

## CHAPTER 4

# LIGHTING

Lighting is the most important element in cinematography. It is the task to which a cinematographer gives his primary attention. He studies the characteristics of his film stock so that he may predict what effect it will have in translating his scene onto the screen. He then manipulates the lights accordingly. Filters are an aid in modifying that translation. But it is lighting that shapes the reality in front of the lens, giving it depth or flatness, excitement or boredom, reality or artificiality. Cinematography attempts to create and sustain a mood, captured on the screen. In this respect lighting is at the heart of cinematography.

### CHARACTERISTICS OF LIGHT

As discussed earlier, a certain overall *quantity* of light is necessary to register the picture on film. However, the way in which the scene will be portrayed on screen depends on the *quality* and *distribution* of the light. There are three distinct aspects to be considered: whether the source is "hard" or "soft," the angle of the "throw" (the path the light follows), and the color of the light.

A source can be described as hard or soft, depending on

the type of shadows it creates. Light that travels directly from the filament of the bulb to the subject with only a lens in between will usually cause sharply defined deep shadows. If the light is bounced off some diffusing reflecting surface, or diffused by some translucent substance suspended between the light and the subject, the shadows will be weaker and less sharp. The diffusing surface acts as a multitude of small sources, all washing out one another's shadows.

The hardness or softness of light depends on the size and distance of the effective source. For example, if the effective source is a large surface from which the light is bounced, it creates a softer illumination than would be obtained if the light came directly from the filament of the bulb. The most extreme example of a soft light is a blue or overcast sky. As for distance, the sun — by no means a small source — creates sharp shadows because it is so far away that its rays are almost parallel when they reach the earth. On the moon, where there is no atmosphere to scatter and diffuse the sunlight, this hard quality is most pronounced. The sky is black, shadows are dramatically dark, and contrasts are extreme. On earth the atmosphere scatters the sunlight. Our sky acts as an enormous soft source that fills in the shadows left by the sun. If the sun is completely diffused by the

atmosphere, as on an overcast day, the gray sky would be the only source and the soft light would create a shadowless effect.

The second aspect of light quality is the angle of the throw. The direction from which the light comes will suggest the mood of the scene, the time of day, and the type of location. It will also model the objects in the scene, bringing out their shape and texture, or perhaps intentionally not revealing shape and texture.

The third aspect of a light source is its color. Often the creative use of color is not aimed at realism, or the situation justifies a color light source other than the proper color temperature. In such cases, gelatin filters might be used on the light sources.

Studying the light around us in every type of location, time, weather, and season is the best way of learning about these light characteristics. The second best way is to watch films with lighting in mind (preferably without sound).

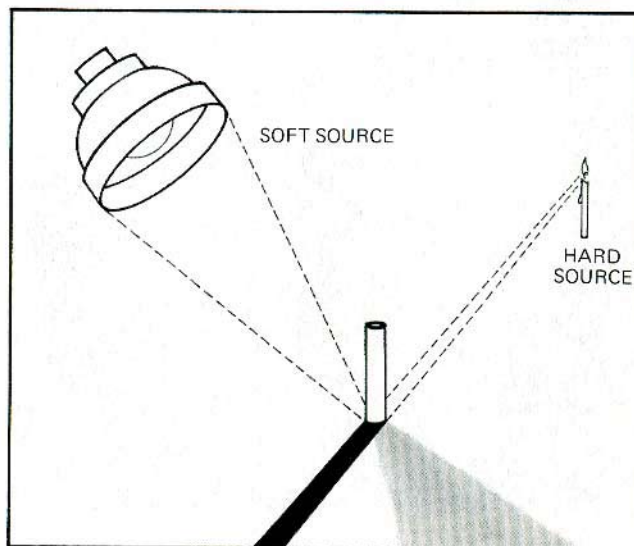
## STYLES IN LIGHTING

In the traditions of motion-picture lighting, it is possible to distinguish various stylizations, just as in the work of the great masters of painting. The three most pronounced styles used by cinematographers are high-key (such as in the paintings of Turner, Whistler, and some of Degas), low-key (such as in the paintings of Rembrandt and Caravaggio), and graduated-tonality (such as in the paintings of Ingres).

A *high-key* scene is one that appears generally bright. It is best achieved in cooperation with the art director, as the sets and costumes should be in light tones. The lighting for a high-key effect will often employ much soft, diffused illumination with relatively few shadows. It is important to include at least a few dark areas to indicate that the highlights are not simply overexposed.

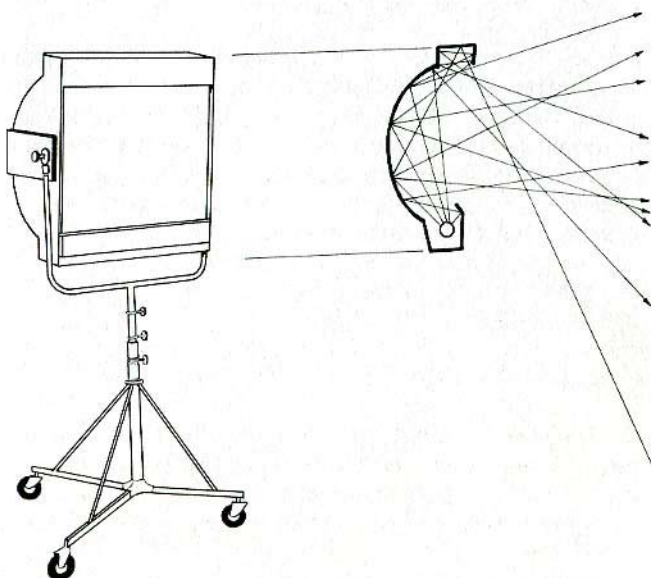
If, on the other hand, only a few areas of the frame are well lit and there are many deep shadows, the effect is *low-key*. There is a popular fallacy that to achieve a low-key effect one has merely to underexpose. In fact, it is the *ratio* of dark shadow area to adequately lit areas that creates a low-key effect. Here again the art director can help, this time by providing darker sets and costumes.

*Graduated tonality* is intended to produce a tonal effect of graduated grays. It is often achieved by soft light evenly illuminating the scene, creating weak shadows, with the tonal

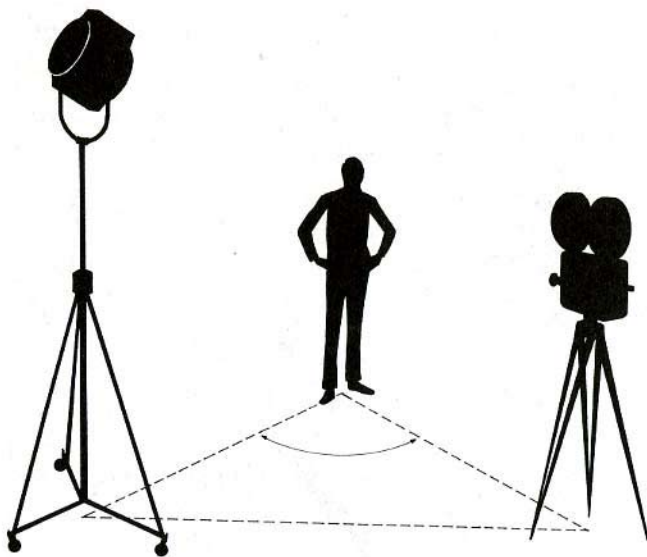


4-1 Hard versus soft light.

4-2 A soft light. Light from the bulb reflects from the large inner back surface, creating soft illumination.







4-3 Key light "outside the actor's look." The actor's sight line runs between the camera and the light.



4-4 Key light only.

gradations often painted onto the sets or created in the actor's costumes and makeup. Sometimes artificial shadows are painted on.

These three stylizations by no means cover all the approaches to lighting the film.

Long before shooting, the director and the cinematographer should discuss the style or approach to be taken in the film. This will depend to a great extent on the mood and character of the story, or perhaps of each scene. For example, a drama is most often done in a low key while a comedy is usually more effective in a high key. All sorts of films *could* be done in gradated tonality. There are no set rules about what style should be used with what type of film. It is all up to the director and cinematographer.

## LIGHT FUNCTIONS

In creating and maintaining a style, the haphazard approach is bad. We have to know exactly what each lamp is doing for us and why we are putting it in a given spot. To simplify things a terminology was developed, naming the functions of the lights.

The key light is the main source of light for a given

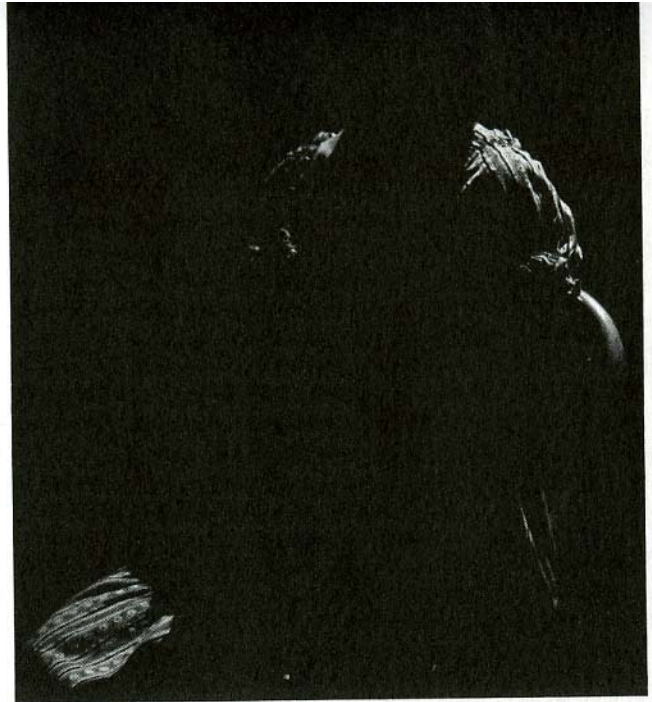
character while at a certain place in the scene. (If the character moves about he may have several key lights, one for each of his locations.) There are no set rules on the placement of the key light. A traditional starting place is 45° from the camera and 45° off the floor, but the mood or location of the scene usually leads the cinematographer to put it elsewhere. Another rule of thumb suggests that the key should come from "outside the actor's look." That is, if the actor is looking off camera, which is usually the case, the key should come from the other side of his line of sight so that he is looking between the camera and the key light. This means the downstage side of his head will be in shadow, giving his features a pleasant three-dimensionality, but this rule, like the 45° rule, is very frequently ignored. It is very interesting to note that many of the masters of painting most frequently use a "key light" coming from the left side of the canvas. A cinematographer rarely has so much freedom. The final position of the key light will depend on the mood, the actor's features, the set topography, the supposed time of day, etc. The key's position will determine the shadow pattern on the face.

A fill light is used to fill in the shadows created by the key light. It should not create additional shadows and therefore usually comes from fairly near the camera. In Hollywood studios, fill light was sometimes introduced by a frame of





4-5 Fill light only.



4-6 Back light only.

bulbs around the lens. This practically eliminated the possibility of creating shadows visible through the lens. Today, soft-light sources are often used for fill. The shadowless quality of soft light allows for greater freedom in placing the fill, and is especially useful in television studios where all lights are hung from above and the action must be properly lit for several cameras at a time. When trying to achieve dramatic low-key effects the fill light is frequently omitted.

The third principal light is the back light, which is designed to separate the actors from the background. This adds three-dimensionality to the picture. This light is often omitted by cameramen who believe in realism and do not want an unmotivated source of light illuminating the picture. The back light is positioned above and behind the actor. It illuminates the top of his shoulders and head.

Similar in function but different in placement is the kicker light. It works from a three-quarter-back position on the opposite side of the key light. It is often placed lower to the floor than the back light. The use of back lights and kickers depends entirely on the situation. Sometimes one, both, or neither will be used. They are introduced at the discretion of the director of photography.

The lighting may also require effects lights — for example,

4-7 Kicker light and back light only.





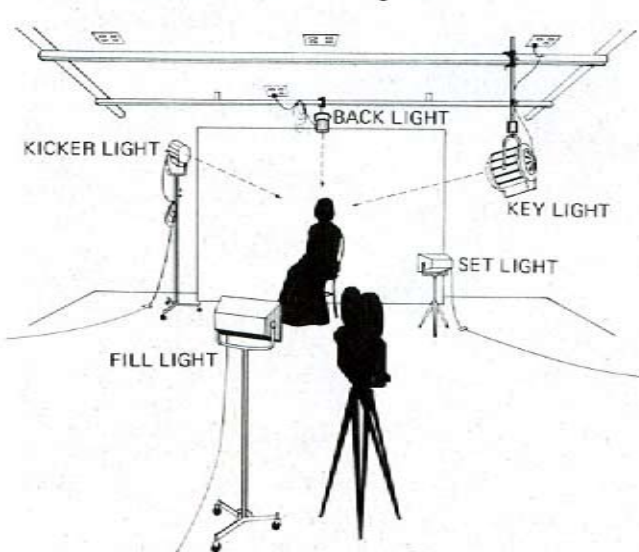


4-8 Set light only.



4-9 Portrait illuminated by key, fill, back, kicker, and set lights. (Photos by author)

4-10 Placement of lights for figures 4-4 through 4-9.



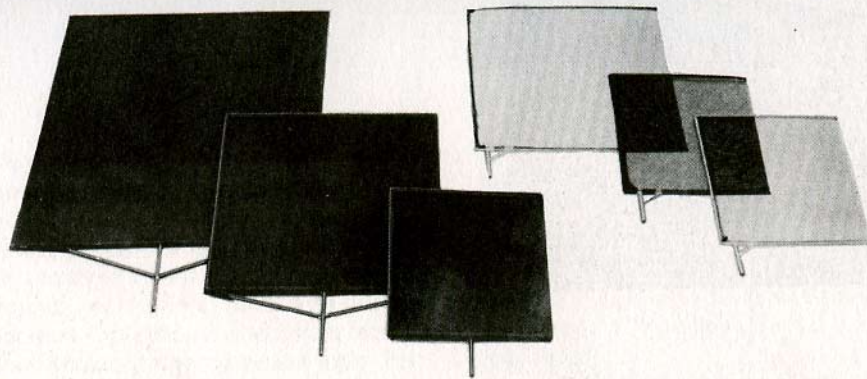
a clothes light to bring up the texture of a costume. Another effect light, the *eye light*, is usually a small hard-light source either positioned near or mounted right onto the camera. It acts as a weak-fill light that mainly fills in the actor's eye sockets. Its reflection provides a lively sparkle in the actor's eye. It is recommended when photographing an actor with dull or deeply set eyes. Some cinematographers mount the eye light on the camera, just above the lens, and use it in every shot because they like its effect.

*Set lights* illuminate the walls and furniture. There may also be *practical lamps* (lamps that are part of the scene), *backdrop lights* illuminating painted or photographed backdrops seen through a window or doorway, and other special light sources such as fireplaces, passing car headlights, etc.

## LIGHT MEASUREMENT

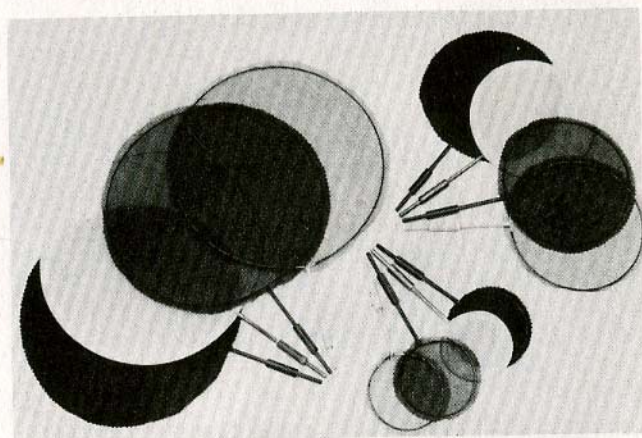
In lighting a scene, the relative intensities of the lamps are almost as important as their placement. For example, the key



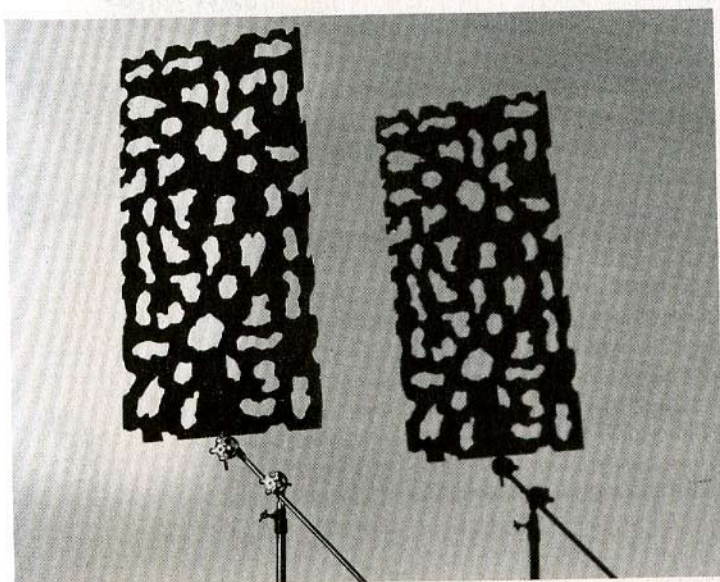


4-57 Flags (black) and scrims (nets). (Bardwell & McAlister, courtesy of F & B Ceco of California, Inc.)

"Flags," "dots," "fingers," and "cookies" differ in size and shape, yet they are all used for introducing shadow patterns. Unlike barndoors or snoots, they are usually on "century stands" or goosenecks that hold them between the light and the subject. One very important use of a flag is shading the camera lens from direct light. The "cucaloris," or "cookie," can be used to create the random shadow pattern usually associated with foliage. Some cookies are made of a frosted plastic material and give a very soft shadow pattern. A cookie will often substantially improve the appearance of woodwork or furniture, giving it a deep, rich look.

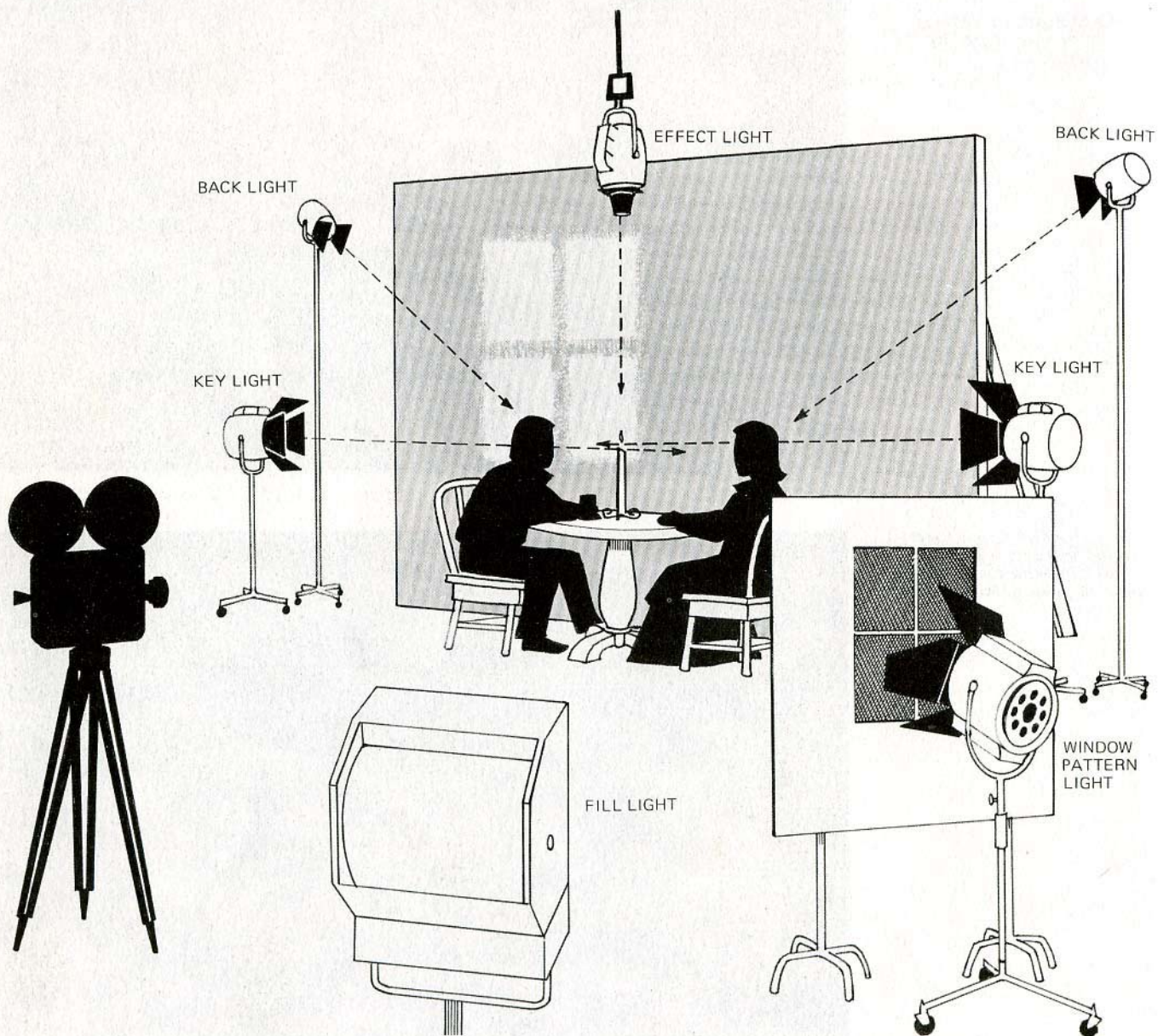


4-58 Assortment of dots and targets. (Bardwell & McAlister, courtesy of F & B Ceco of California, Inc.)



4-59 A cucaloris (cookie). (Photo by author)





4-71 Lighting scheme for the candle effect. Fill, from the soft light, would be used if the scene had been shot in color.