geometrical shapes, dissolving and contracting circles of light, and kinetic swirls. His patterns expand, congeal, flicker, and split off into other shapes, only to re-form and explode again, like a spectacular fireworks display. It is a cinema of uncompromising self-expression—personal, often inaccessible, and iconoclastic.  

1–7 ALLURES (U.S.A., 1961) directed by Jordan Belson.

1–6 THE SEVENTH SEAL (Sweden, 1957) with Bengt Ekerot and Max von Sydow, cinematography by Gunnar Fischer, directed by Ingmar Bergman.
Realism and realistic are much overtaxed terms, both in life and in movies. We use these terms to express so many different ideas. For example, people often praise the “realism” of the boxing matches in Raging Bull. What they really mean is that these scenes are powerful, intense, and vivid. These traits owe very little to realism as a style. In fact, the boxing matches are extremely stylized. The images are often photographed in dreamy slow motion, with lyrical crane shots, weird accompanying sound effects (like hissing sounds and jungle screams), staccato editing in both the images and the sound. True, the subject matter is based on actual life—the brief boxing career of the American middleweight champion of the 1940s, Jake La Motta. But the stylistic treatment of these biographical materials is extravagantly subjective (1–8a). At the opposite extreme, the special effects in Constantine (1–8b) are so uncannily realistic that we would swear they were real if we didn’t know better.

Form and content are best used as relative terms. They are useful concepts for temporarily isolating specific aspects of a movie for the purposes of closer examination. Such a separation is artificial, of course, yet this technique can yield more detailed insights into the work of art as a whole.

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The Shots

The shots are defined by the amount of subject matter that’s included within the frame of the screen. In actual practice, however, shot designations vary considerably. A medium shot for one director might be considered a close-up by another. Furthermore, the longer the shot, the less precise are the designations. In general, shots are determined on the basis of how much of the human figure is in view. The shot is not necessarily defined by the distance between the camera and the object photographed, for in some instances certain lenses distort distances. For example, a telephoto lens can produce a close-up on the screen, yet the camera in such shots is generally quite distant from the subject matter.

Although there are many different kinds of shots in the cinema, most of them are subsumed under the six basic categories: (1) the extreme long shot, (2) the long shot, (3) the full shot, (4) the medium shot, (5) the close-up, and (6) the extreme close-up. The deep-focus shot is usually a variation of the long shot (1–9b).
The **extreme long shot** is taken from a great distance, sometimes as far as a quarter of a mile away. It’s almost always an exterior shot and shows much of the locale. Extreme long shots also serve as spatial frames of reference for the closer shots and for this reason are sometimes called **establishing shots**. If people are included in extreme long shots, they usually appear as mere specks on the screen (1–9a). The most effective use of these shots is often found in **epic** films, where locale plays an important role: westerns, war films, samurai films, and historical movies.

The **long shot** (1–9b) is perhaps the most complex in the cinema, and the term itself one of the most imprecise. Usually, long-shot ranges correspond approximately to the distance between the audience and the stage in the live theater. The closest range within this category is the **full shot**, which just barely includes the human body in full, with the head near the top of the frame and the feet near the bottom.

The **medium shot** contains a figure from the knees or waist up. A functional shot, it’s useful for shooting exposition scenes, for carrying movement, and for dialogue. There are several variations of the medium shot. The two-shot contains two figures (1–10). The **three-shot** contains three figures; beyond three, the shot tends to become a full shot, unless the other figures are in the background. The **over-the-shoulder shot** usually contains two figures, one with part of his or her back to the camera, the other facing the camera.

The **close-up** shows very little if any locale and concentrates on a relatively small object—an animal’s face, for example (1–11a). Because the close-up magnifies the size of an object, it tends to elevate the importance of things, often suggesting a symbolic significance. The **extreme close-up** is a variation of this shot. Thus, instead of a face, the extreme close-up might show only a person’s eyes or mouth (1–11b).

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**1–10 JUNO** (U.S.A./Canada, 2007)  
with Ellen Page and Michael Cera, directed by Jason Reitman.

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Above all, the medium shot is the shot of the couple, romantic or otherwise. Generally, two-shots have a split focus rather than a single dominant: The bifurcated composition usually emphasizes equality, two people sharing the same intimate space. The medium two-shot reigns supreme in such genres as romantic comedies, love stories, and **buddy films**.  

(Fox Searchlight. Photo: Doane Gregory)
The deep-focus shot is usually a long shot consisting of a number of focal distances and photographed in depth (1–9b). Sometimes called a wide-angle shot because it requires a wide-angle lens to photograph, this type of shot captures objects at close, medium, and long ranges simultaneously, all of them in sharp focus. The objects in a deep-focus shot are carefully arranged in a succession of planes. By using this layering technique, the director can guide the viewer’s eye from one distance to another. Generally, the eye travels from a close range to a medium to a long.

The close-up can seem to force an image into our faces, especially when the subject matter, like this snarling wolf, seems to be on the verge of attacking us. Of course, if the image contained a more alluring subject, the effect would be more appealing, even seductive. (MGM/Lakeshore/Berrick Filmproduktions)

The closer the shot, the more intense the emotion. In this extreme close-up, for example, the terrified protagonist is cornered like a trapped animal. The blurred, throbbing red light in the background is like a molten eruption on the surface of the image, an apt symbol of his emotional meltdown. (Dreamworks/Paramount. Photo: Andrew Cooper)
The Angles

The angle from which an object is photographed can often serve as an authorial commentary on the subject matter. If the angle is slight, it can serve as a subtle form of emotional coloration. If the angle is extreme, it can represent the major meaning of an image. The angle is determined by where the camera is placed, not the subject photographed. A picture of a person photographed from a high angle actually suggests an opposite interpretation from an image of the same person photographed from a low angle. The subject matter can be identical in the two images, yet the information we derive from both clearly shows that the form is the content, the content the form.

Film realists tend to avoid extreme angles. Most of their scenes are photographed from eye level, roughly five to six feet off the ground—approximately the way an actual observer might view a scene. Usually these directors attempt to capture the clearest view of an object. Eye-level shots are seldom intrinsically dramatic, because they tend to be the norm. Virtually all directors use some eye-level shots, especially in routine exposition scenes.

Formalist directors are not always concerned with the clearest image of an object, but with the image that best captures its essential nature. Extreme angles involve distortions. Yet many filmmakers feel that by distorting the surface realism of an object, a greater truth is achieved—a symbolic truth. Both realist and formalist directors know that the viewer tends to identify with the camera’s lens. The realist wishes to make the audience forget that there’s a camera at all. The formalist is constantly calling attention to it.

High angles tend to make people look powerless, trapped. The higher the angle, the more it tends to imply fatality. The camera’s angle can be inferred by the background of a shot: High angles usually show the ground or floor; low angles the sky or ceiling. Because we tend to associate light with safety, high-key lighting is generally nonthreatening and reassuring. But not always. We have been socially conditioned to believe that danger lurks in darkness, so when a traumatic assault takes place in broad daylight, as in this scene from Bonnie and Clyde, the effect is doubly scary because it’s so unexpected. (Warner Bros.-Seven Arts/Tatira-Hiller)
There are five basic angles in the cinema: (1) the *bird's-eye view*, (2) the *high angle*, (3) the eye-level shot, (4) the *low angle*, and (5) the *oblique angle*. As in the case of shot designations, there are many intermediate kinds of angles. For example, there can be a considerable difference between a low and extreme low angle—although usually, of course, such differences tend to be matters of degree. Generally speaking, the more extreme the angle, the more distracting and conspicuous it is in terms of the subject matter being photographed.

The *bird's-eye view* is perhaps the most disorienting angle of all, for it involves photographing a scene from directly overhead (1–12b). Because we seldom view events from this perspective, the subject matter of such shots might initially seem unrecognizable and abstract. For this reason, filmmakers tend to avoid this type of camera setup. In certain contexts, however, this angle can be highly expressive. In effect, bird's-eye shots permit us to hover above a scene like all-powerful gods. The people photographed seem vulnerable and insignificant.

Ordinary *high-angle shots* are not so extreme, and therefore not so disorienting. The camera is placed on a crane, or some natural high promontory, but the sense of spectator omnipotence is not overwhelming. High angles give a viewer a sense of a general overview, but not necessarily one implying destiny or fate. High angles reduce the height of the objects photographed and usually include the ground or floor as background. Movement is slowed down: This angle tends to be ineffective for conveying a sense of speed, useful for suggesting tediousness. The importance of setting or environment is increased: The locale often seems to swallow people. High angles reduce the importance of a subject. A person seems harmless and insignificant photographed from above. This angle is also effective for conveying a character's self-contempt.
Some filmmakers avoid angles because they’re too manipulative and judgmental. In the movies of the Japanese master Yasujiro Ozu, the camera is usually placed four feet from the floor—as if an observer were viewing the events seated Japanese style. Ozu treated his characters as equals; his approach discourages us from viewing them either condescendingly or sentimentally. For the most part, they are ordinary people, decent and conscientious. But Ozu lets them reveal themselves. He believed that value judgments are implied through the use of angles, and he kept his camera neutral and dispassionate. Eye-level shots permit us to make up our own minds about what kind of people are being presented.
Low angles have the opposite effect of high. They increase height and thus are useful for suggesting verticality. More practically, they increase a short actor’s height. Motion is speeded up, and in scenes of violence especially, low angles capture a sense of confusion. Environment is usually minimized in low angles, and often the sky or a ceiling is the only background. Psychologically, low angles heighten the importance of a subject. The figure looms threateningly over the spectator, who is made to feel insecure and dominated. A person photographed from below inspires fear and awe (1–13a). For this reason, low angles are often used in propaganda films or in scenes depicting heroism.

Lyricism is a vague but indispensable critical term emphasizing emotional intensity and a sensuous richness of expression. Derived from the word lyre, a harplike stringed instrument, lyricism is most often associated with music and poetry. Lyricism in movies also suggests a rhapsodic exuberance. Though lyrical qualities can be independent of subject matter, at its best, lyricism is a stylistic externalization of the scene’s emotional content. John Ford was one of the supreme masters of the big-studio era, a visual lyricist of the first rank. He disliked overt emotions in his movies. He preferred conveying feelings through forms. Stylized lighting effects and formal compositions such as this invariably embody intense emotions. “Pictures, not words, should tell the story,” Ford insisted. (20th Century Fox)
Sidney Lumet was always a director acutely aware of how technique can shape content. He insisted that technique should be the servant of content. Most of this movie takes place in the confined quarters of a jury room, as twelve male jurors try to come to a decision about a murder trial. “As the picture unfolded,” Lumet wrote, “I wanted the room to seem smaller and smaller.” As the conflict between the jurors grows more intense, Lumet shifted to increasingly longer lenses, thus reinforcing the sense of entrapment. His strategy also included a gradual shift in angles:

I shot the first third of the movie above eye level, and then, by lowering the camera, shot the second third at eye level, and the last third from below eye level. In that way, toward the end, the ceiling began to appear. Not only were the walls closing in, the ceiling was as well. The sense of increasing claustrophobia did a lot to raise the tension of the last part of the movie.

See also Making Movies, by Sidney Lumet (New York: Vintage Books, 1996), one of the best practical discussions of how big-budget movies are actually made, including the commercial as well as artistic issues involved. (United Artists)

Oblique angles, sometimes called “Dutch tilt” shots, photograph the subject with the camera leaning to the left or right. In this film, about the treacherous world of corporate espionage, dreams and reality are frighteningly intertwined, aptly captured by this disorienting tilt shot. As the main character (Leonardo DiCaprio) points out: “Dreams are real while we’re in them. It’s only when we wake up that we realize something was actually strange.” (Warner Bros.)
Chapter 1 PHOTOGRAPHY

An **oblique angle** involves a lateral tilt of the camera (1–15b). When the image is projected, the horizon is skewed. Characters photographed at an oblique angle will look as though they’re about to fall to one side. This angle is sometimes used for **point-of-view shots**—to suggest the imbalance of a drunk, for example. Psychologically, oblique angles suggest tension, transition, and impending movement. The natural horizontal and vertical lines of a scene are converted into unstable diagonals. Oblique angles are not used often, for they can disorient a viewer. In scenes depicting violence, however, they can be effective in capturing precisely this sense of visual anxiety.

### Light and Dark

Generally speaking, the **cinematographer** (who is also known as the director of photography, or D.P.) is responsible for arranging and controlling the lighting of a film and the quality of the photography. Usually the cinematographer executes the specific or general instructions of the director. The illumination of most movies is seldom a casual matter, for lights can be used with pinpoint accuracy. Through the use of spotlights, which are highly selective in their focus and intensity, a director can guide the viewer’s eyes to any area of the photographed image. Motion picture lighting is seldom static, for even the slightest movement of the camera or the subject can cause the lighting to shift. Movies take so long to complete, primarily because of the enormous complexities involved in lighting each new shot. The cinematographer must make allowances for every movement within a continuous **take**. Each different color, shape, and texture reflects or absorbs differing amounts of light. If an image is photographed in depth, an even greater complication is involved, for the lighting must also be in depth.

There are a number of different styles of lighting. Usually designated as a lighting **key**, the style is geared to the theme and mood of a film, as well as its **genre**. Comedies and musicals, for example, tend to be lit in **high key**, with bright, even illumination and no conspicuous shadows. Tragedies and melodramas are usually lit in **high contrast**, with harsh shafts of lights and dramatic streaks of blackness. Mysteries, thrillers, and gangster films are generally in **low key**, with diffused shadows and atmospheric pools of light (1–16a & b). Each lighting key is only an approximation, and some images consist of a combination of lighting styles—a low-key background with a few high-contrast elements in the foreground, for example. Movies shot in studios are generally more stylized and theatrical, whereas location photography tends to use available illumination, with a more natural style of lighting.

Lights and darks have had symbolic connotations since the dawn of humanity. The Bible is filled with light–dark symbolism. Rembrandt and Caravaggio used light–dark contrasts for psychological purposes as well. In general, artists have used darkness to suggest fear, evil, the unknown. Light usually suggests security, virtue, truth, joy. Because of these conventional symbolic associations, some filmmakers deliberately reverse light–dark expectations (1–12a). Hitchcock’s movies attempt to jolt viewers by exposing their shallow sense of security. He staged many of his most violent scenes in the glaring light.

Lighting can be used realistically or expressionistically. The realist tends to favor **available lighting**, at least in exterior scenes. Even out of doors, however, most filmmakers use some lamps and reflectors, either to augment the natural light or, on bright days, to soften the harsh contrasts produced by the sun. With the aid of special **lenses** and more light-sensitive film stocks, some directors have managed to dispense with artificial lighting completely. Available lighting tends to produce a documentary look in the film image—a grainy texture and an absence of tonal balance. For interior shots, realists tend to prefer images with an obvious light source—a window or a lamp. Or they often use a diffused kind of lighting with no artificial, strong contrasts. In short, the realist doesn’t use conspicuous lighting unless its source is
During the Hollywood big-studio era, cinematographers developed the technique of three-point lighting, which is still widely practiced throughout the world. With three-point lighting, the key light is the primary source of illumination. This light creates the dominant of an image—that area that first attracts our eye because it contains the most compelling contrast, usually of light and shadow. Generally, the dominant is also the area of greatest dramatic interest, the shot’s focal point of action, either physical or psychological. Fill lights, which are less intense than the key, soften the harshness of the main light source, revealing subsidiary details that would otherwise be hidden by shadow. The backlights separate the foreground figures from their setting, heightening the illusion of three-dimensional depth in the image. Three-point methods tend to be most expressive with low-key lighting such as this. On the other hand, when a shot is bathed with high-key illumination, the three sources of light are more equally distributed over the surface of the image, and hence are more bland photographically. (CAB/Fr3/Mk2/Zespol Filmowy “Tor”)
Formalists use light less literally. They are guided by its symbolic implications and will often stress these qualities by deliberately distorting natural light patterns. A face lighted from below almost always appears sinister, even if the actor assumes a totally neutral expression (1–16b). Similarly, an obstruction placed in front of a light source can assume frightening implications, for it tends to threaten our sense of safety. On the other hand, in some contexts, especially in exterior shots, a silhouette effect can be soft and romantic.

1–16b MR. BROOKS (U.S.A., 2007)
with Kevin Costner, directed by Bruce A. Evans.

The source of light can radically alter our response to a character. The low light source of this image, for example, creates a sinister, eerie effect, despite the fact that Kevin Costner is a handsome man. He doesn’t look handsome here, just creepy. (MGM/Relativity/Element. Photo: Ben Glass)

1–16c CRIES & WHISPERS
(Sweden, 1972) with Liv Ullmann, directed by Ingmar Bergman.

Side lighting can be a useful technique to symbolize a character’s divided nature, plunging half her face in darkness, the other half in light. (Svenska Filminstitutet/Cinematograph AB)
Film noir (literally, black cinema) is a style defined primarily in terms of light—or the lack of it. This style typified a variety of American genres in the 1940s and early 1950s. Noir is a world of night and shadows. Its milieu is almost exclusively urban. The style is profuse in images of dark streets, cigarette smoke swirling in dimly lit cocktail lounges, and symbols of fragility, such as windowpanes, sheer clothing, glasses, and mirrors. Motifs of entrapment abound: alleys, tunnels, subways, elevators, and train cars. Often the settings are locations of transience, like cheap rented rooms, piers, bus terminals, and railroad yards. The images are rich in sensuous textures, like neon-lit streets, windshields streaked with mud, and shafts of light streaming through windows of lonely rooms. Characters are imprisoned behind ornate lattices, grillwork, drifting fog and smoke. Visual designs emphasize harsh lighting contrasts, jagged shapes, and violated surfaces. The tone of film noir is fatalistic and paranoid. It’s suffused with pessimism, emphasizing the darker aspects of the human condition. Its themes characteristically revolve around violence, lust, greed, betrayal, and depravity. (Paramount Pictures)

Film noir has remained popular even up to the present, though often with a revisionist twist. Kiss Kiss Bang Bang, for example, contains the requisite noir lighting style, the squalid Los Angeles milieu of crime and deception, the fatalistic voice-over narration, and an occasional corpse that needs to be discreetly disposed of. The revisionist angle is the film’s black comedy, including the private eye Perry van Shrike (Kilmer), AKA “Gay Perry,” who’s ruthless, tough, and—you guessed it—gay. (Warner Bros.)

1–17a DOUBLE INDEMNITY (U.S.A., 1944) with Barbara Stanwyck and Fred MacMurray, directed by Billy Wilder.

When a face is obviously lighted from above, a certain angelic quality, known as the halo effect, is the result. “Spiritual” lighting of this type tends to border on the cliché, however. **Backlighting**, which is a kind of semisilhouetting, is soft and ethereal. Love scenes are often photographed with a halo effect around the heads of the lovers to give them a romantic aura (1–20a). Backlighting is especially evocative when used to highlight blonde hair.

Through the use of spotlights, an image can be composed of violent contrasts of lights and darks. The surface of such images seems disfigured, torn up. The formalist director uses such severe contrasts for psychological and thematic purposes (1–18).
Art historians often distinguish between a "painterly" and a "linear" style, a distinction that’s also useful in the photographic arts. A painterly style is soft-edged, sensuous, and romantic, best typified by the Impressionist landscapes of Claude Monet and the voluptuous figure paintings of Pierre Auguste Renoir. Line is de-emphasized: Colors and textures shimmer in a hazily defined, radiantly illuminated environment. On the other hand, a linear style emphasizes drawing, sharply defined edges, and the supremacy of line over color and texture. In the field of painting, a linear style typifies such artists as Sandro Botticelli and the French classicist Jean-Auguste-Dominique Ingres.

Movies can also be photographed in a painterly or linear style, depending on the lighting, the lenses, and filters. The shot from Braveheart might almost have been painted by Renoir. Cinematographer John Toll used soft-focus lenses and warm “natural” backlighting (creating a halo effect around the characters’ heads) to produce an intensely romantic lyricism. Wyler’s post–World War II masterpiece, The Best Years of Our Lives, was photographed by the great Gregg Toland. Its linear style is austere, deglamourized, shot in razor-sharp deep-focus. It was a style suited to the times. The postwar era was a period of disillusionment, sober reevaluations, and very few sentimental illusions. The high-key cinematography is polished, to be sure, but it’s also simple, matter-of-fact, the invisible servant of a serious subject matter.
By deliberately permitting too much light to enter the aperture of the camera, a filmmaker can overexpose an image—producing a glaring flood of light over the entire surface of the picture. Overexposure has been most effectively used in nightmare and fantasy sequences. Sometimes this technique can suggest a kind of horrible publicity, a sense of emotional exaggeration.

**Color**

Color in film didn’t become commercially widespread until the 1940s. There were many experiments in color before this period, however. Some of Méliès’s movies, for example, were painted by hand in assembly line fashion, with each painter responsible for coloring a minute area of the filmstrip. The original version of *The Birth of a Nation* (1915) was printed on various tinted stocks to suggest different moods: The burning of Atlanta was tinted red, the night scenes blue, and the exterior love scenes pale yellow.

Sophisticated film color was developed in the 1930s, but for many years a major problem was its tendency to prettify everything. If color enhanced a sense of beauty—in a musical or a historical extravaganza—the effects were often appropriate. Thus, the best feature films of the early years of color were usually those with artificial or exotic settings. Realistic dramas were thought to be unsuitable vehicles for color. The earliest color processes tended also to emphasize garishness, and often special consultants had to be called in to tone down the color schemes of costumes, makeup, and decor.

Furthermore, each color process tended to specialize in a certain base hue—red, blue, or yellow, usually—whereas other colors of the spectrum were somewhat distorted. It was well into the 1950s before these problems were resolved. Compared with the subtle color perceptions of the human eye, however, and despite the apparent precision of most present-day color processing, cinematic color is still a relatively crude approximation.

Color tends to be a subconscious element in film. It’s strongly emotional in its appeal, expressive and atmospheric rather than intellectual. Psychologists have discovered that most people actively attempt to interpret the lines of a composition, but they tend to accept color passively, permitting it to suggest moods rather than objects. Lines are associated with nouns; color with adjectives. Line is sometimes thought to be masculine; color feminine. Both lines and colors suggest meanings, then, but in somewhat different ways.

Since earliest times, visual artists have used color for symbolic purposes. Color symbolism is probably culturally acquired, though its implications are surprisingly similar in otherwise differing societies. In general, cool colors (blue, green, violet) tend to suggest tranquility, aloofness, and serenity. Cool colors also have a tendency to recede in an image. Warm colors (red, yellow, orange) suggest aggressiveness, violence, and stimulation. They tend to come forward in most images.

Black-and-white photography in a color film is sometimes used for symbolic purposes. Some filmmakers alternate whole episodes in black and white with entire sequences in color. The problem with this technique is its corny symbolism. The jolting black-and-white sequences are too obviously “significant” in the most arty sense. A more effective variation is simply not to use too much color, to let black and white predominate. In De Sica’s *The Garden of the Finzi-Continis*, which is set in Fascist Italy, the early portions of the movie are richly resplendent in shimmering golds, reds, and almost every shade of green. As political repression becomes more brutal, these colors almost imperceptibly begin to wash out, until near the end of the film the images are dominated by whites, blacks, and blue-grays. A similar technique is used in *Life Is Beautiful* (1997).

In the 1980s, a new computer technology was developed, allowing black-and-white movies to be “colorized”—a process that provoked a howl of protest from most film artists and critics.
Red is a color that's often linked with sex, but the dramatic context determines whether the red (and the sex) is seductive or repellent. In this film, the unhappily married protagonist (Spacey) escapes the banality of his suburban hell by fantasizing about a flirtatious teenager (Suvari), a friend of his daughter. He often imagines her nude, covered with red rose petals—a startling metaphor of his fiercely aroused sexuality, his reawakening manhood. (Dreamworks/Jinks/Cohen. Photo: Lorey Sebastian)

But red is also the color of danger. Of violence. Of blood. Blood is a major transmitter of HIV, a precursor of AIDS. This movie explores the sadomasochistic behavior of an HIV-positive bisexual (Collard) who has unprotected sex with two lovers, including Bohringer. Maybe she's color blind. (Banfilm/La Sept Cinema/SNC)
Bright colors tend to be cheerful, so directors often desaturate them, especially if the subject matter is sober or grim. Based on the great American novel by Edith Wharton, this movie explores a forbidden love among New York’s upper crust in the 1870s. The film’s images seem almost washed in sepia, like faded photos. The colors are tastefully subdued, correct, almost repressed, reflecting the conservative values of the society itself. (Columbia Pictures. Photo: Phillip Caruso)

The Godfather was photographed by the great Gordon Willis, who is famous for his low-key lighting magic. The colors are not only subdued, they’re suffocating in airless dark rooms. In this shadowy world, only an occasional wisp of color is allowed to escape—a vibrant red rose, pale yellow light filtering discreetly through the blinds, a few splotches of mottled flesh tones. The rest is darkness. (Paramount Pictures)
This movie begins as a slapstick comedy, and the colors are warm and sunny, typical of Mediterranean settings. But as the Nazi Holocaust spreads southward, our hero, an Italian Jew (Benigni), is arrested and shipped to a German concentration camp by rail (pictured). The colors begin to pale. Once inside the death camp, virtually all the color is drained from the images. Only a few faded flickers of skin tones occasionally punctuate the ashen pallor of the camp and its prisoners. (Melampo Cinematografica/Cecchi Gori. Photo: Sergio Strizzi)

This movie, a companion film to Eastwood’s Flags of Our Fathers (see 9–19a), also centers on the brutal 36-day battle for a tiny Japanese island near the end of World War II. Over 7,000 Americans lost their lives in that battle, but the Japanese force of over 20,000 was virtually wiped out. Watanabe plays a stoic general who knows full well that without backup to help them, his troops are doomed. Note how the color is drained from the image. The two Japanese flags, ordinarily vibrant with their bright red sunburst motifs, look as though they have been bled of their vitality, sickly remnants of their former glory. (Warner Bros. Photo: Merie W. Wallace)
The colorized versions of some genres, like period films, musicals, and other forms of light entertainment, are not damaged too seriously by this process, but the technique is a disaster in carefully photographed black-and-white films, like *Citizen Kane*, with its *film noir* lighting style and brilliant deep-focus photography (see Chapter 12, “Synthesis: Citizen Kane”).

Colorization also throws off the compositional balance of some shots, creating new dominants. In the shot from *Dark Victory* (1–23b), for example, the dominant is Brent's blue suit, which is irrelevant to the dramatic context. In the original black-and-white version, Davis is the dominant, her dark outfit contrasting with the white fireplace that frames her figure. Distracting visual dominants undercut the dramatic impact of such scenes. We keep thinking Brent's suit must be important. It is, but only to the computer.
Not every shot in a movie is photographed in the same style. Many of the earlier portions of this sci-fi film are photographed in a plain, functional style. After the earthling protagonist (Allen) falls in love with an appealing and hunky alien (Bridges), the photographic style becomes more romantic. The city’s lights are etherealized by the shimmering soft-focus photography. The halo effect around the lovers’ heads reinforces the air of enchantment. The gently falling snowflakes conspire to enhance the magical moment. These aren’t just lovers, these are soul mates. (Columbia Pictures)

Although the futuristic setting of this sci-fi film contains some supernatural elements, it uses color in a rigorously “realistic” manner. Aliens is a testosterone world of cold, hard surfaces, heavy-metal technology, and blue-gray fluorescence. This is not a place for children and other gentle creatures. The colors are radically muted, mostly military tans and drab earth colors. Only the red filter adds a note of alarm and urgency. (20th Century Fox)
Lenses, Filters, and Stocks

Because the camera’s lens is a crude mechanism compared to the human eye, some of the most striking effects in a movie image can be achieved through the distortions of the photographic process itself. Especially with regard to size and distance, the camera lens doesn’t make mental adjustments but records things literally. For example, whatever is placed closest to the camera’s lens will appear larger than an object at a greater distance. Hence, a coffee cup can totally obliterate a human being if the cup is in front of the lens and the human is standing at long-shot range.

Realist filmmakers tend to use normal, or standard, lenses to produce a minimum of distortion. These lenses photograph subjects more or less as they are perceived by the human eye. Formalist filmmakers often prefer lenses and filters that intensify given qualities and suppress others. Cloud formations, for example, can be exaggerated threateningly or softly diffused, depending on what kind of lens or filter is used. Different shapes, colors, and lighting intensities can be radically altered through the use of specific optical modifiers. There are literally dozens of different lenses, but most of them are subsumed under three major categories: those in the standard (nondistorted) range, the telephoto lenses, and the wide angles.

The telephoto lens is often used to get close-ups of objects from extreme distances. For example, no cinematographer is likely to want to get close enough to a wolf to photograph a close-up with a standard lens (1-11a). In cases such as these, the telephoto is used, thus guaranteeing the safety of the cinematographer while still producing the necessary close-up. Telephotos also allow cinematographers to work discreetly. In crowded city locations, for example, passersby are likely to stare at a movie camera. The telephoto permits the cinematographer to remain hidden—in a truck, for example—while he or she shoots close shots through a windshield or window. In effect, the lens works like a telescope, and because of its long focal length, it is sometimes called a long lens.

Telephoto lenses produce a number of side effects that are sometimes exploited by directors for symbolic use. Most long lenses are in sharp focus on one distance plane only. Objects placed before or beyond that distance blur, go out of focus—an expressive technique, especially to the formalist filmmaker (1-26a). The longer the lens, the more sensitive it is to distances; in the case of extremely long lenses, objects placed a mere few inches away from the selected focal plane can be out of focus. This deliberate blurring of planes in the background, foreground, or both can produce some striking photographic and atmospheric effects.
Some telephoto lenses are so precise they can focus on a thin slice of action that’s only a few inches deep. Note how the gun and Walker’s hand are radically blurred, as is the background behind him. Our eyes are forced to concentrate on the face of the character during a decisive moment of his life. (New Line. Photo: John Clifford)

Telephoto lenses are often used to enhance the lyrical potential of an image. In this shot, the blurry background renders it supremely irrelevant to what matters most to these characters—each other. The telephoto lens, in effect, is a silent declaration of their total devotion. (Miramax/Universal. Photo: George Kraychyk)

A high-ranking police officer must break off his adulterous affair with his lover, a policewoman who is his subordinate. The lens forces us to focus on his feelings, while she is nearly obliterated by the soft focus, hardly worthy of our notice. If Shelton wanted to emphasize her feelings, Rhames would be in soft focus, and she in sharp. If the director wanted to stress the equality of their emotions, he would have used a wide-angle lens, thus rendering them both in sharp focus. (United Artists. Photo: Robert Zuckerman)

The lens of each of these six shots provides a commentary on the relationship of the characters to their surroundings.

**1–26a** **RUNNING SCARED** (U.S.A./Canada/Germany, 2006) with Paul Walker, directed by Wayne Kramer.

Some telephoto lenses are so precise they can focus on a thin slice of action that’s only a few inches deep. Note how the gun and Walker’s hand are radically blurred, as is the background behind him. Our eyes are forced to concentrate on the face of the character during a decisive moment of his life. (New Line. Photo: John Clifford)
Wide-angle lenses are used whenever deep-focus photography is called for. Objects a few feet from the lens as well as those in the “depth” of the background are in equal focus, reinforcing the interconnectedness of the visual planes. This movie deals with a German industrialist (Neeson) who saved the lives of hundreds of Jews during the Nazi Holocaust. Because deep focus allows for the repetition of visual motifs into infinity, Spielberg is able to suggest that Jews all over Europe were being herded in a similar manner, but their fate was not so lucky as Schindler’s Jews. *(Universal Pictures)*

Extreme wide-angle lenses exaggerate distances between depth planes, a useful symbolic technique. As distorted by the wide-angle lens, Chan’s fist is nearly as large as his head and his feet seem to be standing in another county. *(Golden Harvest/Maple Ridge/New Line)*

Check out the lights in the background. A shrewdly chosen filter makes them look blurry, floating dreamily like woozy fireflies. Do we need to hear the dialogue to know that these two are falling for each other? Do we need to be told that the movie is a romantic comedy? The filtered photography says it all. *(Warner Bros. Photo: Ron Batzdorff)*
The focal distance of long lenses can usually be adjusted while shooting, and thus, the director is able to neutralize planes and guide the viewer's eye to various distances in a sequence—a technique called **rack focusing**, or **selective focusing**. In *The Graduate*, director Mike Nichols used a slight focus shift instead of a cut when he wanted the viewer to look first at the young heroine, who then blurs out of focus, then at her mother, who is standing a few feet off in a doorway. The focus-shifting technique suggests a cause–effect relationship and parallels the heroine’s sudden realization that her boyfriend’s secret mistress is her own mother. In *The French Connection*, William Friedkin used selective focus in a sequence showing a criminal under surveillance. He remains in sharp focus while the city crowds of his environment are an undifferentiated blur. At strategic moments in the sequence, Friedkin shifts the focal plane from the criminal to the dogged detective who is tailing him in the crowd.

Long lenses also flatten images, decreasing the sense of distance between depth planes. Two people standing yards apart might look inches away when photographed with a telephoto lens. With very long lenses, distance planes are so compressed that the image can resemble a flat surface of abstract patterns. When anything moves toward or away from the camera in such shots, the mobile object doesn’t seem to be moving at all.

The **wide-angle lenses**, also called **short lenses**, have short focal lengths and wide angles of view. These are the lenses used in deep-focus shots, for they preserve a sharpness of focus on virtually all distance planes. The distortions involved in short lenses are both linear and spatial. The wider the angle, the more lines and shapes tend to warp, especially at the edges of the image. Distances between various depth planes are also exaggerated with these lenses: Two people standing a foot away from each other can appear yards apart in a wide-angle image, like the side rearview mirror of an auto.

Movement toward or away from the camera is exaggerated when photographed with a short lens. Two or three ordinary steps can seem like gigantically lengthy strides—an effective technique when a director wants to emphasize a character’s strength, dominance, or ruthlessness. The fish-eye lens is the most extreme wide-angle modifier. It creates such severe distortions that the lateral portions of the screen seem warped into a sphere, as though we were looking through a crystal ball.

Lenses and filters can be used for purely cosmetic purposes—to make an actor or actress taller, slimmer, younger, or older. Josef von Sternberg sometimes covered his lens with a translucent silk stocking to give his images a gauzy, romantic aura. A few glamour actresses beyond a certain age even had clauses in their contracts stipulating that only beautifying soft-focus lenses could be used for their close-ups. These optical modifiers eliminate small facial wrinkles and skin blemishes.

There are even more filters than there are lenses. Some trap light and refract it in such a way as to produce a diamondlike sparkle in the image. Many filters are used to suppress or heighten certain colors. Color filters can be especially striking in exterior scenes. Robert Altman’s *McCabe & Mrs. Miller* (photographed by Vilmos Zsigmond) uses green and blue filters for many of the exterior scenes, yellow and orange for interiors. These filters emphasize the bitter cold of the winter setting and the communal warmth of the rooms inside the primitive buildings.

Though there are a number of different kinds of film **stocks**, most of them fall within the two basic categories: fast and slow. **Fast stock** is highly sensitive to light and in some cases can register images with no illumination except what’s available on location, even in nighttime sequences. **Slow stock** is relatively insensitive to light and requires as much as ten times more illumination than fast stocks. Traditionally, slow stocks are capable of capturing colors precisely, without washing them out.

Fast stocks are commonly associated with documentary movies, for with their great sensitivity to light, these stocks can reproduce images of events while they’re actually occurring. The documentarist is able to photograph people and places without having to set up cumbersome lights. Because of this light sensitivity, fast stocks produce a grainy image in which lines tend
to be fuzzy and colors tend to wash out. In a black-and-white film, lights and darks contrast sharply and many variations of gray can be lost.

Ordinarily, technical considerations such as these would have no place in a book of this sort, but the choice of stock can produce considerable psychological and aesthetic differences in a movie. Since the early 1960s, many fiction filmmakers have switched to fast stocks to give their images a documentary sense of urgency (1–27).

Fast film stocks are highly sensitive to light and can record images with no additional illumination except what’s available on a set or location. These stocks tend to produce harsh light-dark contrasts, an absence of details, and images so grainy that they can appear more painterly than linear. Fast stocks are especially effective in fiction films that purport to be realistic and documentary-like, such as Pontecorvo’s grueling account of Algeria’s bloody war of liberation from its French colonial masters. Many of its original audiences thought that the movie was a documentary compilation of authentic footage, complete with torture scenes. Its grainy images and shaky camerawork produce a gripping sense of realism. The film was totally re-created, with not an inch of documentary footage added. (Casbah Film/Igor Film)
The Digital Revolution

In the space of ten years, digital technology has radically changed how movies are photographed, how they’re edited, how they’re distributed, and how they’re shown to the public. Introduced in the 1980s and refined in the 90s, digital technology has, for all intents and purposes, replaced the celluloid technology that dominated the motion picture industry for over a hundred years.

Film was a chemical and mechanical medium—that is, movies were recorded on film emulsion, chemically processed, and then transmitted to audiences on mechanical projectors that consisted of moving gears. Digital cinema combines television and computer technologies and is essentially electronic in nature. The images are not stored on a filmstrip, but on memory cards and hard drives.

Digital images can have a higher degree of clarity and resolution than celluloid. Digital images are composed of “pixels” (short for picture elements), which can be seen as tiny dots on the TV monitor. Somewhat like the dots of an Impressionist painting, when the viewer steps back from the image, the pixels fuse, producing a unified effect. The more pixels that make up an image, the closer it resembles the subject being photographed, with a minimum of distortion.

Pixels are usually arranged on a two-dimensional grid. The sharpness or resolution of an image is a function of the number of pixels it contains. Standard video screens have about 480 scan lines of visual information. High-definition video (which is the favored form in cinema) has up to 1,080 scan lines, giving a much sharper image in terms of clarity and resolution. High-end computers can have up to 2,000 pixels per screen line. Hence, the extraordinary clarity of the image. Digital video also tends to photograph in deep focus, though this can be manipulated electronically. In fact, there are software applications that can even add grain to a digital image, to make it look more like film.

Digital technology has been a huge influence in advancing the cause of democracy. This film, directed by an Iranian expatriate, combines documentary footage, drawings, and animation. It is a harsh indictment of the repressive Iranian regime during the 2009 “Green Revolution.” Scenes of official brutality against peaceful protesters were captured with the iPhones of ordinary citizens, then broadcast to the world via the internet. The same technology was instrumental in toppling the entrenched tyrants of Egypt, Tunisia, and Libya during the “Arab Spring.” As William J. Dobson pointed out, “Today, the world’s dictators can surrender any hope of keeping their worst deeds secret,” because YouTube, Facebook, Twitter, and iPhones have shown the world just how savage these regimes can be. See Dobson’s The Dictator’s Learning Curve: Inside the Global Battle for Democracy (Doubleday, 2012).
While a few waggs dismissed *Avatar* as *Dances With Wolves* in space, Cameron’s sci-fi extravaganza dazzled the public. True, the film doesn't break much new ground in terms of its story, but its technical virtuosity is astounding. In addition to 3-D, the movie employs the full range of CGI and motion capture technology. The 3-D is especially effective in creating a sense of floating through the eerie planetary space of Pandora, with its ethereal forests and exotic creatures. These sequences are almost like lyric poetry—fluid and breathtaking. The swoop and swirl of giant birds as they carry the characters—and us—through the otherworldly flora and fauna is a heart-pounding experience, especially in 3-D. The movie was released in a flat version, a conventional 3-D version, and, most spectacularly, in 3-D in the IMAX big screen format, which totally envelops the spectator in a magical universe. It is still the top grossing movie of all time, and established 3-D as a technology worthy of serious film artists. (20th Century Fox)

Actually, as critic Richard Corliss has pointed out, using a dollar amount to rank the most commercially successful films is not very accurate, since ticket prices have changed radically over the years. For example, the average ticket cost today is about $7.83, whereas in 1997 it was $4.59, and in 1975, it was $2.03. Corliss suggests that the number of tickets sold is a more reliable gauge. The top ten domestic box-office champions using this figure, according to Boxoffice mojo.com, are as follows:

Because these pixels can be easily manipulated by computer, digital technology has revolutionized special effects in movies. In the past, whole scenes often had to be reshot because of technical glitches. For example, if a modern auto or telephone wires appeared in a period film, the scene had to be recut or even re-photographed. Today, such details can be removed digitally. So can a microphone that accidentally dips into the frame. Even sweat on an actor’s face can be effaced by an F/X technician.

Digital video cameras are much more portable than the big, clumsy 35mm film cameras of the past, with their bulky magazines that had to be reloaded every ten minutes. This portability allows the D.P. much more flexibility, especially for moving camera shots. Digital cameras also require far less light than traditional film cameras. When Michael Mann shot *Collateral*, he used high-definition video cameras because the movie was shot almost exclusively at night (see 11–25a). His D.P. didn’t have to use much additional light to capture the razor-sharp images. Using traditional film cameras would have required many hours and much labor to capture these images with acceptable clarity.

**1–29 THE MATRIX** (U.S.A., 1999) with Keanu Reeves and Hugo Weaving, written and directed by Andy and Larry Wachowski.

A winner of four Academy Awards for technical achievement, *The Matrix*, the first installment of a sci-fi trilogy (1999–2003), was choreographed by the Hong Kong martial arts maven, Yuen Wo Ping. The special effects supervisor was John Gaeta. The trilogy is profuse in gravity-defying stunts like people floating and hovering in the air, running up walls, moving in slow motion, and levitation fighting. In one scene, a battle is “frozen” while the camera swings around it. The F/X team also devised a technique called “bullet time,” in which characters dodge gunfire in super-slow-motion vacuums. *The Matrix* trilogy is a veritable cornucopia of influences, including comic books, Hong Kong kung fu films, Western action films, Eastern mysticism, fairy tales, video games, Japanese *anime* (animation), cyberpunk, computer games, and traditional science fiction movies like *Blade Runner*. *(Warner Bros.)*
Digital video is also cheap. Companies like Sony, Panasonic, Nikon, and Canon offer a variety of cameras for shooting hi-def video for a cost of less than $10,000. Unlike film, which has to be chemically processed before it can be viewed, video can be seen immediately after shooting on a TV monitor. And unlike celluloid, digital video can also be copied with no degradation of image quality. Each copy of a movie looks exactly like the original.

The American cinema has always been on the cutting edge of film technology, especially in the area of special effects. Computer-generated images have allowed filmmakers to create fantasy worlds of the utmost realism. In Multiplicity, for example, Keaton plays a man who has lost his wife and his job, and must clone himself in order to function effectively. Computer artist Dan Madsen created a film reality that obviously has no counterpart in the outside physical world. Critic Stephen Prince has observed that such technological advancements as computer-generated images have radically undermined the traditional distinctions between realism and formalism in film theory. See Stephen Prince, “True Lies: Perceptual Realism, Digital Images, and Film Theory,” in Film Quarterly (Spring, 1996). (Columbia Pictures)

Naomi Watts’s most important costar, a 25-foot-tall, 8,000-pound silverback gorilla, was nonexistent. He was created with special effects, yet seems extraordinarily lifelike, almost human. Kong was begotten by computers and blue-screen technology, produced by Weta Digital, Ltd. Joe Letteri, the visual effects supervisor, explained: “We created a system that’s based on emotional states. It depends on us figuring out all the muscles of the face and understanding the correspondence between a human facial system and a gorilla facial system. What that allows us to do is to look at how muscles work together to create believable expressions.” The results were both fantastic and startlingly real—see Figure 11–25b. (Universal Pictures/Wing Nut Films)
Digital video was validated in 2009 when *Slumdog Millionaire* won the Academy Award for Best Cinematography. It was shot in hi-def video. So was *Avatar*. And, in fact, many Hollywood directors are fast replacing traditional celluloid with digital video. Often the choice is a matter of generation. Spielberg prefers shooting in film because he's more comfortable with that medium. David Fincher, a younger man, is more comfortable with digital video.

Digital video can save movie producers millions in other costs. For example, with the invasion of Normandy in *Saving Private Ryan*, Spielberg used only 400 extras as soldiers, but CGI expanded them into thousands, not to speak of dozens of ships and other vehicles of war that were computer simulated. Complex makeup can also be created digitally. Rather than the long, tedious process of applying makeup by hand, digital technology can produce the same effect electronically. The aging of the characters played by Brad Pitt and Cate Blanchett in *The Curious Case of Benjamin Button* was not literally applied to the actors, but created by computer in the finished image.

In short, digital technology can save millions of dollars in motion picture production. A low-budget movie can be made for as little as $10,000 compared to the millions of dollars required by a movie using traditional film technology. There is no stock to purchase, no processing, no negative cutting. Computer-generated images can be stored for future use, when they can be digitally altered with new costumes, new backgrounds or foregrounds, or with a totally different atmosphere, as in the magical landscapes in *The Lord of the Rings* trilogy. In fact, physical sets don't even have to be constructed in some instances, since images containing the sets can be created on a computer.

Traditional animation, with its time-consuming, hand-drawn celluloid images, is being replaced by computers, which produce images that are created digitally, not by hand. CGI has produced a new “look” in animation, less detailed, more sculptural, more plastique—like the streamlined images of *Shrek* and the *Toy Story* films.

Digital editing is also much easier than traditional methods. Instead of handling a physical filmstrip and making actual cuts, modern editors need only to press a button to cut from one shot to another.

Digital technology is making motion picture distribution and exhibition cheaper. In the past, film prints could cost up to $2,000 apiece. A mainstream American movie was often shown simultaneously on 2,000 screens, which generally cost the studios $4 million just for the price of prints. Today, the three leading U.S. theater chains—AMC, Regal, and Cinemark—have already converted their theaters to digital projection. Celluloid prints of new movies from the major studios will no longer be available in the U.S. by the end of 2013, according to John Fithian, President of the National Association of Theater Owners. About 26,000 of the 40,000 screens in the U.S. have already converted to digital projection, according to the Motion Picture Association of America.

Instead of the heavy reels of traditional movie projection, costing thousands of dollars to ship by bus, plane, or rail, lightweight disks can be sent to movie theaters for only a few dollars. Movies can also be shipped to theaters on hard drives or sent by way of the internet or satellite networks. Furthermore, these movies are shown in pristine condition, without the scratches, flutter, or flickering of traditional celluloid projection.

On the other hand, film still has the edge in brightness when projected. In most theaters across the country, digital projection is slightly dimmer than 35mm film projection, especially if 3-D glasses are used.

Because digital technology is still a relatively new medium, most modern movies are still transferred to celluloid for storage purposes. After all, traditional film technology has preserved movies for over 100 years, and producers are still unsure how long digital movies can be archived.
George Lucas’s company, Industrial Light & Magic, is still the largest and boldest innovator in the special effects arena. For its twentieth anniversary Special Edition, his Star Wars Trilogy was remastered digitally. For example, because his budget was limited and special effects were comparatively simple in the original film, the spaceport Mos Eisley was necessarily modest (a). In the remastered version (b), Mos Eisley is larger and more bustling. The F/X team added new creatures, droids, and characters, making the setting more crowded and dangerous than the original. See also Pamela Glintenkamp’s lavishly illustrated Industrial Light & Magic: The Art of Innovation (Abrams Books, 2011), which covers the past thirty-five years and such works as the Harry Potter films, Titanic, Transformers, and Iron Man, among many others. (Lucasfilm/20th Century Fox)

By the time Lucas made Attack of the Clones, he had gone totally digital. He is an enthusiastic champion of the new technology, believing that film will soon be obsolete: “Film has been around for 100 years,” he has said, “and no matter what you do, you’re going to run celluoid through a bunch of gears. It’s gotten more sophisticated over the years, but it’ll never get much more that what it is right now. With digital, we’re at the very bottom of the medium. This is as bad as it’s ever going to be. This is like 1895. In 25, 30 years, it’s going to be amazing.” Lucas spent about $16,000 for 220 hours of digital tape. If it had been traditional film stock, it would have cost him about $1.8 million. Since digital tape is so cheap, it allowed Lucas the freedom to shoot lots of extra footage for coverage. See also Michael Rubin, Droidmaker: George Lucas and the Digital Revolution (Gainsville, FL: Triad Books, 2006).

See also Stephen Prince, “The Emergence of Filmic Artifacts: Cinema and Cinematography in the Digital Era,” in Film Quarterly (Spring, 2004). (Lucasfilm/20th Century Fox)
The Cinematographer

The cinema is a collaborative enterprise, the result of the combined efforts of many artists, technicians, and businesspeople. Because the contributions of these individuals vary from film to film, it’s hard to determine who’s responsible for what in a movie. Most sophisticated viewers agree that the director is generally the dominant artist in the best movies. The principal collaborators—actors, writers, cinematographers—perform according to the director’s unifying sensibility. But directorial dominance is an act of faith. Many films are stamped by the personalities of others—a prestigious star, for example, or a skillful editor who manages to make sense out of a director’s botched footage.

Cinematographers sometimes chuckle sardonically when a director’s visual style is praised by critics. Some directors don’t even bother looking through the viewfinder and leave such matters as composition, angles, and lenses up to the cinematographer. When directors ignore these important formal elements, they throw away some of their most expressive pictorial opportunities. They function more like stage directors, who are concerned with dramatic rather than visual values—that is, with the script and the acting rather than the photographic quality of the image itself.

On the other hand, a few cinematographers have been praised for their artistry when in fact the effectiveness of a film’s images is largely due to the director’s pictorial skills. Hitchcock provided individual frame drawings for most of the shots in his films, a technique called *storyboarding*. His cinematographers framed up according to Hitchcock’s precise sketches. Hence, when Hitchcock claimed that he never looked through the viewfinder, he meant that he assumed his cinematographer had followed instructions.

Cinematographers often comment that the camera “likes” certain individuals and “doesn’t like” others, even though these others might be good-looking people in real life. Highly photogenic performers like Marilyn Monroe are rarely uncomfortable in front of the camera. Indeed, they often play to it, ensnaring our attention. Photographer Richard Avedon said of Marilyn, “She understood photography, and she also understood what makes a great photograph—not the technique, but the content. She was more comfortable in front of the camera than away from it.” Philippe Halsman went even further, pointing out that her open mouth and frequently open decolletage were frankly invitational: “She would try to seduce the camera as if it were a human being. . . . She knew that the camera lens was not just a glass eye but a symbol of the eyes of millions of men, so the camera stimulated her strongly.” (20th Century Fox. Photo: Gene Kornman)
Sweeping statements about the role of the cinematographer are impossible to make, for it varies widely from film to film and from director to director. In actual practice, virtually all cinematographers agree that the style of the photography should be geared to the story, theme, and mood of the film. William Daniels had a prestigious reputation as a glamour photographer at MGM and for many years was known as “Greta Garbo’s cameraman.” Yet Daniels also shot Erich von Stroheim’s harshly realistic *Greed*, and the cinematographer won an Academy Award for his work in Jules Dassin’s *Naked City*, which is virtually a semidocumentary.

During the big-studio era, most cinematographers believed that the aesthetic elements of a film should be maximized—beautiful pictures with beautiful people was the goal. Today such views are considered rigid and doctrinaire. Sometimes images are even coarsened if such a technique is considered appropriate to the dramatic materials. For example, Vilmos Zsig mond, who photographed *Deliverance*, didn’t want the rugged forest setting to appear too pretty because beautiful visuals would contradict the Darwinian theme of the film. He wanted to capture what Tennyson described as “nature red in tooth and claw.” Accordingly, Zsig mond shot on overcast days as much as possible to eliminate the bright blue skies. He also avoided reflections in the water because they tend to make nature look cheerful and inviting. “You don’t make beautiful compositions just for the sake of making compositions,” cinematographer Laszlo Kovacs has insisted. Content always determines form; form should be the embodiment of content.

“Many times, what you don’t see is much more effective than what you do see,” Gordon Willis has noted. Willis is arguably the most respected of all American cinematographers, a specialist in low-key lighting styles. He photographed all three of Francis Ford Coppola’s *Godfather* films—which many traditionalists considered too dark. But Willis was aiming for poetry, not realism. Most of the interior scenes are very dark so as to suggest an atmosphere of evil and secrecy. A time-honored convention is to make sure an actor’s eyes are always visible, but here too, Willis thought the mafia don (Marlon Brando) would seem more sinister if we *couldn’t* see his eyes, at least while conducting “business” (1–22b).
Willis’s preference for low levels of light has been enormously influential in the contemporary cinema. Unfortunately, many filmmakers today regard low-key lighting as intrinsically more “serious” and “artistic,” whatever the subject matter. These needlessly dark movies are often impenetrably obscure when shown on the television screen in VCR or DVD formats. Conscientious filmmakers often supervise the transfer from film to video because each medium requires different lighting intensities. Generally, low-key images must be lightened for video and DVD.

Some film directors are totally ignorant of the technology of the camera and leave such matters entirely to the cinematographer. Other filmmakers are very sophisticated in the art of the camera. For example, Sidney Lumet, who was best known for directing such realistic New York City dramas as *12 Angry Men*, *The Pawnbroker*, *Dog Day Afternoon*, and *Serpico*, always made what he called a “lens chart” or a “lens plot.” In Lumet’s *Prince of the City*, for instance, the story centers on a Serpico-like undercover cop who is gathering information on police corruption. Lumet used no “normal” lenses in the movie, only extreme telephotos and wide-angle lenses, because he wanted to create an atmosphere of distrust and paranoia. He wanted the space to be distorted, untrustworthy. “The lens tells the story,” Lumet explained, even though superficially the film’s style is gritty and realistic.

There are some great movies that are photographed competently, but without distinction. Realist directors are especially likely to prefer an unobtrusive style. Many of the works of Luis Buñuel, for example, can only be described as “professional” in their cinematography. Buñuel was rarely interested in formal beauty—except occasionally to mock it. Rollie Totheroh, who photographed most of Chaplin’s works, merely set up his camera and let Chaplin the actor take over. Photographically speaking, there are few memorable shots in his films. What makes the images compelling is the genius of Chaplin’s acting. This photographic austerity—some would consider it poverty—is especially apparent in those rare scenes when Chaplin is off camera.
But there are far more films in which the only interesting or artistic quality is the cinematography. For every great work like Fritz Lang’s You Only Live Once, Leon Shamroy had to photograph four or five bombs of the ilk of Snow White and the Three Stooges. Lee Garmes photographed several of von Sternberg’s visually opulent films, but he also was required to shoot My Friend Irma Goes West, a piece of garbage.
Understanding MOVIES

Cinematography is very important, but it usually can’t make or break a movie—only make it better or worse. For example, the low-budget *Muriel’s Wedding* was shot mostly on location using available lighting. The photography is adequate, but nothing more. In this shot, for instance, the protagonist (Collette) has the key light on her, but the background is too busy and the depth layers of the image are compressed into an undifferentiated messy blur. Nonetheless, the movie was an international hit and was widely praised by critics, thanks to Collette’s endearing performance, a funny script, and Hogan’s exuberant direction. No one complained about the lackluster photography.

On the other hand, the cinematography of *Soldier* is ravishing—bold, theatrical, richly textured. Note how the lighted rain (rain has to be illuminated or it won’t show up on screen) provides the setting with a dreamlike fish-tank atmosphere. The stylized lighting heightens the outer rim of the men’s torsos, emphasizing their sculptural eroticism. This shot alone must have taken many hours to set up. But the movie was a failure, both with the public and with most critics. In short, not all beautifully photographed movies are great. And not all great movies are beautifully photographed. Many of them—especially realistic films—are plain and straightforward. Realists often don’t want you to notice the photography. They want you to concentrate on what’s being photographed, not on how it’s being photographed.

Perhaps an ideal synthesis is found in a movie like *Days of Heaven*. Malick’s powerful allegory of human frailty and corruption is written in a spare, poetic idiom. The actors are also first-rate, playing people who are needy and touching in their doomed vulnerability. The film was photographed by Nestor Almendros, who won a well-deserved Oscar for his cinematography. The story is set in the early twentieth century in a lonely wheat-growing region of Texas. Malick wanted the setting to evoke a lush Garden of Eden, a lost paradise. Almendros suggested that virtually the
In this chapter, we’ve been concerned with visual images largely as they relate to the art and technology of cinematography. But the camera must have materials to photograph—objects, people, settings. Through the manipulation of these materials, the director is able to convey a multitude of ideas and emotions spatially. This arrangement of objects in space is referred to as a director’s *mise en scène*—the subject of the following chapter.

**Further Reading**

*American Cinematographer*, a monthly journal of contemporary cinema production, is published by the ASC Holding Corporation in Hollywood.


