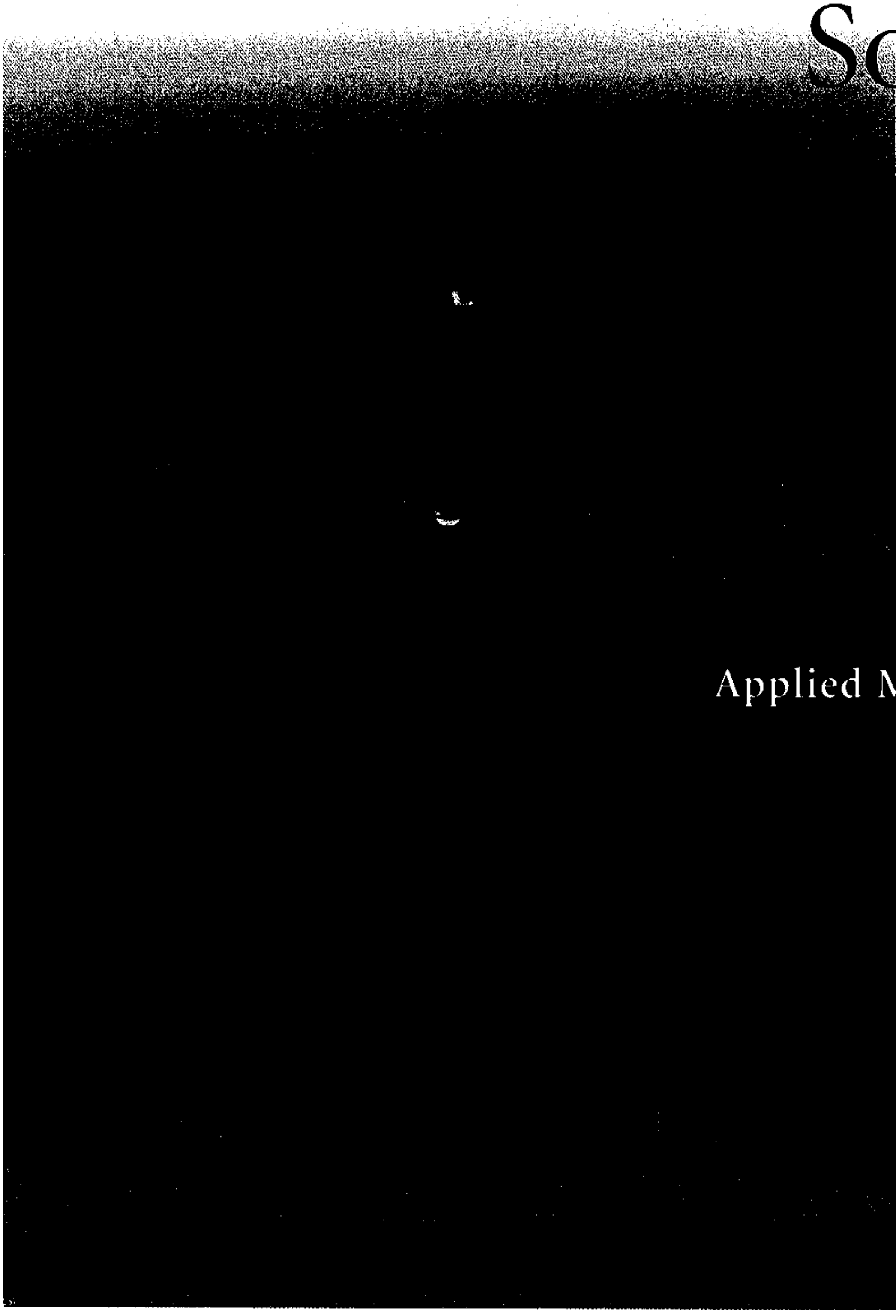
SIGHT

SOUND

MOTION



Applied Media Aesthetics

FOURTH EDITION

Applied Media Aesthetics

1

Consciously or not, you make many aesthetic choices every day. When you decide what to wear, or clean up your room so that things are put back where they belong, or choose what flowers to put on the dinner table, or even when you judge the speed or distance of your car relative to other cars while driving, you are engaging in basic perceptual and aesthetic activities. Even the everyday expression "I know what I like" requires aesthetic judgment.

When you select a certain picture to put on your wall, choose a specific color for your car, or look through the viewfinder of a camera, you are probably more conscious of making an aesthetic decision. This kind of decision making, as any other, requires that you know what choices are available and how to make optimal decisions with a minimum of wasted effort. Painting your bathroom first red, then pink, then orange only to discover that off-white is in fact the best color would be not only expensive and time-consuming but also cumbersome and unproductive.

As a responsible mass communicator, you must go beyond everyday reflexes and approach creative problems with educated judgment. You also need to develop a heightened sense of vision to recognize the universal needs and desires of human beings and learn how to give such vision significant form so that you can share it with all of us.[1] Applied media aesthetics helps you in this formidable task. If not communicated effectively, even significant vision subsides into an insignificant dream.

To provide you with some overview of applied media aesthetics and a background for its study, let us focus on six major areas: applied media aesthetics: definition, applied aesthetics and contextualism, contextual perception, the power of context, the medium as structural agent, and applied media aesthetics: method.

Applied Media Aesthetics: Definition

Applied media aesthetics differs from the traditional concept of aesthetics in three major ways. First, we no longer limit aesthetics to the traditional philosophical concept that deals primarily with the understanding and appreciation of beauty and our ability to judge beauty with some consistency. Nor do we consider aesthetics only to mean the theory of art and art's quest for truth. Applied media aesthetics considers art and life as mutually dependent and essentially interconnected. Its major functions are based on the original meaning of the Greek verb *aisthanomai* ("I perceive") and the noun *aisthetike* ("sense perception").[2] ***Applied media aesthetics*** is not an abstract concept, but a process in which we examine a number of media elements, such as lighting and picture composition, how they interact, and our perceptual reactions to them. Second, the media—in our case primarily television and film and, to a lesser extent, visual computer displays—are no longer considered neutral means of simple message distribution, but essential elements in the aesthetic communication system. Third, whereas traditional aesthetics is basically restricted to analysis of existing works of art, applied media aesthetics serves synthesis as well—the creation of television shows, films, or computer screen displays. Finally, the criteria of applied media aesthetics let you employ formative evaluation, which means that you can evaluate the relative communication effectiveness of the aesthetic production factors step-by-step while the production is still in progress.

Applied Aesthetics and Contextualism

Applied aesthetics emphasizes that art is not an isolated object hidden away in a museum and that aesthetic experiences are very much a part of everyday life. Whatever medium you choose for your expression and communication, art is a process that draws on life for its creation and, in turn, seems necessary to live life with quality and dignity. Even if you are not in the process of creating great works of art, you are nevertheless constantly engaged in myriad aesthetic activities—activities that require perceptual sensitivity and judgment.

But if ordinary life experiences are included in the process of art, how are you to distinguish between aesthetic processes that we call "art" and those that are not art? Is every aspect of life, every perceptual experience we have, art? No. Ordinary daily experiences may be full of wonder, but they are not art—not yet, in any case. But they do have the potential of serving as raw material for the process of aesthetic communication that we call art.

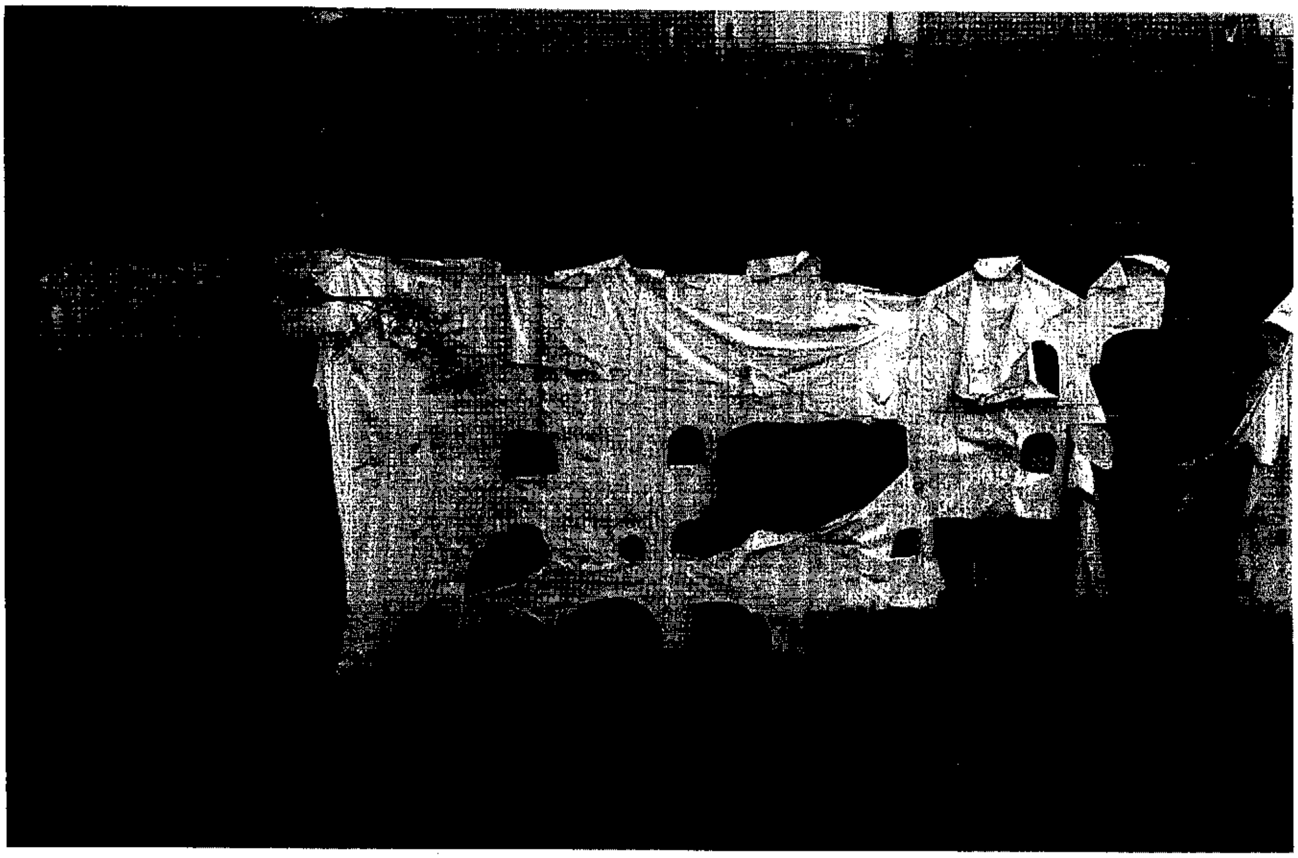
Art and Experience

What, then, is the deciding element that elevates an ordinary life experience into the realm of art? The critical factor is you—the artist—or a group of artists, such as the members of a television or film production team, who perceive, order, clarify, intensify, and interpret a certain aspect of the human condition for themselves or, in the case of media communication, for a specific audience.

The philosopher Irwin Edman pioneered a new aesthetic concept three-quarters of a century ago that stresses the close connection between art and life. He wrote: "So far from having to do merely with statues, pictures, symphonies, art is the name for that whole process of intelligence by which life, understanding its own conditions, turns these into the most interesting or exquisite account."[3] This process presupposes that life is given "line and composition" and that the experience is clarified, intensified, and interpreted. "To effect such an intensification and clarification of experience," Edman says, "is the province of art."[4]

From this perspective, events that some may consider utilitarian or ugly have as much of a chance of becoming an aesthetic experience as a beautiful sunset. SEE 1.1 This process of clarification, intensification, and interpretation is also the province of applied media aesthetics. Whenever you look through the viewfinder of a camera to compose a shot, arrange some visual elements on a computer screen, or edit a film or video sequence, you are engaged in the creative act of clarifying, intensifying, and interpreting some event for a particular audience.

Irwin Edman (1896–1954) was a philosopher and a professor of philosophy at Columbia University. His main theme in his teaching and writing was to connect, rather than isolate, art with the ordinary aspects of life.



1.1 Art and Life

Within the contextualistic framework, we can draw aesthetic experience from all aspects of life. By giving "line and composition" to even a relatively ordinary scene, an artist can help us perceive its inherent beauty.

Contextualistic Aesthetics

As any philosophical movement, ***contextualism*** has many movements and different meanings. Basically, however, it means that we should evaluate art within its historical epoch and according to what the artist felt while creating it. All events, or "incidents of life," are relative and must be understood within their cultural contexts. Very much in the sense of a television docudrama, such incidents of life are interconnected and alive and spontaneous in their present, regardless of when they happened.[5]

These basic ideas serve as a convenient frame of reference for the discussion of applied media aesthetics. In its most basic form, ***contextualistic aesthetics*** means that what and how we perceive an event is greatly influenced by its context. It also stresses the interconnection of the major aesthetic fields of applied media aesthetics: light, space, time/motion, and sound. Finally, it helps to organize the discussion of the great variety of aesthetic elements in each field and their influence and dependence on one another.

Contextual Perception

We perceive our world not in terms of absolutes but rather as changing contextual relationships. When we look at an event, we are constantly engaged in judging one aspect of it against another aspect or another event. A car is going fast because another one is going slow or because it moves past a relatively stationary object. An object is big because another one is smaller. The beam from the same flashlight looks pitifully dim in the midday sun but bright and powerful in a dark room.

When you drive a car, your perceptual activities work overtime. You are constantly evaluating the position of your car relative to the surroundings, and the changes in the surroundings relative to your car. No wonder you feel tired after even a short drive through the city during rush hour. Even when you sit perfectly still and stare at a stationary object, such as a table, your eyes move constantly to scan the object. Then you fuse the many, slightly different views together into a single image of the table, much as a well-edited sequence of various camera angles becomes a cohesive unit.

How, then, can we ever make sense of our multiple views of a changing world with its onslaught of sensations? Our mental operating system encourages a considerable perceptual laziness that shields us from an input overload. We all develop habitual ways of seeing and hearing that make us focus on and notice only a small portion of what is actually there. We screen out most of the sensations that reach our eyes and ears, and we stabilize and simplify as much as possible what we do perceive.[6]

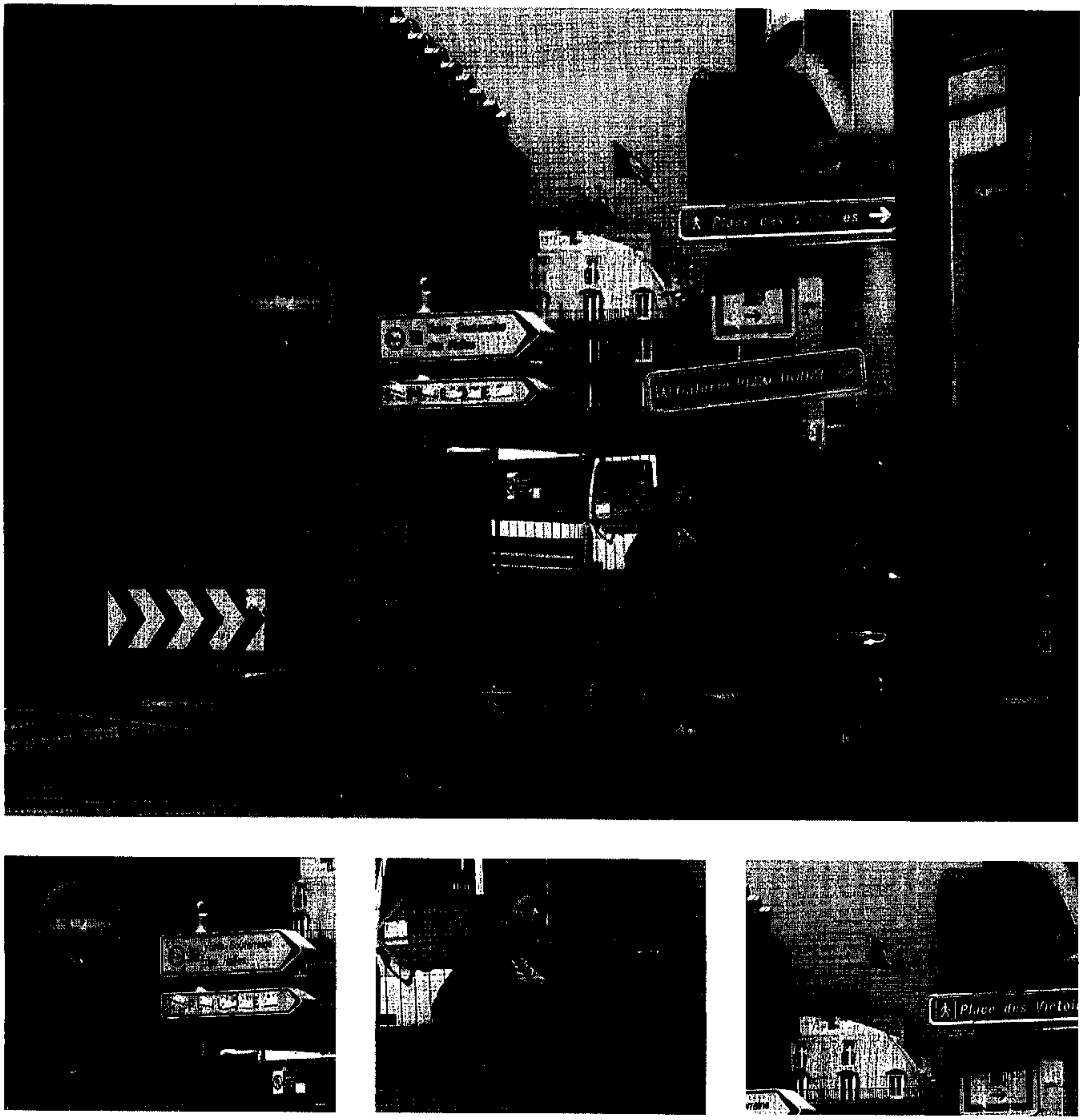
Stabilizing the Environment

Our perceptual mechanisms are designed to stabilize and simplify our surroundings as much as possible so that they become manageable. We tend to cluster certain event details into patterns and simple configurations, perceive the size of an object as constant regardless of how far away we are from it, and see the same color regardless of the actual color variations when part of the object is in the shade. Another of our automatic, "hardwired" perceptual stabilizers is the ***figure/ground principle***, whereby we order our surroundings into foreground figures that lie in front of, or move against, a more stable background.[7]

Selective Seeing and Selective Perception

Most of us tend to notice especially those events, or details of events, that we want to see or are used to seeing. In our habitual ways of seeing, we generally select information that agrees with how we want to see the world, and we screen out almost everything that might interfere with our constructs. This type of ***selective seeing***—frequently but not too accurately called ***selective perception***—is like selective exposure to information. Once we have made up our minds about something, we seem to expose ourselves mostly to messages that are in agreement with our existing views and attitudes, ignoring those messages that would upset our deeply held beliefs.[8] We also choose to look at things we like to see and are especially interested in and ignore those that mean little to us. **SEE 1.2**

Although such cue reductions can clarify and intensify an event for us, they can also create problems. For example, we often see and hear only those details of an experience that fit our prejudicial image of what the event should be and ignore the ones that interfere with this image. We then justify our questionable selection process by pointing out that the event details selected were, indeed, part of the actual occurrence. For example, if you have come to believe (perhaps through advertising or a recommendation) that the Shoreline Café has a nice atmosphere and serves excellent food, a friendly waiter may be enough evidence to verify your positive image, even if the restaurant's food is actually quite awful. By looking only at what we want to see rather than at all there is to see, we inevitably gain a somewhat distorted view of the world.



1.2 Selective Seeing

We tend to see events or event details that fit our perceptual expectations or that interest us highly. Each of us sees an event from his or her particular point of view and according to a specific experiential context.

Selective perception, on the other hand, is much more automatic; in most cases, we have no control over it. For example, if you are talking to a friend in a streetcar, you are probably not aware of most of the other sounds surrounding you, unless they start interfering with your conversation or are especially penetrating, such as a police siren or a crash. When you see somebody wearing a white shirt, you will perceive the same white, regardless of whether the person is standing in bright sunlight or in the shade. Your book pages will not run bluish when you read under a fluorescent light instead of the incandescent light of normal indoor lighting. Although a video camera would see such differences quite readily, you would have trouble seeing them, especially if you weren't looking for them. Your selective perception shields you from seeing too many varieties of shades and colors so that you can keep your environment relatively stable.

The Power of Context

Many of our perceptions are guided, if not dictated, by the event *context*. Let's assume that you are to write down quickly the names of the major American television networks. You will probably end up with a list similar to this one:

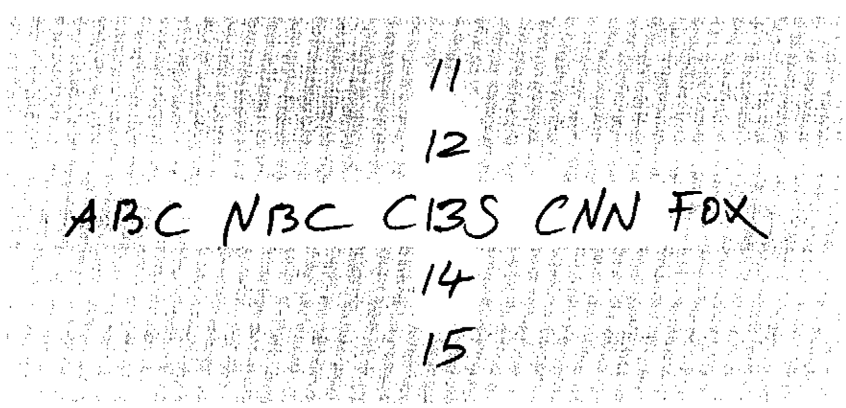
ABC NBC CBS CNN FOX

Now we change the context to helping a child learn to write numbers from 11 to 15.

11 12 13 14 15

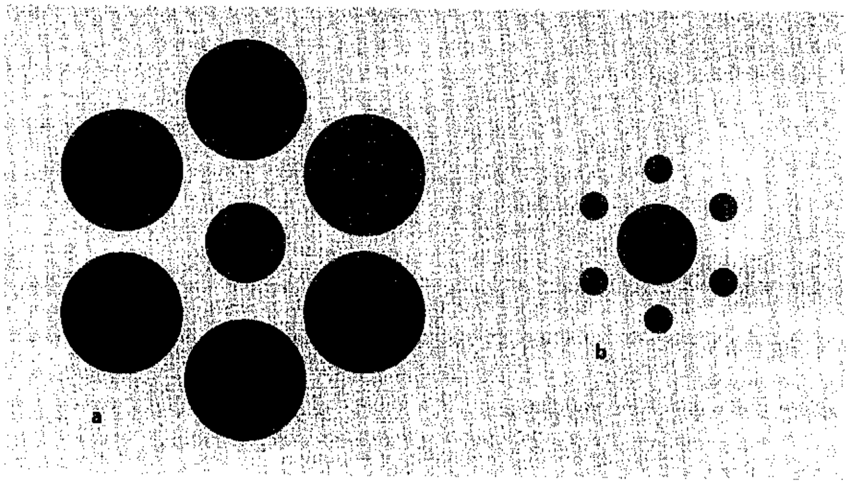
Take another look at the network names and the numbers. You may have noticed that the *B* in *CBS* and the *13* in the numbers series are very similar. In fact, they are identical.[9] Obviously, the context has had a powerful influence on the radically different perceptions of the identical sensation. The power of the context is so strong that you will probably find it difficult to see a *13* in the network context and a *B* in the numbers. Going against the established context is almost as hard as nodding your head affirmatively while uttering "no" or shaking your head sideways while saying "yes." **SEE 1.3**

Some of our perceptual processes are so forceful that we respond to certain aesthetic stimuli in predictable ways even when we know that we are being perceptually manipulated. The many well-known optical illusions are good examples.[10] **SEE 1.4A AND 1.4B** Although you may try vigorously to resist the idea of aesthetic manipulation, you cannot help perceiving the center circle in figure 1.4a as smaller than the one in figure 1.4b although in reality they are exactly the same size. Again, the contextual circles make you perceive the central circles as being different sizes. When surrounded by small circles, the central circle appears larger than it does when surrounded by larger circles.



1.3 Contextual Interpretation

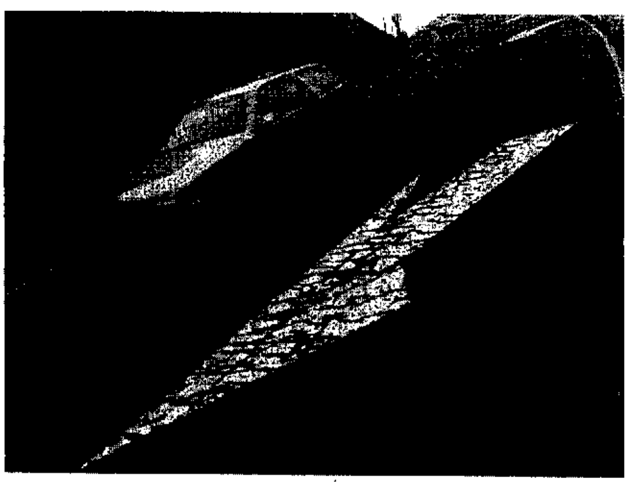
In the context of the horizontal row, the symbols at the center of this intersection are read as the letter *B*. In the context of the vertical row, the identical symbol is read as the number *13*.



1.4 Optical Illusion

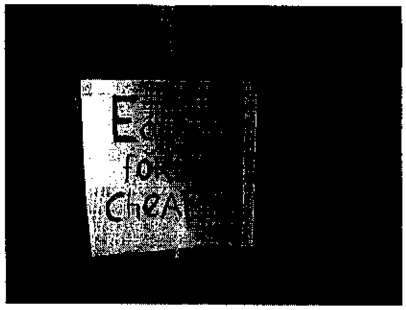
Although we may know that the center circles in this Ebbinghaus figure are identical, we still perceive the center circle in (a) as smaller than the center circle in (b). The large surrounding circles make the center circle look relatively small (a), and the small surrounding circles make the center circle appear relatively large (b).

Sufficient consistency exists in human perceptual processes so that we can predict with reasonable accuracy how people will respond to certain specific aesthetic stimuli and contextual patterns. To test this, the next time you invite a friend to visit, move some of your pictures a little so that they hang slightly crooked. Then watch your friend; most likely, he or she will soon adjust the pictures so that they hang straight again. Your friend's action is a predictable response to a strong aesthetic stimulus—the disturbance of strong horizontals and verticals, of standing upright on level ground. You apply the same principle when you cant the camera to make a scene look more dynamic. SEE 1.5



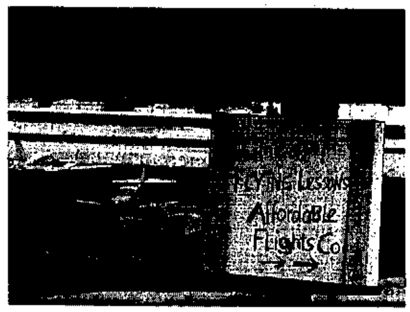
1.5 Tilted Horizon

We automatically perceive a tilted horizon line as a relatively unstable event. This car seems to travel precariously fast around the turn.



1.6 Eggs for Sale

If convenient, would you respond to this sign and buy some eggs? Justify your action.



1.7 Cheap Flying Lessons

Would you respond to this advertisement and take some flying lessons from the Affordable Flights Company? Justify your decision.

We call the framework within which we respond to aesthetic stimuli on a gut level the ***aesthetic context.*** Such elements as light, color, and sound are especially able to sidestep our rational faculties and therefore play a big role in establishing an aesthetic context.

But there is also a context that is established through our previous experience of the world around us. **SEE 1.6 AND 1.7**

What is your initial reaction to the two advertisements? Whereas you might respond positively to the eggs-for-sale sign and even buy some eggs if convenient, you would probably not be eager to sign up for your first flying lesson with the Affordable Flights Company. Why? Because our experience tells us that awkward hand lettering may be appropriate in the context of a small, family-run, charmingly inefficient operation that occasionally sells surplus eggs. But in the context of aviation, the sloppy hand-lettered sign is not a good indicator of success, efficiency, and safety. You are now associating what you see with your previous experiences and prejudices. We call this type of cognitive framework *associative context.* In an associative context, you consciously establish and apply a code that dictates, at least to some extent, how you should feel about and interpret what you see. The associative context is culture-bound.[11]

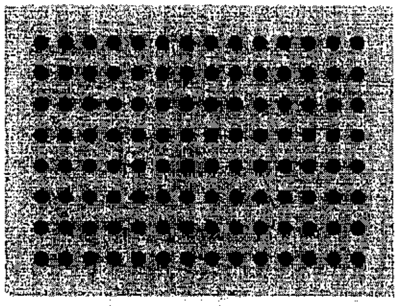
But if we seek only information that reinforces our personal projection of reality and are so readily manipulated by context, how can we ever attain a relatively unbiased view of the world? The fine arts have tried for centuries to break this vicious circle. Although we may still be tied to our automatic perceptual processes and stabilizing cue reductions, all art leads, at least to some extent, to counter this automatization, to see events from various points of view and shift from glance to insight. **SEE 1.8**

Significant television and films, regardless of the genre, can and should do the same. Depending on where you put a camera or microphone, and what field of view or camera angle you select, your viewers have no choice but to share your point of view. You can prod viewers to see an event from different perspectives and advance them from "looking at" to "looking into." In essence, you can help viewers educate their way of seeing, if not their perceptions.

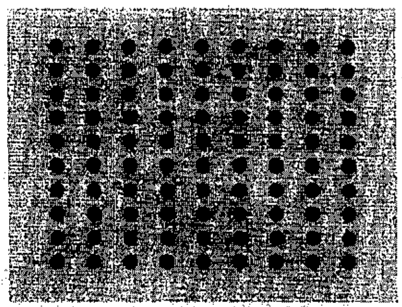
Before you can expect to help viewers become more sensitive to their surroundings and unlearn, at least to some degree, their habitual ways of seeing, you will have to acquire a degree of aesthetic literacy that allows you to perceive the complexities, subtleties, and paradoxes of life and to clarify, intensify, and interpret them effectively for an audience.[12]

We know that people apply psychological closure to formulate specific patterns. But is the process of psychological closure predictable? Can we predetermine the stimuli necessary for someone to perceive a particular pattern? Can we deduce any principles of psychological closure? Yes. Three gestalt psychologists—**Wolfgang Köhler** (1887–1967), **Max Wertheimer** (1880–1943), and **Kurt Koffka** (1886–1941)—helped develop three major principles of psychological closure: proximity, similarity, and continuity.[9]

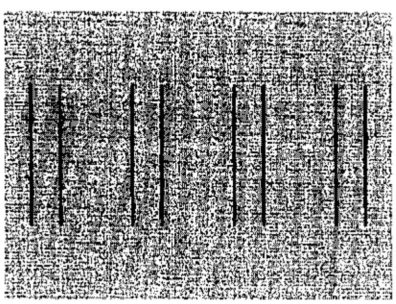
Proximity When similar elements lie in close proximity to one another, we tend to see them together. Because of attraction of mass, we connect more readily those elements that lie closer together than those that lie farther apart.



Here we see horizontal rather than vertical lines because the horizontal dots lie closer together than the vertical dots.

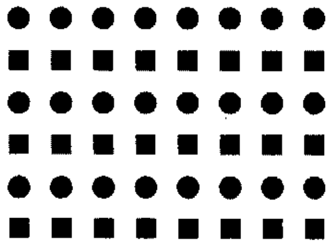


Now we perceive vertical lines because the vertical dots are closer together than the horizontal ones.

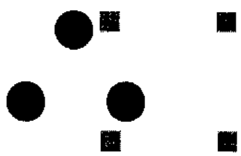


Here we tend to see four narrow columns rather than three fat ones.

Similarity Similar shapes are seen together.

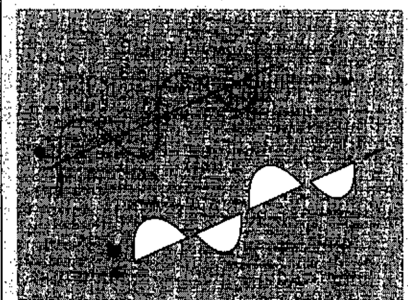


All these dots are equally spaced, yet we see horizontal lines because we tend to see similarly shaped objects together.



Here the similarity overrides the proximity. We see a triangle and a square intersecting.

Continuity Once a dominant line is established, its direction is not easily disturbed by other lines cutting across it.



We see a curved line being intersected by a straight line (a) rather than four odd-shaped forms attached to each other (b).

These three principles of psychological closure—proximity, similarity, and continuity—are all based on our desire to establish ***visual rhythm***. I propose this overriding perceptual principle:

> *We tend to perceive together those elements that are easily recognizable as occurring at a certain frequency (number of similar elements) within a certain interval (distance from one another) or that pursue a dominant line.*

VECTORS

Probably the strongest forces operating within the screen are directional forces that lead our eyes from one point to another within, or even outside of, the picture field. These forces, called ***vectors***, can be as coercive as real physical forces.[10] Each vector has a certain magnitude, or strength as to directional certainty and power. A vector, therefore, is a force with a direction and a magnitude.[11]

A vector on the screen indicates a main direction that has been established either by implication—such as with arrows, things arranged in a line, or people looking in a specific direction—or by actual screen motion, such as a man running from screen-left to screen-right or toward or away from the camera.

For screen displays, where you must deal with implied as well as real motion, the proper understanding and handling of vectors becomes extremely important. Once you have grasped what vectors are and how they interrelate and interact with other visual and aural elements, you can use them effectively not only to control screen directions but also to build screen space and event energy within a single frame or over a series of frames. A firm understanding of the vector theory will help you immensely in preproduction placement of cameras and in post-production editing.

VECTOR FIELD

In structuring ***on-screen space,*** we no longer work with isolated vectors but instead with a ***vector field:*** a combination of various vectors operating within a single picture field (single frame), from picture field to picture field (from frame to frame), from picture sequence to picture sequence, from screen to screen when you use multiple screens, and from on-screen to off-screen events.

You can also find vectors in color, in music, and even in the structure of a story; in fact, a vector is any aesthetic element that leads us into a specific space/time—or even emotional—direction. More-complex vector fields include ***external vectors,*** which operate within or without the screen, and ***internal vectors,*** which operate within ourselves, such as feelings or empathetic responses.

For the present, however, let's concentrate simply on the visual vectors that operate in on- and off-screen space of film, television, and computers.

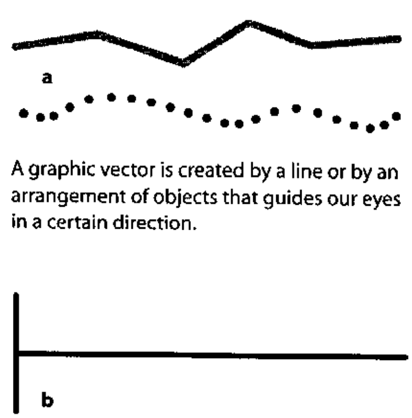
VECTOR TYPES

If you carefully examine the various ways visual vectors operate, you will discover three principal types: graphic vectors, index vectors, and motion vectors.

Graphic vectors A ***graphic vector*** is created by a stationary element that guides our eyes in a certain direction. The direction of a graphic vector is ambiguous, however. A simple line is a graphic vector, but we can scan the line from left to right or (with a little more effort) from right to left. SEE 7.48 When we establish a point of origin for the line, we increase the magnitude of the graphic vector. Its directionality is now determined by a point of origin but is still somewhat ambiguous. SEE 7.49 AND 7.50 The pipe structure supporting the roof of a ferry boat pier and the lines of the highrise building give basic directional orientation, but they do not unequivocally point in a single direction, so their directional magnitude remains relatively low.

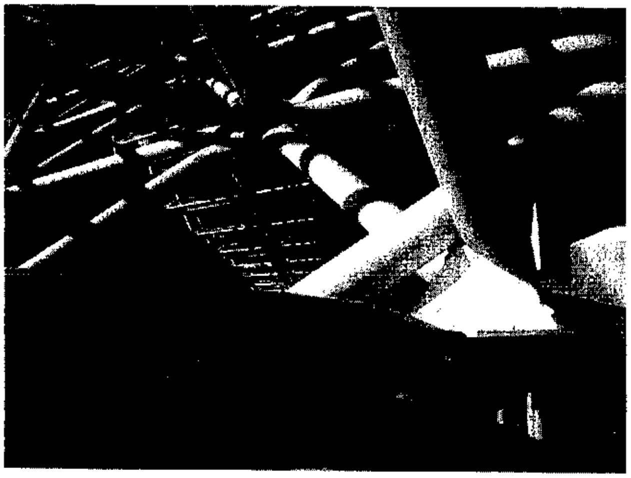
Index vectors In contrast to a graphic vector, an ***index vector*** is created by something that points unquestionably in a specific direction. Examples are arrows or people pointing or looking in a particular direction. Index vectors include still

7.48 Line as Graphic Vector



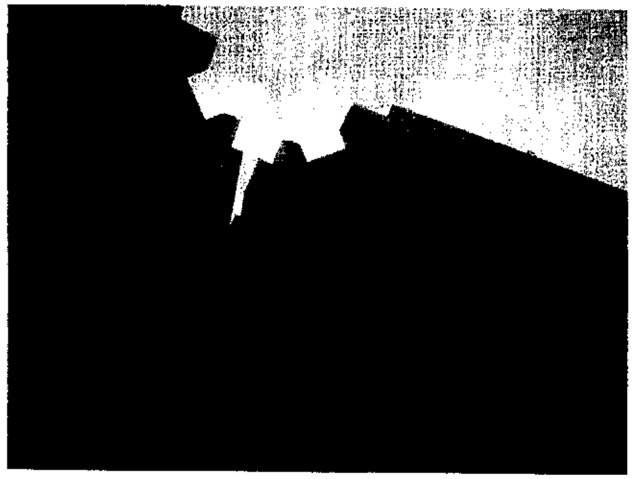
A graphic vector is created by a line or by an arrangement of objects that guides our eyes in a certain direction.

This graphic vector has a more definite direction than those in (a), but it is still not unidirectional.



7.49 Graphic Vectors: Roof Structure

This pipe structure that supports a roof generates a multitude of graphic vectors.



7.50 Graphic Vectors: Highrise Building

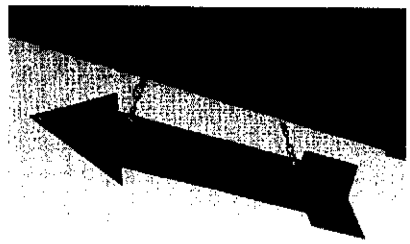
The vertical lines of this building create strong graphic vectors. The horizontal lines of the windows are also graphic vectors.

7.51 Index Vectors: Pointing

An index vector is created by anything that points unequivocally in a particular direction. Somebody pointing forms a high-magnitude index vector.

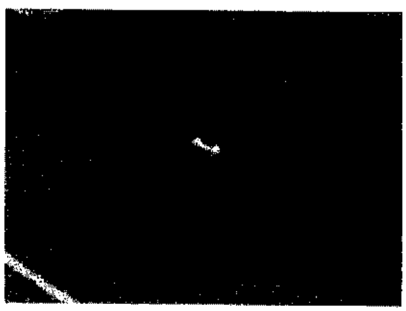
7.52 Index Vectors: Looking

Somebody looking in a specific direction forms an index vector.



7.53 Index Vectors: Arrow

An arrow is a high-magnitude index vector.

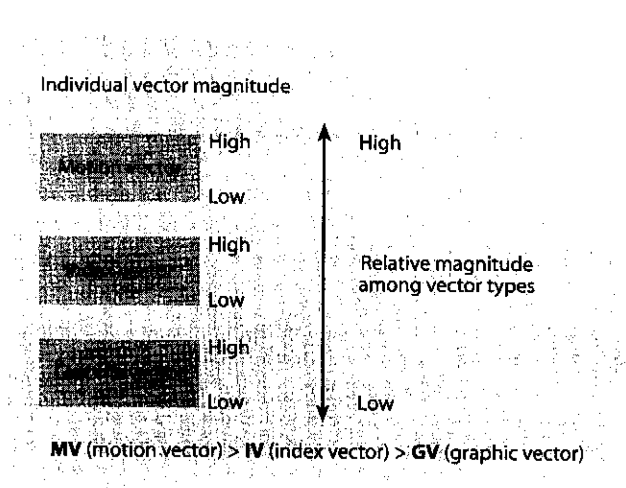


7.54 Index Vectors: Motorcycle

Note that a still shot of a person or an object in motion is not a motion vector but rather a strong index vector. Even a blurred photo suggesting movement is still an index vector. A motion vector is created only by something that is actually moving or is perceived as moving on-screen.

photographs of runners or somebody riding a motorcycle. SEE 7.51–7.54 Note that in figure 7.54 you don't see the motorcycle actually moving, despite the blur alluding motion, so it is an index rather than a motion vector.

Motion vectors A *motion vector* is created by an object that is actually moving or seen as moving on the screen. Obviously, a motion vector cannot be illustrated with a still picture in this book. Even if you blur a still photo as in figure 7.54, or imply motion by keeping the object in focus and blurring the background or the foreground, it does not move and is therefore not a motion vector. Imagine that a fly just landed on the page you are currently reading and is crawling around figure 7.54. The page with the blurred photo of the motorcycle will inevitably remain the stable ground, and the fly is the figure in motion. The importance of this distinction is that motion vectors will command immediate attention, overriding all other vectors.



7.55 Vector Magnitude

Although each vector type can be strong or weak (have a high or a low magnitude), motion vectors generally have a higher magnitude than index vectors, which in turn have a higher magnitude than graphic vectors.

Vector Magnitude

The magnitude of a vector is a product of its relative strength, that is, its directional certainty and perceived directional force. ***Vector magnitude*** is determined primarily by screen direction, graphic mass, and perceived object speed. Although each vector type can be strong or weak (have a high or a low magnitude), motion vectors generally have a higher magnitude than index vectors, which in turn have a higher magnitude than graphic vectors. **SEE 7.55**

Vector magnitude and screen direction As pointed out earlier, a line indicates a general direction (horizontal, vertical, curved) but is not precise as to its direction. Such a graphic vector has, therefore, a relatively low magnitude. An index vector that is generated by someone pointing in a particular direction, a one-way-street sign, or a directional arrow in a parking garage has a much higher magnitude. Motion vectors have a relatively high magnitude because their screen direction is most conspicuous.[12]

Something moving or pointing directly toward or away from the camera results in a ***z-axis vector***, so called because the vector direction follows the ***z-axis***—the virtual line extending from camera to horizon. Whereas a ***z-axis index vector***, such as somebody looking or pointing directly at the camera, has a very low magnitude, a ***z-axis motion vector*** can have a high or a low magnitude. A race car hurtling toward the camera definitely has a higher magnitude than the first uncertain steps of a child toddling toward the camera (representing Mother's arms). Depending on the context, a fast zoom-in or zoom-out can also produce a high-magnitude z-axis motion vector, although the screen motion is now implied rather than actual.

Vector magnitude and graphic mass The larger the graphic mass that is in motion, the higher its vector magnitude. As stated earlier, a large graphic mass is less likely to be disturbed in its course than a small one. Because its directionality is more certain, its vector magnitude is higher than for small objects.

> In production you simply estimate the relative magnitude of a vector. Because the context in which you judge vector magnitudes is a given, your estimation of which vector has a higher magnitude, or your efforts to lower or raise a specific vector magnitude, can be fairly accurate. But if you analyze a particular film or video for the specific magnitudes of its vectors, you may need to develop a more accurate and reliable measuring technique.[13]

Vector magnitude and perceived object speed The faster the speed of an object, the higher its vector magnitude. This principle applies to all motion vector directions, including vectors that move along the z-axis. A runner or bicycle racing across the screen, a galloping horse, a skier whizzing down a steep slope—all are strong motion vectors of high magnitude. The image of a racecar roaring down the track makes for a higher-magnitude motion vector than does a couple's leisurely stroll through the park. But like all elements in applied media aesthetics, vectors are context-dependent. For example, if you see the racecar moving across the screen in an extreme long shot, its magnitude is definitely lower than the relatively slow motion of a police officer who walks along the street in a tighter long shot, unaware of the villain who lurks in the shadows.

Within titles and other still graphic images, however, you may want to place key elements off-center to boost the graphic tension and energy of the picture. The asymmetrical distribution of graphic mass and vectors is discussed more thoroughly in "Stages of Balance" later in this chapter.

Stabilizing the Field Through Distribution of Vectors

When trying to stabilize the two-dimensional field, you need to focus on the distribution of vectors, which are such powerful structural elements that they usually override the lesser forces of graphic weight and frame magnetism.

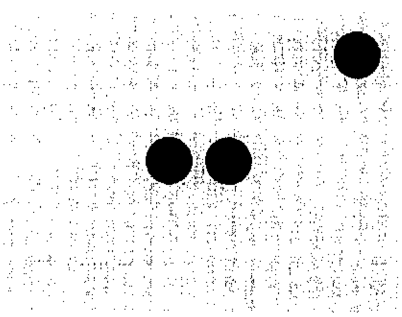
Structural Force of Index Vectors

Take a look at the following figure. **SEE 8.11** You will inevitably perceive the two center discs as belonging together (attraction of mass, see figure 8.8) and the upper-right disc as the isolated one (pull of screen corner, see figure 7.12).

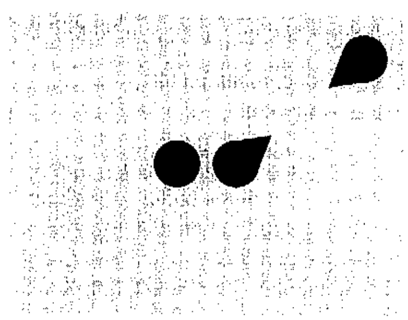
But vectors can easily override these relatively subtle structural forces and cause you to perceive a different pattern. **SEE 8.12** The discs are in the same positions as in figure 8.11, but we have put "noses" on two of them. They have now become high-magnitude index vectors that establish a new relationship. Now the middle-right disc and the corner disc are strongly connected through their converging index vectors, putting the middle-left disc in isolation.[2] The increasing magnitude of index vectors of somebody's turning from a straight-on (z-axis) shot to a profile shot has similar structural consequences.

Noseroom and Leadroom

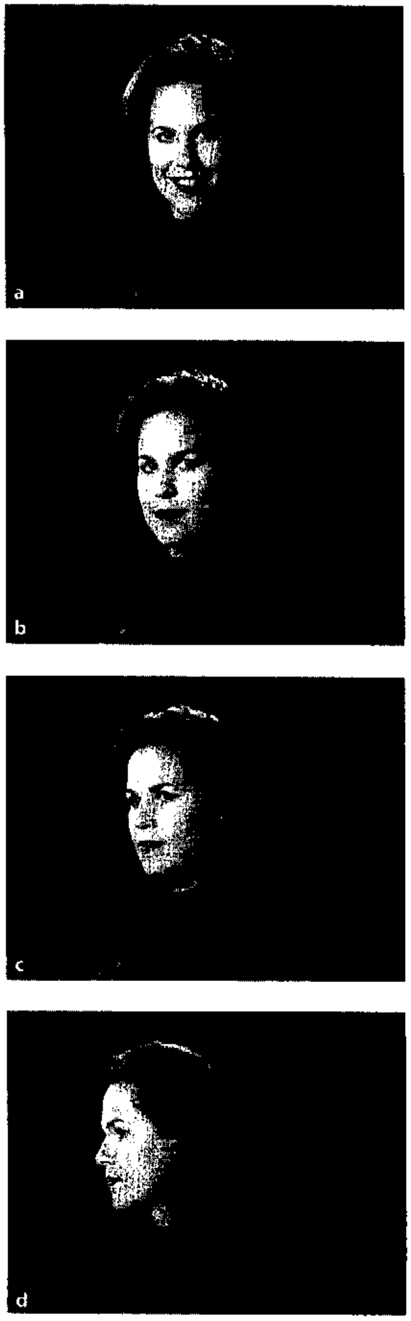
Imagine the figures on the following page as a shot sequence. **SEE 8.13** In 8.13a the woman is looking directly into the camera (at you), generating a z-axis index vector. Because this z-axis index vector points directly at you, its magnitude within the screen is practically zero. You can therefore ignore the force of this index vector and stabilize the picture strictly by graphic weight and magnetism of the frame. Putting the subject in the center of the picture (maximum stability of graphic mass) with adequate headroom (neutralizing the magnetism of the upper edge) is the most logical thing to do.



8.11 Structure Through Attraction of Mass
The two center discs attract each other and are seen together. The disc in the upper-right corner is isolated.

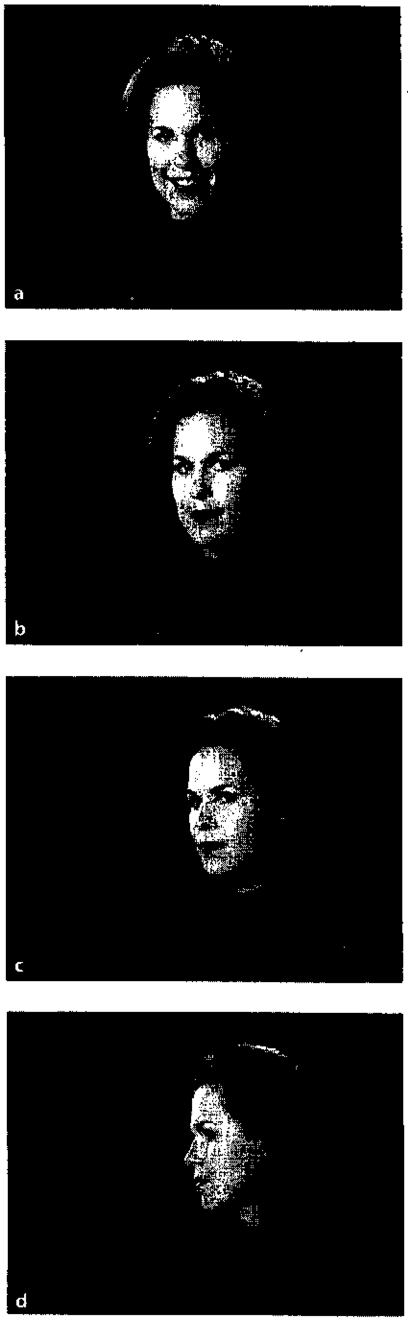


8.12 Structure Through Index Vectors
The converging index vectors now combine the right-center disc and the disc in the upper-right corner. The left-center disc is isolated.



8.13 Force of Index Vector: Lack of Noseroom

The increasing magnitude of the index vector when someone gradually shifts from looking directly into the camera (z-axis vector) to looking at one of the screen edges will cause the index vector to crash into the screen edge.



8.14 Force of Index Vector: Proper Noseroom

If you compensate for the increasing vector force by pulling the subject back to provide enough noseroom, the vector has enough space to have its force absorbed or comfortably guided through the screen border into the next shot.

But watch what happens when the woman turns her head (figure 8.13b–d). The more she looks to the side, the greater the magnitude of the index vector and the more the structural force of the vector comes into play. This index vector reaches its maximum magnitude in the profile shot (figure 8.13d). Although she has moved only her head and shoulders and has not changed her basic screen position, in the 4 × 3 aspect ratio the shot looks strangely out of balance. She seems cramped into the screen-left space, with her index vector crashing into the left edge of the frame. Assuming that no other person will walk up behind her to balance the picture through graphic weight (see figure 8.2), you will have to shift the subject more to screen-right to give the index vector enough space to run its course and travel relatively unhindered to, and even through, the screen edge. This space is often called ***noseroom*** for index vectors and ***leadroom*** for motion vectors.[3]

Note that you must leave more noseroom the higher the magnitude of the index vector becomes. **SEE 8.14** The index vector is at its maximum magnitude in the profile shot; therefore, the noseroom has also reached its maximum length (figure 8.14d).

But wouldn't the index vector have a better chance of crashing through the screen edge if it originates as close to the edge as possible? Apparently not. When the index vector operates too close to the edge, it draws undue attention to the screen edge itself. As part of a picture frame whose major function is to contain the event, the screen edge acts as the final barrier to the index vector. This "short" vector and the graphic mass of the subject's head fall victim to the magnetism of the frame; both graphic forces are firmly glued to the edge and can no longer penetrate it.

Proper noseroom not only inhibits the magnetism of the frame but also creates enough space around it to divert our attention away from the edge. Rather than deplete the vector's energy, the noseroom seems to signal clear sailing for the vector, not only through on-screen space but also—through the edge—into ***off-screen space.***[4]

You treat motion vectors in the same way. When panning the camera with a moving object, always pan enough ahead to maintain leadroom for the motion vector to expand. If you do not sufficiently lead the moving object, the screen edge toward which the object moves will appear as a formidable barrier to the motion. All you see is where the object has been but not, as you should, where it is going. A lack of leadroom will make the motion look cramped and hampered.

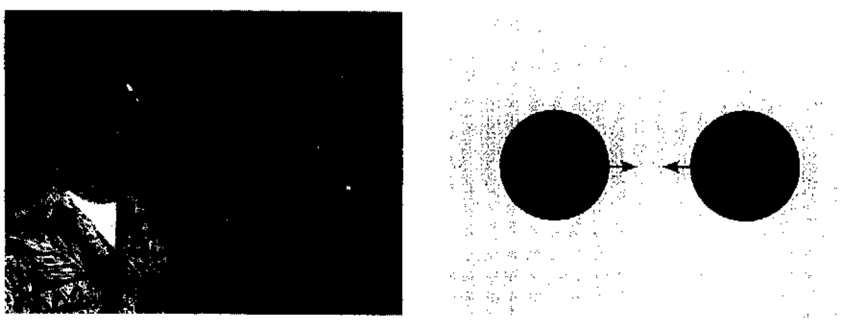
Similar to the noseroom of lateral index vectors, lateral motion vectors need the most leadroom. Objects that move at an oblique screen angle need less leadroom, and z-axis vectors don't need any.

Converging Vectors

You can also balance an index vector with a converging one within the same screen. **SEE 8.15** With two people looking at each other, you achieve balance through the converging index vectors and the almost symmetrical placement of the subjects, whose graphic mass translates into just about equal graphic weight.

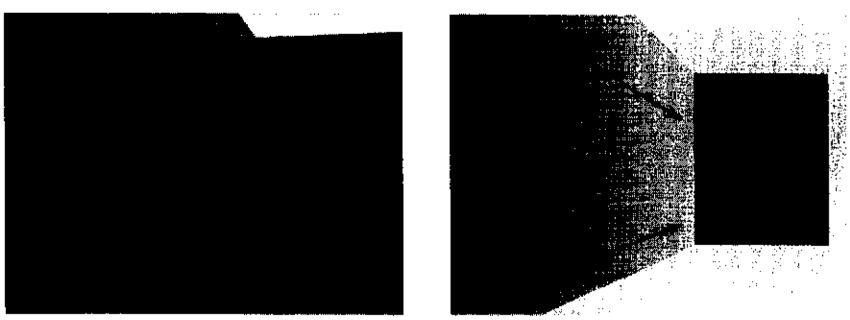
Graphic Vectors

Although graphic vectors as a category have relatively low magnitude, you can nevertheless use them to stabilize the two-dimensional field. **SEE 8.16** The perspective lines of the buildings in the figure produce fairly strong graphic vectors that lead our eyes naturally, though not as directly as an index vector, along the downhill diagonal from screen-left to screen-right. If you want to prevent the vector from plunging through the right edge—to contain it properly within the screen—you can do it quite easily with other graphic vectors or with graphic mass. In figure 8.16 the downhill vector of the entablature (on top of the columns) is arrested by the horizontal block of the back building.



8.15 Converging Index Vectors

Converging index vectors of equal magnitude balance each other.



8.16 Distribution of Graphic Vectors and Graphic Mass

You can use graphic vectors and graphic mass to contain other graphic vectors. Here the horizontal and vertical graphic vectors of the back building and the resulting graphic mass block the sloping vectors of the columns.

STAGES OF BALANCE

Look back at figures 7.1 through 7.9. You will probably notice that the various structural arrangements in these illustrations do not have the same degree of balance, that is, the same degree of structural stability. Some look more at rest, whereas others appear to have more internal tension—they look more dynamic.

Because our organism strives to obtain a maximum of potential energy and to apply the best possible equilibrium to it, as Rudolf Arnheim points out, balance does not necessarily mean maximum stability within the screen.[5] Rather, ***balance*** can range from, or fluctuate between, stabile (stable) and labile (unstable) field structures. Thus there are three basic structural stages of balance: *stabile*—stable and unlikely to change; *neutral*—with some tension; and *labile*—unstable and easily turning into an unbalanced composition.

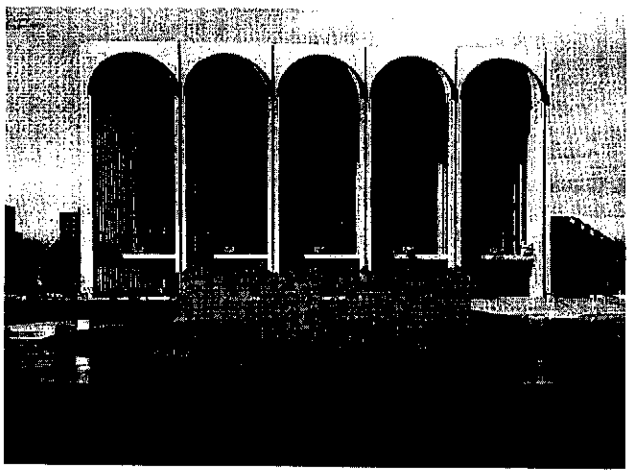
STABILE BALANCE

A ***stabile balance*** is a symmetrical structuring of visual elements. This means that identical picture elements appear on the left and the right sides of the screen. The forces of graphic mass, frame magnetism, and vectors are the same, or at least almost the same, on both sides of the screen, and the horizontal/vertical screen directions are kept intact. **SEE 8.17**

NEUTRAL BALANCE

In a ***neutral balance***, the graphic elements are asymmetrically distributed. This means that the graphic weight and the various vectors are no longer equal on both sides of the screen. Instead they are engaged in a sort of tug-of-war with one another that increases dynamic energy. **SEE 8.18**

Golden section One of the classical ways of creating a neutral balance is to use the proportions of the ***golden section***—a division of the screen (or any other linear dimension) into roughly 3 × 5 units (or, more accurately, 0.616:1, which translates into approximately 8 × 13 units). This means that we divide a given horizontal



8.17 Stabile Balance

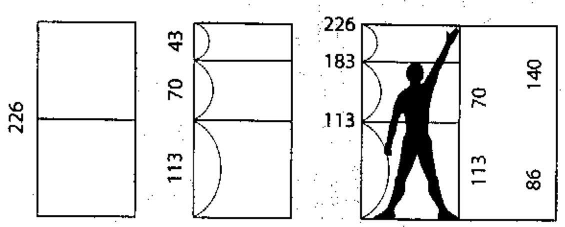
Symmetrical balance is among the most stabile. In this picture both sides have identical graphic weights, frame magnetism, and vector distributions. The tension is low.

8.18 Neutral Balance

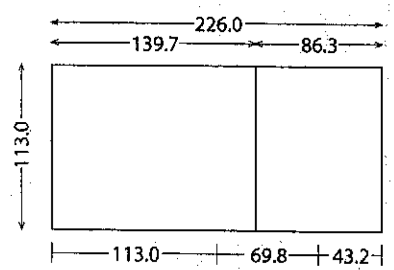
In a neutral balance, the dynamic energy is increased because the asymmetrical distribution of graphic elements and vectors causes some tension.

The Modulor The well-known contemporary Swiss-French architect Le Corbusier (Charles E. Jeanneret-Gris, 1887–1965) developed a proportional system that is essentially a refined version of the golden section.[6] His system, which he called *the Modulor*, is also based on the proportions of the human figure, specifically the proportions of a 6-foot man.

All the Modulor proportions are presented in a gradually diminishing scale of numbers. Here, in Corbusier's diagram, all numbers are in centimeters (one one-hundredth of a meter).



The more exact Modulor dimensions are:

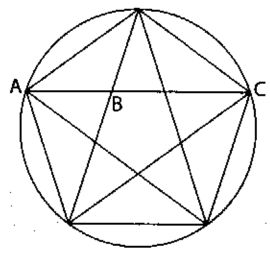


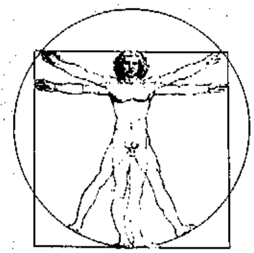
Harmonious Proportions The question of discovering proper proportions and using them with consistency in the various forms of art has been of major concern to artists for many centuries. The Egyptian temples and wall paintings; the Greek and Roman buildings and sculptures; the churches, palaces, and paintings of the Renaissance; the modern skyscraper; magazine layouts; and automobile design—all reveal the human preoccupation with proportional harmony. Amazingly enough, the proportions as revealed by the Egyptian and Greek temples, by a Gothic cathedral, or a Renaissance palace still seem harmonious to us today.

Obviously, we have, and always have had, a built-in feeling for what proportion constitutes. But because we are never satisfied with just feeling, but also want to know *why* we feel a particular way and what makes us feel that way—mainly to make emotional responses more predictable—people have tried to rationalize about proportional ratios and develop proportional systems. Mathematics, especially geometry, was of great help to people who tried to find the perfect, divine proportional ratio.

One charming illustration of this point is a statement by **Albrecht Dürer**, the famous German Renaissance painter (1471–1528). In the third book of his *Proportionslehre (Teachings on Proportions)*, he writes: "And, indeed, art is within nature, and he who can tear it out, has it. . . . And through *geometrica* you can prove much about your works."[7]

Golden Section The most well known proportional ratio is the golden section, often called the "divine proportion" or the "golden mean." The familiar pentagram, or five-pointed star, contains a series of golden sections, each line dividing the other into a golden section proportion.

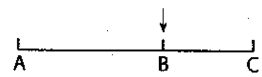




This proportion was produced by calculating minds from ancient Egypt to the Renaissance. Although the Egyptians knew about the golden section proportion and used it extensively in their architecture, sculpture, and painting, the Greeks are usually credited with working out the mathematics of this proportion and relating it to the proportions of the human figure. Later, **Leonardo da Vinci**, the great Italian Renaissance painter, scientist, and inventor (1452–1519), spent much time proving and making public the validity of the mathematical formula of the golden section (0.616:1), worked out by the Greek philosopher and mathematician **Pythagoras** as early as 530 B.C.

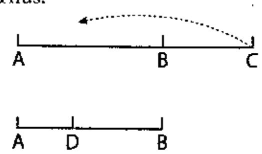
In the golden section, the smaller section is to the greater as the greater is to the whole. Thus:

$$\frac{BC}{AB} = \frac{AB}{AC}$$



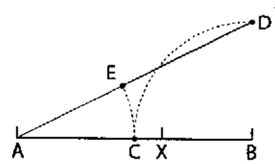
This proportion continues ad infinitum. If you fold the BC section (on the right) into the AB section (on the left), you will again have created a golden section. Thus:

$$\frac{AC}{BC} = \frac{AB}{AD}$$



If you want to divide a specific area, such as a television or movie screen, into the golden section and find the precise dividing point, you need to go through some exercises in geometry:

1. Divide the horizontal line (screen width) A–B into half. You get point C.
2. Draw a vertical line from B with the B–C length. The line ends at point D.



3. Draw a line that connects points D and A.
4. Mark off the A–C (half A–B) distance on the diagonal, starting at point A. This is point E.
5. Mark off the distance E–D on the original A–B line (width). This is point X, which marks the divine division.

dimension, such as the width of this page, into a larger part (approximately three-fifths of the total width) and a smaller part (approximately two-fifths of the total width). The point where these meet is termed the golden section.

In such a division, the small and the large screen areas are competing with each other, with the larger portion not quite able or even eager to outweigh the smaller one. Also, the dividing line (actual or imaginary) has not given in to the magnetic pull of one or the other screen edge, although one is definitely pulling harder than the other. The result is a less stable structure with increased graphic energy, yet the picture is still balanced. For many centuries this proportion was considered ideal and, at times, even divine.

Although the golden section is rarely applicable when dealing with moving images, it is nevertheless valuable when framing relatively static shots and designing titles and still images for the screen. For example, a title that is placed so that it divides the screen into the golden section proportion often gains dynamism and visual interest compared with one that is centered. Even when using illustrated titles, you may well arrange the major picture elements in proportions according to the golden section. This way the title gains in graphic energy without threatening the overall balance of the screen image. **SEE 8.19**

8.19 Golden Section Applied: Titles

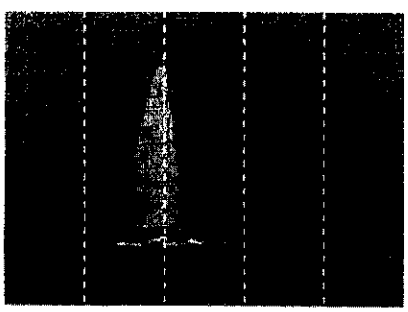
The left edge of the printing coincides with the golden section, providing increased visual interest. The figure balances the titles through graphic weight.

The golden section division of vertical screen space is especially effective when the vertical element (vertical graphic vector) divides a clean, horizontal vista (horizontal graphic vector). **SEE 8.20**

In a similar way, you can use a relatively uncluttered horizon line (horizontal graphic vector) to divide the screen at approximately three-fifths or two-fifths of its height, thus dividing the screen horizontally into classical golden section dimensions. **SEE 8.21**

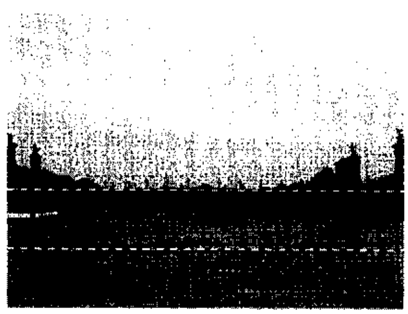
Rule of Thirds A variation of the golden section in the *rule of thirds,* which suggests dividing the screen into three horizontal and three vertical fields. **SEE 8.22** You can always achieve a fail-safe composition by placing subjects where a vertical and a horizontal line intersect. These fields can help you maintain continuity of subject and object placement when shooting out of sequence.

Although you may now presume that the golden section or the rule of thirds can provide area proportions that are, indeed, divine, avoid going overboard with them. Think twice before placing the newscaster in the golden section, for example, simply because you feel that such a graphic maneuver would create enough tension to keep the viewer watching. If the newscaster lacks dynamism in personality as well as message, even a divine screen placement will fail to improve the



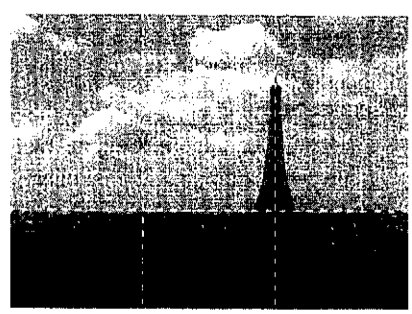
8.20 Golden Section Applied: Horizontal Division

It is especially effective to have a single vertical element divide a clean horizontal graphic vector at the golden section.



8.21 Golden Section Applied: Vertical Division

You can also use horizontal graphic vectors (such as the horizon line) to divide the screen vertically at the golden section.



8.22 Rule of Thirds

To achieve a pleasing composition within a frame and placement continuity from shot to shot, divide the screen into thirds. Position the principal subjects where the horizontal and vertical lines intersect.

communication. Unless the newscaster's shift to the side of the screen is done to accommodate additional visual material—as pointed out earlier—the newscaster will merely look off-center.[8]

Modular units Architects and scene designers have modified golden section proportions into a modular concept. This means that a piece of scenery or a prefabricated wall can be used in a variety of configurations, with, for example, two or three widths of one scenic or building unit fitting the length of another. This makes the units easily interchangeable. With modular units you can create a great variety of scenic structures without having to build custom units each time a new environment is required.

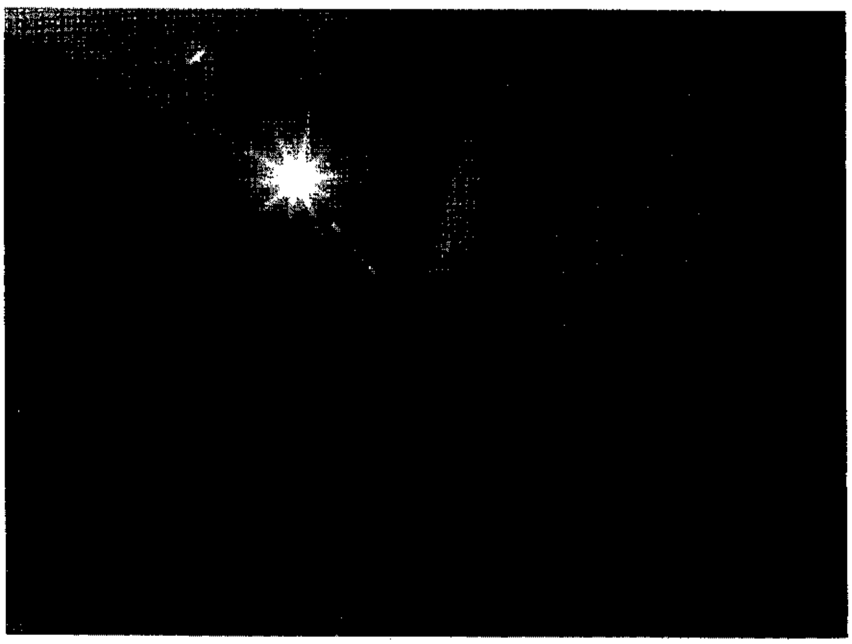
Labile Balance

In a ***labile balance,*** the distribution of graphic weight, frame magnetism, and vectors are pushed to their structural limit, creating a tendency for imbalance. As viewers we sense that even the slightest change in the field structure would cause a loss of balance. This instability makes the graphic tension and energy quite high.

You can achieve graphic tension by overloading one or the other side of the screen with graphic weight, by not providing the vectors with enough room to play out, or by constantly having high-energy vectors converge either within the shot or in a shot series. **SEE 8.23**

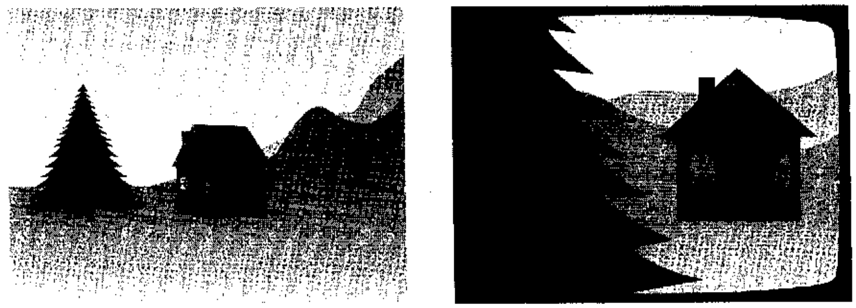
The easiest way to achieve more tension and move from a stabile to a neutral balance and from there to a labile balance is to tilt the horizon line. This way the customary horizontal/vertical equilibrium is disturbed enough to create tension without changing the balance of the other structural forces of graphic mass, frame magnetism, and vectors. **SEE 8.24–8.26**

Our inborn sense of equilibrium—our desire to see things stand upright on level ground—reacts so strongly to this labile balance that we try almost physically to keep the objects in the picture from slipping out of the frame and to bring the horizon line back to its normal, level position. Hence we perceive such labile types of balance as high-energy.



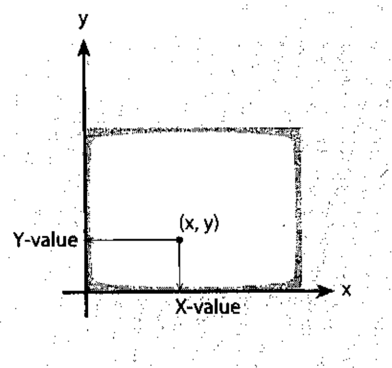
8.23 Labile Balance

In a labile balance, the tension is high. With the slightest change in the distribution of graphic elements, the vectors would lead to an unbalanced picture field.



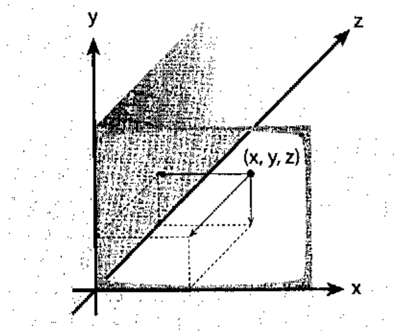
9.1 Projection of 3D Space onto a 2D Plane

In traditional television and film, as in still photography and painting, we project the three-dimensional event onto a two-dimensional surface.



9.2 X and Y Coordinates

The x and y coordinates locate a point precisely within an area, such as the screen. A point within the screen can be assigned an x-value, indicating where it is located on the x-axis (screen width), and a y-value, indicating where it is located on the y-axis (screen height).



9.3 Three-Dimensional Model

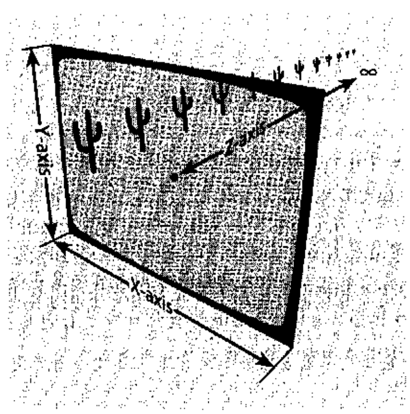
To locate a point precisely within a described volume, the z-axis, describing depth, becomes an essential dimension. The z-value describes how far a point is located away from the frontal plane (the screen).

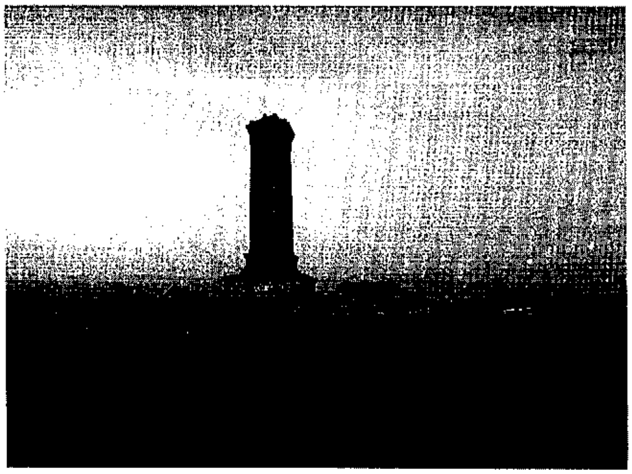
Amazingly enough, the illusory third dimension—depth—proves to be the most flexible screen dimension in film and especially in television. Whereas the screen width (x-axis) and height (y-axis) have definite spatial limits, the z-axis (depth) is virtually infinite. SEE 9.4

Notice that without stereovision or hologram projection (as is the case with most films, television, and computer displays for the time being), we perceive the

9.4 Z-axis Dimension

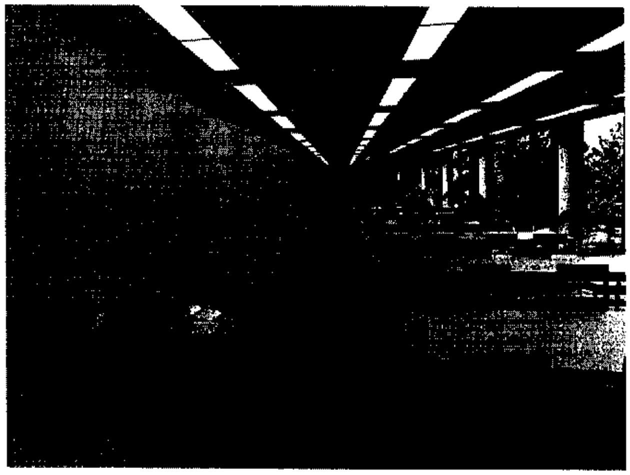
Although the z-axis—the depth dimension—is illusory in television and film, it is aesthetically the most flexible screen dimension.





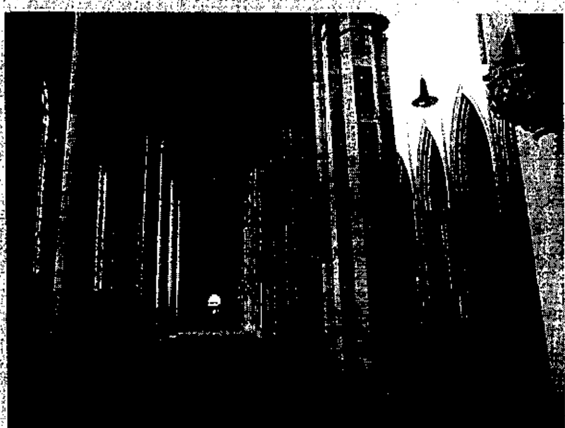
10.6 Feeling Vastness

This square has a preponderance of negative volume. The negative volume is nevertheless articulated by the people and the monument in the center. Such vast negative volumes can inspire awe. At the very least, we feel dwarfed by the space.



10.7 Too Much Negative Volume

An interior with too much negative space can make us feel isolated and uncomfortable. This library room is anything but cozy.



The Gothic cathedrals were deliberately built with a maximum of negative volume. The positive space modulators, such as the walls and pillars, were kept to a bare structural minimum to emphasize the wide expanse of the church interior. Such a vast interior space contributes greatly to making us feel both humble and reverent.

A large negative volume, such as an open plaza, an empty stadium, or the interior of a Gothic cathedral, can fill us with awe. **SEE 10.6**

Too much negative volume, however, can promote a certain emptiness wherein we feel alone, cold, isolated, and lost.[3] **SEE 10.7** It's no wonder that people who work in the large, unarticulated space of modern offices put up screens and partitions or use space modulators such as file cabinets to create a less public and more personal space for themselves.

Applications of Volume Duality

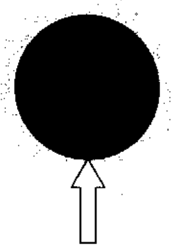
You can see the most obvious application of volume duality for its own sake in sculptures done primarily to explore the interrelationship of positive and negative volumes. **SEE 10.8**

In scene design volume duality is applied in an open set. *Open set* refers not to a set that is open to the public, but rather to scenery that is not continuous; the open set is not closed or boxed in by connected walls but instead consists of only the most important parts of a room, for example, a window, some furniture, and a few separate single flats. **SEE 10.9**

The open-set method is especially effective for television. Usually, television builds its screen events inductively, bit by bit, close-up by close-up in a mosaic fashion. Whereas the wide motion picture screen not only allows but frequently demands large vistas, the relatively small television screen is most effective with intimate close-ups. A continuous set, which is often essential for large movie vistas, is superfluous for television especially when it involves shooting and assembling the scene in postproduction.

Ways of Looking

When working with television or film—or any other photographic medium for that matter—we need to decide on a basic approach to viewing an event. We can, for example, merely look *at* an event and report it as faithfully as possible; or we can look *into* an event and try to communicate its complexity and psychological implications. We can also choose to use the technical potentials of the medium to create special effects or images that are entirely computer-generated. Examples of creating such unique screen events are the superimpositions and digital video effects (DVE) discussed in previous chapters. Thus we have three basic ways of looking and using the medium for optimal communication: looking at an event, looking into an event, and creating an event. Each of these basic ways of looking can serve as a game plan for the general production approach and its overall style. In practice, however, they usually—and should—overlap. Even in the live pickup of a football game, where most of the coverage is done within the framework of "looking at," the extreme close-ups that show the tension of the players give you an opportunity to "look into" the event and empathize with the players.

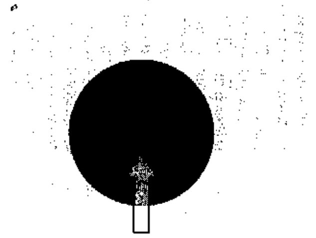


11.4 Looking At

When using the medium for looking *at* the event, we simply try to assume as neutral and objective a point of view as possible.

Looking At an Event

When you merely want to report an event, use a visualization approach that comes as close as possible to the point of view of an observer of the actual event—someone who watches it more or less objectively from a particular point of view. This we call *looking at* an event. In this visualization framework, you use the camera and microphones primarily to report what is going on. Most news coverage consists of a "looking at," as do most shots during a live or live-on-tape pickup of a sporting event. "Looking at" is done mainly for event clarification. **SEE 11.4**

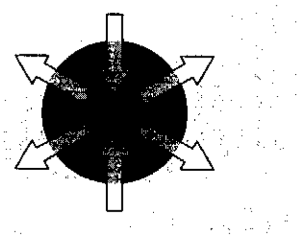


11.5 Looking Into

When using the medium to look *into* the event, we provide a deeper insight into what is going on.

Looking Into an Event

Looking into an event means to scrutinize the event as closely as possible, to look behind its obvious outer appearance, to probe into its structure and, if possible, its very essence. "Looking into" means communicating to the viewer aspects of an event that are usually overlooked by a casual observer and providing an insight into the nature and emotions of the event. If you were to objectively report—look at—two people in a lively conversation, a simple two-shot with an audio track of their conversation would suffice. But if looking into the event, you would use the camera to reveal the psychological implications and the emotional tensions of the conversation; the sound track of the conversation may well be supported by music or even some sound effects. "Looking into" not only shows what is happening, but why. It's main purpose is event intensification. **SEE 11.5**



11.6 Creating

In this case, the medium is essential for creating a screen event. The event exists only as a screen image.

Creating an Event

Creating an event means that you use the technical devices and potentials of the medium to build a unique screen event that depends entirely on the medium. You can use a lens-generated event (as seen by the camera) as the basic energy source and manipulate it through DVE, or you can create an event entirely through digital electronics. Creating an event does not mean manufacturing an event to mislead the public, such as inventing and reporting a big story on a slow news day. Rather, this approach refers to building a screen event through various electronic and/or optical special effects for event clarification, intensification, and interpretation. **SEE 11.6**

Let's use a simple action, such as placing a telephone call, and visualize the event according to these three principal ways of looking.

11.7 Telephone Call: Looking At

Here the woman is simply placing a routine call. We look at it as objectively as possible.

Viewers see her walking up to the phone.

She picks up the receiver and inputs the number.

She engages in a simple conversation. The shots for this sequence are not dramatic. They should simply tell us what is going on.

Event 1: Looking at All you need to do is communicate as simply and accurately as possible the action of placing a phone call. The woman reaches for the phone, picks up the receiver, inputs the number, waits for the other party to respond, and starts the conversation. You could easily cover this sequence with a single camera on a medium shot with a possible zoom-in when she makes the connection to the other party. **SEE 11.7**

Event 2: Looking into Now the event calls for intensification. You need to communicate the urgency of the call, the emotional state of the caller, and the overall tense atmosphere. The easiest way of fulfilling these communication objectives is to use tighter shots. But this means deciding which parts of the event to show in the tight shots. Do you need to show the woman reaching for the phone? Probably not. You can start with a close-up view of her hand inputting the phone number. Under stress, the woman will probably call the wrong number and have to do it all over again. You may not even want to show the second attempt but instead switch to, and stay on, a close-up of her face. By partially blocking her face with the phone, you can suggest the negative nature of the call. As you can see, your choice of shots becomes very important with this approach. **SEE 11.8**

Event 3: Creating To show the relative complexity and/or urgency of this event, you may use any one of the many available digital video effects such as *jogging,*

11.8 Telephone Call: Looking Into

Now the woman is under stress. You need to let the viewer experience the event's intensity and complexity.

The close-up of the keypad action intensifies the importance of the call.

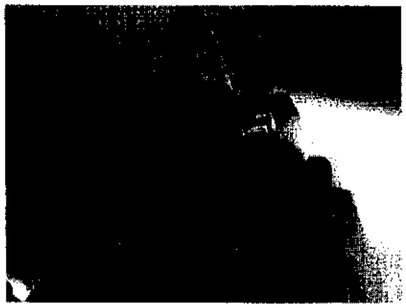
By partially blocking her face with the phone, you can emphasize the negative aspects of the phone call.

An even tighter close-up will further intensify the event.

11.9 Telephone Call: Creating

The intensification in this series of shots is achieved through selective view, close-ups, and electronic manipulation of the lens-generated image.

We start out with a normal close-up of the woman's hand making the call.



A double image now suggests the woman's extreme nervousness.

The intensity of the conversation is further enhanced by solarization.

11.10 Extreme Long Shot (ELS)

11.11 Long Shot (LS)

whereby the motion shows a frame-by-frame advance, or such digital manipulation as solarization or mosaic effects.[5] Such manipulation through digital devices reveals the underlying complexity of the event and greatly intensifies it. The following figure shows how the DVE of jogging (represented here by multiple images) and solarization are media-created images that are meant to amplify and interpret the woman's emotional state. **SEE 11.9**

Note that the series of manipulated images in figure 11.9 exists only as a screen event. Under normal circumstances we do not perceive the world in limited, highly contrasting brightness steps or as moving frame-by-frame. The event is now created by the medium, using the lens-generated or actual event—the phone call—as raw material.

Field of View

Field of view refers to how far away or close we show on-screen an object or a person or how much territory a shot includes. There are five traditional designations of fields of view: *extreme long shot (ELS), long shot (LS), medium shot (MS), close-up (CU),* and *extreme close-up (ECU).* **SEE 11.10–11.14**

Exactly how close is a close-up? What is a medium shot? How much territory should a long shot encompass? How big should the steps—the changes in image size—be between an extreme long shot and a close-up? There are no reliable formulas for these shot designations. They are relative and depend, like other viewpoint factors, largely on the context and interpretation of an event. You will be greatly aided in deciding on the basic field of view by determining as early as possible your principal way of looking—that is, whether you are using the medium to look at, to look into, or to create the event.

Even if you have decided on the primary approach, you can move freely among the three. But an early determination of the *principal* way of looking will help you establish a basic visual approach. Take another look at figures 11.7 and 11.8; you will notice that in the looking-at approach each individual shot and the progressive steps are considerably looser (wider) than in the more intimate and intense looking-into approach. As you recall, your shots are generally wider when looking at an event but quite a bit tighter when looking into one.

Long shots and close-ups differ not only in how big objects appear on-screen (graphic mass relative to the screen borders) but also in how close they seem to us, the viewers. Close-ups seem physically and psychologically closer to us than long shots. Because we seem to perceive variations in field of view as variations of physical and psychological distance, we seem to react to them in the same way we do to the actual distance of people and things in everyday life. In some societies people stand much closer when talking to one another than in other cultures, a phenomenon called *proxemics*.[6] Similarly, what constitutes a close-up is not uniform throughout the world. For example, the close-ups of newscasters and even actors in dramatic productions are much wider in some parts of the world than in the United States. Such observations are all part of *video proxemics*—the study of how we perceive the screen space and the people operating within it.[7]

Regardless of the cultural differences of video proxemics, close-ups are innately more intimate than long shots and carry more aesthetic energy.

11.12 Medium Shot (MS)

11.13 Close-up (CU)

11.14 Extreme Close-up (CU or ECU)

Point of View

Point of view has several different meanings, depending on who uses it and the context in which it is used. Basically, ***point of view (POV)*** refers to the camera's simulating the index vector of a particular person or persons on the screen. But it can also mean what we called ways of looking, or a specific character's perspective. In the famous Japanese film *Rashomon*, the same event is told from four people's differing perspectives—points of view.[8] Visualization can be guided by an internal, psychological rather than an external point of view. And, for good measure, you may detect an author's or a director's point of view—the way the director has the camera look at or into an event. Most often all these point-of-view types, and then some, are intermixed in a single dramatic episode.

Technically, there is a difference between camera viewpoint and point of view. ***Viewpoint*** simply refers to what the camera is looking at and from where. Point of view, on the other hand, means that the camera takes on a bias of looking: it no longer describes (looking at) but comments on the event (looking into and interpreting). Point of view refers to the camera's narrative involvement. Most often, however, the terms *viewpoint* and *point of view* are used interchangeably, sometimes referring to camera viewpoint (what the lens sees) and sometimes to the camera's narrative involvement. Such a multidefinition of *point of view* is so ingrained that it would prove futile and counterproductive to insist on holding on to these definitions absolutely. Nevertheless, I will use the different definitions if they help to explain how point of view operates.

Our discussion of point of view focuses on three major areas—POV: looking up and looking down; POV: objective viewpoint to subjective point of view; and POV: subjective camera.

11.15 Prestige Through Looking up

Statues of influential people are often put up high so that we have to look up at—or rather up to—them.

11.16 Power Through Looking up

Speakers position themselves high enough so that they can see their audience and, more important, make the audience look up to them. Such a superior position seems to confirm their authority and power.

POV: Looking up and Looking down

For some time kings, schoolteachers, preachers, judges, and gods have known that sitting up high had a significant effect. Not only could they see better and be seen more easily but they could also look down on people—and make people look up to them.

Physical elevation has strong psychological implications. It immediately distinguishes between inferior and superior, between leader and follower, and between those who have power and authority and those who do not. Phrases like *the order came from above, moving up in the world, looking up to and down on* (rather than *looking up and down at*), and being *on top of the world*—all are manifestations of the strong association we make between physical positioning along a vertical hierarchy and feelings of superiority and inferiority.

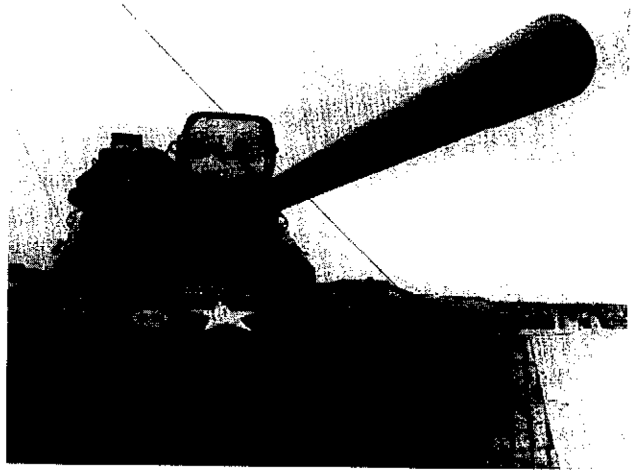
The camera's viewpoint can evoke similar feelings in an audience. When we look up with the camera (sometimes called a *low-angle* or a *below-eye-level* point of view), the subject or object seems more important, more powerful, more authoritative than when we look at it straight-on (*normal-angle* or *eye-level* point of view) or look down on it (*high-angle* or *above-eye-level* point of view). When we look down with the camera, the subject or object generally diminishes in significance; it becomes less powerful and less important than when we look at it straight-on or from below. As viewers we readily assume the camera's viewpoint and identify with its superior high-angle position (looking down on the object or subject) and its inferior low-angle position (looking up at the subject or object).[9]

Statues of famous people are either huge, such as those of the kings in ancient Egypt, or are put on pedestals to force people to look up at them or, more appropriately, up to them, which makes viewers assume an inferior position relative to the statue. **SEE 11.15**

When speakers address large crowds, they usually stand on fairly high platforms with the audience looking up to them. If you want to duplicate this effect and intensify the authority and power of the speaker, have the camera look up at the speaker from a below-eye-level position. **SEE 11.16**

11.17 Intensifying Power of Machinery

Even machines tend to gain in strength when shot from below.

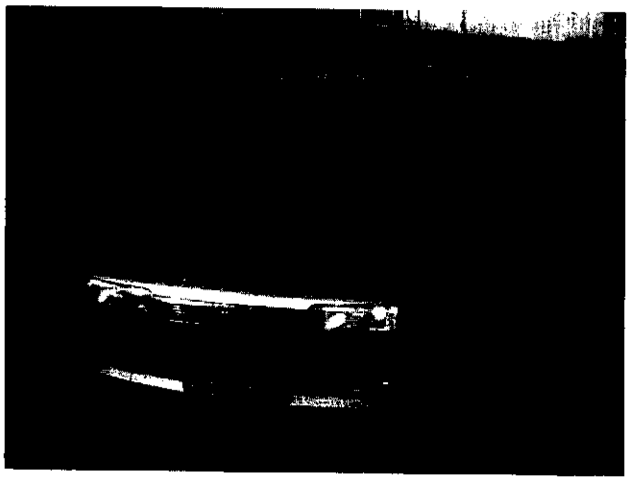


11.18 Intensifying Destructive Power

Machines that are designed primarily for destruction become more menacing and powerful when shot from below.

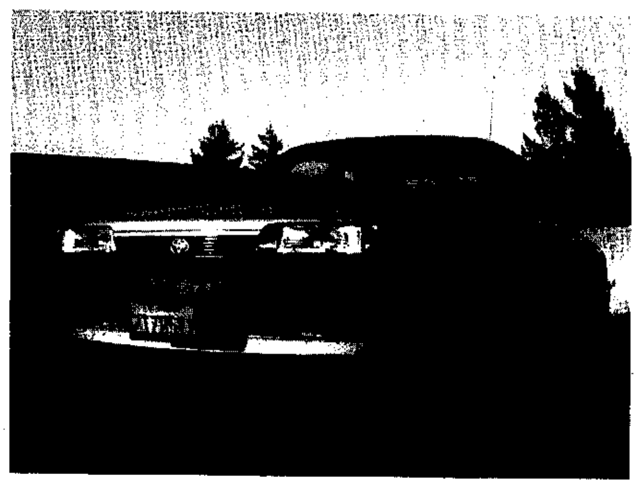
You can emphasize the power of heavy machinery or the menace of machines designed primarily for destruction by shooting them from below. Again, as audience members we are put in an inferior position. **SEE 11.17 AND 11.18**

Even our perception of movement varies with whether we observe the motion from a low- or a high-angle position. When shot from above, a car seems to move more gently and somewhat more slowly than when shot from below. **SEE 11.19 AND 11.20** Note that the wide-angle lens distortion contributes greatly to the power of the below-eye-level POV.



11.19 Point of View from Above

When shot from above, a car seems to be less dynamic or powerful than when shot from below. A moving car seems to travel at a more leisurely speed when shot from above.



11.20 Point of View from Below

A below-eye-level view of the car makes it look dynamic and powerful. The speed of a car seems slightly greater when shot from below than from above.

TYPES OF SUBJECTIVE TIME: PACE AND RHYTHM

As indicated in chapter 12, the term *subjective time* contains a paradox. We judge the felt duration of an event not by the clock but rather by how aware or unaware we are of the passage of clock time during and after the event. Instances do occur, however, in which the manipulation of subjective time requires an acute awareness of time. We explore this paradox later in the section on plot time and character time.

Considering the relativity of subjective time, can you ever use it as a reliable element in structuring the four-dimensional field? Yes, but not in a truly scientific way. Because it is more dependent on feeling than measurement, you need to approach the control of subjective time using intuition and educated guesses rather than logic.

Subjective time is usually categorized into pace, tempo, rate, and rhythm. *Pace* refers to the perceived speed of the overall event; *tempo* and *rate,* to the perceived duration of the individual event sections; and *rhythm,* to the flow within and among event segments. At first glance such a variety of subjective time divisions seems quite advantageous for managing the perceived duration of a screen event. In practice, however, they prove more confusing and bothersome than helpful. We therefore limit the subjective time categories here to pace and rhythm.

PACE

As stated, ***pace*** refers to the perceived speed of an event, that is, whether we feel the event to drag or to move along briskly. Different event sections, such as scenes or sequences, can have their own paces, and so can an entire show. We usually consider a fast-paced scene to be one in which many things happen one after the other, with fast dialogue and rapid action. It is a high-density event. A slow-paced event moves less rapidly in story development, dialogue, and action.

You probably wonder at this point whether trimming a few seconds off a dance number in a music video, cutting some lines here and there to render the dialogue a little tighter, or replacing one of the slower songs with a more upbeat one is a manipulation of subjective time, the vertical time vector, or of objective time, the horizontal time vector. Although pace belongs to the subjective time category because it is not measured by the clock, you can control it by manipulating the horizontal time vector (making an event shorter or longer or increasing its density).

Slow and accelerated motion are especially useful tools in governing pace. *Slow motion,* as a close-up-in-time, seems to interrupt pace temporarily, rather than slow it down, very much like holding your breath for a while. *Accelerated motion* does the opposite: it seems to lurch through time, giving pace a temporary push. Pace appears to be out of breath for a while. As you can see, pace does not remove us from an awareness of time. It simply regulates our perception of the flow of time—whether the flow feels fast or slow, regular or irregular.

RHYTHM

Rhythm refers to the flow within and among event segments (shots, scenes, sequences) and to a recognizable time structure—a beat. It is determined by the pace of the individual segments and how they relate to one another. Although individual scenes might consist of fast-paced shots, this does not guarantee a smooth flow from one scene to the next.

Very much like the bars in musical notation, the overall rhythm is frequently determined more by the transitions between shots, scenes, and sequences; by the beat created by the shot or scene times; and by the beat of the music than it is by the pace of the individual segments. For example, straight cuts between the shots of a fast-paced car chase will probably produce a much more exciting and appropriate rhythm than dissolves or fancy wipes would. But when establishing a slow rhythm that matches the slow pace of a solemn event, such as a funeral, you may prefer dissolves over staccatolike cuts. Establishing a rhythm is high on the list of priorities for editors.[2] Even if the visual cutting does not establish an obvious rhythm, a rhythmic sound track will provide the necessary beat. The structural function of sound and music is explored in chapter 18.

As with the structuring of the color field, the control of pace and rhythm requires sensitivity and experience. The stopwatch alone should not be your sole guide in assessing pace. But even though we don't have scientifically precise criteria for evaluating pace and rhythm, their role in structuring the four-dimensional field is no less important than that of the clock.

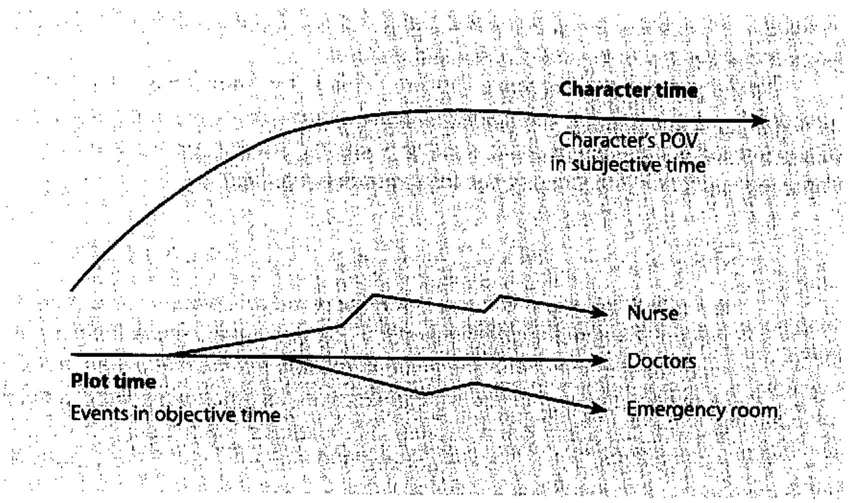
Plot Time and Character Time

There are instances in which you need to juggle the interplay of objective and subjective times on various levels. The story may progress according to a clock time schedule (often marked with the clock times keyed over the action), but the characters may seem to be in a different time zone and march to a different drummer.[3] ***Plot time*** consists of the objective and subjective time concerning the story or sequence of events. ***Character time,*** on the other hand, consists of the objective and subjective time elements concerning the character's actions and feelings. When done right, the overall effect of a scene can be highly intensified. In music such rhythmic counterpoints happen all the time. You can probably recall a few songs that have a rapid and urgent underlying beat but whose melody seems to float above in a more lyrical way, or the other way around. Chapter 18 gives some explanations about tension-building structures.

The difference between plot time and character time is best explained with examples. Visualize this scene: The plot revolves around a young female nurse who is interning in a large-city hospital and her relationship with a male patient who is bedridden with an unbearably painful disease. He can barely move but is very much aware of what is going on around him. He observes the frenetic activity of the nurses and the doctors, who, from his perspective, all seem to move in accelerated motion. At times, when his pain medication kicks in, the accelerated motion changes to slow motion. The camera goes subjective, and we see a distorted CU of the nurse's face talking to him. Her speech too changes to slow motion. Sometimes the subjective camera POV remains for quite some time on a static shot, such as the curtain that partially hides the neighbor's bed. When the nurse enters the frame and approaches the bed (we see her only from the waist down), she is out of focus and gets progressively more blurred the closer she comes to the patient. During the whole scene, the ambient sounds maintain the frantic pace of the emergency room next door.[4]

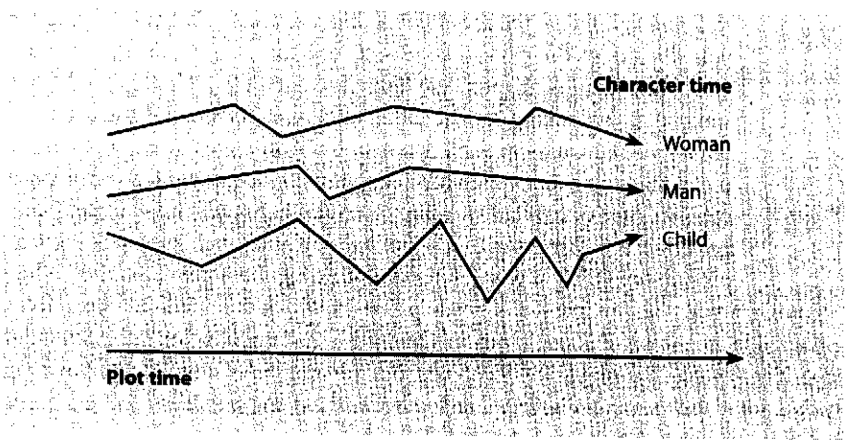
As you can see, the plot time (hospital activity) and the character time (man lying in bed) are quite different. The basic pace and rhythm of the hospital are fast and urgent, but the character's subjective time is excruciatingly slow. **SEE 14.7**

In another play the scene may show a more simple plot: three people—a man, a woman, and a four-year-old child—sitting at a table having lunch. The plot progresses in real time. This means that there is no manipulation of the running time; the scene takes as long as their scripted conversation and actions. The not-so-friendly dialogue of the three people is intense and fast-paced, however, its rhythm broken from time to time by the child's dropping some food on the carpet, then climbing off the chair to pick it up again.



14.7 Fast Plot Time Versus Slow Character Time

The plot (objective event) time is quite fast and hectic and establishes the foundation beat. The subjective character time is seemingly independent and, in this case, much slower.



14.8 Slow Plot Time Versus Fast Character Time

Now the plot (objective event) time is quite slow and hectic and counterpoints the subjective character time, which is fast and hectic.

Look up for a moment and visualize the scene and especially "hear" their dialogue. You cannot help but sense the great differences in pace of plot time and character time. In fact, you could probably intensify the tension of the scene by stretching the plot time relative to the staccato conversation. Staying on a close-up of the woman or the man for a relatively long period (and not cutting between their sentences) or watching the child trying to get the spilled food out of the carpet is but one possibility. SEE 14.8

PRINCIPAL MOTIONS AND THEIR FUNCTIONS

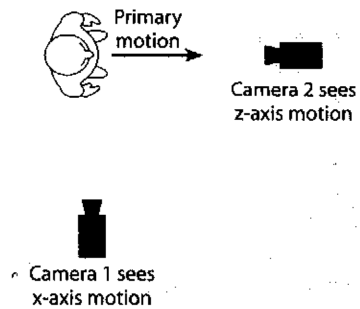
In television and film, we are confronted with many different movements. The performers move about, the camera dollies and trucks along with the action, and the viewpoints shift through cutting. Let's label and order these motions so that you can work with them more easily when structuring the four-dimensional field. There are three principal motions: primary motion, secondary motion, and tertiary motion.

Primary motion is event motion. It always occurs in front of the camera, such as the movements of performers, cars, or a cat escaping a dog.

Secondary motion is camera motion, such as the pan, tilt, pedestal, boom, dolly, truck, or arc. Secondary motion includes the zoom, although only the lens elements, rather than the camera itself, move during the zoom. Still, aesthetically, we perceive the zoom as camera-induced motion.[5]

Tertiary motion is sequence motion. This is the movement and rhythm induced by shot changes—by using a cut, dissolve, fade, wipe, or any other transition device to switch from shot to shot. All three types of motion are important factors in structuring the four-dimensional field.

Primary Motion and Functions



14.9 Primary Motion and Camera Proximity

Depending on the relative camera position, we can see the same primary motion as x-axis movement or z-axis movement.

It is called "primary" because this is the principal indicator of an object's dynamics—whether the object is in motion or at rest. It is primarily event-dependent. Although primary motion refers to the actual motion of an object or event in front of the camera, its function is always judged from the camera's point of view. For example, no primary motion is intrinsically an x- or z-axis motion. It becomes so only in proximity to the camera. The same primary motion can be an x-axis motion or a z-axis motion, depending on whether it occurs laterally to the camera or toward and away from it. SEE 14.9 This motion is primary because it is, and should be, the prevalent motion in a scene. Whenever possible, you should let the person or object, not the camera, do the moving.

In previous chapters we have discussed the advantages of z-axis motion and blocking for the small television screen and the dramatic effects you can achieve with this motion.[6] But z-axis blocking does not mean that you cannot use a limited amount of x-axis motion or primary motion that occurs at an oblique angle. Especially when used for a larger-screen format with a wider aspect ratio (such as a wide motion picture or HDTV screen), lateral motion can be highly effective. When shooting a wide-screen movie, a battle scene in which the soldiers come from either side of the screen and clash in the middle is probably more spectacular than if they were charging along the z-axis. On the small television screen, however, such a long shot remains largely ineffective. At best the laterally blocked battle lacks energy; more often, it looks foolish.

Whatever screen format you use, your first concern is the natural flow of the action—before manipulating it for the camera. Ideally, you should not force the action to fit the camera position but instead place the camera so that it can capture the normal flow of "event traffic."

Nevertheless, you need to adjust the event traffic to fit the camera, especially if you desire a specific intensification effect. For example, you may want to have the actor speed up or slow down for the camera. Close-ups always need a slowdown of the speed with which we normally do things. Trying to follow on a close-up the lifting of a telephone receiver from its cradle to the caller's ear can be a frustrating experience unless the whole action is slowed down considerably. You will find that trying to keep up with lateral action is also difficult, especially on a fairly tight shot.[7]

Although all screen motion is ultimately medium-generated, we seem to sense a difference between event-generated primary motion, such as watching a dancer on the screen, and medium-generated primary motion, such as cartoons or even more realistic digital video creations of object motion. Somehow, when videotaping or filming actual object motion, the lens-generated motion seems to belong intrinsically to the object. When creating object motion through animation or computer-generated sequences, the motion seems to belong more to the medium; that is, the motion seems to superimpose itself on the object rather than spring from it. Overcoming such subtle disparities between lens-generated and computer-generated fluency has been a major problem for special-effects people.[8]

A similar problem occurs when live action of people and things is coupled with the motion of models. Because models are usually built on a small scale, their speed needs to be adjusted to that of the live action. To get some idea of the problem of matching speeds, hold a pencil vertically on your desk. Pretending that it is a huge tree, let it crash onto the desk. The "crash" took only a fraction of a second. A real tree would certainly take quite a bit longer to fall. To make the fall of the tree model (the pencil) believable, you obviously need to slow it down. By how much is the problem of synchronizing model and perceived speeds.

Secondary Motion and Functions

Secondary motion—the motion of the camera and the motion created by zooming—is medium-dependent. This means that camera motion is basically independent of event motion. Unfortunately, this independence of primary motion can seduce inexperienced camera operators into believing that it is the moving camera that is important rather than the event motion. We are all too familiar with the wild and unmotivated camera moves and fast zooms that characterize almost every amateur videotape or film.

The problem with unmotivated secondary motion is that it draws attention to itself and away from the event. Instead of contributing to the clarification and intensification of an event, it muddles its depiction. Nevertheless, secondary motion fulfills several important functions: to follow action, to reveal action, to reveal landscape, to relate events, and to induce action.

To follow action When trying to follow a football player with the camera, you need to pan the camera to keep him in the shot. When a performer stands up and the camera is on a fairly close shot of her, you need to tilt up to keep her in the frame. When you are on a close-up of the host and you want to include the guest in a two-shot, you need to dolly or zoom out unless you cut to another shot. Following action is one of the most natural and least obtrusive uses of secondary motion.

To reveal action A rather dramatic use of secondary motion is to reveal action gradually or to emphasize event detail. For example, you may create considerable tension in the viewer by not showing the accident scene right away but by first showing the horrified face of an onlooker and then, rather than cutting to it, doing a slow pan that traces her index vector right to the accident. Another example of creating tension through revealing action is to follow a skier hurtling down an icy slope (secondary motion to follow action) but then pan ahead to reveal the treacherous crevasse that lies in the skier's path (secondary motion to reveal an event). Will he be able to stop in time once he sees it? (No, but he managed to jump over it.) In this example you used secondary motion as a proven dramaturgical device: to let the audience in on what the hero has yet to discover.

To reveal landscape A similar application of the revealing function is to show landscape in a dramatic way. For example, you can pan along stopped traffic to show just how long the line of waiting cars is, or tilt up along the awesome height of an office building to discover smoke pouring out of one of the top-floor windows. Showing the mountain range or the building in long shots would be much less dramatic. Sometimes it is more natural to follow some action and, in the process, reveal the desired environment. For example, to show the run-down, dilapidated houses and stores of a certain street, you could pan with a cat prowling along the sidewalk or with a child walking to school. One word of caution: such motivation for secondary motion can quickly turn into a cliché or, worse, bad taste. To use a homeless person pushing a loaded shopping cart as a motivating agent would certainly be borderline. On the other hand, having a bicycle messenger weave through the stopped traffic is a perfectly good way of using such an agent for motivating camera motion.

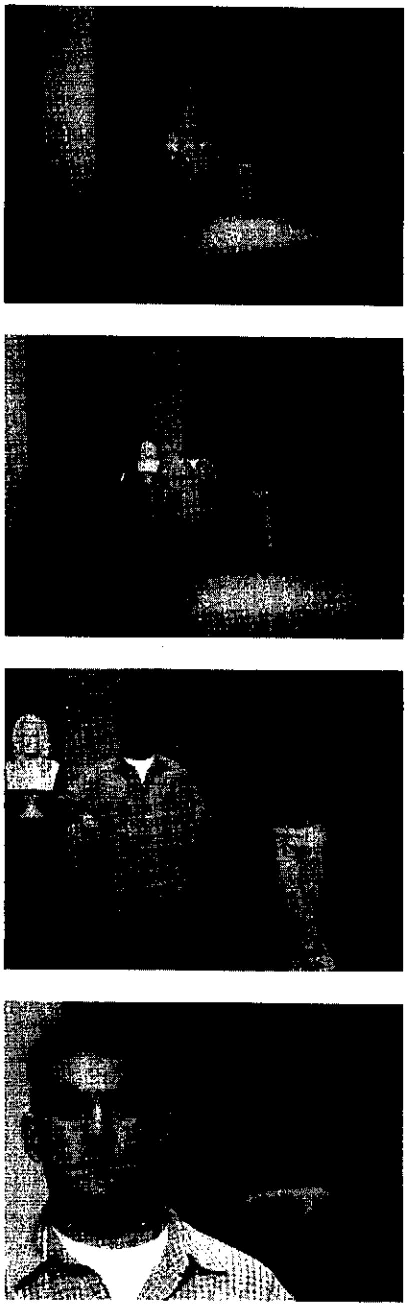
To relate events Through secondary motion you can establish a connection between seemingly unrelated events or draw attention to a specific event detail. Thus, depending on the event context, secondary motion can imply meaning. Let's take a courtroom scene, for example. First we see a close-up of the defendant (a man), who stares at something or someone. But rather than cut to the target of his index vector, the camera pans rather quickly to it: a woman in the jury box, who meets the defendant's glance ever so briefly, trying to look as inconspicuous as possible. Somehow, they know each other but don't want anybody else to know that. Nevertheless, the secondary motion that followed the man's index vector gave them away and revealed their connection to the audience. Here the primary function of the secondary motion is not to reveal an event but rather to connect two events—the man and the woman. Such a connection makes the viewers feel good; they've been given a clue to this secret even though the judge, lawyers, and all the other jurors are not aware of such a connection.

You may have noticed that the difference between revealing an event (following an index vector to the accident) and relating events (following the man's index vector to see the woman) is not determined by the pan itself but by the event context. A very fast pan (called a *swishpan*) from one event to the other, however, usually establishes quite readily a relationship between the two events, regardless of the event content. For example, a swishpan from a fire to the street signs of the nearest intersection will tell viewers where the fire is happening. You can also use the swishpan to connect two events that are separated by time or location.

To induce action Sometimes you may want to simulate object motion by moving the camera or zooming on a still picture. In this case, the secondary motion induces a motion vector. For example, by panning in a wavelike motion against the index vector of the picture of a ship, the ship seems to be moving relative to the screen. The problem with such induced motion is that figure (the ship) and ground (the sea) both do the moving instead of only the figure. Hence, the viewer will usually remain aware of the moving camera and not accept the induced vector as primary motion.

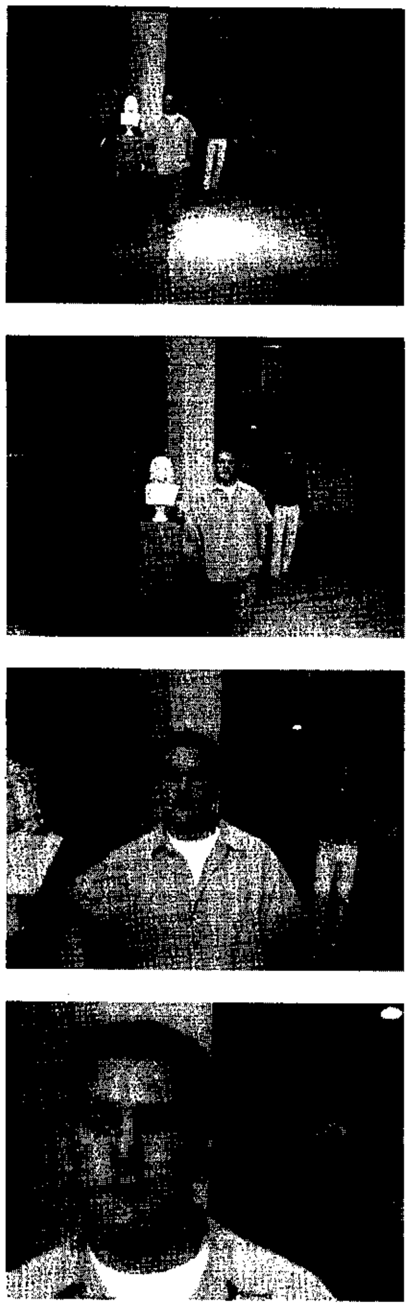
Zooming We classify zooming as secondary motion, although normally the camera remains stationary during the zoom. The reason for this classification is that, for the inattentive viewer, the zoom looks similar to a dolly. As a matter of fact, there is a tendency even among experienced production people to substitute the zoom for a dolly. Whereas the basic function of the zoom and dolly may be similar—to change the field of view in a continuous move—there is a significant aesthetic difference between the two motions. When doing a fast zoom-in and zoom-out, the object seems to hurl along the z-axis toward the screen or else shoot toward the background as if self-propelled. Fast zooms create induced motion vectors of high magnitude. The reason we perceive the object as flying toward—and sometimes even through—the screen at the viewer is that all space modulators along the z-axis are quickly enlarged. And because we interpret a continuous enlargement of an object not as getting bigger but as coming closer, we see the objects coming toward us during a zoom. When they get smaller during a zoom-out, we perceive them as receding into the background (see figure 13.17 in the previous chapter). Because the camera does not move during a zoom, there is no perspective change between the various space modulators along the z-axis. The objects seem to be glued together during the entire zoom. **SEE 14.10** Zooms make us perceive object motion even if we know that the object is stationary. Because of this you must be especially careful with fast zooms; viewers can easily become annoyed when bombarded with objects hurtling toward them.

Dollying When dollying, the camera perspective, and with it the volume duality between the space modulators, changes continuously. The objects close to the camera quickly grow in size when the camera dollies past them, with background objects remaining relatively unchanged. Because this change of perspective is close to what we would be seeing when walking past the space modulators, we tend to identify with the moving camera, perceiving the space modulators as part of the stationary environment. Hence, we seem to be moving into the scene rather than having the scene come to us. A dolly-out works on the same principle except that now we are moving out of, instead of into, the scene. **SEE 14.11** A zoom simulates



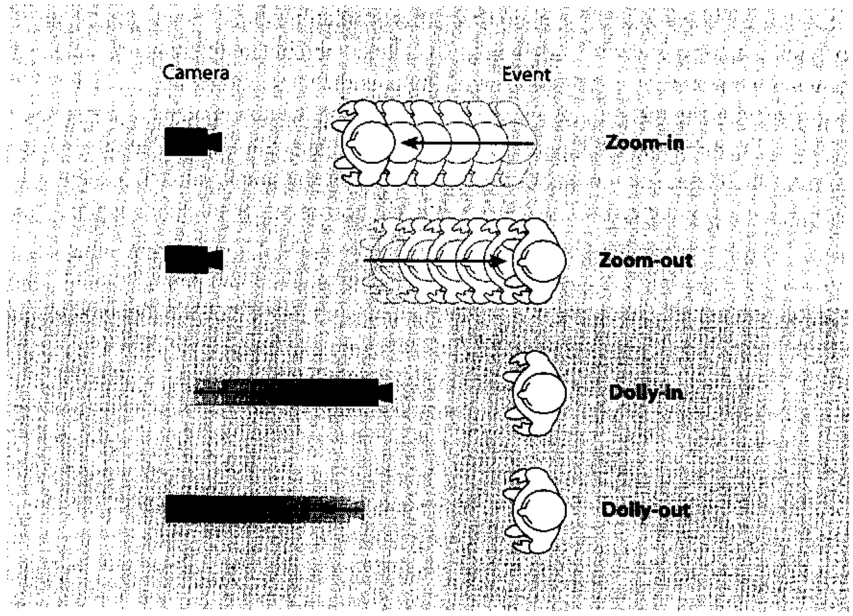
14.10 Perceived Motion During Zoom

A zoom-in seems to bring the object to the screen. Because the camera does not move, the camera perspective remains the same throughout the zoom.



14.11 Perceived Motion During Dolly

When dollying in we seem to move with the camera into the scene. Because of the moving camera, we experience a continuous changing perspective of the space modulators.



14.12 Zoom Versus Dolly

A zoom-in brings the event toward the viewer; a zoom-out moves the event away from the viewer. A dolly-in takes the viewer to the event; a dolly-out leads the viewer away from it.

primary (object) motion with the viewer in a solidly stationary position. A dolly faithfully reflects secondary (camera) motion. It invites the viewer to assume the camera's point of view and walk with it into or out of the scene.

Zoom versus dolly The aesthetic difference between a zoom and dolly is important enough to emphasize it one more time. When zooming in on an event, the event seems to come toward you. When zooming out, the event seems to move away from you. A fast zoom-in hurls the object toward you; a fast zoom-out pulls it away from you. During a dolly-in, you will seem to be moving with the camera toward the event. In a dolly-out, you seem to be moving with the camera away from the event. **SEE 14.12**

Tertiary Motion and Functions

Tertiary motion is sequence motion. Through a change of shots, we perceive a movement of progression, a visual development. The important aspect of tertiary motion is not so much the vector field of the individual shot but the moment of change—the relationship of vector fields from shot to shot. As with bars in music, the various transition devices act as important structural elements in the overall development of the television show or film without drawing too much, if any, attention to themselves. Their basic and common purpose is to provide the necessary link from shot to shot. Transition devices and the lengths of shots determine the basic beat and contribute to the rhythm of the various sequences and the overall pace of the show. They guide the viewer's attention and feeling and supply structural unity.

Digital electronics have provided us with such a great variety of transition effects that you may well wonder what to do with them all.[9] Many of them are so interesting and so easily produced that it is hard not to use them regardless of their appropriateness. But how can you tell whether a transition device is appropriate?