A PRIMER OF VISUAL LITERACY

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2

COMPOSITION: THE SYNTACTICAL GUIDELINES FOR VISUAL LITERACY

The process of composition is the most crucial step in visual problem solving. The results of the compositional decisions set the purpose and meaning of the visual statement and carry strong implications for what the viewer receives. It is at this vital stage in the creative process that the visual communicator has the strongest control of the work and the greatest opportunity to express the total mood the work is intended to convey. But the visual mode offers no proscribed structural systems that are absolute. How can we gain control of our complex visual means with some certainty of shared meaning in the final results? In language syntax means the orderly arrangement of words in their appropriate form and order. The rules are defined: all one has to do is learn them and use them intelligently. But syntax in the context of visual literacy can only mean the orderly arrangement of parts, leaving us with the problem of how we can approach the process of composition with intelligence and knowledge of how compositional decisions will affect the final result. There are no absolute rules, but there is a great deal of understanding of what will occur in terms of meaning if we make certain arrangements of the parts toward organizing and orchestrating the visual means. Many of the guidelines for understanding the meaning in visual form, the syntactical potential of structure in visual literacy, stem from the investigation of the process of human perception.

PERCEPTION AND VISUAL COMMUNICATION

Meaning in visual message-making lies not only in the cumulative effects of the arrangement of the basic elements but also in the perceptual mechanism that is universally shared by the human organism. More simply put: we create a design out of many colors and shapes and textures and tones and relative proportions; we relate these elements interactively; we intend meaning. The result is the composition, the artist's or photographer's or designer's intention. It is his input. Seeing is another and separate step in visual communication. It is the process of absorbing information into the nervous system through the eyes, the sense of sight. This process and capacity is shared by all people on a more or less common basis, finding its significance in terms of shared meaning. The two separate steps, seeing and designing and/or making are interdependent for both meaning in a general sense and message in the case of attempting to respond to a specific communication. Between the general meaning, mood, or ambience of visual information and a specific, defined message lies yet another area of visual meaning, functionality, in the objects that are designed, made, and manufactured to serve a purpose. While it would seem that the message of such works is secondary to their viability, the facts prove otherwise. Clothes, houses, public buildings, even the whittling and scrimshaw of amateur craftsmen tell us an enormous amount about the people who designed and chose them. And our understanding of a culture depends on our study of the world they built and the tools and artifacts and art they created.

Primarily, the act of seeing involves a response to light. In other words, the most important and necessary element in the visual experience is tonal. All of the other visual elements are revealed to us through light, but they are secondary to the element of tone, which is, in fact, light or the absence of light. What light reveals and offers us is the substance by which man fashions and devises what he recognizes and identifies in the environment, namely all the other visual elements: line, color, shape, direction, texture, scale, dimension, motion. Which elements dominate which visual statements is determined by the nature of what is being designed or, in the case of nature, what exists. But when we define painting elementally as tonal, filled with shape reference and consequently direction, having texture and tone-color, possibly scale reference and no dimension and motion except by implication, it does not even begin to define the visual potential of painting. The possible variations of a visual statement that fits neatly within that description is literally infinite. Those variations depend on the artist's subjective expression through emphasis of certain elements over others and the manipulation of those elements through the strategic choice of techniques. In these choices, the artist finds his meaning.

The final result is the artist's true statement. But meaning also depends on the response of the viewer, who also modifies and interprets through the net of subjective judgment. One factor alone is common currency between artist and audience, in fact, among all people—the physical system of their visual perceptions, the psychophysiological components of the nervous system, the mechanical workings, the sensory apparatus through which they see.

Gestalt psychology has contributed valuable research and experimentation in the area of perception, collecting data and searching the significance of visual patterns, as well as finding how the human organ-

ism sees and organizes visual input and articulates visual output. Together, the physical and the psychological are relative and not absolute. Every visual pattern has a dynamic quality that cannot be defined intellectually, emotionally, or mechanically by size or direction or shape or distance. These stimuli are only the static measurements, but the psychophysical forces they set off, like those of any stimuli, modify space and arrange or derange balance. Together they create the perception of a design or an environment or a thing. All things visual are not just something that happens out there. They are visual events, total occurrences, actions that incorporate the reaction into the whole.

Abstract as the psychophysiological elements of visual syntax may be, they can be defined as to their general character. The meaning inherent in abstract expression is intense; it short-circuits the intellect, making contact directly with the emotions and feelings, encapsulating the essential meaning, cutting through the conscious to the unconscious.

Visual information may also have definable form either through attached meaning in symbols or through shared experience in the environment, in life. Up, down, blue sky, vertical trees, scratchy sand, red-orange-yellow fire, are but a few of the denotative, point-at-able qualities we all share visually. And so, whether consciously or not, we respond with some conformity to their meaning.

BALANCE

The most important psychological as well as physical influence on human perception is man's need for balance, to have his two feet planted firmly on the ground and to know if he is to remain upright in any circumstance, in any attitude, with some reasonable certainty. Equilibrium, then, is man's firmest and strongest visual reference, both his conscious and unconscious basis for making visual judgments. The extraordinary fact is that while all visual patterns have a center of gravity which can be technically computed, no method of calculation is as fast, as accurate, as automatic as the intuitive sense of balance inherent in man's perceptions.

So the horizontal-vertical construct is the basic relationship of man to his environment. But beyond the simple, static balance shown in Figure 2.1 is the process of adjustment to each variation of weight through a response of counterpoise (2.2 and 2.3). This internalized awareness of steady uprightness in relationship to a stable base is ex-

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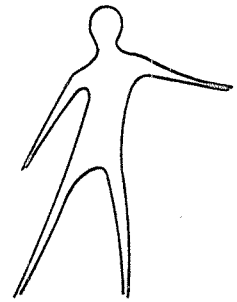


FIGURE 2.2

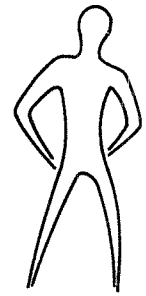


FIGURE 2.3

pressed externally through the visual establishment of Figure 2.4 and a horizontal-vertical relationship of what is being viewed (2.5) and its relative weight in relationship to a balanced state (2.6). Balance is as fundamental in nature as it is in man. It is the state opposite to collapse. You can measure the effect of disequilibrium by observing the look of alarm on the face of a victim who has suddenly and without warning been pushed off balance.

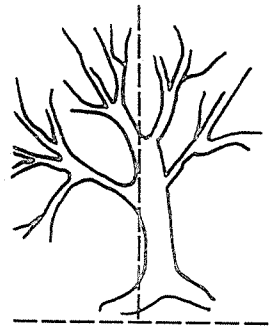


FIGURE 2.4

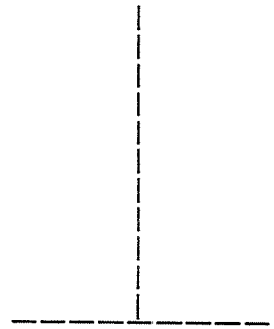


FIGURE 2.5

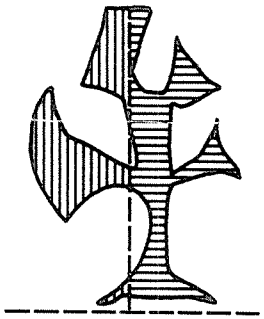


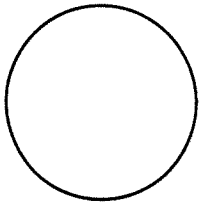
FIGURE 2.6

In visual expression or interpretation, this process of stabilization imposes on all things seen and planned a vertical "axis" with a horizontal secondary referrent which together establish the structural factors that measure balance. This visual axis is also called a felt axis which better expresses the unseen but dominating presence of the axis in the act of seeing. It is an unconscious constant.

STRESS

Many things in the environment appear to have no stability. A circle is a good example. It seems the same however we look at it (2.7), but

in the act of seeing, we supply it with stability by imposing on it the vertical axis that analyzes and determines its balance as a form (2.8) and then (2.9) adding the horizontal base as a reference that completes the sense of stability. Projecting the hidden (or felt) structural



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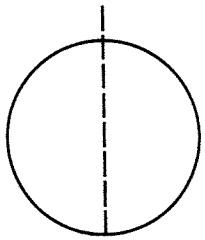

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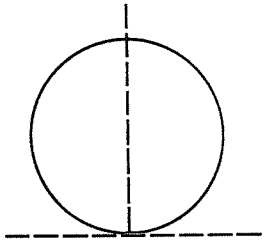


FIGURE 2.9

factors onto regular forms, such as a circle, or square, or an equilateral triangle, is comparatively simple and easy to understand, but when a form is irregular, the analysis and establishment of balance is more involved and intricate (see Figure 2.10). This stabilization process can be demonstrated with greater clarity through a sequence of slight changes in the examples and the responses of the position of the felt axis to the shifting state of balance in Figure 2.11.

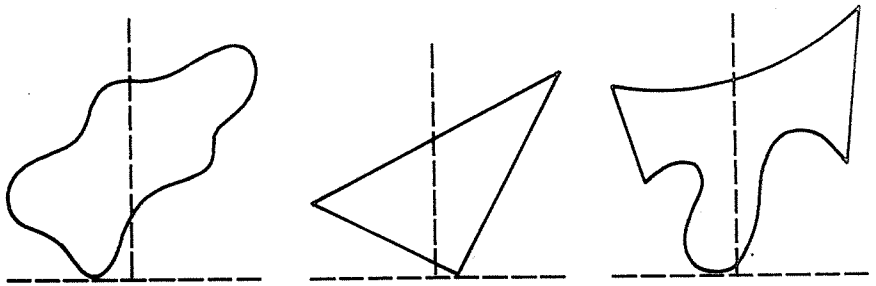


FIGURE 2.10

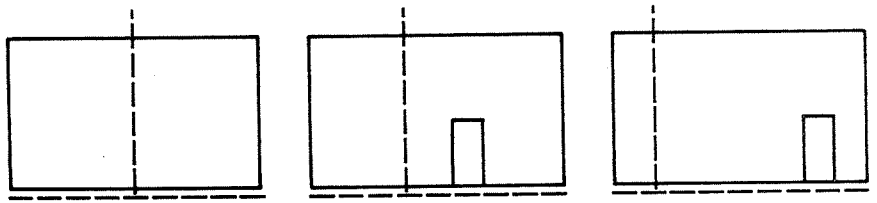


FIGURE 2.11

This process of ordering, of intuitively recognizing regularity or the lack of it, is an unconscious one, requiring no explanation or verbalization. For both the sender and the receiver of visual information the lack of balance and regularity is a disorienting factor. In other words, it is the most effective of all visual means in creating an effect in response to message purpose, an effect that has a direct and economic potential for conveying visual information. The visual options are polarities, either regularity and simplicity (2.12) on the one hand, or complex and unexpected variation (2.13) on the other. Choice between these options governs relative response from the viewer with either repose and relaxation or stress.

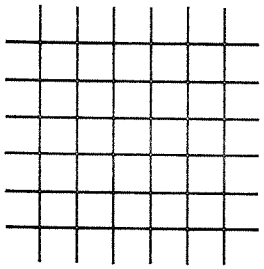


FIGURE 2.12. REPOSE

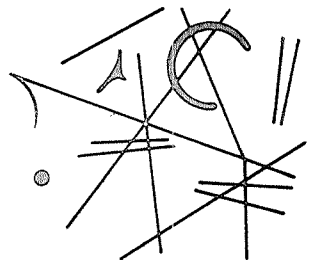
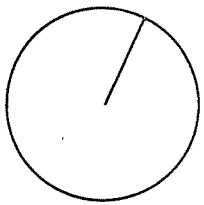


FIGURE 2.13. STRESS

The connection between relative stress and relative balance can be demonstrated simply in any regular form. For example, a tipped radius in a circle (2.14) exerts greater visual stress because the radius does not confrom to the unseen "visual axis" and therefore unsettles the balance. The visible element, the radius, is modified by the invisible element, the felt axis (2.15), as well as by its relationship to the horizontal, stabilizing base (2.16). In terms of design, plan, purpose: of two circles side by side, it is the one with the tipped or nonconforming radius (2.18 rather than 2.17) which attracts the attention of the viewer most.



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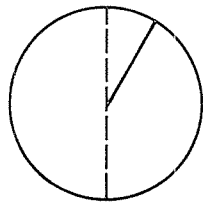

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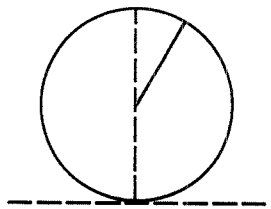

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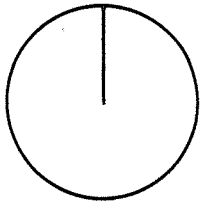

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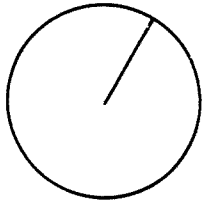


FIGURE 2.18

There is no judgment to attach to this phenomenon of stress. It is neither good or bad. Its value in the theory of perception lies in how it is used in visual communication, that is, how it can reinforce meaning, purpose, intention and, further, how it can be used as a basis for interpretation and understanding. Stress, or its absence, is the first compositional factor that can be used syntactically in the pursuit of visual literacy.

There are many aspects of stress that should be expanded on, but, first, consider that stress (the unexpected, the most irregular, complex, unstable) does not alone dominate the eye. There are other factors in the sequence of seeing which contribute to attention-getting and compositional dominance. The process of establishing the vertical axis and horizontal base draws the eye with much more intensity to both visual areas, automatically giving them relative importance compositionally. As already demonstrated, it is easy to locate these areas in regular shapes, shown in Figure 2.19. In more complex shapes, the

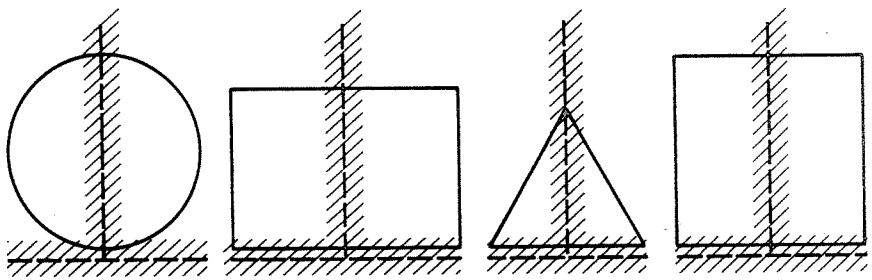


FIGURE 2.19

felt axis is naturally more difficult to establish, yet the process still gives maximum importance compositionally. Thus a visual element placed in the felt axis locus of the examples in Figure 2.20 is automatically emphasized. These are simple examples of what still holds true,

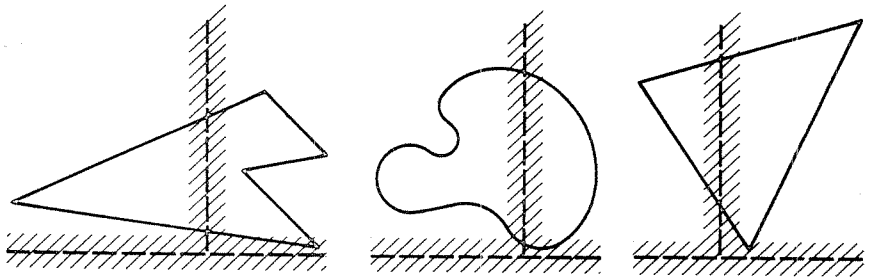


FIGURE 2.20

not only in complex shapes but also in complicated compositions. Yet no matter how involved the elements, the eye seeks out the felt axis in any visual event in an unending process of establishing the relative balance. In a triptych, the visual information set in the central panel takes compositional precedence over that in the lateral panels. The axis area of any field is looked at first; it is where you expect to see something. The same holds true for visual information in the lower half of any field, the eye being drawn to that locus in the secondary step of establishing balance through the horizontal reference.

LEVELING AND SHARPENING

But the power of the predictable pales before the power of surprise. Harmony and stability are polarities of the visually unexpected and stressful in composition. In psychology, these opposites are called leveling and sharpening. In a rectangular visual field, a simple demonstration of leveling would be to place a dot in the field in the dead center of a structural map (2.21). The placement of the dot as shown in Figure 2.22 offers no visual surprise; it is totally harmonious. Placement

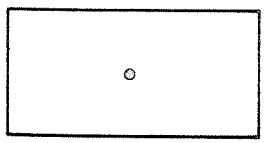


FIGURE 2.21

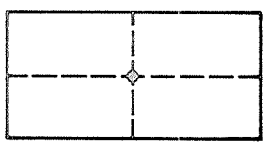
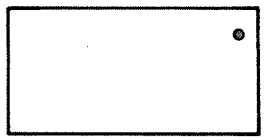


FIGURE 2.22

of the dot in the right-hand corner demonstrates sharpening (2.23). The dot is off center not only in the vertical structure but also in the horizontal structure as shown in Figure 2.24. It does not even conform to the diagonal components of the structural map (2.25). In either case, compositional leveling or sharpening, there is clarity of de-



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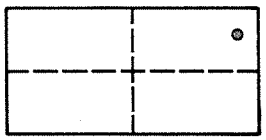

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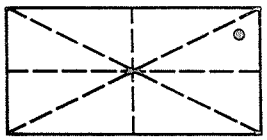


FIGURE 2.25

sign. Through our automatic perceptions, we can establish balance or the marked lack of it, we can easily recognize the abstract visual conditions. But there is a third state of a visual composition which is neither leveled nor sharpened, where the eye must struggle to analyze the components as to their balance. This is called ambiguity and although the connotation is the same as in language, the form may be slightly differently described visually. The dot in Figure 2.26 is not clearly on center, nor is it far off-center as shown in Figure 2.27. Vi-

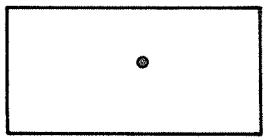


FIGURE 2.26

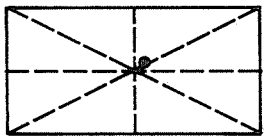


FIGURE 2.27

sually, its placement is unclear and would confound the viewer unconsciously hoping to stabilize its position in terms of relative balance. Visual ambiguity, like verbal ambiguity, obscures not only compositional intent, but also meaning. The natural balancing process would be slowed down, confused, and, most important, unresolved by the meaningless spatial phraseology of Figure 2.26. The Gestalt law of perceptual simplicity is greatly frustrated by such an unclear state of difference in all visual composition. In terms of sound visual syntax, ambiguity is totally undesirable. Of all our senses, sight is the one that wastes the least energy. It experiences and recognizes balance, obvious or subtle, and the interacting relationships of diverse visual data. It would be counterproductive to frustrate and confuse this unique function. Ideally, visual forms should not be purposefully unclear; they should harmonize or contrast, attract or repel, relate or clash.

PREFERENCE FOR LOWER LEFT

In addition to being influenced by elemental relationships to the structural map, visual stress is maximized two other ways: the eye fa-

vors the left-hand and lower area of any visual field. Translated into a diagrammatic demonstration, this means that there is a primary scanning pattern of the field that responds to the vertical-horizontal referents (2.28) and a secondary scanning pattern that responds to the left-lower perceptual pull (2.29).

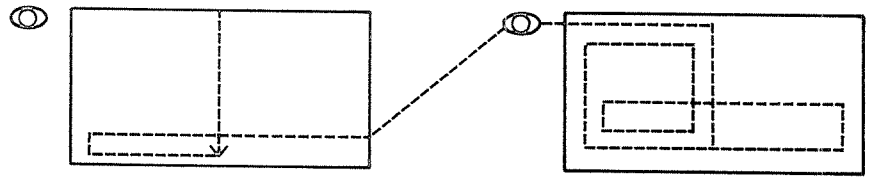


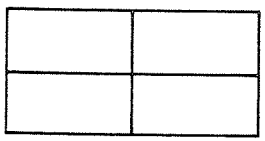
FIGURE 2.28

FIGURE 2.29

The explanations for these secondary perceptual preferences are many, and they are not as easy to explain conclusively as primary preferences. The favoring of the left part of the visual field could be influenced by the Western print formation and the fact that there is strong conditioning in the way we learn to read from left to right. There is little research and a great deal to be learned about why we are predominantly right-handed organisms and specialize our left-to-right reading and writing competencies to the left hemisphere of the brain. Oddly, right-handedness extends to cultures that have written from top to bottom and presently write from right to left. We also favor the left field of vision. If we do not know for sure why, it may be sufficient to know that the fact does prove out in practice. Watch the eyes of an audience scan a stage on which there is no action when the curtain goes up in a theater.

SOME EXAMPLES

Conjecture though it may be, the fact of top-bottom, left-right weight differences has great value in compositional decisions. It can give a refined knowledge of our understanding of stress as illustrated by Figure 2.30, which shows a linear division of a rectangle in a leveled composition; Figure 2.31 demonstrates sharpening but with minimized



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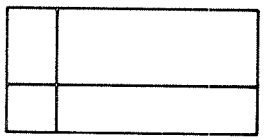

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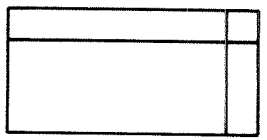


FIGURE 2.32

stress, while Figure 2.32 shows maximum stress. Of course, these facts may be modified for left-handed people or those who read their language any way other than left to right.

When visual material conforms to our expectations in terms of the felt axis, the horizontal stabilizing base, the dominance of the left-hand area of the field over the right, the lower half of the visual field over the upper half, we have a leveled composition, with minimum stress. When the opposite conditions obtain, we have a visual composition of maximum stress. In simple terms, the visual elements that are placed in areas of stress have more weight (2.33, 2.34, 2.35) than those that are leveled. Weight, which means in this context ability to attract the eye, of course, has enormous significance here in terms of compositional balance.

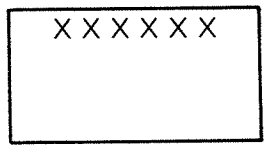
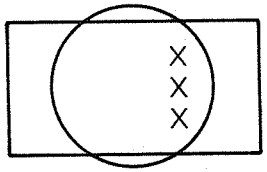


FIGURE 2.33



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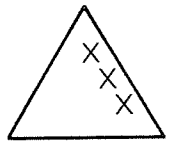


FIGURE 2.35

A practical demonstration of the theory demonstrated in Figure 2.36 shows that in a still life, one apple on the right balances two apples on the left. The compositional dominance is intensified by moving the right-hand apple higher than the two left-hand apples as shown in Figure 2.37.

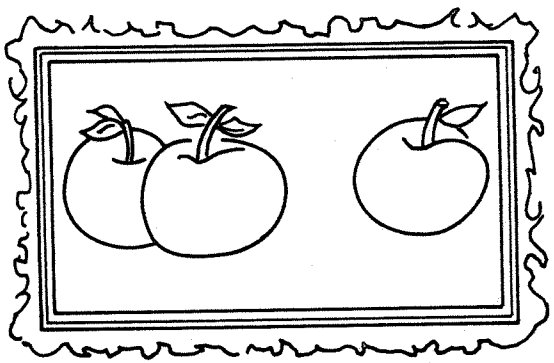


FIGURE 2.36

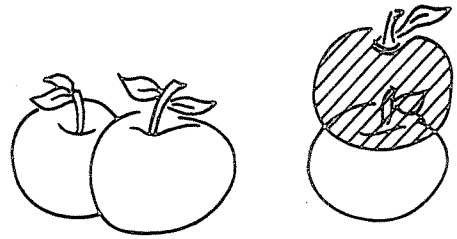


FIGURE 2.37

Shapes have more weight or dominance visually in direct relationship to their relative regularity. Complexity, instability, irregularity increase visual stress and consequently attract the eye as shown in the regular shapes (2.38, 2.39, 2.40) and the irregular shapes (2.41, 2.42, 2.43). The two groups represent the choice between two major categories in composition: the balanced, rational, harmonious, as opposed to the exaggerated, distorted, and emotional.

In Gestalt theory of perception, the law of Prägnanz defines psychological organization as being as "good" (regular, symmetrical, simple) as prevailing conditions allow. "Good," in this case, is not a desirable or even very descriptive word, considering the intended meaning; a more accurate definition would be emotionally least provoking, sim-

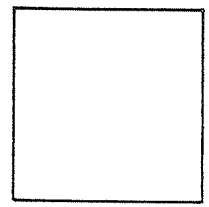


FIGURE 2.38

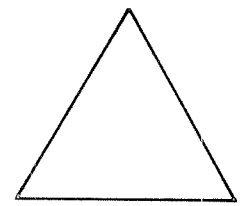


FIGURE 2.39

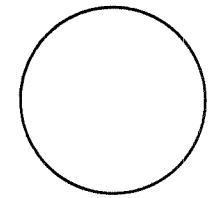


FIGURE 2.40

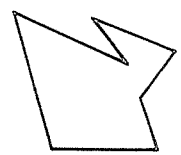


FIGURE 2.41

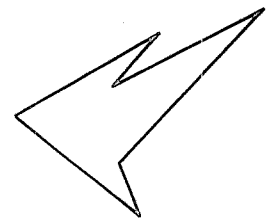


FIGURE 2.42

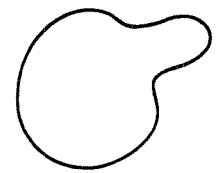


FIGURE 2.43

plest, least complicated, all of which describe the state arrived at visually through bilateral symmetry. Axial balance designs are not only easy to understand, they are easy to do, employing the least complicated formulation of counterpoise. If a dot is placed firmly to the left of the vertical or felt axis, a state of imbalance is provoked as shown in Figure 2.44 and immediately countered by the addition of another dot on balance in Figure 2.45. This is a perfect demonstration of counterpoise, which, when used in a visual composition, produces the most ordered and organized effect possible. The classic Greek temple is a tour de force in symmetry and, as would be expected, a most serene visual form.

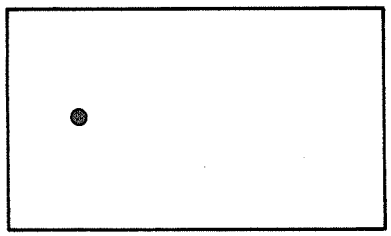


FIGURE 2.44

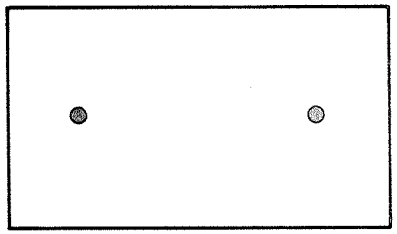


FIGURE 2.45

It is exceptional to find much in nature or the work of man that can reach an idealized state of balance. It could be argued that it is compositionally more dynamic to arrive at a balance of the elements in a visual work through the technique of asymmetry. It is not as easy. Variations of the visual means involve factors of compositional weight, size, and position. Figures 2.46 and 2.47 demonstrate the axial distribution of weight based on size. It is also quite possible to balance dissimilar weights by shifting their position as shown in Figure 2.48.

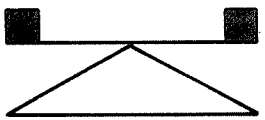


FIGURE 2.46

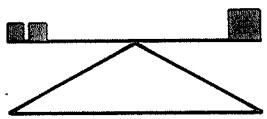


FIGURE 2.47

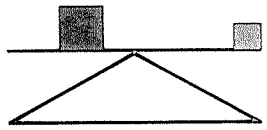


FIGURE 2.48

ATTRACTION AND GROUPING

The power of attraction in visual relationships represents another Gestalt principle with great compositional value, the law of grouping. It has two levels of significance to the visual language. It is a visual

condition that creates a circumstance of give and take of relative interaction. A dot alone in a field relates to the whole as shown in Figure 2.49, but it stands alone, and the relationship is a mild state of intermodification between it and the square. In Figure 2.50, the two dots fight for attention in their interaction, creating comparatively individual statements because of their distance from one another and, consequently, appearing to repel each other. In Figure 2.51, there is an immediate and more intense interaction; the dots harmonize and, therefore, attract each other. The closer they are, the stronger their attraction. In the spontaneous act of seeing, individual visual units

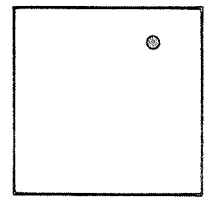


FIGURE 2.49

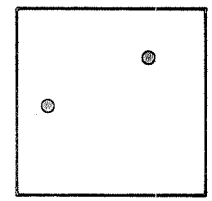


FIGURE 2.50

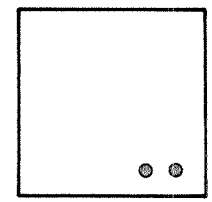


FIGURE 2.51

create other and distinct shapes. The closer the marks the more complicated the forms they can describe. In simple diagrams like 2.52 and 2.53 the eye supplies the missing connective links. Man, through his perceptions, has a need to make wholes of units, in this case, to connect the dots by responding to their attraction. This is the visual phe-

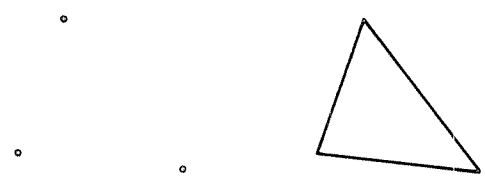


FIGURE 2.52

nomenon that inspired ancient man to see the interacting points of light of the stars as representational forms. We still can do the same thing on a clear, starry night when we look up at the sky and make out those forms of Orion or the Big and Little Dipper, recognized so long ago. One might even try an original exercise in finding objects described by the encompassing light dots of the stars.

The second level of importance to visual literacy of the law of grouping is how it is affected by similarity. In visual language, opposites re-

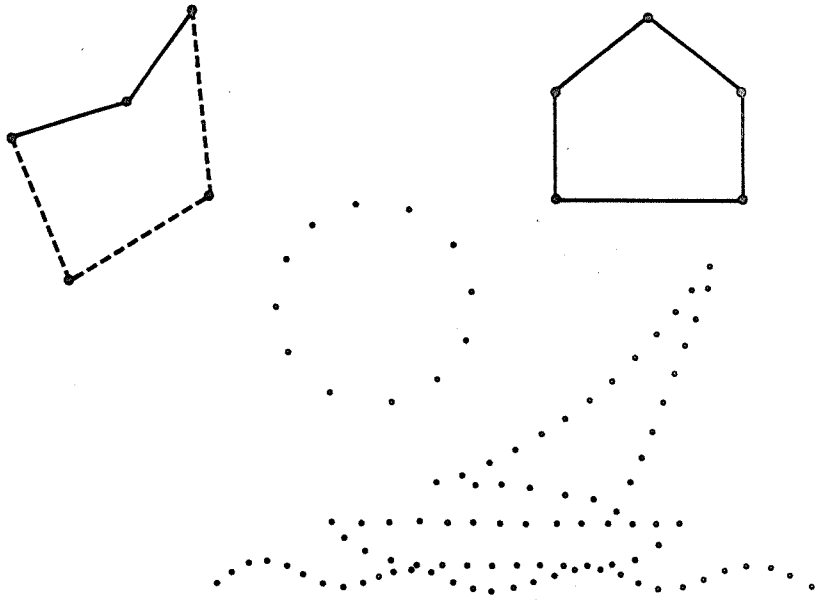


FIGURE 2.53

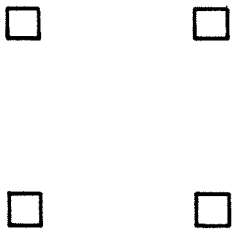


FIGURE 2.54

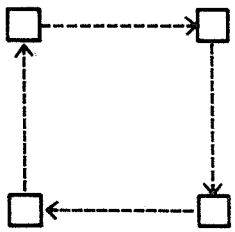


FIGURE 2.55

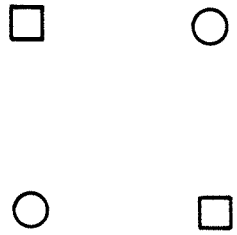


FIGURE 2.56

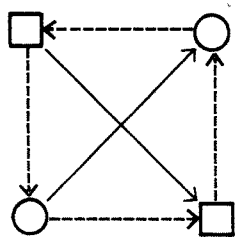


FIGURE 2.57

pel, but similars attract. So the eye fills in the missing connections but automatically relates the like units more strongly. The perceptual process is demonstrated by the visual clues of Figure 2.54,

which create a square (2.55). But in Figure 2.56, the clues have been changed and their shape influences what elements are connected and in what order; Figure 2.57 shows the possible connections. In all four figures (2.54-2.57) the similarity demonstrated is shape, but many other visual affinities govern the law of grouping in the act of seeing, such as size, texture, or tone, as shown in Figures 2.58, 2.59, and 2.60.

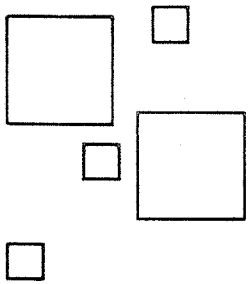


FIGURE 2.58

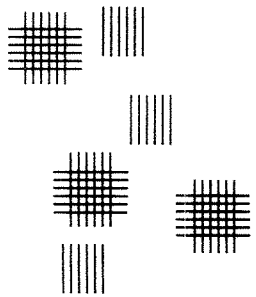


FIGURE 2.59

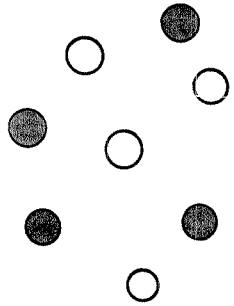


FIGURE 2.60

POSITIVE AND NEGATIVE

All that we see has the grammatical quality of being the major statement or the modifier—in verbal terminology, the noun or the adjective. This structural relationship in the visual message has a strong connection to the sequence of seeing and absorbing information. A square is a good example of a field that is a positive visual statement clearly expressing its own definition and character and quality (2.61). It would be fair to observe that, as in the case of most of these examples, the square is the simplest possible field. The introduction of a dot onto the square or field (2.62), although it, too, is an uncomplicated visual element, sets up visual tension, stress, and absorbs the visual attention of the viewer away from the square in some part. It sets up a sequence of seeing which is called positive and negative seeing. The significance of positive and negative in this context means merely that there are separate yet unified elements in all visual events. Figures 2.62 and 2.63 demonstrate that positive and negative are in no way meant to describe darkness or lightness or mirror image as they do in the description of film and prints in photography. Whether it is a dark dot on a light field as in Figure 2.62 or a white dot on a dark ground as in 2.63, the dot is the positive form, the active stress, and the square the negative form. In other words, what dominates the eye in visual experience would be considered the positive elements while those more passively displayed would be considered the negative. Posi-

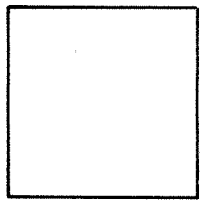


FIGURE 2.61

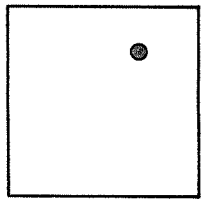


FIGURE 2.62

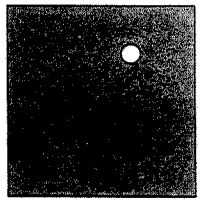


FIGURE 2.63

tive and negative seeing can sometimes fool the eye. You look at something and in the visual clues see what is not there. Two couples huddling in the distance appear to be a dog on its haunches. A face can appear to us in the shape of a stone. Involvement with relative and active clues of seeing an object can sometimes be so convincing that it is almost impossible to see what you are really looking at. This trick of the eye has always been of great interest to Gestaltists. In Figure 2.64, the positive-negative sequence is demonstrated by whether you see a vase or two profiles, which you see first, if, in fact, you see them both. The same observations could be made of how you see the juxtaposed 2 and 3 in Figure 2.65. In both examples there is little dominance of one element over the other, which reinforces the ambiguity of the visual statement. The eye seeks one simple solution to what it is seeing, and, although the process of assimilating the information may be long and complicated, simplicity is the end sought. The Chinese symbol of yin-yang, shown in Figure 2.66, is a perfect example of simultaneous contrast and complementary design. Like the "arch which never sleeps," the yin-yang is dynamic in both its simplicity and complexity, constantly moving; its negative-positive visual state is never resolved. It is as close a balance of individual elements brought together into a cohesive whole as one can find.

There are other examples of psychophysical facts of seeing that can be utilized in the understanding of visual language. What is larger ap-

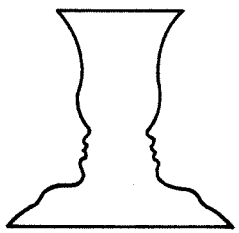


FIGURE 2.64

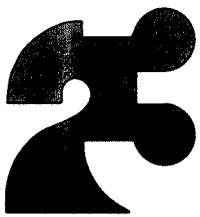


FIGURE 2.65

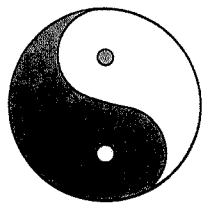


FIGURE 2.66

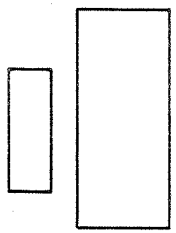


FIGURE 2.67

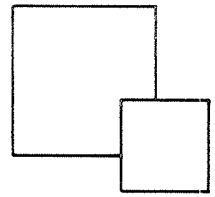


FIGURE 2.68

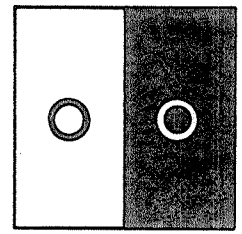


FIGURE 2.69

pears to be closer in the field, as shown in Figure 2.67. Yet, relative distance is even more distinctly legislated by overlap (2.68). Light elements on a dark ground appear to expand while dark elements on a light ground appear to contract (2.69).

There is a Berlitz approach to visual communication. You don't have to decline verbs or spell words or learn syntax. You learn by doing. In the visual mode you pick up a pencil or crayon and you draw; you doodle out a rough plan for a new living room; you paint a sign announcing a public event. You can negotiate the visual means to make a message or a plan or an interpretation, but how does the effort fit in terms of visual literacy? The major differences between the direct, intuitive approach and visual literacy is the level of dependability and accuracy between the message encoded and the message received. In verbal communication what is spoken is heard only once. Knowing how to write affords a greater chance for control of effect and narrows the area of interpretation. So, also, with a visual message, but not quite. The complexity of the visual mode does not allow the narrow range of interpretation of language. But in-depth knowledge of the perceptual processes that govern response to visual stimuli increases the control of meaning.

The examples in this chapter are only part of the possible visual information that can be utilized in developing a visual language anyone can articulate and understand. Knowing these facts of perception educates our compositional plan and affords syntactical guidelines to those seeking a beginning toward achieving visual literacy. The standards of literacy do not require that every verbal message-maker be a poet; therefore, it seems only fair that every designer or maker of visual material need not be a great and talented artist. This is a beginning toward releasing the ability of a generation immersed in a highly visual media environment; here are the ground rules that can serve as

a strategic syntax for the visually illiterate to control and legislate the content of their visual work.

EXERCISES

1. Photograph or find an example of perfect balance and an example of complete imbalance. Analyze them from the point of view of the basic compositional arrangement and its effects, particularly its meaning.

2. Do a collage using two different shapes as the means for identifying and associating two separate groups (such as old/young, rich/poor, happy/sad).

3. Find an example of a bad visual design in graphics, which, although it was intended to deliver a message, is difficult to read and understand. Analyze how much ambiguity has contributed to the failure of the visual statement. Roughly resketch the design (1) to level the effect and (2) to sharpen the effect.

3

THE BASIC ELEMENTS OF VISUAL COMMUNICATION

Whenever anything is designed and made, sketched and painted, drawn, scratched, constructed, sculpted, or gestured, the visual substance of the work is composed from a basic list of elements. Visual elements are not to be confused with the materials or a medium, the wood or clay or paint or film. The visual elements are the basic substance of what we see, and they are few in number: the dot, line, shape, direction, tone, color, texture, dimension, scale, movement. Few though they may be, they comprise the raw material of all visual information in selective choices and combinations. The structure of the visual work is the force that determines which visual elements are present and with what emphasis.

Much of what we know about the interaction and effect of human perception on visual meaning is drawn from the research and experimentation in Gestalt psychology, but Gestalt thinking has more to offer than just the relationship between psychophysiological phenomena and visual expression. Its theoretical base is the belief that an approach to understanding and analyzing all systems requires recognizing that the system (or object or event, et cetera) as a whole is made up of interacting parts, which can be isolated and viewed as completely independent and then reassembled into the whole. No one unit of the system can be changed without modifying the whole. Any visual event or work is an incomparable example of this thesis since it was originally devised to exist as a well-balanced and inextricably involved totality. You can analyze any visual work from many points of view; one of the most revealing is to break it down into its constituent elements to better understand the whole. This process can provide deep insights into the nature of any visual medium as well as that of the individual work and the previsualization and making of a visual statement as well as the interpretation and response to it.

Using the basic visual components as a means for knowledge and understanding of either complete categories of visual media or individual works is an excellent method for exploration of their potential and realized success in expression. Dimension, for instance, exists as a visual element in architecture and sculpture and in both these media is dominant in relation to other visual elements. The whole science and art of perspective was developed during the Renaissance to suggest the presence of dimension in two-dimensional visual work such as painting and drawing. Even with the trompe d'oeil aid of perspec-

tive, dimension in these visual forms can only be implied, not expressed. But nowhere is dimension more subtly and completely synthesized than in film, still and moving. The lens sees as the eye sees in complete detail, fully reinforced with all of the visual elements. All of which is another way of saying the visual elements are richly present in our natural environment. No such completeness of replication of our visual setting is present in the beginnings of visual ideas, the plan, the rough sketch. Previsualization is dominated by the simple, spare, yet highly expressive element of line.

It is vital to note here that the choice of emphasis of visual elements, the manipulation of those elements toward an intended effect, lies in the hands of artist and craftsman and designer; he is the visualizer. What he chooses to do with them is his art and craft, and the choices are infinite. The simplest visual elements can be used with great complexity of intention: the dot juxtaposed in varying sizes is the integral element of the halftone print and plate (cut), which is the mechanical means for mass reproduction of continuous tone visual material, particularly photographs; at the same time, the photograph, whose character it is to report the environment in exact visual detail, can become a simplifying and abstract medium in the hands of a master photographer like Aaron Siskind. Deeper understanding of the elemental construction of visual forms offers the visualizer greater freedom and options in composition; those options are essential to the visual communicator.

To analyze and understand the total structure of a visual language, it is helpful to focus on the individual visual elements, one at a time, so as to better understand their unique qualities.

THE DOT

The dot is the simplest, irreducibly minimum unit of visual communication. In nature, roundness is the most common formulation, the straight or square in the natural state being a rarity. When any liquid material is dropped on a surface, it assumes a rounded form, even if it does not simulate a perfect dot. When we make a mark, whether with color or heavy substance or with a stick, we think of that visual element as a dot that can serve as a reference point or a marker of space. Any point has strong visual power to attract the eye wherever it exists naturally or is placed by man in response to a purpose (3.1).

Two dots serve as handy tools for measuring space in the environment or in the development of any kind of visual plan (3.2). We learn

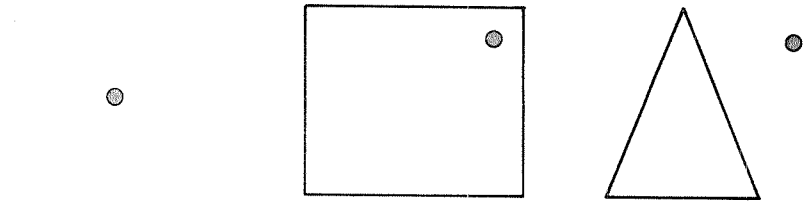


FIGURE 3.1

early to utilize the dot as the ideal notation system in conjunction with the ruler and other measurement devices such as the compass. The more complex the measurements necessary in a visual plan, the more dots are employed (3.3, 3.4).

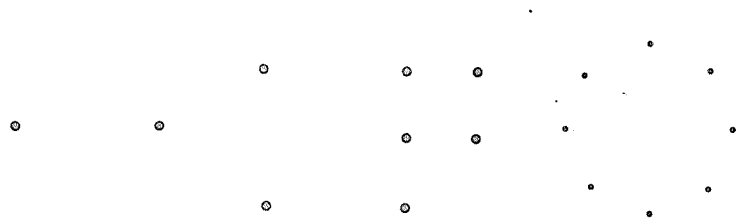


FIGURE 3.2

FIGURE 3.3

FIGURE 3.4

When seen, dots connect and therefore are capable of leading the eye (3.5). In great profusion and juxtaposed, dots create the illusion of tone or color, which, as already noted, is the visual fact on which the mechanical means for reproducing any continuous tone is based (3.6, 3.7). The perceptual phenomenon of visual fusion was explored by Seurat in his Pointillist paintings, which are remarkably varied in color and tone, although he used only four pots of paint—yellow, red, blue, and black—and applied the paint with tiny, pointed brushes. All the Impressionists explored the process of blending, contrasting, and organizing, which took place in the eyes of the viewer. Involving and exciting, the process was in some ways similar to some of the more re-

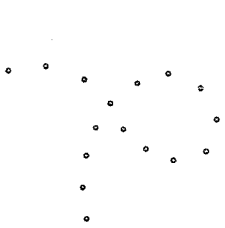


FIGURE 3.5

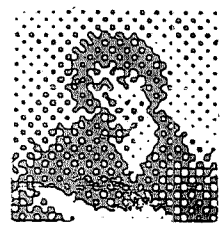


FIGURE 3.6

FIGURE 3.7

cent theories of McLuhan concerning visual involvement and participation in the act of seeing as a part of the meaning. But no one probed the possibilities as completely as Seurat, who, in his efforts, seems to have anticipated four-color halftone process by which almost all full-color continuous-tone photographs and drawings are now reproduced in mass printing.

The unique ability of a series of dots to lead the eye is intensified the closer the dots are to one another (3.8).

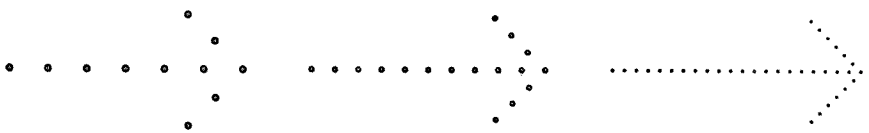


FIGURE 3.8

THE LINE

When the dots are so close to one another that they cannot be individually recognized, the sensation of direction is increased, and the chain of dots becomes another distinctive visual element, a line (3.9). A line could also be defined as a dot in motion, or the history of a dot's movement, since, when we make a continuous mark or a line, we make it by placing a marker point on a surface and moving it along, leaving the formed marks as a record (3.10).

FIGURE 3.9

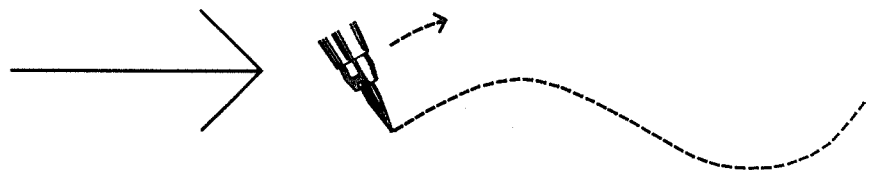


FIGURE 3.10

In the visual arts, line, because of its nature, has enormous energy. It is never static; it is the restless, probing, visual element of the sketch. Line, wherever it is employed, is the essential tool of previsualization, the means for presenting in palpable form that which does not exist yet, except in the imagination. In this way, it is tremendously useful to the visual process. Its fluid linear quality contributes to the freedom of experimentation. Yet for all its looseness and freedom, line is not vague: it is decisive; it has direction and purpose, it is going somewhere, it is doing something definitive. Thus, line can also be tight and technical, serving as the prime element in diagrammatic plans for mechanical construction and architecture and many other highly measured or scaled visual representations. Whether it is used loosely and experimentally (3.11) or tightly and measured (3.12), line is the indispensable means for making visible what cannot be seen, what does not exist except in the imagination.

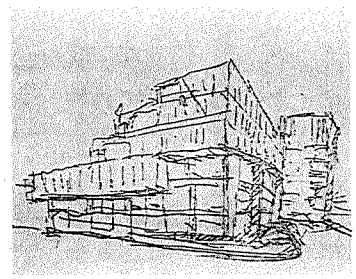


FIGURE 3.11

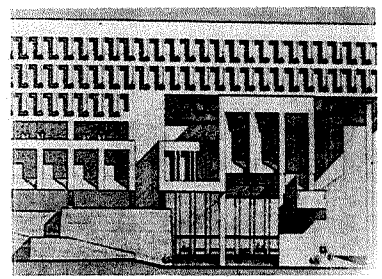


FIGURE 3.12

Line is also a tool for notation systems, writing, for example. Writing, map-making, electric symbols, and music are all examples of symbol systems in which line is the most important element. But in art, line is the essential element of the drawing, which is a notation system that does not stand for something else, symbolically, but does capsulize visual information, boiling it down to a state of reduction where all superfluous visual information has been stripped away and only the essential remains. This spareness has a highly dramatic effect in drawings or drypoints, woodcuts, etchings, and lithographs.

Line can take many different forms to express many different moods. It can be very loose and undisciplined, as in the sketches illustrated, to take advantage of its spontaneity of expression. It can be very deli-

cate and undulating or bold and coarse, even in the hands of the same artist. It can be hesitant, indecisive, questioning, when it is merely a visual probe toward a design. It can also be as personal as handwriting in the form of nervous doodles, which are a hallmark of the unconscious activity under the pressure of thinking or as amusement in boredom. Even in the bloodless, mechanical format of maps, plans for a house, cogs in a machine, line expresses the intention of the maker and artist, and, further, his most personal feelings and emotions, and most important, his vision.

Line rarely exists in nature. But line does appear in the environment: the crack in a sidewalk, telephone wires against the sky, bare branches in winter, a cable bridge. The visual element of line is used mostly to express the juxtaposition of two tones. Line is utilized most often to describe that juxtaposition, and in this, it is an artificial device.

SHAPE

Line describes shape. In the parlance of the visual arts, line articulates the complexity of shape. There are three basic shapes, the square, circle, and equilateral triangle. Each of the basic shapes (3.13) has its own unique character and characteristics and to each is attached a great deal of meaning, some through association, some through arbitrary attached meaning, and some through our own psychological and physiological perceptions. The square has associated to it dullness, honesty, straightness, and workmanlike meaning; the triangle, action, conflict, tension; the circle, endlessness, warmth, protection.

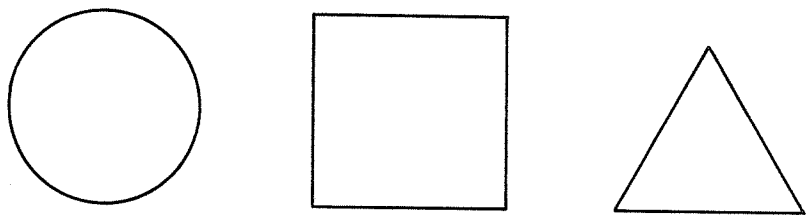


FIGURE 3.13

All the basic shapes are fundamental, simple planal figures, which can be easily described and constructed either visually or verbally. A square is a four-sided figure with exactly equal right angles at each corner and sides of exactly the same length (3.14). A circle is a continuously curved figure whose outline is at all points equidistant from

its center point (3.15). An equilateral triangle is a three-sided figure whose angles and sides are all equal (3.16). From these basic shapes in endless combinations and variations, we derive all physical forms in nature and in the imagination of man (3.17).

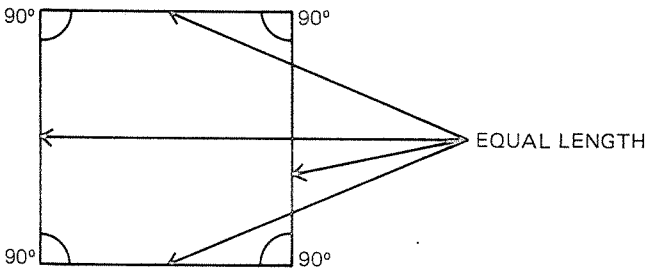


FIGURE 3.14

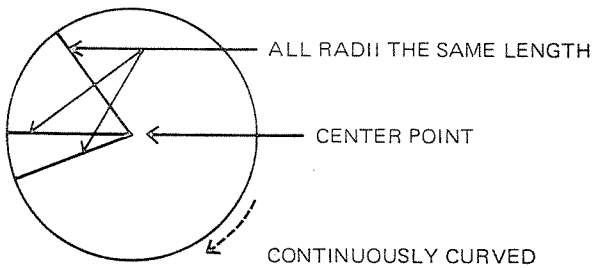


FIGURE 3.15

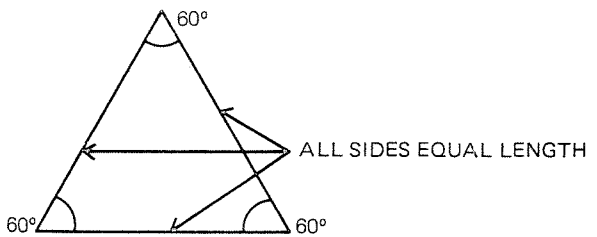


FIGURE 3.16

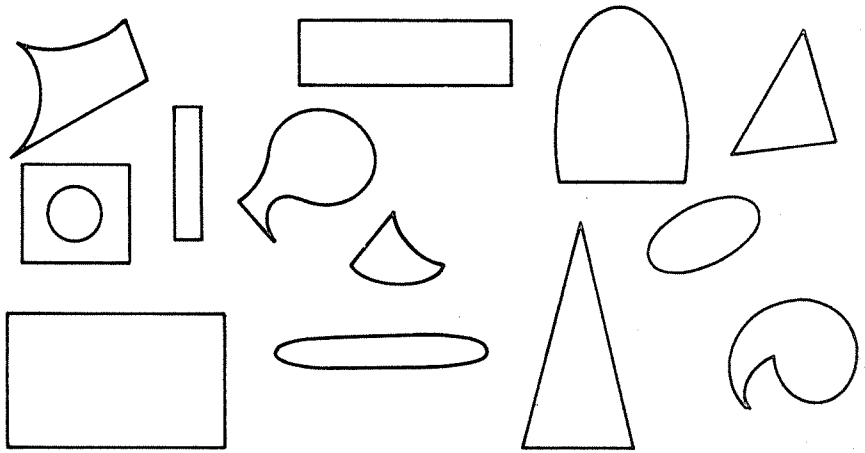


FIGURE 3.17

DIRECTION

Every basic shape expresses three basic and meaningful visual directions: the square, the horizontal and vertical (3.18): the triangle, diagonal (3.19); the circle, the curve (3.20). Each of the visual directions has strong associative meaning and is a valuable tool in making visual messages. The horizontal-vertical (3.21) reference has been commented on already, but to review, it is man's primary reference in terms of his well-being and maneuverability. Its most basic meaning has to do not only with the human organism's relationship to the environment, but also to stability in all visual matters. Not only does man have more ease in balance; so do all things constructed and designed. Diagonal direction (3.22) has particular significance in direct reference to the idea of stability. It is the opposite formulation, the most unstable directional force and consequently the most provoking visual formulation. Its meaning is threatening and almost literally upsetting. Curved directional forces (3.23) have meanings associated with

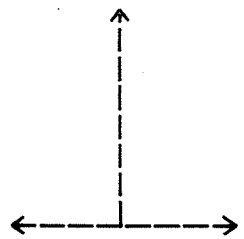
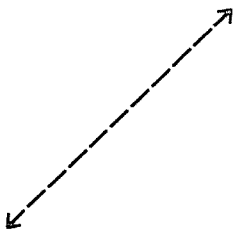


FIGURE 3.18



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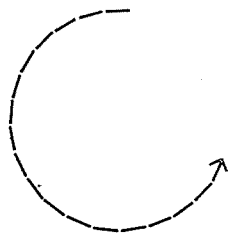

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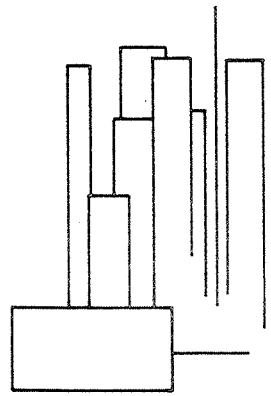

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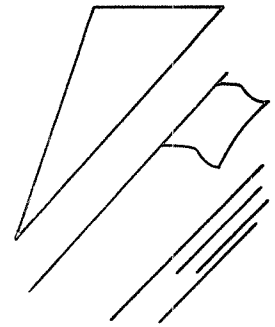


FIGURE 3.22

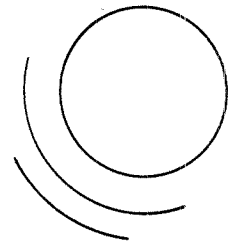


FIGURE 3.23

encompassment, repetition, and warmth. All directional forces have great importance to compositional intention toward final effect and meaning.

TONE

The edges that line is used to represent in a rough sketch or a detailed, mechanical plan in the environment, for the most part, appear as the juxtaposition of tone, the intensity of darkness or lightness of anything seen. We see because of the relative presence or absence of light, but light is not uniformly shed on the environment either by the sun or moon or by artificial light. If it were, we would be as much in the dark as we are in complete absence of light. Light goes around things, is reflected by shiny surfaces, falls on objects which themselves have relative lightness and darkness. Variations in light or tone are the means by which we optically distinguish the complicated visual information in the environment. In other words, we see what is dark because it abuts or overlaps what is light, and vice-versa (3.24, 3.25).

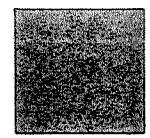


FIGURE 3.24

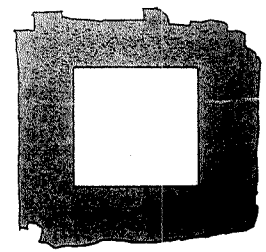


FIGURE 3.25

From dark to light in nature, there are multiple subtle steps which, in man's means for reproduction of nature in art and film, are severely limited. When we observe tonality in nature, we are seeing true light. When we talk of tonality in graphics, painting, photography, film, we have reference to some kind of pigment, paint, or nitrate of silver, which is used to simulate natural tone. Between light and dark in nature, there are hundreds of distinct tonal steps, but in graphic arts and photography these steps are severely limited (3.26). From white to black in pigment, the most commonly used tonal scale has about thirteen steps. At the Bauhaus and at many other art schools, students have always been challenged to see how many distinct and recognizable tonal steps they could represent from black to white. With great sensitivity and delicacy, they can be pushed to 30+ tones of gray, but this is not practical for common use since it is too subtle visually. How, then, can the visualizer cope with this tonal limitation? Manipulation of tone through juxtaposition greatly lessens the tonal limitations inherent in the problem of emulating the tonal largess of nature. One tone of gray can change dramatically when it is placed on a tonal scale (3.27). The possibility for highly expanded tonal representation can be achieved through utilization of these means.

FIGURE 3.26

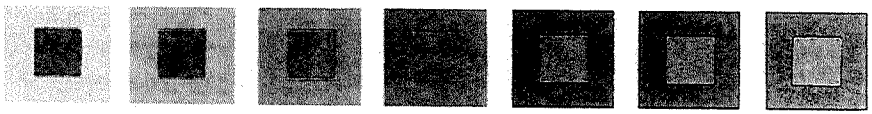
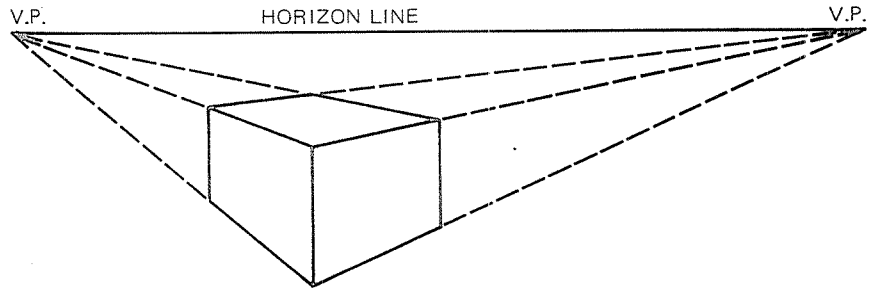


FIGURE 3.27

The world we live in is dimensional, and tone is one of the visualizer's best tools for indicating and expressing that dimension. Perspective is the method for plotting many of the special visual effects in our natural surroundings, to represent the three-dimensional way we see in two-dimensional graphic form. It uses many devices to plot distance, bulk, point of view, the vanishing point, the horizon line, eye level, et cetera (3.28). But even with the aid of perspective, line alone will not create the illusion of reality effectively without the aid of tone (3.29). The addition of tonal background detail reinforces the appearance of reality through the sensation of reflected light and cast sha-



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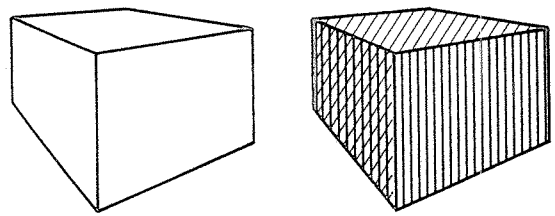

FIGURE 3.29

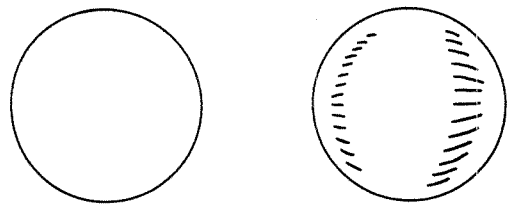

FIGURE 3.30

dows. This effect is even more dramatic in simple, basic shapes such as the circle, which could not appear as dimensional without tonal information (3.30).

Lightness and darkness are so intensely important to the perception of our environment that we accept a monochromatic representation of reality in the visual arts and we do it without hesitation. In fact, the varying tones of gray in photographs, film, television, etching, mezzotints, tonal sketches, are monochromatic surrogates and represent a world that does not exist, a visual world we accept only because of the dominance of tonal values in our perceptions (Plate 3.1).*

*Plates 3.1-3.6 are on pages 53 and 54.

The ease with which we accept the monochromatic visual representation is the exact measure of just how vitally important tone is to us, and even more interesting, just how unconsciously sensitive we are to the dull, monochromatic values of our environment. How many people even realize they have this sensitivity? The reason for this startling visual fact is that tonal sensitivity is most basic to our survival. It is second only to the vertical-horizontal reference as visual clues to our relationship to our surroundings. Through it we see sudden movement, depth, distance, and other environmental references. Tonal value is another way of describing light. Through it, and only through it, we see.

COLOR

The monochromatic representations we so readily accept in the visual media are tonal stand-ins for color, for what is, in truth, a chromatic world, our richly colored universe. While tone is related to questions of survival and is therefore essential to the human organism, color has stronger affinity to the emotions. It is possible to think of color as the aesthetic frosting on the cake, rich, and in many ways useful, but not absolutely necessary for creating visual messages. That would be a very shallow view of the matter. Color is, in fact, loaded with information and one of the most pervasive visual experiences we all have in common. It is, therefore, an invaluable source for visual communicators. In the environment we share the associative meanings of the color of trees, grass, sky, earth and on endlessly to where we see color as a common stimulus. And there, we associate meaning. We know color also under a broad category of symbolic meaning. Red means something, for instance, even where it does not have any environmental connection. The red that is associated with anger has been carried over into the "red flag (or cape) waved in front of a bull." The color red has little significance for the bull, who has no sensitivity to the color, but only to the fact that the cape or flag moves. Red means danger, and love, and warmth, and life, and maybe a hundred other things. Each color has as many meanings, associative and symbolic. Thus, color offers an enormous vocabulary of great usefulness in visual literacy. The variety of meaning obtainable is expressed in this example from Carl Sandburg's poem, "The People, Yes":

> The blood of all men of all nations being red
> the Communist International named red its banner color
> Pope Innocent IV gave cardinals their first red hats
> saying a cardinal's blood belonged to the holy mother church.
> The bloodcolor red is a symbol.

There are many color theories. Color, both the color of light and the color of pigment, behaves in unique ways, but our knowledge of color in visual communication goes very little further than collecting observations of our reactions to it. There is no single, ultimate system of how hues relate to each other.

Color has three dimensions which can be defined and measured. Hue is the color itself, or chroma, of which there are more than a hundred. Each hue has individual characteristics; groups or categories of colors share common effects. There are three primary or elementary hues: yellow, red, blue. Each represents qualities that are fundamental. Yellow is the color considered closest to light and warmth; red is the most emotional and active; blue is passive and soft. Yellow and red tend to expand, blue to contract. In association with each other, through mixtures, new meanings take over. Red, which is a provoking hue, is subdued when it is mixed with blue and activated when it is mixed with yellow. The same changes in effect are reached with yellow, which mellows when it is mixed with blue.

Color structure in its simplest formulation is taught through the color wheel. The primary colors, yellow, red, blue, and the secondary colors, orange, green, violet, are invariably included in such a chart. But it usually also includes expanded mixtures of at least twelve hues. From this simple chart of a color wheel (Plate 3.2), multiple variations of color hues can be developed.

The second dimension of color is saturation, which is the relative purity of a color from the hue to gray. Saturated color is simple, almost primitive, and always given preference by folk artists and children. It is both uncomplicated and overstated, composed of the primary and secondary hues. The less saturated colors reach toward neutrality of color, even noncolor, and are subtle and restful. The more intense or saturated the coloration of a visual object or event, the more highly charged it is with expression and emotion. Informational results in the choice of saturated or neutralized color base choice on intention. But saturation or its absence as a meaningful visual effect is the difference between the dentist's office and the Electric Circus.

The third, and last dimension of color is achromatic. It is the relative brightness, from light to dark, of value or tonal gradations. It must be noted, underlined, and emphasized that the presence or absence of color does not affect tone; it is constant. A color television set is an excellent device for demonstrating this visual fact. When you turn the

color knob slowly to black and white, to the monochromatic picture, you slowly drain off the color saturation. The process in no way affects the tonal values of the picture. Turning the saturation up and down demonstrates the constancy of tone and proves that color and tone coexist in perception without modifying each other.

An afterimage is the physiological visual phenomenon that takes place after the human eye has been fixed or focused on any visual information. When the object or information being stared at is replaced with a blank white field, a negative image is seen on the blank space. The effect is related to the spots one sees after flash bulbs or bright lights are directed into the eye. Although this is an extreme example, any visual material or tone will cause an afterimage. The negative afterimage of a color produces the complementary color or its exact opposite. It is on this visual phenomenon that Munsell based the entire structure of his color theory. The opposite color on his color wheel is what the afterimage would be. But there are further implications of what happens when you stare at a color long enough to produce an afterimage. You will first see the complementary color. For instance, if you stare at yellow, purple will appear on the blank area in your afterimage (Plate 3.3). Yellow is the closest hue to white or light; purple the closest to black or dark. The afterimage in Plate 3.3 will not only be tonally darker than the value of yellow, but will be the median tone of gray, if they were mixed or balanced (Plate 3.4). A red of a middle tonal value would produce a complementary green of the same middle tone. The afterimage, then, appears to react in the same tonal fashion as pigment. When you mix two complementary colors together, red and green, yellow and purple, they not only cancel out each other's chroma or hue to gray, they also produce from their mixture a middle tone of gray.

There is another way of demonstrating this process. Two complementary colors displayed on the same middle tone of gray affect the neutral tone. The gray panel with a warm, red-orange hue appears bluish or cool (Plate 3.5), while the reverse occurs with the gray on which a blue-green square is displayed (Plate 3.6). Its gray background appears reddish-toned and warm. This experiment shows that the eye is seeing the opposite or contrasting hue, not just in the afterimage, but at the same time it is viewing a color. The process is called "simultaneous contrast," and its psychophysiological significance extends beyond just its importance to color theory. It is another piece of evidence that indicates the intense need to reach for complete neutrality and hence

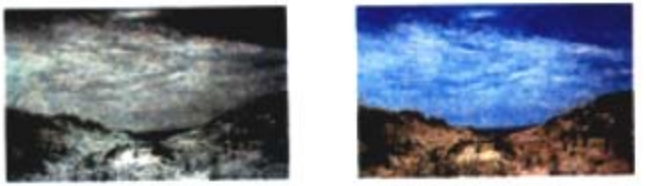

Plate 3.1

Plate 3.2

Plate 3.3

Plate 3.4

Plate 3.5

Plate 3.6

complete repose that man demonstrates over and over again in the visual context.

Since perception of color is the single most strongly emotional part of the visual process, it has great force and can be utilized to express and reinforce visual information to great advantage. Color not only has universally shared meaning through experience, but it also has separate worth informationally through symbolically attached meaning. In addition to the highly negotiable color meaning, each of us has our own personal and subjective color preferences. We choose our own color statements and settings. But there is little analytic thought or concern about what methods or motivation we use to arrive at our own choices in terms of the meaning and effect of color. When a jockey dons an owner's silks, a soldier wears his dress uniform, a nation displays its flag, the attempt to find symbolic meaning in their colors may be obvious. Not so in our personal color choices, which are less symbolic and therefore less clearly defined. Nevertheless, whether we think about it or not, realize it or not, we tell the world a great deal when we make a color choice.

TEXTURE

Texture is the visual element that frequently serves as a stand-in for the qualities of another sense, touching. But, in fact, we can appreciate and recognize texture either by touch or sight individually, or by a combination of both. It is possible for a texture to have no tactile quality, only optical, like the lines of type on a printed page, or polka dots on material, or crosshatched lines in a doodle. Where there is actual texture, the tactile and optical qualities coexist, not like tone and color which are unified in their comparable and even value, but separately and uniquely, affording individual sensation to the eye and the hand, even though we project onto both strong associative meaning. What sandpaper looks like and what sandpaper feels like have the same intellectual meaning, but not the same value. They are singular experiences which may or may not suggest each other under certain circumstances. The judgment of the eye is usually checked on by the hand by actual touching. Is it really smooth or does it just look that way? Is that an indentation or a raised mark? No wonder there are so many "do not touch" signs!

Texture has reference to the composition of a substance through minute variations on the surface of the material. Texture should serve as a sensitive and enriching experience. Unfortunately, those "do not

touch" signs in the expensive shops overlap into social behavior, and we are strongly conditioned not to touch things or people with anything approximating sensual involvement. The result is a minimal tactile experience and even a fear of tactile contact; the sense of blind touch is carefully guarded in sighted people. We act super-cautiously when blindfolded or in the dark, reaching out tentatively, and, because of our limited experience of touch, we often do not recognize a texture. At the 1967 Montreal Expo, the 5+ Comingo Pavilion was designed for visitors to explore the quality of their five senses. It was a popular and enjoyable exhibit. People sniffed away at a series of funnels offering a variety of odors, even though they suspected, and justifiably, that some would be unpleasant. They listened, they looked, tasted, but they stood hesitant and inhibited in front of the yawning holes designed to be reached into blindly. What did they fear? It appears that the natural, free, "hands on" investigative approach of the baby and young child has been conditioned out of the adult by—Who knows what?—the Anglo-Saxon ethic, Puritan repression, instinctive taboos. Whatever the reason, the result starves one of our richest senses. But in this increasingly simulated and plastic world, the problem arises infrequently. Most of our textural experience is optical, not tactile. Not only is texture faked rather convincingly in plastics and printed material and faked fur, but, also, much of what we see that is painted, photographed, and filmed convincingly presents texture that is not there. If we touch a photograph of silky velvet, we do not have the convincing tactile experience the visual clues promise. Meaning is based on what we see. This fakery is an important factor in survival in nature; animals, birds, reptiles, insects, fish, take on the coloration and texture of their surroundings as a protection against predators. Man copies this camouflage method in war in response to the same needs for survival that inspires it in nature.

SCALE

All visual elements have the capacity to modify and define each other. The process, itself, is the element of scale. Color is bright or subdued depending on juxtaposition, just as relative tonal values take on enormous visual modifications depending on what tone is next to or behind them. In other words, there can be no large without small (3.31). But even when large is established through small, the entire scale can be changed with the addition of another visual modification (3.32). Scale can be established not only through the relative size of visual clues, but also through relationships to the field or the environment. The visual results in terms of scale are fluid and not absolute, since

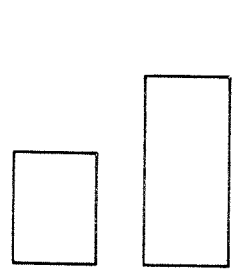

FIGURE 3.31

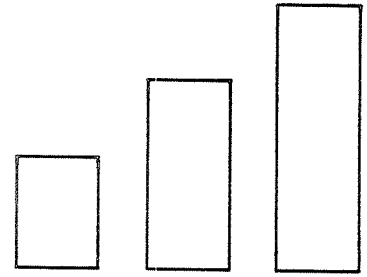

FIGURE 3.32

they are subject to so many variables of modification. In Figure 3.33, the square can be considered large because of its size relationship to the field, while the square in Figure 3.34 can be called small because of its relative size in the field. All that is being observed is true in the context of scale, false in terms of measurement, since the square in Figure 3.33 is smaller than the square in Figure 3.34.

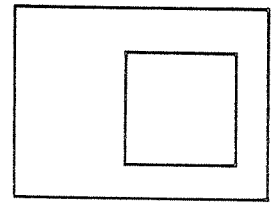

FIGURE 3.33

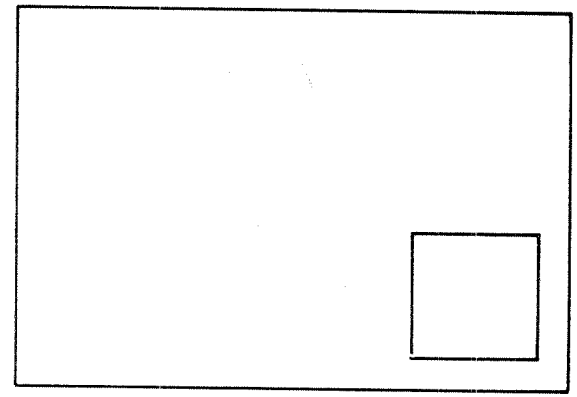

FIGURE 3.34

Scale is often used in plans and maps to represent real measurement in proportion. The scale is usually designated, for example, 1 inch = 100 miles, or 1 inch = 10 miles. The globe of the world represents enormous distance in small measurement. All of which requires some extension of understanding to visualize in terms of distance real measurement as it is simulated in a map or plan. Measurement is an integral part of scale, but it is not crucial. What is more important is juxtaposition, what is alongside of the visual subject, what setting it is in; these factors are more important.

The most vital factor in the establishment of scale is the measurement of man himself. In matters of design that relate to comfort and fit, all manufacture is geared to the average size of human proportion. There is an ideal proportion, a mean average, and all the endless variations that make us all unique. Mass production is, of course, ruled by the mean average with all large objects of manufacture, such as cars and bathtubs, adapted to that measure. On the other hand, clothes have multiple sizes in mass production, recognizing the enormous variations in individual human size.

There are proportional formulas on which scale can be based; the most famous is the Greek "Golden Mean." This is a mathematical formula of great visual elegance. It is arrived at by bisecting a square and using the diagonal of one half of the square as a radius to extend the dimensions of the square to become a "Golden Rectangle." In the proportion arrived at, a:b = c:a. The method of constructing the proportion is demonstrated in Figure 3.35 and Figure 3.36. The "Golden Mean" was used by the Greeks to design most of what they built from the classic Greek amphora to the floor plans of temples and their elevations (3.37, 3.38).

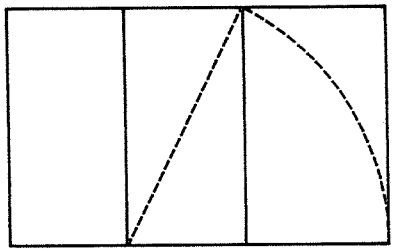

FIGURE 3.35

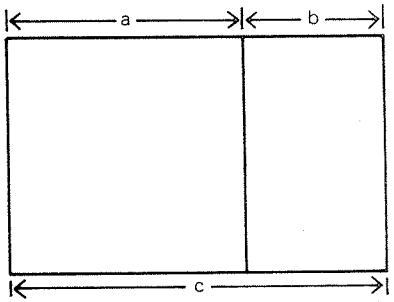

FIGURE 3.36

There are many other scale systems; the most outstanding contemporary version is that developed by the late French architect, Le Corbusier. His modular unit, on which his entire system is based, is the size of man, and on this proportion, he establishes an average ceiling height, door size, window opening, et cetera. Everything becomes unitized and repeatable. Oddly enough, the unitized system of mass production has these effects built into it, and creative design solutions are often limited by what is available to design with, a limiting factor.

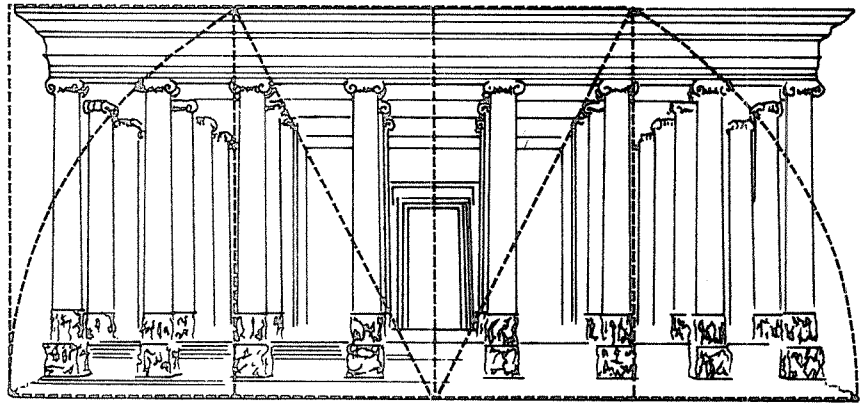

FIGURE 3.37

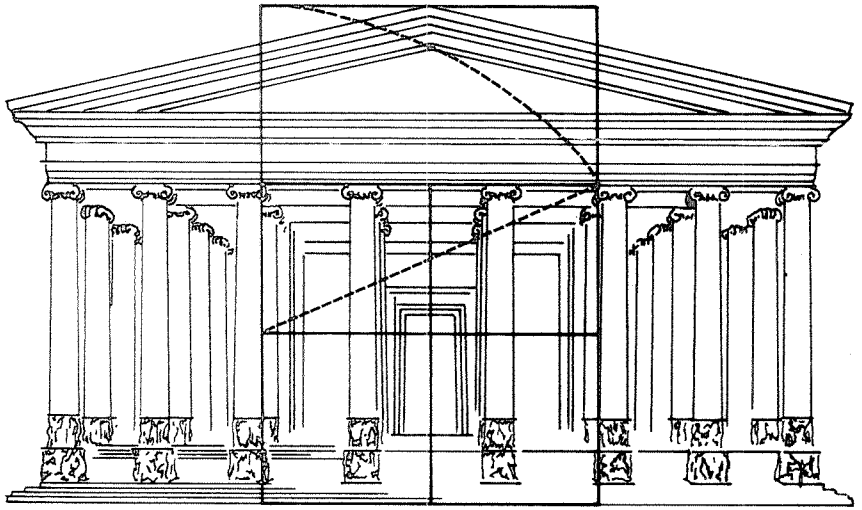

FIGURE 3.38

Learning to relate size to purpose and meaning is essential in the structuring of visual messages. Control of scale can make a large room seem small and cozy and a small room appear open and airy. This effect can extend to all manipulation of space, illusory though it may be.

DIMENSION

Representation of dimension in two-dimensional visual formats is also dependent on illusion. Dimension exists in the real world. We cannot

only feel it, but, with the aid of our two-eyed, stereopticon sight, we can see it. But in all two-dimensional representations of reality in drawing, painting, photography, film, television, there is no actualized dimension, it is only implied. The illusion is reinforced in many ways, but the prime device for simulating dimension is the technical convention of perspective. The effects produced by perspective can be reinforced by tonal manipulation through "chiaroscuro," the dramatic emphasis of light and shade.

Perspective has exact formulas with many and complicated rules. It uses line to plot its effects, but its final intention is to produce the feeling of reality. There are some fairly easy rules and methods which can be demonstrated. Showing how two planes of a cube appear to the eye depends first, as shown in Figure 3.39, on establishing the eye level. There is only one vanishing point to which one plane disappears. The top cube is seen in a worm's eye view, while the bottom cube is seen in a bird's-eye view.

In Figure 3.40, two vanishing points must be used to express the perspective of a cube with three surfaces in sight. These are two extremely simple demonstrations of how perspective works. To present it adequately would take an enormous amount of explanation. The artist certainly does not use perspective slavishly. He uses it; he knows it. Ideally, the technical facts of perspective are in his mind because of careful study, and can be utilized in quite a free way.

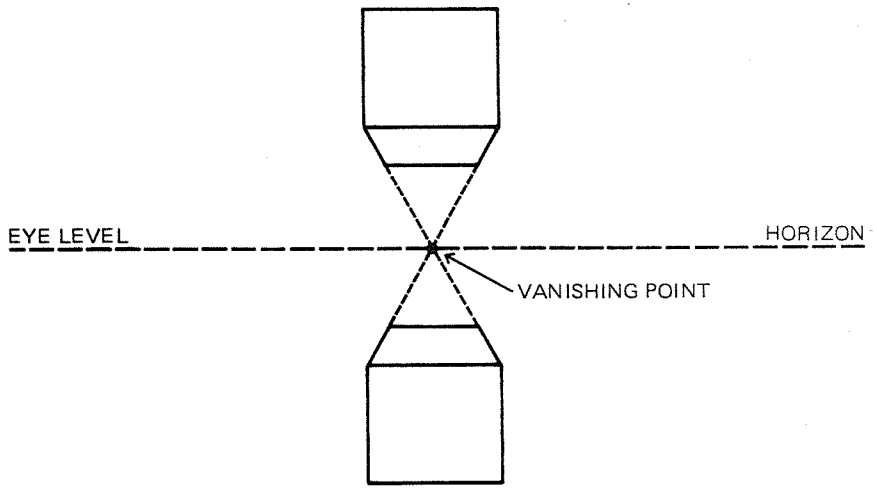

FIGURE 3.39

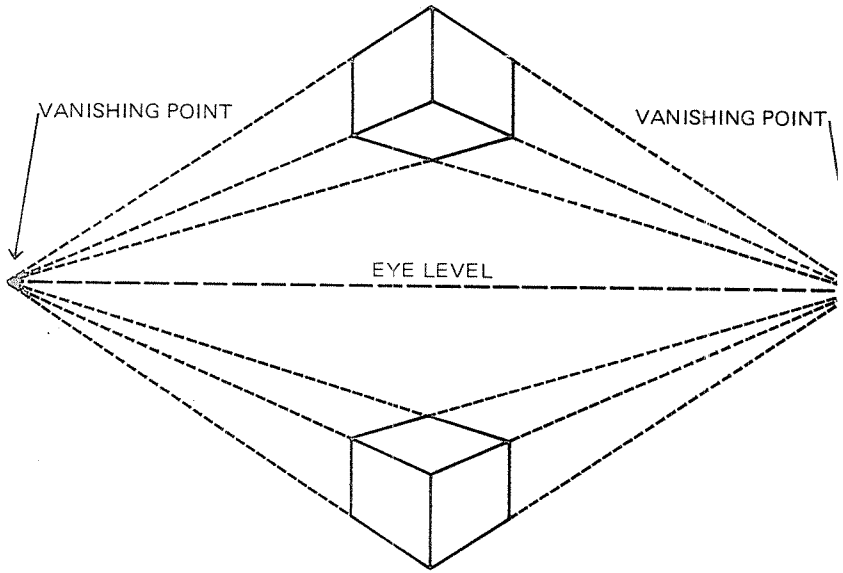

FIGURE 3.40

In photography, perspective dominates. The lens has some of the same properties as the eye, and simulation of dimension is one of it: prime abilities. But there are some crucial modifications. The eye ha wide peripheral vision (3.41), which the camera cannot duplicate.

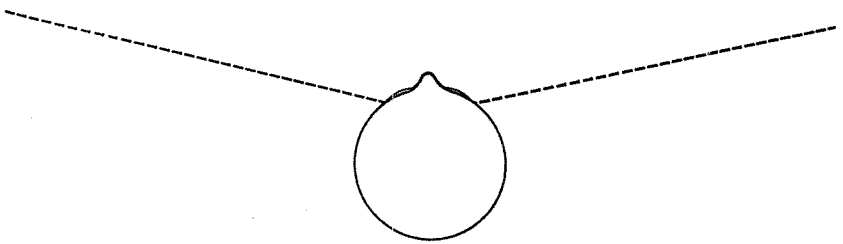

FIGURE 3.41

The scope of field of the camera lens is changeable, that is, what it can see and record is determined by the focal length of its lens. But it cannot match the eye without the enormous distortion of a fish-eye lens. The normal lens (3.43) has nowhere near the range of fielc of the eye, but what it does see is close to the perspective of the eye The telephoto lens (3.42) can record visual information in ways the eye cannot, collapsing space like an accordion. The wide angle lens

broadens the scope of the field, but covers nowhere near the area of the eyes (3.44). Even though we may observe of the camera that it has its own perspective different from the human eye, one thing is certain: the camera can replicate the environment with startling accuracy and in infinite detail.

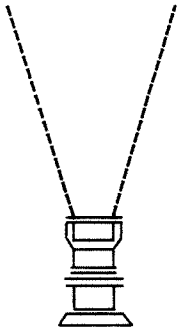

FIGURE 3.42

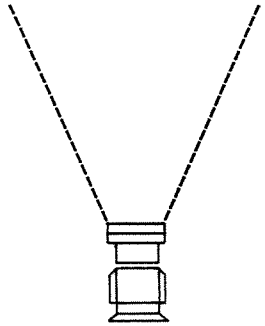

FIGURE 3.43

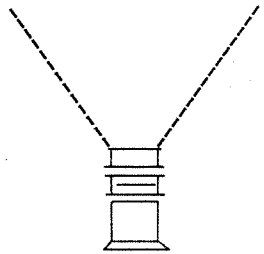

FIGURE 3.44

Real dimension is the dominating element in industrial design, crafts, sculpture, architecture, and any visual material in which the total and actual volume must be dealt with. This is enormously complex and requires an ability to previsualize and plan in full dimension. The difference in problem between the representation of volume in two dimensions and the construction of the real thing in the full three dimensions can be best explained by Figure 3.45, where a piece of sculpture is seen as a silhouetted shape augmented with some detail. In 3.46, we see five views, top, front, back, right, left, of a piece of sculpture. The five views represent only a few of the thousands of silhouettes that the piece of sculpture contains. Paper-thin slices of the sculpture would produce endless silhouetted drawings.

FIGURE 3.45

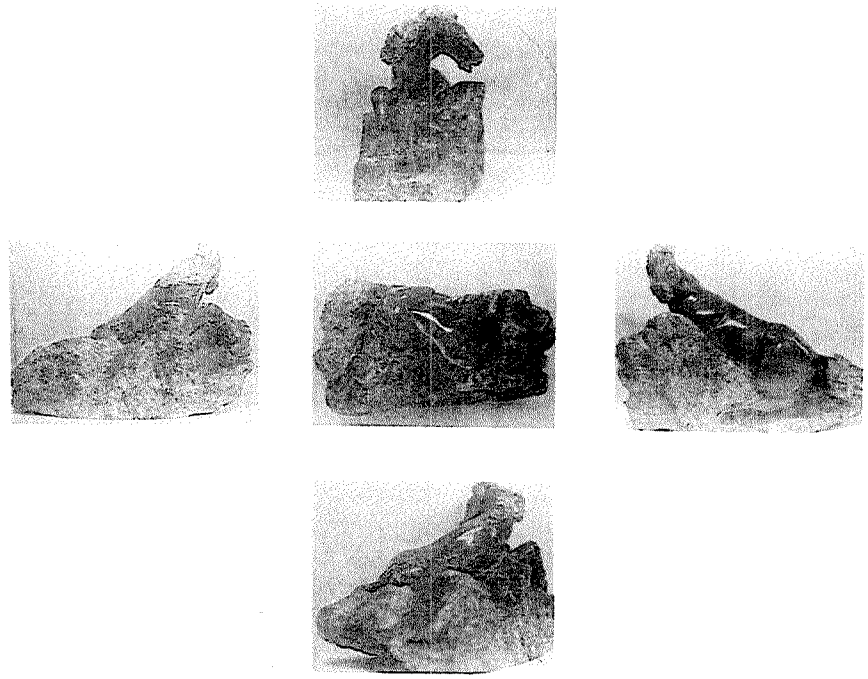

FIGURE 3.46

It is this extreme complexity of dimensional visualization that demands of the maker a tremendous grasp of the whole. Toward successful understanding of a problem, the design and planning of three-dimensional visual material requires many steps to think through and project the possible solutions. First, there is the sketch, usually in perspective. There may be endless sketches, loose and probing and uncommitted. Second, there are the working drawings which are rigid and mechanical. The technical and engineering requirements of build-

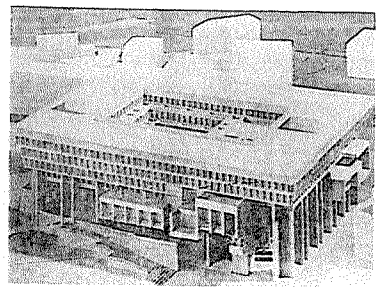

FIGURE 3.47

ing or manufacture require these in careful detail. Last, though it is expensive, building a model (3.47) is probably the only way people with little sensitivity to visualization can be shown how something will appear in its completed form.

Despite the fact that our total human experience is set in a dimensional world, we tend to think of visualization as mark-making, and ignore the special problems of visual problem solving in terms of dimension.

MOVEMENT

The visual element of movement, like dimension, is more often implied in the visual mode than actually expressed. Yet movement is probably one of the most dominant visual forces in human experience. In actual fact, it exists only in film, television, the charming mobiles of Alexander Calder, and where something visualized and made has a movement component, like machinery or windows. But techniques can trick the eye; the illusion of texture or dimension appears real through the use of intense expression of detail, as in the case of texture, and the use of perspective and intensified light and shade as in the case of texture, and the use of perspective and intensified light and shade as in the case of dimension. Suggestion of motion in static visual statements is at once harder to achieve without distorting reality at the same time, implicit in everything we see. It derives from our complete experience of movement in life. In part, this implied action is projected into static visual information both psychologically and kinesthetically. After all, like the tonal world of achromatic film we accept so readily, the static forms of the visual arts are not natural to our experience. This stilled, frozen world is the best we could create, until the advent of the motion picture and its miracle of representing movement. But note, even in this form, true movement does not exist as we know it; it lies not in the medium, but in the eye of the beholder through the physiological phenomenon of "persistence of vision." Movie film is really a string of still pictures containing slight changes, which, when viewed by man in the proper time intervals, are blended together by a holdover factor in seeing so that the movement appears real.

Some of the properties of "persistence of vision" may be the incorrect reason for the use of the word, "movement," to describe compositional tensions and rhythms in visual data when what is being seen is fixed and unmoving. A painting, photograph, or fabric design may

be static, but the amount of repose it projects compositionally may imply movement in response to the artist's design emphasis and intention. There is little rest in the process of seeing.

The eye is constantly scanning the environment in pursuit of the many methods it has for absorbing visual information. The formalized convention of reading, for instance, follows an organized sequence (3.48). Scanning, as a method of seeing, appears to be unstructured, yet, random though it may appear, research and measurement show that human scanning patterns are as individual and unique as fingerprints. It can be measured through the projection of a light into the eye and recording on film the reflection in the pupil as the eye looks at something (3.49). The eye also moves in response to the unconscious process of measurement and balance through the "felt axis" and left-right, top-bottom preferences (3.50). Since two or even all three of these visual methods may be going on at once, it is clear there is action not only in what is seen, but also in the process of seeing.

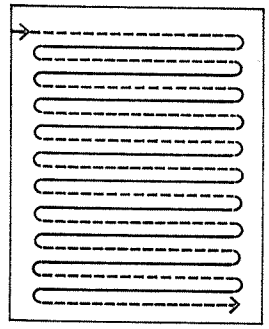

FIGURE 3.48

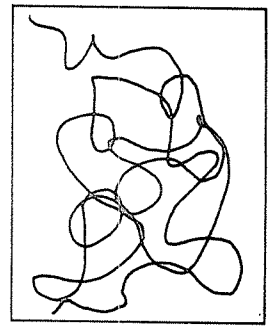

FIGURE 3.49

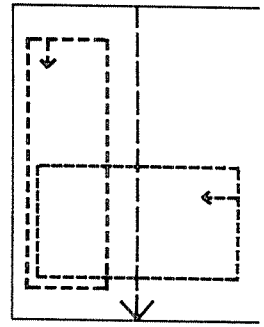

FIGURE 3.50

The miracle of motion as a visual component is dynamic. Man has used picture-making, form-making for many purposes, one of the most important of which is to objectify himself. No visual means has approached as complete and effective a mirror of man and his world as the motion picture.

All these elements, the dot, line, shape, direction, tone, color, texture, scale, dimension, movement, are the irreducible components of the visual media. They are the basic ingredients we draw on for the

development of visual thinking and communication. They have the dramatic potential for carrying information with simple directness and ease, messages that are effortlessly understandable to anyone who who can see. These potentialities for conveying universal meaning universally have been recognized, but not pursued with the determination the situation demands. The instant information of television will make the world into a global village, says McLuhan. Yet language continues to dominate communication media. Language separates, nationalizes; the visual anneals. Language is complex and difficult; the visual is as fast as the speed of light and can instantaneously express many ideas. These basic elements are the essential visual means. Proper understanding of their character and workings is the basis for a language that will recognize no boundaries or barriers.

EXERCISES

1. In a 4-inch square, do a collage of any or all of the following individual visual elements: dot, line, texture. Each collage should be composed of many examples of the element as found in print or drawn and arranged so that the collage demonstrates some of the essential characteristics of the element.

2. In either a 4-inch square, a circle with a 4-inch diameter, or a triangle with a 4-inch base, compose a collage of objects or actions most often associated with that basic shape. The examples can be chosen from a magazine or other print materials or drawn. The composition should emphasize the quality of the particular shape.

3. Choose a sheet of colored paper, preferably a true shade produced by Color-Aid Paper, and on it draw or construct a collage that expresses one or more meanings that color has for you. Try to seek out some universal meaning for the color.

4. Photograph or design a collage that deliberately finds a familiar small object dwarfing an object we think of as large. The quality of surprise will demonstrate the strong predetermined sense of scale we all have.

5. Choose a photograph or painting of any subject and list the basic elements you can identify.

4

THE ANATOMY OF A VISUAL MESSAGE

We express and receive visual messages on three levels: representatic ally—what we see and recognize from environment and experience; abstractly—the kinesthetic quality of a visual event reduced to the l sic elemental visual components, emphasizing the more direct, emo tional, even primitive message-making means; symbolically—the vas world of coded symbol systems which man has created arbitrarily, and to which he has attached meaning. All these levels of informati retrieval are interconnected and overlapping, but can be sufficiently distinguished from each other so that they can be analyzed both as their value as potential tactics for message-making and their quality in the process of seeing.

Vision defines the act of seeing in all its ramifications. We see in sha detail and learn and recognize all the elemental visual material in ou lives in order to negotiate most competently in the world. This is o shared world of sky and sea, trees, grass, sand, earth, day, night; thi is the world of nature. We see the world we make, a world of cities, airplanes, houses, machinery; this is the world of manufacture and the complexity of modern technology. We learn instinctively both t understand and maneuver psychophysiologically in the environmen and intellectually to live with and operate those mechanical objects which are necessary to our survival. Both instinctively and intellectu ally, much of the learning process is visual. Sight is the only necessi for visual understanding. One does not need to be literate to speak understand language; one need not be visually literate to make or u derstand visual messages. These abilities are intrinsic in man and wil emerge, to some extent, with or without teaching or models. As the develop in history, so they develop in the child. The visual input is profound importance to understanding and survival. Yet the whole area of vision has been compartmentalized and de-emphasized as a primary means for communication. One explanation of this rather negative approach is that visual talent and competency were not co sidered available to all people, as verbal literacy was thought to be. this were ever true, it certainly is no longer. Part of the present and most of the future will be made by a generation conditioned by ph tography, film, and television, and to whom camera and visual com puter will be an intellectual adjunct. One means of communication does not negate the other. If language can be compared with the visual mode, it must be understood that they are not in competitio but are merely to be weighed against each other in terms of effecti