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USING THE CAMERA FOR INTERPRETATION

Lensing the Image

The Eye of the Beholder

When we think about directing a film, most of us probably think of defining the action and directing the work of a production crew. However, our most important job as director is to direct the audience's attention in a scene.

We can shoot action in an infinite variety of ways, but how we break the action up into separate shots, the framing and angles we choose, the lenses we use, the compositions we design, the placement of the camera, and whether we move the camera during a shot—all the camera techniques—enormously influence the essence of our scene. Second only to the audience's involvement in the reality we create on the screen—the fantasy, if you will—is the pure aesthetic pleasure the audience takes in fine camera work. In the early days, simply seeing a moving image on a screen was sufficiently entertaining. Viewing a train pulling into a station from the comfort of a theater seat was a marvel for audiences of the Lumière brothers' films. Stories and plots actually came later.

In modern productions, we usually work with the camera as an invisible participant in the action. More than simply providing views of a scene, the camera places the audience in the scene. There, they shift their view from one place to another, approach and retreat from objects and people, and are often as involved in the actions of the production as the players themselves. The camera leads the audience around by the eyes.

Though the camera's visual rendering of scenes is such an integral part of the pleasurable experience for the audience, it is worth noting that what the audience lacks, in most cases, is free will. *We,* as producers, decide where the audience's interest should be, as well as where they will want to look as the

scene unfolds. Usually we are accommodating. We anticipate where the audience would look if they were invisible voyeurs in the scene and we shift the camera to that view. However, there are times, such as in Alfred Hitchcock's *Rear Window,*[1] when we restrain the audience, preventing them from seeing what they want to see in order to increase the tension and build empathy with the main character with whom our point of view is associated.

Inside the Fourth Wall

In theater, we witness a scene as an audience normally confined outside the space in which the dramatic action is occurring—we are on the outside looking in. The theatrical convention of the "fourth wall" describes the stage as an enclosure with three walls formed by the sides of the stage and an invisible fourth wall separating the characters from the audience. Characters on the stage behave and interact as if in a real world, without recognizing the presence of an audience looking in from the other side of the proscenium. If a character momentarily steps out of the drama and directly addresses the audience, that person has broken the fourth wall and the illusion of reality created on the stage is suspended.

Theatrical productions sometimes use a thrust stage, or present plays in the round, or even move actors into the audience. However, moving the action closer to the audience is different from moving the audience into the middle of the action. With a camera, the point of view of the film, video, and television audience can move within the space in which the action takes place. Consequently the first principle of camera technique is that, instead of simply placing actions and subjects in front of the camera as on a stage, we move the camera into the space with the subjects. There the audience watches the action from the camera positions, framings, and angles that show what we as directors want them to see.

Even in film and video, there is a version of the fourth wall. Characters on the screen usually do not recognize the presence of the camera in the same way that characters on the stage ignore their audience.[2] The camera serves as an invisible eye for the audience, freely moving around in the space with the action without characters acknowledging its presence. Except in point of view (POV) shots, once a character looks into the camera, directly at the audience, the fourth wall is broken and the illusion of reality is dissolved. This is why eye contact with the camera can be such an intrusive distraction, or such a powerful device if used well (the final freeze frame in Truffaut's *The 400 Blows,* for example).

Visual Variety

The camera presents a scene—subjects, actions, settings—in a series of shots that render images on a screen. The second principle of camera technique, then, is that instead of just placing the camera where an audience can watch the action, we place the camera to provide the audience with engaging visual experiences.

Variety is important. If a scene is rendered simply by a continuous series of wide shots, the eye soon tires of the repetition. The sequence is likely to appear visually uninteresting. A good shot script and shot sequence will usually contain a variety of camera framings and angles, offering an orchestrated blend of compositions on the screen. This, of course, depends on the needs of our subject and theme because we can shoot most scenes in as many variations as there are visual styles.

Camera Placement

Once the director knows where the action will be taking place, the next decision is where to place the camera. Camera placement decides two primary elements of a shot—framing and angle. Framing refers to how much of the scene in front of the camera is included in the shot; or to think of it another way, how close to or how far away from the subject the camera seems to be; or to think of it a third way, how large or small the subject appears in the shot. Angle refers to how far to the side and how high or how low we place the camera in relation to the subject. Camera framing and angle are the principal means for creating composition with the camera.

Framing

When framing a subject, what we exclude from the frame is as important as what we include. The composition loses cohesion and power by arbitrarily framing a subject with a clutter of irrelevant items scattered around. The audience assumes the clutter is intended and searches the mess for meaning much like a hidden pictures game. Sometimes a cluttered frame is the effect we want, but when composing a shot, we usually tighten or reframe the shot to rid the picture of unwanted and unintended distractions so that the audience's eye quickly locates the objects in the frame that are important to see. (See Figures 8.1(a) and 8.1(b).)

Wide, Medium, and Close-Up Shots

Camera framings fall into three main types: wide shots or long shots (WS or LS), medium shots (MS), and close-ups (CU). Wide shots show the full human figure, usually with the height of a person occupying somewhere between one-half and three-fourths of the frame's height. Long shots usually show the same. The difference is that calling for a wide shot usually means shooting with a wide-angle lens, whereas a long shot requires a lens with a long focal length. (More about that in a moment.) Medium shots show only part of a person, from about the waist up. Close-ups frame a person's head, with perhaps a bit of the neck and shoulders included. (See Figures 8.2(a), 8.2(b), and 8.2(c).)

There are elaborations on these general shot framings. Extreme wide shots (EWS) or extreme long shots (ELS), for example, are essentially landscape shots

FIGURE 8.1(a)
Clutter in the frame can distract the viewer's eye.

FIGURE 8.1(b)
We should tighten or reframe these shots to remove unwanted distractions.

with the human figure occupying only a small portion of the frame, as in Figure 8.3. We use extreme wide shots to convey the sense of environment—natural or manufactured—engulfing the human subject. They convey scale, distance, and geographic location.

FIGURE 8.2(a)
A wide shot (WS).

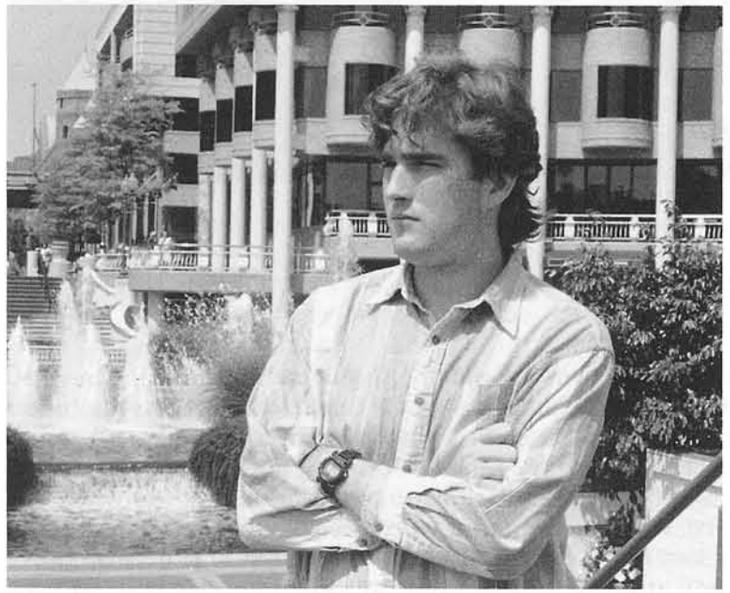

FIGURE 8.2(b)
A medium shot (MS).

Medium wide shots (MWS) show human figures, usually cut off across the legs above or below the knees. We often use this framing for a "two-shot," a shot showing two people. In film, a medium wide shot is wide enough to show the physical setting in which the action is taking place, yet it is close enough to show facial expression.

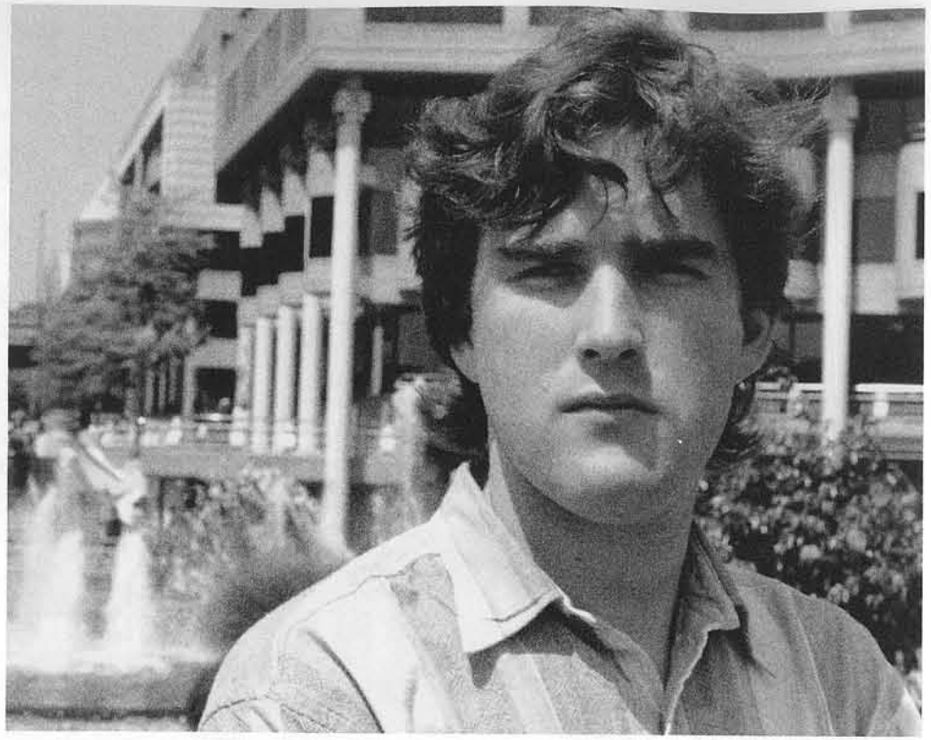

FIGURE 8.2(c)
A close-up shot (CU).

Television and film present information in the frame differently. In video and television, the image the audience sees is smaller and has less resolution (shows less detail). We can see this effect when viewing a videotape of a grand-scale film (David Lean's *Lawrence of Arabia,* or George Lucas's *Star Wars,* for example), in which huge, panoramic shots simply lose their power when displayed on the tube. When we shoot for video, we place our cameras closer to the action so the audience can see facial expressions and other details.[3]

When shooting any type of wide shot, we need to decide how far back from the subject we want to set the camera. Don't get too far back! Usually wide shots are more effective if we are still close enough that the subject occupies a significant portion of the frame. If we move the camera back too far, subjects become distant and actions lose dramatic impact. Audiences feel removed and care less about the fate of our subjects. Often in a scene, not only is an extreme wide shot too far removed from the action, but even a wide shot does not bring the audience close enough to see facial expression and be

FIGURE 8.3
In extreme wide shots (EWS), we get a sense of distance, and the surroundings engulf the human figure.

moved by the emotions and cues of interpersonal communication. Consequently the medium wide shot is frequently the widest shot used in a scene.

Medium close-ups (MCU) are head and shoulder shots, as in Figure 8.4. They are close enough to clearly see subtle facial expression, but they are not so dramatic as a full close-up. Often we use them in over-the-shoulder shots, with the back of one character serving as a foreground framing device as we look at the face of a second character. Medium close-ups are common framings for shooting interview and dialogue, both for shots of the person speaking and for reverse or reaction shots of the person listening.

When describing the medium wide shot, we made the point that television and film present information in the frame differently. Because of this, we find that video shot scripts and production sequences contain many more medium close-ups than we normally would find in film-shot scripts.

Extreme close-ups (ECU) fill the screen with the details of a subject, as in Figure 8.5. Ingmar Bergman, when shooting *Scenes from a Marriage* as a six-part television series, filled his production with them for the reasons just mentioned, giving extraordinary intimacy to the production but an almost overpowering intensity for the audiences seeing it in its film release. Extreme close-ups have to be carefully defined. For example, it is not enough simply to call for an extreme close-up of someone's face. We need to know what part of the person's face we intend to show—an eye, a mouth, or maybe an ear or a twitching mustache. Both close-ups and extreme close-ups can have enormous power if used judiciously, but they can also become empty and tiring gestures if used too often in overdramatic treatments of a subject.

FIGURE 8.4
A medium close-up shot (MCU).

Terms that refer to framing are approximate and a cameraperson's medium shot may not be the same as what the director has in mind. Because of these variations, the director in the studio or on location should consult with the photographer (cinematographer, videographer, shooter, or cameraperson) to agree on what is intended by various framing terms. It is common practice for a studio director working with a new crew to ask each cameraperson to frame a medium shot, a medium close-up, and so forth. Then, while viewing the compositions on the monitor, the director asks each to adjust their framings—looser, tighter, a bit more headroom, and so on—until the director is satisfied that they all agree on the basic definitions.

In single camera work, it is especially important that the cameraperson understand what the director intends by different framing terms. Shots that are meant to be cut together in a match cut are often taken out of sequence. Sometimes a director won't bother looking through the camera lens before a shot, especially when working with a trusted cameraperson. A successful match cut requires that there be a definite change in framing or angle. A director might call for a medium shot and then, later, call for a medium close-up of the same subject with the intention of making a match cut between the two. The cameraperson, because of shooting out of sequence, may not realize the two shots are meant to match cut and might frame the MS too tight and the MCU too

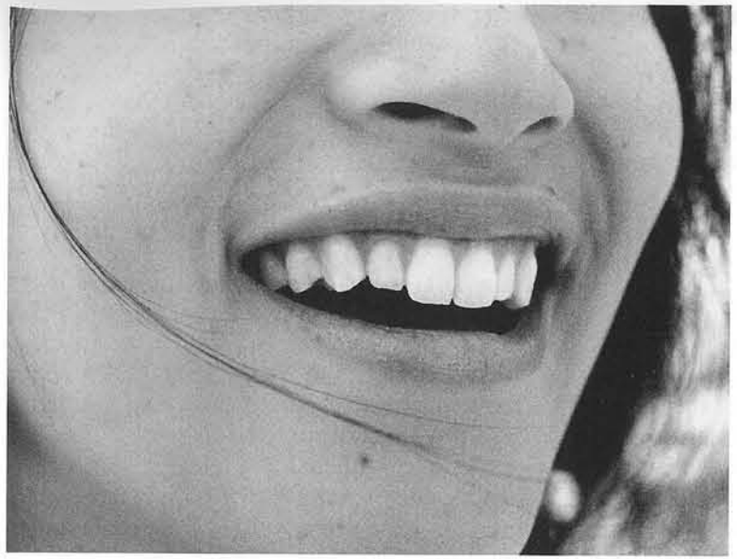

FIGURE 8.5
An extreme close-up shot (ECU). When scripting or directing an ECU, it's important to specify what part of the subject should be seen in the ECU (mouth, eye, hand, and so forth).

loose, resulting in two shots that are so similar in framing they cannot be cut together smoothly.

Angles

Depending on where we place the camera, we can enable an audience to view a subject from any angle:

- Frontal
- Three-quarter front
- Profile
- Three-quarter rear
- Rear (or tail-away)
- High angle (from above eye level to overhead)
- Eye level
- Low angle (from below eye level to underfoot)

Camera angles help us see action from revealing perspectives, they help us create the illusion of three-dimensional reality in a two-dimensional image, and they help us create pleasing compositions.

When presenting a film or video to an audience, we usually want the audience to suspend their disbelief and, for the time they are watching the action, imaginatively become involved in an illusion of reality on the screen as

a world unto itself. Part of this illusion is the sense that action takes place and characters live in a three-dimensional space. To create this illusion requires the knowledgeable use of technique because the image itself is two-dimensional. We create film and video images with the monocular (one-eyed) vision of the camera, which cannot duplicate the depth perception of binocular (two-eyed) vision. Without binocular vision, angles become an important tool for creating spatial depth in the frame.

Frontal Angles

Besides rendering depth in the frame, angles also help us to render the three-dimensional physical presence of objects and people. We can illustrate this with a simple exercise in visualization. Suppose we are looking at a simple shape such as a box. If we look at the box straight on, we see only the front surface—a square or rectangle. If we move to the side, we now see both the front and one side, which recedes from us from foreground to background. Viewing the box at an angle, we see more of the three-dimensional features of the box. Finally, staying at this angle, but rising above or dropping below the box somewhat, we see the front, one side, and either the top or bottom. By viewing the box from an angle a little to the side, and from an additional angle above or below, we see the three-dimensional aspect of the box most dramatically.

Given the need to render space and three-dimensional objects in a scene, we find that camera angles are very important in their ability to render the illusion of reality. If we are doing a setup and find the camera pointed squarely into a wall, an alarm should go off in our heads. We may truly want the flat composition that results from shooting straight into a wall, as in Figure 8.6. More likely, however, a camera position angled into a wall, with the wall receding from foreground to background in converging perspective lines that create an illusion of depth, is the shot we want. (See Figure 8.7.)

Beyond rendering three-dimensional space, the use of angles enables us to create dynamic compositions in our shots. Consider the simple situation of two people facing each other having a dialogue. A shot from the side would show both characters in profile, each person on an opposite side of the frame in a symmetrical composition. Such a static, symmetrical composition is sometimes desirable—in the formal depiction of a wedding ceremony, for example—but, more often, the dialogue can be more interestingly handled by shooting over-the-shoulder, three-quarter front reverse angles. With this strategy we trade symmetry for dynamic composition. We see depth in the frame with the back of a head and shoulder serving as foreground, framing the person farther back in the depth of the frame. The head and shoulder also act as a weight in our composition, counterbalancing the mass of the person we are facing, as in Figure 8.8.

The preceding example also illustrates another very important advantage of angled camera positions. If we were to settle for the profiles of two people by shooting squarely at them, we would see ears, hair, some jaw line, the side of one eye, but very little face. (See Figure 8.6.) By angling our shots in three-

FIGURE 8.6
Shooting straight against walls produces flat compositions with little sense of depth in the frame.

FIGURE 8.7
Angling our shots into walls produces receding perspectives and a greater sense of depth.

FIGURE 8.8
In an over-the-shoulder shot, the back of the head and shoulder act as foreground framing, providing depth and balance to our composition.

quarter front positions as in Figure 8.9, we can see each person's face openly and, consequently, clearly. Angles enable us to see faces more fully, which is critical to effective portraiture and characterization.

In documentary as well, the technique of favoring one person with a three-quarter front shot while shooting over the shoulder of the other person is preferable to a profile shot of both. Usually the person being favored is the person dominating the conversation. We can show the other person in cutaway reaction shots. If the course of the dialogue takes an unexpected turn and the person over whose shoulder we are looking becomes the dominant character, we can simply move the camera around to the reverse position and shoot over the other person's shoulder.

High and Low Angles

High-angle shots are those with the camera above the subject's eye level. Conversely, low-angle shots are those with the camera below eye level, usually around the chin or chest or even slightly lower. A low-angle shot gives power and a subtle sense of dominance to the subject. It can also give the impression of height. Setting the lens a little below eye level produces a complementary portrait of our subjects.

It's interesting to look at the shots of Jack Nicholson in *Batman,* most of which are below eye level. In our first shots of him, the camera stays below his shoulder level. In his first confrontation with Eckhardt (William Hootkins), all of Nicholson's shots are low angle, giving him a particularly menacing look.[4]

FIGURE 8.9
The reverse angle of the shot in Figure 8.8. In theatrical productions, we can avoid profiles in dialogues by shooting three-quarter front reverse angles that show more of the face. This is more difficult to do when covering action in documentaries, but showing the face is just as important.

Chinatown paired Nicholson with Faye Dunaway, who is tall compared to him. To disguise their mismatch in size, Polanski shot Dunaway from higher angles and Nicholson from lower angles. He never shot them standing together in the frame from an angle that showed their true comparative height.

The slight shifts from high to low angle or vice versa often mirror the shifts in power or dominance in the scene. A typical situation involving the use of these angles is in a dialogue where the dominant person is shot from a low angle and the other person from a high angle. These differences in angle are usually subtle and not usually evident to the audience. A good idea is to review some particularly good dialogue scenes on video and pay close attention to if, when, and why the angles shift from high to low.

A typical situation involving the use of high and low angles is in a dialogue in which one person is standing while the other is sitting. Although these are not point-of-view shots, we often take reverse angles from a position near the height of the person over whose shoulder we are looking. Consequently, when we take a three-quarter front shot of the person who is standing, we often place the camera near the head level of the person who is sitting, looking up at the subject from an angle below eye level, as in Figure 8.10(a). Then, in the reverse angle, we place the camera near the head level of the person who is standing, looking down on the sitting subject from a high angle above eye level, as in Figure 8.10(b).

A similar situation occurs when we see two people of significantly different heights standing and talking together. However, to diminish the apparent difference in height, it is not unusual in these situations to bring the two nearer to each other's eye level, even if it is necessary to cheat and place the shorter person on a box.[5]

FIGURE 8.10(a)
In reverse angle three-quarter shots, we usually place the camera near the eye level of the person not being shown. Someone sitting is usually shot from a high angle, if the other person is standing.

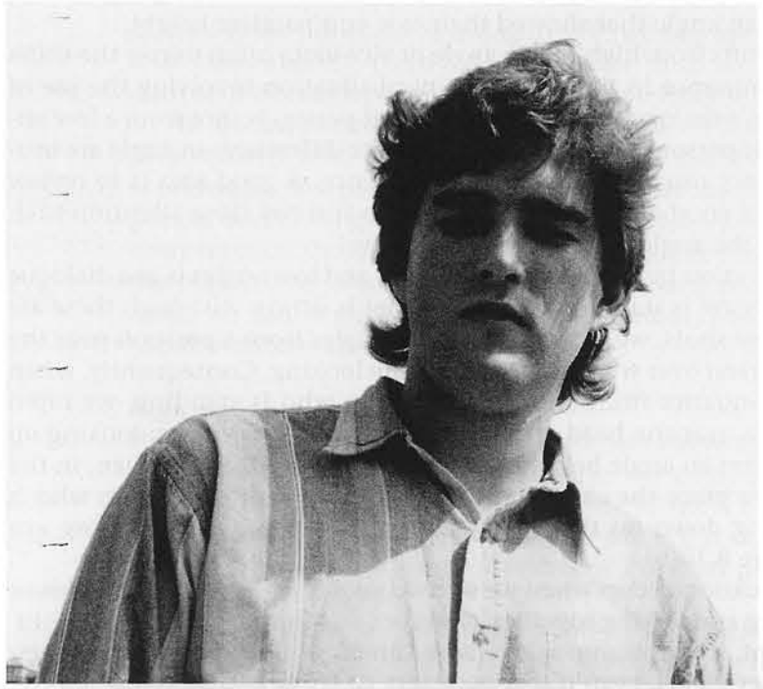

FIGURE 8.10(b)
In a reverse angle, a person standing is shot from a low angle if the other person is sitting.

When we want to make a person look small, vulnerable, subdued, or defeated, we commonly use a higher high angle, over the subject's head, often in a medium wide shot, to look down on the subject. A medium high angle, if you will. Although this, like any technique, can seem simply mechanical and unconvincing, it can also be quite effective. In *Dead Poets Society,* for example, we see young Neil (Robert Sean Leonard) sink down in a chair in total defeat after his father has forbidden him to participate in theater at his school. The high-angle shot of him crumpled despondently in the chair, which amplifies his despair, directly precedes his suicide. Another good example is the opening of *Terminator 2.* After the camera tracks through the now devastated playground in the Los Angeles of the future and the robot's foot smashes the skull, the camera cranes up, but also maintains a low angle on the robot. Throughout the balance of this sequence, shots of the humans are a medium high angle, just over their heads, whereas shots of the robotic machines are from about chest height looking up. Then the camera moves in on John Connor (John McIntire), and we are just slightly below his eye level, giving him a strong and determined presence. We don't need a guide book to figure out who is winning this war. The angles tell it all.

Extreme high and low angles that are not dramatically motivated can seem contrived, distracting, artistically heavy handed, and self-conscious. However, there are occasions when extreme high angles, even full overhead shots, can be very effective. One powerful use of an overhead shot, for example, occurs in *Psycho* when Detective Arbogast (Martin Balsam) comes to the Bates Motel to investigate Marion's (Janet Leigh) disappearance and is himself killed after he climbs to the top of the long staircase. The shot of Norman's "mother" running out of a room with an upraised knife and slashing at Arbogast is taken from an extremely high overhead camera angle. The angle is disorienting, suddenly throwing us high up in the air above the stairwell and setting up the next shot, a high-angle close-up in which the stunned and mortally wounded Arbogast, his face slashed, falls backward down the stairs.

Conversely, extreme low angle shots make a subject look big, aggressive, dominant, or victorious. Kurosawa uses the extreme low camera position throughout *The Seven Samurai.* Welles's use of extreme low angle to create the towering figures of Kane and Jedidiah (Joseph Cotten) confronting one another in the newsroom at night after the election in *Citizen Kane* is an impressive use of camera position to turn mortals into mythical giants. Orson Welles was particularly fond of extreme low angle shots to make his characters tower above us in the scene. Extreme low angle, menacing shots of him as the murderous Hank Quinlan in *Touch of Evil* are particularly memorable.

Focal Length

The focal length of a lens greatly influences the way an image is translated to the screen. It can alter apparent distances and heights. It can change a person's

face. It can exaggerate speed or cause motion to appear suspended. It can cause objects to look small or big, far away or close up, and it can make backgrounds appear sharply focused, slightly soft, or completely out of focus. The lens turns the hard reality before us into a plastic medium and molds it like clay.

The most distinguishing property that separates one lens from another is focal length. The impact of focal length is defined in terms of the angle of view and apparent size of the scene before the camera, depth of field, and perspective.

Angle of view and apparent subject size are the most obvious effects of focal length on image quality. Depth of field—how much of the scene in front of and behind a subject is in focus when the lens is focused on the subject—is a bit more subtle. However, it becomes clear when looking through the lens with a reflex viewfinder,[6] at a monitor, or at the final image on the screen. The effect of focal length on perspective is the least obvious, yet, in many ways, it is the most significant, consequence of lens selection on image quality.

We rarely need to measure the focal length of a lens. It's enough to know that focal length is an optical property of a lens that has little to do with its size. Lens focal lengths are conveniently divided into three types—short, normal, and long.

Short Focal Length

Lenses with a short focal length exaggerate distances in front of the camera. Objects seem farther away than they actually are. They are called *wide-angle lenses* because they take in a broad view of the scene before them. Because of their wide angle of view, they are often used for establishing shots. We have seen them used for those wide, panoramic shots in films like *Out of Africa, Glory,* and *Dances With Wolves.*

Short focal length lenses have great depth of field, that is, when focused on a subject, they also show the background and much of the foreground in focus. Because of their great depth of field, many wide-angle lenses do not even have focusing rings. They are "point and shoot" lenses, their deep depth of field causing everything from about four feet out to infinity to be in focus. Inexpensive still cameras without interchangeable lenses often have short focal length lenses that do not require focusing. This enormous range in depth of field is not the way the human eye perceives the scene in front of it. Our eyes select objects and planes of focus. Thus, in shots using short focal length lenses, unless the purpose is purely panoramic or establishing the scene or set, there needs to be some design element or movement in the frame to give the audience cues about where to focus their attention. Otherwise, they will scan the scene for meaning and perhaps focus on some unintentional or irrelevant scene detail. (See Figure 8.11.)

Short focal length lenses, because of their great depth of field, make camera movement easier. A camera can move through the space where action is taking place without the need to change focus. Furthermore, because short focal length lenses show a scene in a wide angle of view, they diminish any

FIGURE 8.11
Short focal length, wide shots with foregrounds and backgrounds in focus and no center of attention cause the viewer's eye to search for significant detail.

bumpiness in a camera move. Short focal lengths, therefore, lend themselves to moving camera shots because they help make moves appear smoother. In a news or documentary situation, a cameraperson attempting a walking shot with a camera on a shoulder or bodypod mount usually prefers to get as close as possible so that the widest possible lens can be used. In the more elaborate world of feature production, short focal lengths enable the complex, moving camera shots of long-take style production described at the beginning of Chapter 7.

Short focal length lenses exaggerate perspective by causing parallel lines in the scene to converge more quickly than we normally see with our eyes. If we look up at a building with a short focal length lens, the parallel lines of the building—the walls, window frames, corners, and so on—converge toward each other sooner than we see with our eyes. The convergence of lines is an especially important cue for height in the monocular media of film and video, which lack the depth perception made possible by binocular vision. The effect is that the building looks higher than it actually is, as in the scene where the Ghostbusters look up at the skyscraper where Gozer awaits them. Conversely, if we look down the outside of a building with a short focal length lens, as in the shot above Batman looking down at the crime in the streets below in the opening of *Batman,* we see the parallel lines of the building converge in an exaggerated way. It makes our point of view seem higher than it really is. (See Figures 8.12(a) and 8.12(b).)

The exaggeration of perspective caused by a short focal length applies to all objects, not just buildings. It works with the apparent height of people as well. Look up at a person, as we do at Batman when he first drops into view (from a low angle with a short focal length lens), and the person, Michael

FIGURE 8.12(a)
Short focal length, low-angle shots exaggerate the height of buildings.

FIGURE 8.12(b)
Short focal length, high-angle shots also exaggerate perspective, making the point of view seem higher.

Keaton, in this case, appears taller. In *Terminator 2,* when the Terminator, played by Arnold Schwarzenegger, already a fairly big person, leaves The Corral in his new biker clothes, there is a wide angle tilt up from his shoes. He looks enormous.

A short focal length lens exaggerates interior heights as well. Shooting someone seated (at a desk, for example) from a standing position makes them appear as if we are observing them from near the ceiling. This can be deliberate, but it can also happen accidentally—the result of not moving the camera

down closer to the eye level of the seated subject. The results can be disappointing, making us feel remote from the action and showing us lots of our subject's hair and forehead of our subject but too little face, as in Figure 8.13.

Perspective makes near objects seem larger and far objects seem smaller. If we look down a row of people or out into a crowd with a short focal length lens, the peoples' body and head sizes will diminish more quickly than normal the farther away people are from the camera. There will not only seem to be more space between them, the entire physical space of the room or terrain they are in will appear to be larger than it actually is. Television studio cameras often use short focal length lenses. They provide depth to the set with their great depth of field and exaggerated perspective, often making limited space look more spacious.

David Letterman in his late night show, often plays the focal length with hand and arm gestures toward the camera. He has a good visual sense of how he affects his television image, as opposed to many talk show hosts who still perform for an audience as opposed to the camera.

The effect of exaggerating space with a short focal length can be made even more extreme if the camera is placed near the floor so that we seem to be looking out across a vast expanse, as in Figure 8.14. Gregg Toland used these low-angled, short focal length shots to make the interiors in *Citizen Kane* appear opulent and expansive.

Since the lens exaggerates real distance, objects increase in size more quickly as they approach the camera. Car-mounted cameras using short focal length lenses accentuate high-speed chase sequences. As mentioned in Chapter 5, pointing the camera down the street in the direction in which the

FIGURE 8.13
Shooting a sitting person from a standing position with a short focal length exaggerates camera height, making the subject seem far down and distant, and showing more hair and forehead, but less face.

FIGURE 8.14
Short focal length wide shots near ground level exaggerate the expanse of space in the frame.

car is traveling increases the apparent speed of the car. Drive a car toward a camera with a short focal length lens and the car appears to come toward the camera faster. Throw a fist toward a camera so that the end of the swing is only a foot or two from the lens and the sudden change in fist size makes the act seem much more abrupt and violent. (See Figures 8.15(a) and 8.15(b).)

Normal Focal Length

A "normal lens" is so named because it renders perspective similarly to the way our eyes see perspective. A normal lens *does not* take in an angle of view similar to our eyes, which have an angle of view of almost 180 degrees, an extremely wide angle of view in photography. Only a specialized ultra-short focal length lenses called "fisheye" lenses can duplicate this degree of angle.

The focal length of the normal lens varies from one format to another. For example, in 35mm still and motion picture film, the normal lens has a focal length of 50mm. In 16mm film and some video cameras, the normal focal length is 25mm. Other video cameras have normal focal lengths that are somewhat shorter.

Because a normal lens renders perspective the way our eyes see perspective, height, distance, speed, changes in apparent sizes of objects and people at different distances from the camera, and facial contours all look natural. Because of this lack of distortion, many directors prefer to use this lens or one near the "normal" focal length for most of their shots.

Normal lenses do not have extreme depth of field, and under usual lighting conditions, they cause the background behind a subject to be slightly out of focus. This is much the way the human eye recognizes background while

FIGURE 8.15(a)
Short focal length shots of something moving toward the camera, such as a hand or fist, exaggerate the physical force and speed of the action.

FIGURE 8.15(b)
Completion of the action begun in Figure 8.15(a), staged close to the camera and shot with a short focal length lens.

focusing on a foreground object or sees foreground objects in a blur when we shift our focus to objects at some distance from us. The somewhat restricted depth of field that a normal lens produces can be desirable for many shots—major architectural structures and large shapes remain recognizable, but the details are out of focus enough not to be distracting.

Because of the shallow depth of field, it becomes important to shift or follow-focus as the subject in the scene moves toward or away from the camera.

We do this by taking focus readings at the beginning and end positions between which the subject will be moving and shifting focus during the shot while the subject moves. Sometimes it's useful if an assistant puts a thin strip of white camera tape on the lens alongside the distance markings on the focus ring. Then the beginning and end points can be marked with a marker or pen, and the assistant can pull focus while the camera operator pays attention to the framing of the moving shot. With or without an assistant, it's important to rehearse pulling focus with the movement of the subject until it is a comfortable and well-choreographed action. The result should be that the subject remains sharp while various parts of the background drop in and out of focus. As the focus shifts, the moving subject can lead the audience's eye to various details within the scene.

Similarly we can produce a more pleasing move during a shot if we move the camera—dollying the camera in or out—rather than zooming in or out with a zoom lens. Zooming produces the effect of magnifying or shrinking the image, rather than the effect of moving through space.

Long Focal Length

Longer than normal focal lengths are extremely useful tools for a director. Long focal length lenses take in a narrow angle of view and magnify a small portion of the scene before the camera. At extended focal lengths, these "telephoto" lenses work exactly like telescopes—making distant objects seem closer and filling the frame with the details of a scene. Long focal lengths enable us to pick out details and isolate them, investing them with significance and enriching the context of a scene.

Depth of field in long focal lenses is very shallow, throwing backgrounds progressively out of focus as focal lengths increase. At about 100 millimeters in 16mm film (200 millimeters in 35mm film), depth of field is narrower than the thickness of the human head. If we focus on a subject's eyelashes in a close-up at this focal length, the nose and ears will be out of focus. In a three-quarter shot, focusing on the subject's eye on the side closest to the camera causes the eye farther from the camera to be a bit out of focus.

The depth of field in a long lens is far shallower than in the normal lens. This greatly increases the ability to selectively focus on subjects while keeping the background out of focus and less distracting. More than this, out-of-focus backgrounds resulting from shallow depth of field create a certain look—they set the focused subject like a cameo against soft, cloudlike diffusion, sometimes enhanced by sparkling highlights. (See Figure 8.16.) The effect can be quite romantic although, as with any pronounced effect, it can seem contrived if overused.

The shallow depth of field created by long focal lengths enhances the effect of rack-focusing. Rack-focusing is an effect in which we see a subject in the foreground with the background out of focus (or vice versa), and then, motivated by some significant moment within the scene, we shift the focus from the foreground subject to another subject in the background, coalescing the

FIGURE 8.16
Long focal length shots sets the subject against soft, diffused backgrounds and flatten features.

image of the background subject into sharp focus while throwing the previously focused foreground subject out of focus. In *Terminator 2,* for example, when the Terminator (Schwarzenegger) is first sent back to contemporary Los Angeles, he stands up, is given a close-up with a long lens, and then he shifts his eyes to camera left. There is a rack-focus, and what was a blur between the two trucks is now clearly the sign of The Corral, the biker bar where he goes to get clothes. Rack-focusing motivates the transition to the next sequence.

Although long lenses require more space in interiors, superior camera mounts for smooth camera moves, longer time in shot setups, and more critical focus control, they are often essential for quality production and an important element in polished professional work.

Distortion of perspective by long focal lengths is the reverse of the distortion produced by short focal lengths. This distortion is especially useful in treating dramatic action. Long focal lengths distort perspective lines so they appear to converge farther away than where our eyes normally expect to see them coming together. The effect causes an object to change size much more slowly than we anticipate as it approaches or moves away from the camera. Thus, in Mike Nichols's *The Graduate,* near the end of the movie when Benjamin (Dustin Hoffman) is running toward the camera, trying to reach the church before his girlfriend, Elaine (Katharine Ross), gets married, he appears almost suspended in space, running and running but getting nowhere.

Another excellent example of the use of the long lens to suspend an object rushing toward the camera is in David Lean's *Lawrence of Arabia.* The scene oc-

curs near the beginning of the film when Lawrence (Peter O'Toole) is being led out to the desert by a guide to meet with the Arab tribal leaders. They stop at a well for water and, as the guide starts to draw water up from the well, a shot rings out. Lawrence spins around to look into the desert to see who fired the rifle. We are then treated to a magnificent shot of a robed figure on a draped camel racing toward us at full gallop, but suspended in some kind of perpetual motion, silhouetted against the desert sunset as a mythical Oriental figure of doom.

Another effect of the long lens is to compress space. This causes subjects and objects at varying distances from the camera to appear all crammed together at about the same distance from the camera. The long lens shot from center field of the pitcher in baseball games usually shows a batter nearly the same size and looking as if he were only a few feet away.

John Schlesinger used a short focal length lens in his film *Midnight Cowboy* to exaggerate perspective and emphasize wide open spaces of Oklahoma. Then, when Joe Buck (John Voight) arrives in New York City, there is a wonderful shot taken with a long lens looking up a crowded New York City sidewalk. The streets appear packed with people's heads and shoulders piled on top of each other. And there is Joe's cowboy hat compressed in the middle. The sense of the cowboy lost in New York's mass of humanity is intense.

If we look out across a room filled with people using a long focal length lens, heads and shoulders will diminish in size only slightly. Someone in the back of the room will appear almost as large as someone nearer to the camera. Because diminishment in size is a critical cue for distance, the result is that the distance from the front to the back of the room will seem compressed (just the opposite from the effect of the short focal length lens) and people will appear packed tightly on top of each other. Most of us are familiar with the long lens shot of rush hour traffic with what appears to be cars stacked up on top of one another. Long lens shots can create beautiful backdrops in films like *On Golden Pond,* when the subjects are next to the lake. Compressing distance with a long lens brings the water up as the background, out of focus, shimmering, and very pretty.

Although these examples show extreme uses of long focal length lenses to compress space, the most common use of the long lens for spatial compression can be found in almost any well-executed production. Directors often enhance dramatic tension in a dialogue scene by shooting over-the-shoulder shots of subjects with longer than normal focal lengths. Long focal lengths in these kinds of shots compress the space between characters, causing them to appear closer together, more face to face. Heightening the effect on dramatic interactions with long lenses can be very powerful.

We might expect to see this kind of manipulation in more stylized productions, but we also find it used in more realistic works as well. For example, in Martin Scorsese's *Raging Bull,* there is an extraordinary scene in the kitchen when Jake (Robert De Niro) commands his brother, Joey (Joe Pesci), to hit him in the face. The over-the-shoulder shots of the two men in the growing tension

of the scene are all long focal length, compressing the space and the drama between them. Furthermore, as mentioned in Chapter 5, there is another use of focal length manipulation at the end of the scene. At this point, Scorsese switches to a short focal length shot of the brother just before they stand up and he throws the punch. The switch to the short focal length lens at this point exaggerates the foreshortening, emphasizing the violent motion of the fist.

Knowledgeable directors don't select focal lengths for their dramatic effect only occasionally—they do it all the time. But, as we have mentioned, long focal lengths require more space, better camera mounts, and more setup time. It is interesting to trace the evolution of a director's body of work. Often we see a pattern of increasing use of longer focal length treatment of dialogue and action as larger budgets make it accessible. We have noted this process of evolution in looking at Spike Lee's earlier film, *She's Gotta Have It* and comparing it to his later film, *Do the Right Thing.*

Focal Length and Portraiture

A powerful effect of short focal length on perspective is in the way it distorts the human face. If we shoot a frontal close-up of a subject with a short focal length lens, the exaggeration in perspective causes the nose to protrude forward, the forehead to slope back, the brow to jut outward, and the ears to be set farther back. We can create a gargoylelike, subhuman, Neanderthal look. This can be used to achieve a comic effect (Jim Varney's Ernest character), to exaggerate monstrousness (*The Shining,* when Jack beats down the bathroom door), or to emphasize a look of horror (Nancy, in *Nightmare on Elm Street*). If the shot is slightly higher, the head bulges at the top, leading away to a narrow chin and diminutive shoulders. From below, the jaw becomes more pronounced with the brow narrowed. Although we seldom use these exaggerations, it's important to recognize the distorting effect of a lens on the face. Differences in the way we shoot a face powerfully influence how a person looks. If the face shot is a medium close-up with a short focal length lens, as in Figure 8.17(b), it may be difficult to cut it with a shot taken with a normal or long focal length lens as in Figure 8.17(a) or 8.16.

A long focal length lens has the opposite effect. It flattens the subject's features. Noses become shorter, ears seem farther forward, and foreheads, cheeks, and jaws flatten and look more squared, flaring to the side rather than sloping back. (See Figure 8.16.)

This effect can alter the appearances of both women and men. A young actor who is supposed to play a tough character but is too round and open faced can be squared off and roughened by using longer than normal focal lengths.

If we shoot close-ups with long focal lengths, medium shots with a normal lens, and wide shots with short focal lengths, we can make a subject's face look different in each of the three shots. This haphazard distortion of facial features caused by changes in focal length to achieve differences in framing (CU, MS,

FIGURE 8.17(a)
A medium close-up shot with a normal lens.

FIGURE 8.17(b)
The same subject shot with a short focal length lens. Compare these to the same subject shot with a long focal length lens in Figure 8.16. Notice how short, normal, and long focal length lenses dramatically change the face of the subject.

or WS) is a common disfigurement when we use zoom lenses without understanding the effect of focal length on perspective.

Because of this shifting distortion, many directors prefer to move the camera closer to the subject, shooting the close-ups with a normal lens, rather than staying where they were for the wide shot but using a longer lens. Although the members of the audience may not consciously be aware of the effect, they will know the camera is close to the action, not observing the action from a distance and magnified as if through a telescope.

Camera Movement

Moving camera shots can truly heighten the audience's experience of watching a production. Besides taking the audience into the action, a moving camera can draw the audience into the fantasy of the moment, involve them in the excitement of the drama, pull them into the dialogue, or float them through the action. Moving camera shots add to the dynamic treatment of the action in a scene. Many high-action scenes are worth studying to see how accomplished directors can use the moving camera to impart powerful movement to a scene. As mentioned earlier, the night the Viet Cong attack in *Platoon* is a *tour de force* use of moving camera technique to enhance physical action in a scene.

The types of camera moves are as follows:

- Pans, in which the camera rotates horizontally
- Tilts, in which the camera rotates vertically
- Dolly shots, in which the camera moves backward or forward
- Trucking shots, in which the camera moves sideways
- Pedestal or crane shots, in which the camera is raised or lowered
- Canting shots, in which the camera is rocked sideways

Also included within the inventory of moving camera shots, although they involve lens manipulation rather than camera movement, are the following camera moves:

- Zoom shots, in which the focal length of a zoom lens is lengthened or shortened
- Rack-focus shots, in which a shallow depth of field is shifted from foreground to background or vice versa by a shift in focus (also called follow-focus when a subject moving forward or away from the camera is kept in focus).

We can execute all these moves at varying speeds and with either mechanically smooth perfection, or a more imprecise, shakier hand-held camera look.

Sometimes several of these moves are orchestrated together, as when the camera is mounted on a dolly or a crane and the movements of the camera are choreographed with the action of the performers, giving a fluidity of motion to the audience's point of view in the scene.

The Moving Point of View

Because the camera's point of view often represents the eyes of the audience, moving camera shots are a little tricky. The human eye doesn't pan very well. Try it. It follows a moving object, or if given none, it looks at a spot and then shifts to another spot. The moment the eye focuses on a spot, it de-selects the rest of the scene. In effect, it cuts from place to place in the scene before it. Zooming is a particularly unnatural act. Although these movements are frequently appropriate ways to cover action, when we use them we risk making the audience too aware of the artificial contrivance.

Moving camera shots and zooms are also difficult to edit. Except in fast-paced action scenes, or in a cut from one moving camera shot to another, or in other stylized treatments, it seems very abrupt and awkward to the audience to cut into a shot that is already moving or cut out of one before the movement stops. There is very little an editor can do to increase or decrease the pace of the move so that it matches the pacing of the rest of the scene without using expensive optical or computerized effects. Thus, when faced with a moving camera shot, the editor is stuck unless other shots cover the action. Until our ability to previsualize the finished piece has matured, it's better to avoid zooming and panning the camera in an attempt to follow action.

Specific Compositions

Shots with camera moves need to be specific. As with wide-angle shots, the audience needs some sense of what is important in the frame. Long panning shots without structure or composition give the audience little or no information. Whether done by panning across or trucking through a location, such shots set up the audience's anticipation for an unexpected surprise at the end of the shot or some kind of rewarding payoff. The audience expects the shot to move from something important, a specific composition, to something else important in another composition. Random moves over a scene leave the audience feeling the cupboard is bare. (The same is true with a shot panning along the outline of an object in a slow reveal that doesn't end on a significant composition). For this reason, it is a common technique to establish some moving subject within the scene for the camera to follow as motivation for the camera move. An excellent example of this is in Howard Hawks's *His Girl Friday,* when the camera follows the man through the newsroom to the elevator for the entrance of Hildy (Rosalind Russell). A nearly three-minute trucking shot to establish the conditions of a large location occurs at the end of Kenneth Branagh's *Henry V,* as the camera follows Henry (Branagh) carrying the dead body of the page boy as he walks through the carnage of the Agincourt battlefield.

When there is a specific subject, let the audience look at it. Waving and bobbing the camera around from subject to subject and back again may emulate a home video look that is sometimes the desired treatment. Moving the camera is also a means of changing point of view and can substitute for cutting from one shot to another. When considering a camera move, remember that we should have some reason for choosing a move over a simple cut because the cut will appear far more natural to the audience.

Motivating the Move

Moves need to be motivated. If the audience feels naturally motivated to shift its gaze and the camera makes the move, the move will seem natural and uncontrived. A good practice is to let subjects motivate the move through their action. They can do this by suggesting that action is occurring in another part of the scene not within the frame, perhaps with a shift of the eyes or slight head gesture. This makes the audience want to see the off-screen action. The subject can also move to another part of the scene.

The motivation for most camera movement is to pan or truck with moving subjects. We often pan with subjects when they walk within a room or between rooms, run on the ground, or move about in cars, on motorcycles, astride horses, and so on. Though pan shots usually require some degree of follow-focusing, they are much easier to execute than trucking shots and are therefore more commonly used for following action. However, trucking shots physically move the point of view of the audience rather than simply rotating it from a fixed perspective. Therefore, this conveys the action with a treatment that is much more dynamic.

Panning and trucking shots with fast-moving subjects are often enhanced by placing the camera so that objects such as trees, fences, and brush are between the camera and the moving subjects. These foreground objects stream or flash through the frame as the camera moves with the subject.[7] Point-of-view traveling shots can be very exciting. Witness some of the helmet-mounted shots in documentaries featuring downhill skiing, luge, kayaking, or other fast-action sports. William Friedkin padded his Panavision camera and rolled it down the long flight of steps in Georgetown to give an exciting point-of-view shot to the priest's suicide in *The Exorcist.*

When the subject does not motivate the move, the audience assumes that it is motivated by the director, perhaps to reveal to the audience something of which the subject is unaware. The camera move suggests to an audience that it will reveal something else in the scene that is also significant and interesting. Through this we can isolate and draw the audience's attention to small objects in a scene by dollying in on them. Dollying back from a small portion of a larger scene can reveal context and location. In wide establishing shots, dollying in can carry an audience into the scene.

Action in the scene also motivates moves. Many shots require minor reframing as action changes composition. Subjects approaching the camera usually require an upward tilt of the camera to maintain proper headroom. A shot

that begins with one person sitting but then introduces a second person walking into frame usually requires a tilt up to avoid cropping the head of the second person and an adjustment for the new two-person composition.

Every movement the subject makes should not motivate a camera move, however. It's important not to try to follow small actions by keeping a subject centered in the frame, but to hold a steady composition and let the action move through the frame. Panning around from one subject to another and chasing quick, random subject movement with the camera not only has an unsettling effect on the audience, but, as mentioned, also makes the pacing of the edit difficult to control.

Executing the Move

A well-executed moving camera shot usually has an opening framing held on the screen, a smoothly paced move, and a final composition also held on the screen. Usually, a camera move starts from one subject and goes to another subject. The shot should start on a well-framed subject. We then hold that frame for at least several beats. (We count beats at the rate of approximately one beat per second.) This pause before the move allows for some pad, extra footage, which lets the editor decide how long the shot needs to hold and when to start the move based on the pacing considerations of the sequence. When we frame a shot, we are telling the audience that there is something in that composition to see. At the beginning of a moving camera shot, the audience needs a few seconds minimum to recognize and absorb the content of the initial composition. If we start a shot and move the camera immediately, we are saying to the audience that really there was not anything to look at in the initial framing and where we really want it to look is someplace else. The content of the shot becomes the camera searching for the shot, instead of the shot itself.

The second stage of a moving camera shot is the move. To find the pace of a camera move, the directors, camerapersons, and crew often identify the number of beats it takes to achieve the move. A fast move might be a two-beat pan; a slow one, a five-beat pan. A fast or slow move should be choreographed with the pace of the action and the pace of the editing that will be created later. A slow move in a fast-cut, fast-moving scene can break the rhythm and be a disaster unless it is deliberately planned as a moment in which the pace of the scene is to be retarded. Conversely a fast pan in a slow-moving scene can disturb the calm and distract the audience awkwardly unless a jolt is the intended effect. If the vision of the finished production is still uncertain, it's always safe to shoot the move at several varying rates.

The third stage of a moving camera shot is the framing achieved at the end of the move. As with the framing at the beginning of a moving shot, when we arrive at the final composition something of significance should be in the frame. When we get to this framing, again, shoot a few beats of pad to give the audience a chance to see what has been revealed and to give the editor a chance to decide tempo and rhythm.

Sometimes moves are made that can't be used in the edit because they are the wrong pace, they pick up an unwanted object in the shot, or they have some other technical problem. Holding on those beginning and ending framings allows the editor to remove the footage of the camera move and work with the two steady frames at the beginning and end as two discrete shots.

Dollying in slightly and tightening the frame can heighten the dramatic tension in shots involving confrontation or intense interaction. Conversely, dollying back or a pedestal up can relieve tension and help bring an interaction or scene to closure. As with any move, these small adjustments need to be deliberately executed. A frame that creeps after a subject or is constantly adjusting to improve the composition is often more distracting for the audience then living with an awkward or unbalanced composition. It also seems amateurish.

Complex Moves

We briefly discussed moving the camera as a stylistic decision at the beginning of Chapter 7. Long-take styles, whether executed with deep focus and multiple planes of action or complex camera moves, involve true choreographed performance, which can lend elegance and grace to a production. Long-take styles enable us to treat the audience to such fascinating shots as the six-minute moving camera confection that opens Robert Altman's *The Player* or the famous opening in Orson Welles's *Touch of Evil*.

This style of production is only successful when the visualization of the final production is complete, accurate, and well communicated to cast and crew. For safety, a single, complex long take is often covered by individual shots of the same action. As much as a long take can enhance the style of a production, it can devastate the quality of the final piece if ill conceived or poorly executed.

Most camera moves follow (actually stay with or even lead) the action. One fairly simple, but effective move contradicts this generalization. It involves moving the camera in the opposite direction of the subject. Thus, if the subject were moving from screen left to screen right, the camera might truck left, against the movement of the subject, but pan right holding the subject in the frame, allowing us to see first where the person is coming from and then finally where the person is going. This is often executed with a medium shot that keeps us close to the character and the action while progressively revealing the space around them without going to a wider establishing shot. This move is a particularly effective way of avoiding wide shots where the action or character might get lost on a television screen.

Long involved shots require time to set up and, of course, the necessary equipment to create smooth camera movement. Their value to the production often has to be weighed against the time it takes to move and set up the camera and lights to cover the same action in several different shots. Furthermore, in film especially, they may contribute to higher shooting ratios because more things can go wrong in a long take. A long take that goes wrong near the end

creates lots of useless footage. Thus long-take styles generally are limited by budget and resources.

Camera Mountings

Camerapersons sometimes fall asleep at night imagining new ways to mount a camera to achieve a combination of mobility and stability. The ideal camera mount would be an invisible skyhook that would enable the camera to float in midair and hold rock steady, yet move in any direction with agility and precision. The demands of moving-camera technique and long-lens cinematography make camera mounts a cameraperson's obsession.

At the simplest, we hold or mount the camera on something to make the shot steady. The longer the focal length, the steadier the mount needs to be because long focal lengths magnify any shaking of the camera. The more we want the camera to move, the more we rely on the mount to effect this movement smoothly, unobtrusively, and perhaps repeatedly with precision. The longer the shot needs to be held, the more important it becomes that the mount isn't subject to fatigue, breathing, or heartbeat.

The Hand-Held Camera

Cameras have become so reduced in size that most can be hand held or supported on the shoulder. The hand, arm, and shoulder are probably the most commonly used camera mounts. However, if we physically hold the camera in our hands, we soon discover that shooting steady shots, especially with long focal length lenses, moving smoothly, and avoiding unacceptable shakiness is difficult.

Shoulder-mounted cameras and cameras mounted on bodypods can be held steadier than cameras simply held in our hands and supported by our arms, but we still find that there is a maximum focal length beyond which we cannot hold a steady frame. Consequently, depending on the physical shape we are in, we are limited in the long focal lengths that we can use when we are trying to replicate the good hand-held and body-mounted camera technique such as we find in some documentaries, news, and certain forms of advertising and music videos.

Although it is possible to walk with a hand-held camera and produce a somewhat smooth movement by bending the knees and doing a kind of Groucho Marx glide, this is usually attempted only when it necessary to track a moving subject. Sometimes, when a subject is walking from one location to another, the person hand-holding the documentary camera must get in front of the subject and shoot the oncoming person in a frontal or three-quarter shot while glide-walking backwards. To accomplish this kind of move and produce a well-composed, acceptably steady shot is very difficult and takes practice. It's helpful at these times to have an assistant, soundperson, or reporter who can put a hand on the backward-walking cameraperson for guidance.

Although we might occasionally find the need to do a walking shot, the better technique with a hand-held camera is to treat our body as a mobile tripod and use our legs *between* shots to move rapidly from one shooting angle to another, but then stay in position during each shot. In other words, good hand-held camera technique may involve some panning, tilting, and zooming, but we only do walking shots when we must.

Even when staying in one place during a hand-held shot, however, it is still easy to shoot shaky footage, especially as muscles frozen in one position begin to fatigue. Another problem that often occurs when we support the camera with our bodies is that we can lose our sense of level and our shots can come out oddly canted, as shown in Figure 8.18.

For all the problems of hand-held shooting, however, it is probably the best way to learn camera angles and framing. The hand-held camera is fast, versatile, and uninhibited except by the cameraperson's physical limitations. It allows us to change camera positions easily for various shots, getting the audience into the action. However, when the shots on the screen are judged unacceptably shaky and unsatisfying, the need for steady shots and quality images will drive us to spend the time and energy necessary to wrestle a tripod into position.

Tripods

Though not as convenient as our shoulder, a tripod is much more stable for creating shots that are steady and level. Tripods come in an array of styles,

FIGURE 8.18
When hand-holding a camera, we can lose our sense of level and shoot takes that are awkwardly canted.

some that simplify the shooting of extreme low angles, some with heads on ball mounts that make it easy to get the camera level, and some with quick release mechanisms that allow us to mount and dismount the camera from the tripod quickly and easily. However, in a small production, they are an additional piece of equipment that someone must handle. And, even as it solves the problems of stability, it introduces new difficulties. If a tripod is not heavy enough for the camera, we will still get shaky shots. Not only that, but a light tripod made top heavy by too large a camera can easily fall over, causing hundreds or thousands of dollars in damage. Furthermore, a light or poorly constructed tripod head is incapable of delivering smooth pans and tilts, and it produces unacceptably jerky camera moves.

A good tripod—heavy enough to handle the camera with a head capable of delivering smooth movement—can be cumbersome, even if it is made of lightweight materials. Tripods take time to set up. At a minimum, for each shot we have to adjust the legs to the proper length so that the camera is at the desired height and is level when the legs are spread. Even making these adjustments correctly is time consuming. Setting the tripod properly for every shot is a chore and slows the production process. Once the tripod is in place, we tend to block action around it rather than move it into the heart of the action. Therefore, it can discourage breaking scenes into separate shots and, instead, encourage the blocking of action in front of the camera in long, wide takes, as if on a stage. The result is that we exclude the audience from the space in which the action takes place and relinquish one of the fundamental strengths of film and video.

Dollies

Less cumbersome than tripods are camera dollies. Again they increase the size of the crew because more people are necessary to transport and grip for a dolly. However, because they provide maneuverable mounts for the camera, they tend to encourage the camera's being inserted into the action. It takes time in production to plan for dolly moves and to rehearse and execute moves. However, it is often worth the extra crew and time necessary to pull off a camera shot which moves and flows with the action.

Wheelchairs make reasonably good dollies in low-budget productions. A cameraperson sits in the wheelchair holding the camera while being pushed or pulled along the floor by an assistant. Obviously this can work only if the floor is smooth. Also, we are limited by the cameraperson's ability to hold the camera steady.

Simple dollies can be built with a piece of plywood large enough to carry a tripod and wheels of a diameter large enough to even out irregularities in the floor. The usual tactic for executing camera moves over rough surfaces and irregular ground is to lay track over the surface and then mount a dolly with four sets of dual wheels that can ride on the track. It is even possible to build a low-budget version of a track dolly, using lightweight PVC pipe for the track and eight wheels mounted inward in four sets of two.

More elaborate camera mounts are usually rented. These include various types of dollies, pedestals, cranes, and booms, which can be expensive. A well-planned shot script might include several sophisticated camera moves, which would enhance the production value during one or two pivotal scenes. If the shots can all be executed in one or two days, equipment rental expense can be minimized.

Since the first *Rocky,* the Steadicam has become a mainstay in the arsenal of film and, more recently, video production. The Steadicam combines the stability of a tripod or dolly with the flexibility of hand-held camera technique. It is a spring-loaded, gyroscope-steadied contraption that straps onto a cameraperson and allows free movement while keeping the camera steady. It requires practice to use well, and many camerapersons sell their skills as specialists in its use. A small, lightweight version is also sold to the home video market that may be available in your area.

Composition

When framing a subject or when holding a subject in the frame during a moving shot, we want to compose shots that make use of the entire frame. Especially during moving camera shots, there is a tendency to mistakenly regard the frame as an aiming device and our camera as some kind of gun, constantly placing the subject in the center of the frame as a target lined up in our cross hairs. Always placing the subject in the middle of the frame creates repetitive, static, and even awkward compositions that undermine visual interest.

Dynamic Composition

A well-framed subject in a medium shot or a medium close-up should have a small amount, but not too much, space between the top of the head and the top of the frame. If there is too much space, the framing looks awkward. If we place the subject's head in the center of the frame, we usually create a composition with too much headroom. A related problem with compositions involves not providing any headroom at all, but instead placing the top of the frame directly on top of the subject's head, as shown in Figure 8.19.

The best framed shot, however, can get away from us as the camera or subject moves. A common problem is chopping off the top of the subject's head with the frame line. This often happens when a shot opens with a seated subject. Then a second person walks into the frame and the camera can't tilt up to accommodate the standing height of the second subject without losing the seated person. The resulting shot decapitates the unfortunate standing subject, and the audience watches the pathetic sight of a headless person walking around the frame. Our problem is that we did not anticipate the entrance. The camera shot of the first person needs to be low enough that the tilt up will keep both subjects in the frame.

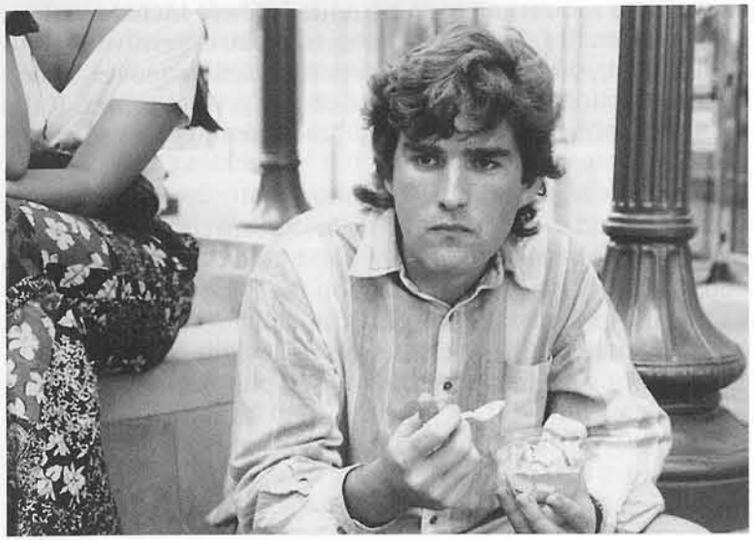

FIGURE 8.19
No headroom.

Another consideration related to placing the subject in the frame is the amount of space we proportionally compose in front of and behind the subject when the subject is looking toward one side of the frame or the other. Seldom do we block action so that subjects are facing frontally toward the camera. Most of the time, we block subjects at an angle to the camera, not in profile, but in some form of three-quarter front shots. In a profile or three-quarter front shot, we find that we need to place the subject off-center for pleasing composition, providing more space in front of them (in the direction in which they are looking) and less space behind them. This is sometimes called *lead space* or *nose room* and is shown in Figure 8.20.

As the subject moves, we attempt to maintain this lead space so that the subject always appears to be moving into an empty area in the frame rather than running into the edge of the frame. This becomes very difficult in tight compositions. Even experienced actors in a rehearsed scene can make unrehearsed moves if it feels right to them during the moment of their performance. This is the case in the tight shot of Sigourney Weaver in *Ghostbusters* when she pulls Bill Murray down on the bed with her while under Gozer's influence. Her performance is terrific, and the camera operator loses her head during part of the shot. Not an uncommon or infrequent problem.

There is a major distinction between symmetrical compositions and dynamic compositions. We usually create symmetrical compositions when we place subjects in the middle of the frame, or when we carefully balance subjects so that they are of equal size and weight on each side of the center line. We can use symmetrical compositions to good effect. Ingmar Bergman often used them to reinforce the formal nature of a relationship. Also, confrontations between adversaries or two people coming together in a romantic embrace are sometimes treated by symmetrical CU profile shots of the two subjects facing each other nose to nose from each side of the frame.

FIGURE 8.20
Lead space.

Symmetrical compositions are static, having an enclosed quality that draws the eye away from the edges and toward the middle of the picture. Consequently they can be useful in conveying a sense of enclosure or imprisonment. A symmetrical landscape shot of a mansion with a road leading to it and trees bordering it will impart a sense of stability—a self-contained world. There is an excellent use of symmetrical composition at the beginning of *Dead Poets Society* when the boys march into the hall framed in heavily symmetrical shots, conveying rigidity, immobility, and confinement—themes that are then well developed in the plot.

Dynamic compositions, on the other hand, balance uneven size and mass in the frame to lead the eye away from the center. A simple over-the-shoulder three-quarter shot of two people in dialogue, with the shoulder and back of the head of the foreground person large in the frame and the torso and head of the person facing the camera smaller in the frame, is a common example of dynamic composition. In this shot, we must place each character so that their uneven size and mass still balance the composition.

Several times in this book we have discussed the importance of creating the illusion of three-dimensional space by using foreground framing devices and angling shots so that perspective lines converge to the side of the frame. Shooting square into a wall or scene with no foreground framing device is almost a sure formula for flat, uninteresting compositions. (See Figure 8.6.)

Rule of Thirds

One useful design tool that can aid in the creation of dynamic composition is the *rule of thirds*. This classic concept suggests that we divide the frame into thirds both horizontally and vertically. The points where the vertical and horizontal lines cross are aesthetically pleasing spots to place subjects or to have perspective lines converge. Similarly, we find it is usually best to avoid placing horizon lines exactly in the middle of a frame, but to place the horizon either above or below center, approximately one-third or two-thirds up the height of the frame. (See Figures 8.3 and 8.11.)

Another useful concept for the creation of dynamic compositions is the idea of balancing unequal weights on a teeter-totter (or, as expressed more formally in physics, a lever and fulcrum). Remember the idea? A lighter weight can counterbalance a heavier weight if it is placed farther away from the center fulcrum. We find the idea works in composition as well—lighter mass can counterbalance heavier mass if it is placed farther from the center of the frame. We are so familiar with this concept that if we frame a subject off-center so far to one side or the other that a "hole" is left in the frame, we are led to anticipate that the hole will soon be filled by the introduction of a new element such as the entrance of another person.

The Compositional Triangle

The compositional triangle is another helpful design idea. When framing subjects, we often find we are composing three principle elements rather than two. This may be three people, or two people and some significant object or piece of architecture. Obviously, under these circumstances, the simple idea of two objects of unequal size balanced on a fulcrum at different distances from the center requires some elaboration. The concept of balancing unequally sized objects at unequal distances still holds, but now we imagine the objects at the three points of a triangle, with their distance and placement proportional to their size. Thus we can compose two smaller objects to counterbalance one larger object, or arrange objects at different distances around a central point, as shown in Figure 8.21.

One simple rule of composition is to eliminate extraneous elements. If our composition includes parts of people, fragments of furniture, or little bits of ancillary objects that simply litter the frame, the best solution is to tighten the shot and frame out the distracting clutter. Related to this is the tendency to frame details of hand activity too loosely. Suppose we are shooting someone carving a small wooden figurine. We start with a medium shot showing the person, including the busy hands. An awkward but common transition we often see is a tilt down while staying in the medium shot so that the hands shift up near the center of the frame. (The bull's-eye framing we usually try to avoid!) The idea, of course, is that the cameraperson wants us to see what the hands are doing. However, we are still in a medium shot, which includes a large portion of the subject's body, so that tilting down to draw attention to the hands also has the sad effect of chopping off the subject's head. If the

FIGURE 8.21
We can compose three objects by clustering two nearer to the center and the third farther from the center of the frame.

hands are included in a medium shot, we will see their activity just as easily near the bottom of the frame. If the cameraperson wants us to see more detail, the better solution is to move in to a close-up of the hands so that the cropping of the full figure is acceptable and not ungraceful. (See Figures 8.22(a) and 8.22(b).)

FIGURE 8.22(a)
Tilting the camera down to draw attention to the hands in a medium shot can result in an awkward framing of the subject, cutting off the head.

FIGURE 8.22(b)
If we want to emphasize the action of the hands, we should go in to a tighter medium close-up of the hands.

A similar composition error we see often results from wanting to show details in the background and framing the shot to place these details more prominently in the frame, but in doing so, creating a very awkward framing of our main subjects. For example, suppose we want to shoot on a city street that has a strong international flavor. Along the street are many storefronts with signs over the doors written in foreign languages. We want to show this to our audience. If we simply take the shot from eye level out in the street or at the edge of the sidewalk and tilt the camera up to show the signs, we inadvertently cause people walking by to have their heads and shoulders sticking up from the bottom of the frame in a very awkward composition. The solution in this situation is to lower the camera point of view, framing both the signs above the shops and the passers-by. (See Figures 8.23(a) and 8.23(b).)

The most important point in these various examples is to avoid falling into the trap of concentrating on one element within the frame at the expense of badly composing other elements and the entire shot.

Good composition involves designing the whole frame, not just properly positioning our major subjects. Often, while learning camera technique, we first learn to place our main subjects in the frame but fail to see the entire composition. Besides badly framed backgrounds, we can, for example, inadvertently leave large portions in the background of our composition without any interesting elements. We can have distracting empty space, which draws the eye away from the action. As discussed in Chapter 7, we should use set dressings, props, and architecture as elements to create a fully composed frame.

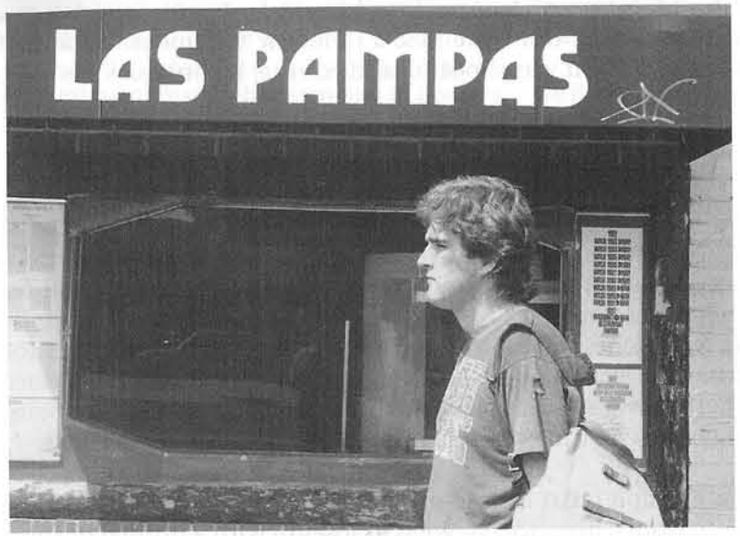

FIGURE 8.23(a)
Sometimes we awkwardly frame subjects by also trying to frame objects in the background. In this case, in trying to show the awning sign over the door, we have placed the subject too low in the frame.

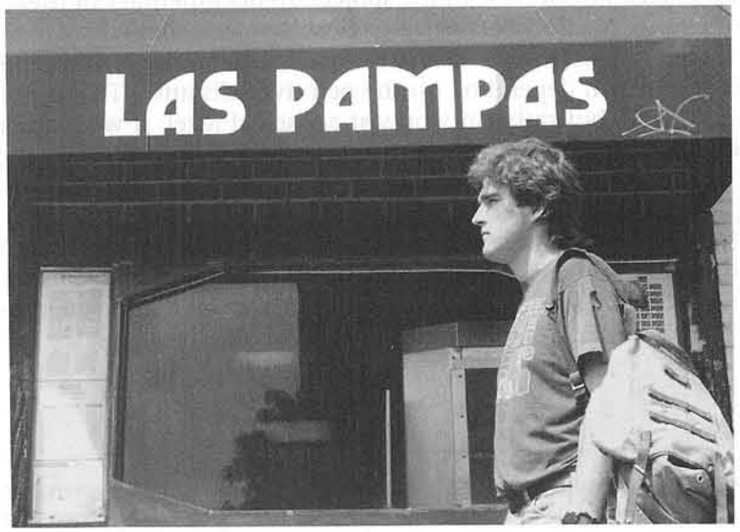

FIGURE 8.23(b)
We need to see the composition of all the elements in the frame and line up the camera to compose everything comfortably. In this case, lowering the camera shows the sign and brings the subject up higher into the frame.

The secret of good camera work is the ability to really see the frame. It is a skill that must be mastered. When we begin learning camera technique, we are aware of how the subject looks to our eyes—as a reality before us. When we first look into the viewfinder, we tend to see what we know is there, not what the camera is really shooting. Once we had a student who brought in a film of his wife having a picnic in a park and frolicking on a playground slide. The intended treatment was idyllic, but the student had shot all of the many close-

up shots with a short focal length lens, making his wife look grotesque. We discovered that the student had truly intended a romantic treatment. What had happened? While the student was shooting and editing, he only saw his wife. He did not see the image.

Point of View

Camera technique—camera placement, framing and angles, lens selection, and composition—all contribute not only to how the audience's eyes will see the image, but what relationship the audience will have with the action. By means of camera technique, we place an audience in the scene, or just outside it, or far away from it. Deciding how far from or close to the action we want the audience, where we want the audience to be, and from what vantage point we want the audience to see can only be decided if we know what our purposes are.

We know, for example, that a close-up shot with a long lens is somehow recognized as taken from a distance, whereas a close-up with a normal or short lens is recognized as taken from close to the subject. In documentary or theatrical work, the difference in effect between two close-ups, one shot with a long lens, the other with a normal lens, can be remarkable. An audience feels and reacts to actions on a screen depending on the perceived distance. This is not thought about abstractly, but rather it works at a visceral level. If we place a camera near the floor so that figures tower over us, we have to react. If we are free, above our subjects going about their business below us, we have to look down on them, literally.

Camera technique, then, is not simply a matter of recording subjects and action on film or video, nor is it a matter of creating pretty pictures. Camera technique is the creation of an illusion of reality that exists on the screen, rendered and interpreted with all the photographic devices at our disposal.

Notes

1. In Hitchcock's *Rear Window,* our ability to see what is going on in the murderer's apartment is limited to what we can see through the window from a distance. Our point of view is confined with Jeff (Jimmy Stewart), immobilized by a broken leg, and moves from plot action in one window to subplot action in another as he watches events in the apartments he can see from his room. Much of the film deals with overcoming this limitation in point of view and discovering the nature of the crime being witnessed.

2. Some genres and dramatic conventions in film and video do recognize the presence of the camera. *Cinéma vérité,* for example, is a style of documentary production that makes no attempt to conceal the fact the scene is being filmed by a camera. In television news and some nontheatrical productions, direct address to the camera by a reporter or an on-camera narrator is common. Similarly, some dramatic directors such as Woody Allen will also recognize the existence of the camera. For example, in *Annie Hall,* Allen steps back from the drama and breaks the fourth wall when he confides with the audience what a pleasure it is to have Marshall McCluhan personally confirm a philosophical point made while standing in line at a movie theater.

3. This may change as High Definition Television (HDTV), with its greater size and higher resolution, gradually replaces our present video format.

4. In this scene, Nicholson appears to be several inches taller than William Hootkins, the actor playing Eckhardt. This is in part due to the angle but probably also enhanced with a box for Nicholson to stand on.

5. It's interesting to note in *Home Alone* and *Home Alone 2* how often Macaulay Culkin is blocked above the bad guys so that he gets the low angles and they get the high ones.

6. A reflex viewfinder is an optical system we find on most film cameras that allows us to see the image directly through the taking lens. In video, monitors also provide us with a direct view of the shot as seen through the taking lens.

7. A beautiful example of this technique occurs in *Butch Cassidy and the Sundance Kid* in the bicycle interlude where Butch (Paul Newman) rides by with Etta on the handle bars as we truck along with a board fence between us and the riders, the slats of the fence flashing through the frame providing stroboscopic glimpses of the playful scene.