Film is not a language in the sense that English, French, or mathematics is. It is, first of all, impossible to be ungrammatical in film. And it is not necessary to learn a vocabulary. Infants appear to understand television images, for example, months before they begin to develop a facility with spoken language. Even cats watch television. Clearly, it is not necessary to acquire intellectual competence in film in order to appreciate it, at least on the most basic level.

But film is very much like language. People who are highly experienced in film, highly literate visually (or should we say "cinemate"?), see more and hear more than people who seldom go to the movies. An education in the quasi-language of film opens up greater potential meaning for the observer, so it is useful to use the metaphor of language to describe the phenomenon of film. In fact, no extensive scientific investigation of our ability to comprehend artificial sounds and images has as yet been performed, but nevertheless we do know through research, that while children are able to recognize objects in pictures long before they are able to read, they are eight or ten years of age before they can comprehend a film image the way most adults do. Moreover, there are cultural differences in perception of images. In one famous 1920s test, anthropologist William Hudson set out to examine whether rural Africans who had had little contact with Western culture perceived depth in two-dimensional images the same way that Europeans do. He found, unequivocally, that they do not. Results varied—there were some individuals who responded in the Western manner to the test—but they were uniform over a broad cultural and sociological range.
Figure 3-1. CONSTRUCTION-TASK FIGURES. Subjects asked to reconstruct these figures in three dimensions using sticks or rods, respond in different ways. People from Western cultures, trained in the codes and conventions that artists use to convey three-dimensionality in a two-dimensional drawing, see A as three dimensional and B as two-dimensional. The operating code for three-dimensionality here insists that the dimension of depth be portrayed along the 45º oblique line. This works well enough in A, but not in B, where the oblique lines are not in the depth plane. Subjects from African cultures tend to see both figures as two-dimensional, since they are not familiar with this Western three-dimensional code. Figures C and D illustrate the models of A constructed by Western and African observers, respectively. (From, "Pictorial Perception and Culture," Jan B. Deregowski. (~) 1972 by Scientific American, Inc. All rights reserved.)

The conclusions that can be drawn from this seminal experiment and others that have followed are two: first, that every normal human being can perceive and identify a visual image; second, that even the simplest visual images are interpreted differently in different cultures. So we know that images must be "read." There is a process of intellection occurring— not necessarily consciously—when we observe an image, and it follows that we must have learned, at some point, how to do this. The "ambiguous Trident," a well-known "optical illusion," provides an easy test of this ability.
Figure 3-2. THE AMBIGUOUS TRIDENT. The illusion is intriguing only because we are trained in Western codes of perspective. The psychological effects is powerful: our minds insist that we see the object in space rather than the drawing on a plane.

It's safe to say that the level of visual literacy of anyone reading this book is such that observation of the trident will be confusing to all of us. It would not be for someone not trained in /123/Western conventions of three-dimensionality. Similarly, the well-known optical illusions in Figures 3-3 and 3-4 demonstrate that the process of perception and comprehension involves the brain: it is a mental experience as well as a physical one.

Figure 3-3 THE NECKER CUBE. Devised in 1832 by L. A. Necker, a Swiss naturalist. The illusion depends, once again, on cultural training.

Whether we "see" the Necker Cube from the top or the bottom or whether we perceive the drawing in Figure 3-4 as either a young girl or an old woman depends not on the physiological function of our eyes but on what the brain does with the information received.
Figure 3-4. "My Wife and My Mother-in-Law," by cartoonist W.E. Hill, was published in *Puck* in 1915. It has since become a famous example of the phenomenon known as multistable figure. The young woman's chin is the old woman's nose. The old woman's chin is the young woman's chest.

The word "image," indeed, has two conjoined meanings: an image is an optical pattern; it is also a mental experience, which is why, we can assume, we use the word "imagine" to describe the mental creation of pictures.

So there is a strong element of our ability to observe images, whether still or moving, that depends on learning. This is, interestingly, not true to a significant extent with auditory phenomena. If the machines are sophisticated enough, we can produce recorded sounds that are technically indistinguishable from their originals. The result of this difference in mode of the two systems of perception—visual and auditory—is that whatever education our ears undergo in order to
perceive reality is sufficient to perceive recorded sound, whereas there is a subtle but significant difference between the education necessary for our eyes to perceive (and our brain to understand) recorded images and that which is necessary simply to comprehend the reality that surrounds us. It would serve no purpose to consider phonography as a language, but it is useful to speak of photography (and cinematography) as a language, because a learning process is involved.

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Another way to describe this difference between the two senses is in terms of the function of the sensory organs: ears hear whatever is available for them to hear; eyes choose what to see. This is true not only in the conscious sense (choosing to redirect attention from point A to point B or to ignore the sight altogether by closing our eyes), but in the unconscious as well. Since the receptor organs that permit visual acuity are concentrated (and properly arranged) only in the "fovea" of the retina, it's necessary for us to stare directly at an object in order to have a clear image of it.

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You can demonstrate this to yourself by staring at the dot in the center of this page. Only the area immediately surrounding it will be clear. The result of this foveated vision is that the eyes must move constantly in order to perceive an object of any size. These semiconscious movements are called "saccades" and take approximately 1/20 second each, just about the interval of persistence of vision, the phenomenon that makes film possible.

The conclusion that can be drawn from the fact of foveated vision is that we do indeed read an image physically as well as mentally and psychologically, just as we read a page. The difference is that we know
how to read a page in English, from the left to right and top to bottom—but we are seldom conscious of how precisely we read an image.

A complete set of physiological, ethnographic, and psychological experiments might demonstrate that various individuals read images more or less well in three different ways:

- physiologically: the best readers would have the most efficient and extensive saccadic patterns;
- ethnographically: the most literate readers would draw on a greater experience and knowledge of various cultural visual conventions;
- psychologically: the readers who gained the most from the material would be the ones who were best able to assimilate the various sets of meanings they perceived and then integrate the experience.

Figure 3~5. SACCADE PATTERNS. At left, a drawing of a bust of Queen Nefertiti; at right, a diagram of the eye movements of a subject viewing the bust. Notice that the eye follows regular patterns rather than randomly surveying the image. The subject clearly concentrates on the face and shows little interest in the neck. The ear also seems to be a focus of attention, probably not because it is inherently interesting, but rather because it is located in a prominent place in this profile. The saccadic patterns are not continuous; the recording clearly shows that the eye jerks quickly from point to point (the "notches" in the continuous line), fixing on specific nodes rather than absorbing general information. The recording was made by Alfred L. Yarbus of the
The irony here is that we know very well that we must learn to read before we can attempt to enjoy or understand literature, but we tend to believe, mistakenly, that anyone can read a film. Anyone can see a film, it's true, even cats. But some people have learned to comprehend visual images—physiologically, ethnographically, and psychologically—with far more sophistication than have others. This evidence confirms the validity of the triangle of perception outlined in Chapter 1, uniting author, work, and observer. The observer is not simply a consumer, but an active or potentially active—participant in the process.

Film is not a language, but is like a language, and since it is like language, some of the methods that we use to study language might probably be applied to a study of film. In fact, during the last ten years,

Figure 3-6. THE PONZO ILLUSION. The horizontal lines are of equal length, yet the line at the top appears to be longer than the line at the bottom. The diagonals suggest perspective, so that we interpret the picture in depth and conclude, therefore, that since the "top" line must be "behind" the "bottom" line, further away, it must then be longer.

this approach to film—essentially linguistic—has grown considerably in importance. Since film is not a language, strictly linguistic concepts are misleading. Ever since the beginning of film history, theorists have been
fond of comparing film with verbal language (this was partly to justify the serious study of film), but it wasn't until a new, larger category of thought developed in the fifties and early sixties—one that saw written and spoken language as just two among many systems of communication—that the real study of film as a language could proceed. This inclusive category is **semiology**, the study of systems of signs. Semioticians justified the study of film as language by redefining the concept of written and spoken language. Any system of communication is a "language"; English, French, or Chinese is a "language system." Cinema, therefore, may be a language of a sort, but it is not clearly a language system. As Christian Metz, the well-known film semioticist, pointed out: we understand a film not because we have a knowledge of its system, rather, we achieve an understanding of its system because we understand the film. Put another way, "It is not because the cinema is language that it can tell such fine stories, but rather it has become language because it has told such fine stories" [Metz, *Film Language*, p. 47].

For semioticians, a sign must consist of two parts: the signifier and the signified. The word "word," for example—the collection of letters or sounds—is a **signifier**; what it represents is something else again—the **signified**. In literature, the relationship between signifier and signified is a main locus of art: the poet is building constructions that, on the one hand, are composed of sounds (signifiers) and, on the other, of meanings (signifieds), and the relationship between the two can be fascinating. In fact, much of the pleasure of poetry lies just here: in the dance between sound and meaning.

But in film, the signifier and the signified are almost identical: the sign of cinema is a short-circuit sign. A picture of a book is much closer to a book, conceptually, than the word "book" is. It's true that we may have to learn in infancy or early childhood to interpret the picture of a
book as meaning a book, but this is a great deal easier than learning to interpret the letters or sounds of the word "book" as what it signifies. A picture bears some direct relationship with what it signifies, a word seldom does.

[Pictographical languages like Chinese and Japanese might be said to fall somewhere in between film and Western languages as sign systems, but only when they are written, not when they are spoken, and only in limited cases. On the other hand, there are some words—"gulp," for example—that are onomatopoeic and therefore bear a direct relationship to what they signify, but only when they are spoken.]

It is the fact of this short-circuit sign that makes the language of film so difficult to discuss. As Metz put it, in a memorable phrase: "A film is difficult to explain because it is easy to understand." It also makes "doing" film quite different from "doing" English (either writing or speaking). We can't modify the signs of cinema the way we can modify the words of language systems. In cinema, an image of a rose is an image of a rose is an image of a rose—nothing more, nothing less. In English, a rose can be a rose, simply, but it can also be modified or confused with similar words: rose, rosy, rosier, rosiest, rise risen, rows (ruse), arose, roselike, and so forth. The power of language systems is that there is a very great difference between the signifier and the signified; the power of film is that there is not.

Nevertheless, film is like a language. How, then, does it do what is does? Clearly, one person's image of a certain object is not another's. If we both read the words "rose" you may perhaps think of a Peace rose you picked last summer, while I am thinking of the one Laura Westphal gave to me in December 1968. In cinema, however, we both see the same rose, while the filmmaker can choose from an infinite variety of
roses and then photograph the one chosen in another infinite variety of ways. The artist's choice in cinema is without limit; the artist's choice in literature is circumscribed, while the reverse is true for the observer. Film does not suggest, in this context: it states. And therein lies its power and the danger it poses to the observer: the reason why it is useful, even vital, to learn to read images well so that the observer can seize some of the power of the medium. The better one reads an image, the more one understands it, the more power one has over it. The reader of a page invents the image, the reader of a film does not, yet both readers must work to interpret the signs they perceive in order to complete the process of intellection. The more work they do, the better the balance between observer and creator in the process, the better the balance, the more vital and resonant the work of art. /129/

The earliest film texts—even many published recently—pursue with shortsighted ardor the crude comparison of film and written/spoken language. The standard theory suggested that the shot was the word of film, the scene its sentence, and the sequence its paragraph. In the sense that these sets of divisions are arranged in ascending order of complexity, the comparison is true enough; but it breaks down under analysis. Assuming for the moment that a word is the smallest convenient unit of meaning, does the shot compare equivalently? Not at all. In the first place, a shot takes time. Within that time span there is a continually various number of images. Does the single image, the frame, then constitute the basic unit of meaning in film? Still the answer is no, since each frame includes a potentially infinite amount of visual information, as does the soundtrack that accompanies it. While we could say that a film shot is something like a sentence, since it makes a statement and is sufficient in itself, the point is that the film does not divide itself into such easily manageable units. While we can define "shot" technically well enough as a single piece of film, what happens if
the particular shot is punctuated internally? The camera can move; the scene can change completely in a **pan** or **track**. Should we then be talking of one shot or two?

Likewise, scenes, which were defined strictly in French classical /130/ theater as beginning and ending whenever a character entered or left the stage, are more amorphous in film (as they are in theater today). The term scene is useful, no doubt, but not precise. Sequences are certainly longer than scenes, but the "sequence-shot," in which a single shot is coterminous with a sequence, is an important concept and no smaller units within it are sequential.

It would seem that a real science of film would depend on our being able to define the smallest unit of construction. We can do that technically, at least for the image: it is the single frame. But this is certainly not the smallest unit of meaning. The fact is that film, unlike written or spoken language, is not composed of units, as such, but is rather a continuum of meaning. A shot contains as much information as we want to read in it, and whatever units we define within the shot are arbitrary. Therefore, film presents us with a language (of sorts) that:

a) consists of short-circuit signs in which the signifier nearly equals the signified; and

b) depends on a continuous, nondiscrete system in which we can't identify a basic unit and which therefore we can't describe quantitatively. The result is, as Christain Metz says, that: "An easy art, the cinema is in constant danger of falling victim to this easiness." Film is too intelligible, which is what makes it difficult to analyze. "A film is difficult to explain because it is easy to understand."
Films do, however, manage to communicate meaning. They do this essentially in two different manners: denotatively and connotatively. Like written language, but to a greater degree, a film image or sound has a denotative meaning: it is what it is and we don't have to strive to recognize it. This may seem a simplistic statement, but the fact should never be underestimated: here lies the great strength of film. There is a substantial difference between a description in words (or even in still photographs) of a person or event, and a cinematic record of the same. Because film can give us such a close approximation of reality, it can communicate a precise knowledge that written or spoken language seldom can. "Film is what you can't imagine."

Language systems may be much better equipped to deal with the nonconcrete world of ideas and abstractions (imagine this book, for example, on film: without a complete narration it would be incomprehensible), but they are not nearly so capable of conveying precise information about physical realities. By its very nature, written/spoken language analyzes. To write the word "rose" is to generalize and abstract the idea of the rose. The real power of the linguistic languages lies not in their denotative ability but in this connotative aspect of language: the wealth of meaning we can attach to a word that surpasses its denotation. If denotation were the only measure of the power of a language, for example, then English—which has a vocabulary of a million or so words and is the largest language in history—would be more than three times more powerful than French, which has only 300,000 or so words. But French makes up for its "limited" vocabulary with a noticeably greater use of connotation. Film has connotative abilities as well.

Considering the strongly denotative quality of film sounds and images, it is surprising to discover that these connotative abilities are very much a part of the film language. In fact, many of them stem from film's denotative ability. As we have noted in Chapter 1, film can draw on all the other arts for various effects simply because it can record them. Thus, all the connotative factors of spoken language can be accommodated on a film soundtrack while the connotations of written language can be included in titles (to say nothing of the connotative factors of dance, music, painting, and so forth). Because film is a product of culture, it has resonances that go beyond what the semiotician calls its "diegesis" (the sum of its denotations). An image of a rose is not simply that when it appears in a film of Richard III, for example, because we are aware of the connotations of the white rose and the red as symbols of the houses of York and Lancaster. These are culturally determined connotations.

In addition to these influences from the general culture, film has its own unique connotative ability. We know (even if we don't often remind ourselves of it consciously) that a filmmaker has made specific choices: the rose is filmed from a certain angle, the camera moves or does not move, the color is bright or dull, the rose is fresh or fading, the thorns apparent or hidden, the background clear (so that the rose is seen in context) or vague (so that it is isolated), the shot held for a long time or briefly, and so on. These are specific aids to cinematic connotation, and although we can approximate their effect in literature, we cannot accomplish it there with the precision or
efficiency of cinema. A picture is, on occasion, worth a thousand words, as the adage has it.

When our sense of the connotation of a specific shot depends on its having been chosen from a range of other possible shots, then we can say that this is, using the language of semiotics, a paradigmatic connotation. That is, the connotative sense we comprehend stems from the shot being compared, not necessarily consciously, with its unrealized companions in the paradigm, or general model, of this type of shot. A low-angle shot of a rose, for example, conveys a sense that the flower is for some reason dominant, overpowering, because we consciously or unconsciously compare it with, say, an overhead shot of a rose, which would diminish its importance.

Conversely, when the significance of the rose depends not on the shot compared with other potential shots, but rather on the shot compared with actual shots that precede or follow it, then we can speak of its syntagmatic connotation; that is, the meaning adheres to it because it is compared with other shots that we do see.

These two different kinds of connotation have their equivalents in literature. A word alone on the page has no particular connotation, only denotation. We know what it means, we also know potentially what it connotes, but we can’t supply the particular connotation the author of the word has in mind until we see it in context. Then we know what particular connotative value it has because we judge its meaning by conscious or unconscious comparison of it with (1) all the words like it that might fit in this context but were not chosen, and (2) the words that precede or follow it.

These two axes of meaning—the paradigmatic and the syntagmatic—have real value as tools for understanding what film means. In fact, as an art, film depends almost entirely upon these two sets of choices. After a filmmaker has decided what to shoot, the two obsessive questions are how to shoot it (what choices to make: the paradigmatic) and how to present the shot (how to edit it: the syntagmatic). In literature, in contrast, the first question (how to say it) is paramount, while the second (how to present what is said) is quite secondary. Semiotics, so far, has concentrated on the syntagmatic aspect of film, for a very simple reason: it is here that film is most clearly different from other arts, so that the syntagmatic category (editing, montage) is in a sense the most “cinematic.”

Film draws on the other arts for much of its connotative power as well as generating its own, both paradigmatically and syntagmatically. But there is also another source of connotative sense. Cinema is not strictly a medium of intercommunication. One seldom hold s dialogues u sing film as the medium. Whereas spoken and written languages are used for intercommunication, film, like the nonrepresentational arts in general (as well as language when it is used for artistic purposes), is a one-way communication. As a result, even the most utilitarian of films is artistic in some respect. Film speaks in neologisms.

"When a 'language' does not already exist," Metz wrote, "one must be something of an artist to speak it, however poorly. For to speak it is partly to invent it, whereas to speak the language of everyday is simply to use it." So connotations attach to even the simplest statements in film.

There is an old joke that illustrates the point: Two philosophers meet; one says “Good morning!” The other smiles in recognition, then walks on frowning
and thinking to himself: "I wonder what he meant by that?" The question is a joke when spoken language is the subject; it is however, a perfectly legitimate question to ask of any statement in film. Is there any way we can further differentiate the various modes of denotation and connotation in film? Borrowing a "trichotomy" from the philosopher C. S. Peirce, Peter Wollen, in his highly influential book Signs and Meaning in the Cinema (1969), suggested that cinematic signs are of three orders:

0 The Icon: a sign in which the signifier represents the signified mainly by its similarity to it, its likeness;
0 The Index: which measures a quality not because it is identical to it but because it has an inherent relationship to it;
0 The Symbol: an arbitrary sign in which the signifier has neither a direct nor an indexical relationship to the signified, but rather represents it through convention.

Although Wollen didn't fit them into the denotative/connotative categories, Icon, Index, and Symbol can be seen as mainly denotative. Portraits are icons, of course, but so are diagrams in the Peirce/Wollen system. Indexes are more difficult to define. Quoting Peirce, Wollen suggests two sorts of indexes, one technical-medical: symptoms are indexes of health, clocks and sundials are indexes of time-and one metaphorical: a rolling gait should indicate that a man is a sailor. (This is the one point where the Peirce/Wollen categories verge on the connotative.) Symbols, the third category, are more easily defined. The way Peirce and Wollen use it, the word has a rather broad definition: words are symbols (since the signifier represents the signified through convention rather than resemblance).

These three categories are not mutually exclusive. Especially in photographic images, the iconic factor is almost always a strong one. As we have noted, a thing is itself even if it is also an index or a symbol. General semiotic theory, especially as it is put forth in Christian Metz's writings, covers the first and last categories-icon and symbol-fairly well already. The icon is the short-circuit sign that is so characteristic of cinema; the symbol is the arbitrary or conventional sign that is the basis of spoken and written language. It is the second category-the index-that is most intriguing in Peirce and Wollen's system: it seems to be a third means, halfway between the cinematic icon and the literary symbol, by which cinema can convey meaning. It is not an arbitrary sign, but neither is it identical. It suggests a third type of denotation that points directly toward connotation, and may in fact not be understandable without the dimension of connotation.

The index seems to be one very useful way in which cinema can deal directly with ideas, since it gives us concrete representations or measurements of them. How can we convey the idea of hotness cinematically, for instance? In written language it's very easy, but on film? The image of a thermometer quickly comes to mind. Clearly that is an index of temperature. But there are more subtle indexes as well: sweat is an index, as are shimmering atmospheric waves and hot colors. It's a truism of film esthetics that metaphors are difficult in cinema. Comparing love with roses works well enough in literature, but its cinematic equivalent poses problems: the rose, the
secondary element of the metaphor, is too equivalent in cinema, too much present. As a result, cinematic metaphors based on the literary model tend to be crude and static and forced. The indexical sign may offer a way out of this dilemma. Here film discovers its own, unique metaphorical power, which it owes to the flexibility of the frame: its ability to say many things at once. The concept of the index also leads us to some interesting ideas about connotation. It must be clear from the above discussion that the line between denotation and connotation is not clearly defined: there is a continuum. In film, as in written and spoken language, connotations if they become strong enough are eventually accepted as denotative meanings. As it happens, much of the connotative power of film depends on devices that are indexical; that is, they are not arbitrary signs, but neither are they identical.