

## ***I. Plastic organization***


### ***The created image***

We live in the midst of a whirlwind of light qualities. From this whirling confusion we build unified entities, those forms of experience called visual images.

To perceive an image is to participate in a forming process; it is a creative act. From the simplest form of orientation to the most embracing plastic unity of a work of art, there is a common significant basis: the following up of the sensory qualities of the visual field and the organizing of them. Independent of what one “sees,” every experiencing of a visual image is a forming; a dynamic process of integration, a “plastic” experience. The word “plastic” therefore is here used to designate the formative quality, the shaping of sensory impressions into unified, organic wholes. •

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•Throughout this discussion and that which follows, it should be understood that all terms used are arbitrary, and are not to be considered as scientifically established. The use of such terms is made necessary by the lack of an adequate terminology in the field of visual experience considered as a creative activity.



The experience of a plastic image is a form evolved through a process of organization. The plastic image has all the characteristics of a living organism. It exists through forces in interaction which are acting in their respective fields, and are conditioned by these fields. It has an organic, spatial unity; that is, it is a whole the behavior of which is not determined by that of its individual components, but where the parts are themselves determined by the intrinsic nature of the whole. It is, therefore, an enclosed system that reaches its dynamic unity by various levels of integration; by balance, rhythm and harmony.

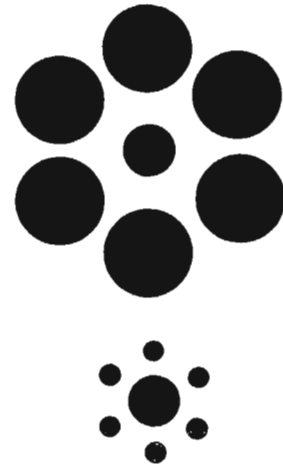
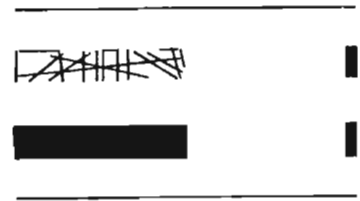
The experiencing of every image is the result of an interaction between external physical forces and internal forces of the individual as he assimilates, orders, and molds external forces to his own measure. The external forces are light-agents bombarding the eye and producing changes on the retina. The internal forces constitute the dynamic tendency of the individual to restore balance after each disturbance from the outside, and thus to keep his system in relative stability.

Every force acts in a medium, exists in a field. Any process induced by forces makes sense only with reference to the surroundings, as an interaction between the force and the medium in which it acts. One walks against the resistance of the earth, the spatial extension of the objective world. One flies, buoyed up by the resistance of the air. The frame of reference or field in which one force acts conditions the range and path of the action induced. The weight and shape of a material as well as the nature of the resisting medium will define the manifestations of the force of gravity. A pebble dropped through air behaves differently from one dropped into water, snow, mercury, or mud.

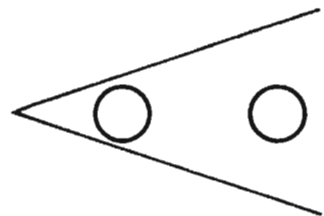
Optical forces and the physiological and psychological responses which they induce also are meaningful only in their respective fields. The external optical forces which provide the physical bases of the experience which we call the plastic image, and the internal forces—the dynamic tendency to integrate the impacts of the environment—act within their respective frames of reference. It must be borne in mind, however, that it is the nervous system which organizes impacts from the outside. Therefore, the distinction between external and internal frames of reference is, in a sense, artificial and is used only for convenience, since in every experience the external frame of reference is transformed into a part of the internal one.

### ***External forces***

The plastic image as a dynamic experience begins with the light-energy flowing through the spectator's eye to his nervous system. For example, this light-energy is articulated on a picture-surface in different extensions by different pigments. The nature of the pigments provides the basis for sensations of light and color; that is, brightness, hue and saturation. The geometrical demarcation of these qualities provide the physical basis for perception of areas and their shapes. Altogether, these factors constitute the vocabulary of the language of vision, and are acting as the optical forces of attraction.



*Visual illusion of size and direction*

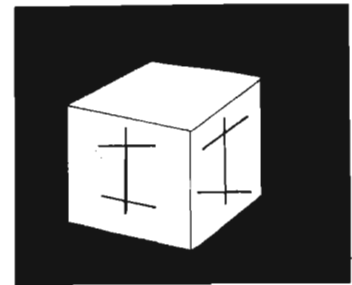


### *The visual field, the retinal field*

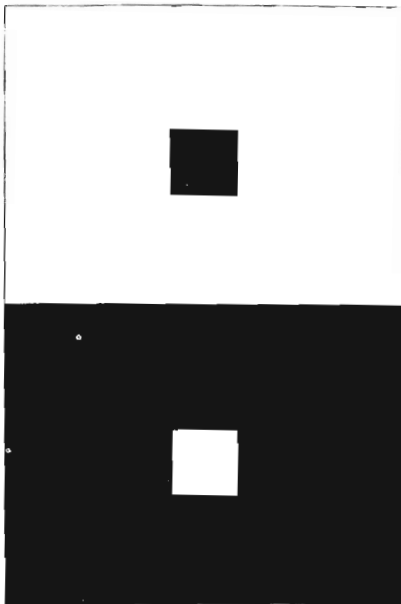
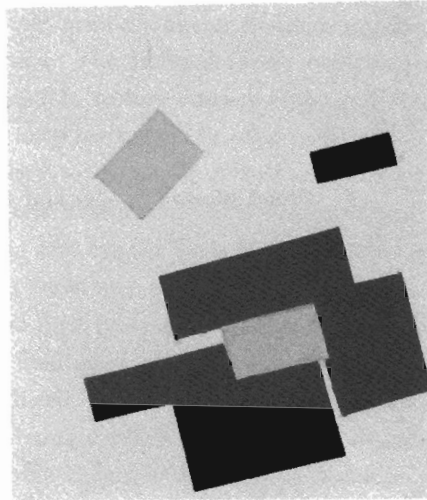
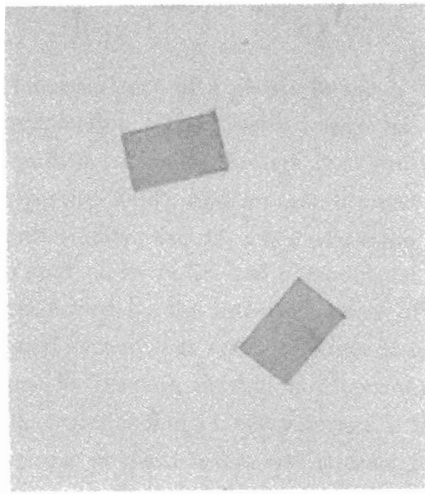
The forces of visual attraction—a point, a line, an area—exist in an optical background and act on the optical field. This optical field is projected on the retinal surface of the eyes as an inseparable background for the distinct visual units. One can not therefore perceive visual units as isolated entities, but relationships. “As so called optical illusions show, we do not see individual fractions of a thing; instead, the mode of appearance of each part depends not only upon the stimulation arising at that point but upon the conditions prevailing at other points as well.”•

Color and value depend always upon the immediate surrounding surfaces. A brightness value can be amplified or blotted out by the other values. A color can be intensified or neutralized in the same way.

The same is true of texture-qualities. Sizes and shapes likewise are perceived only in polar unity with a background and their specific optical quality is due to their respective frames of reference. A slightly irregular shape appears strongly irregular in a frame of reference of geometrically perfect squares, but the same shape appears perfectly regular in reference to extremely irregular units. Generally speaking, all the optical units on a picture-surface derive their qualities in relationship to their respective backgrounds, ranging from the immediate surrounding surface to the optical field as a whole.



•W. Kohler, *Physikal Gestalten* 1920



*Visual illusion of values*

There can be, therefore, neither an absolute quality of color, brightness, saturation, nor absolute measure of size, length and shape on the optical field, because each visual unit gains its unique mode of appearance in a dynamic interrelationship with its optical environment. Here is an important point. The range of hue, value, saturation, and the scale of geometrical measure is incomparably narrower on the picture surface than in one's visible surroundings and only by a creative use of the relativity of optical differences can one create an optical image on the surface that stands up to the vitality of the visible world.

"The sky in a landscape may be thousands of times brighter than a deep shadow or a hole in the ground. A cumulus cloud in the sky may be hundred thousands brighter than the deepest shadow. However, the artist must represent a landscape by means of a palette whose white is only about thirty times brighter than the black."•

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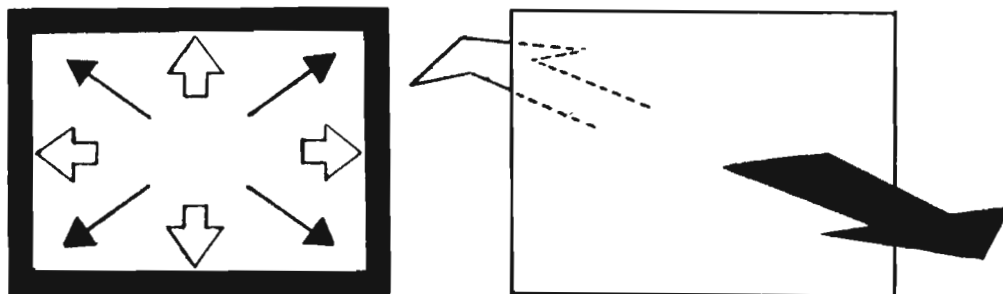
•M. Luckiesh, *Visual illusions*

### ***The three-dimensional field***

Looking at a landscape, at people on the street, or at any single object, as the visual field has no definite boundaries, one can only make a spatial interpretation of the things he sees—their location, extension—based upon his own spatial position. He judges the position, direction and interval of things seen by relating them to himself. He measures and organizes up, down, left, right, advance, and recession in a single physical system of which his body is the center and identified with the main directions in space. The ego-centered horizontal and vertical axis is the latent background, and optical differences are interpreted against this background. If the spectator moves his head, eye, or body—changing his position and consequently changing the retinal field from the natural vertical position,—he at once transfers to the objects nearest him the original role of the human body and the main directions of space remain valid.

### ***The picture field***

The visual field of a picture image is less diffused. It is limited to the boundaries of a picture-plane, and to the two dimensions of this surface.



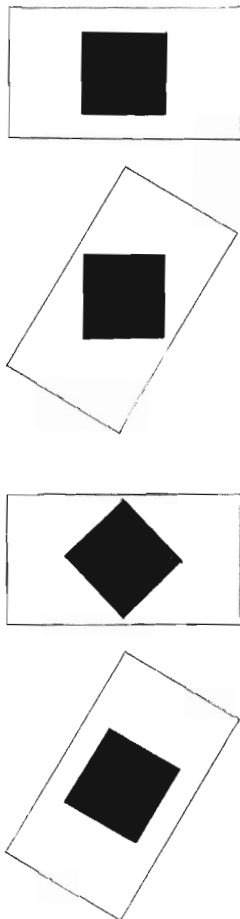
The frame of reference shifts from the more general spatial direction of the spectator to the new background of picture field—to the four borders and the two dimensions. An entirely new frame of reference is created, a world with new laws formed out of the new relations.

The four borders of the picture-plane generally assume the main directions of space, and each distinct optical unit on the surface receives its spatial evaluation, its position, direction, and interval because of its relationship to the margins considered as the horizontal and vertical axes of the newly created world. The two-dimensional picture plane assumes the center of the spatial field and every optical unit appears to advance or recede from it. A point, a line, or a shape on the picture-surface is seen as possessing spatial qualities. If one places a point or a line in one or another position on the surface, the position of the respective optical units in reference to the picture margin will relate different spatial meanings as a dynamic form of movement. The elements appear to be moving left, right, up, down, and to be receding or advancing, depending upon their respective position in the picture-plane. The optical units create an interpretation of the surface as a spatial world; they have strength and direction, they become spatial forces.

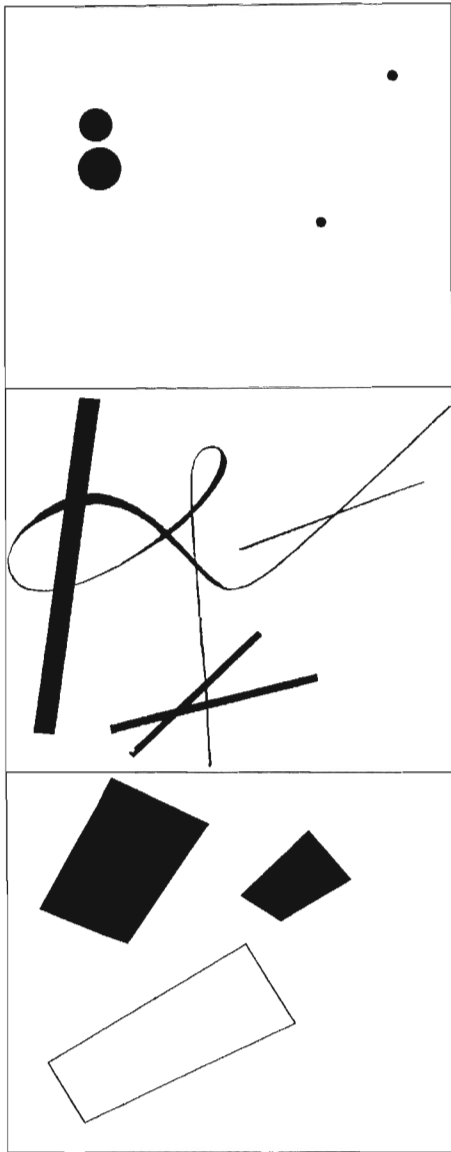
## *The spatial forces*

A stone, a tree, or a fish has its own particular type of existence. The stone is static with the latent perpendicular movement of its weight. The tree can expand in any direction but cannot change its position. The fish can move and take any position. Each behaves according to its specific nature. Similarly, any visible unit placed on a picture-plane germinates a life of its own.

Positions, directions and differences in size, shape, brightness, color and texture are measured and assimilated by the eye. The eye lends the character of its neuro-muscular experience to its source. Since each shape, color, value, texture, direction, and position produces a different quality of experience, there must arise an inherent contradiction from their being on the same flat surface. This contradiction can be resolved only as they have the appearance of movement in the picture-plane. These virtual movements of optical qualities will mould and form the picture space, thus acting as spatial forces. Only incidentally does the spatial quality derive from the fact that optical signs resemble objects known empirically. One experiences space when looking at an articulated two-dimensional surface mainly because one unconsciously attempts to organize and perceive the different sensations induced by the optical qualities and measures as a whole, and in so doing is forced, by the various qualities in their relationships to each other and to the picture-surface, to impute spatial meaning to these relationships.

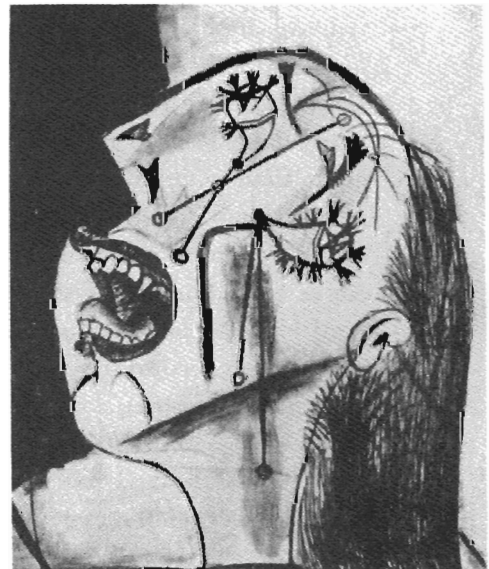


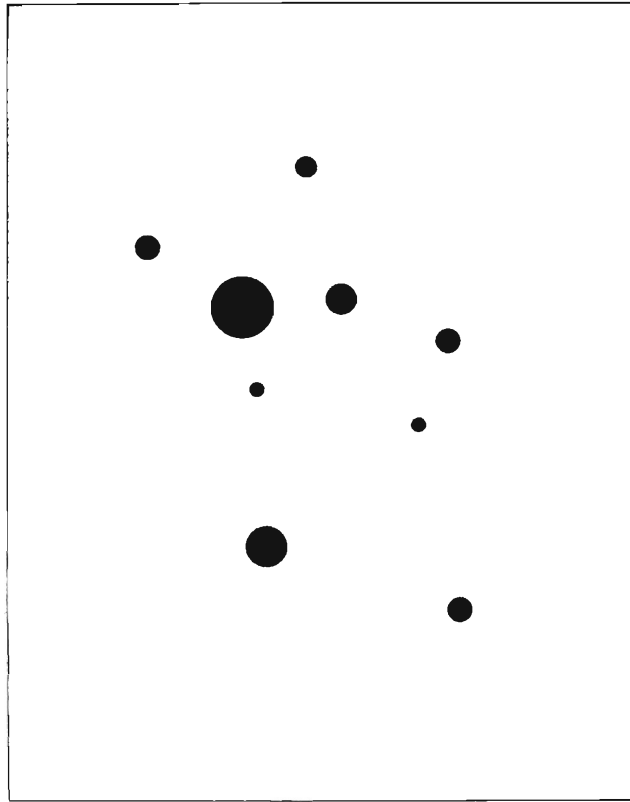
In the diagram taken from Kopferman, the black squares in a rectangular outline which indicates the boundaries of the picture-plane demonstrate the modifications of the same shape under various conditions. Wherever the small square can be brought into accordance with the main direction of space it is seen as a square, partly because it is parallel with the borders of the picture-plane, and partly because it is actually in a horizontal-vertical position in regard to the next frame of reference—the page. It is thus dependent upon the ground on which it appears. If the ground has a definite correspondence to the horizontal-vertical axis, however, the square figure in a diagonal position not only loses its stability but undergoes a modification. It is seen, not as a square, but as a diamond. A study of the diagram makes it obvious that the relationship of the unit to the picture-border generates its spatial expression. In one case it appears static and suspended; in another, static but with strong resistance—almost with a quality of solidity; in a third case, it changes shape and loses its concreteness; finally, it suggests a potential movement and fluctuates between the square and the diamond shape.



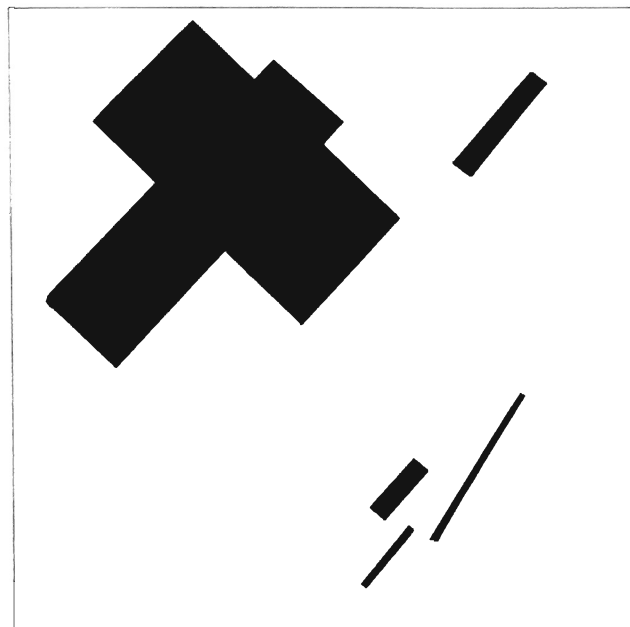
Whether we wish it or not, any optical differentiation of a picture surface generates a sense of space. A typographical design, scribbling on paper, color spots on a canvas, a photograph, a simple haphazard manipulation of light or a painting with an explosive emotional message—all these are spatial expressions by virtue of the process through which the eye organizes their visible differences into a whole.

**Picasso. *Crying Woman* 1936**  
*Reproduction Courtesy*  
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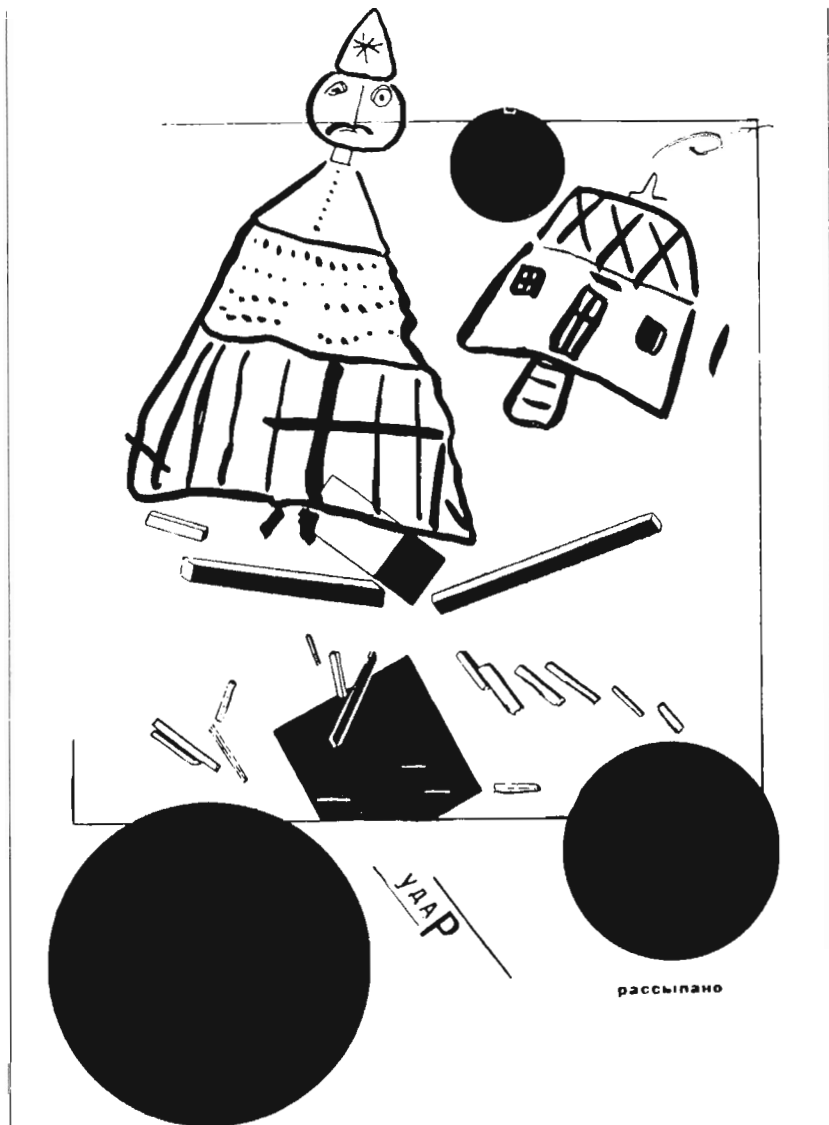


Kandinsky. *9 Points In Ascendance*



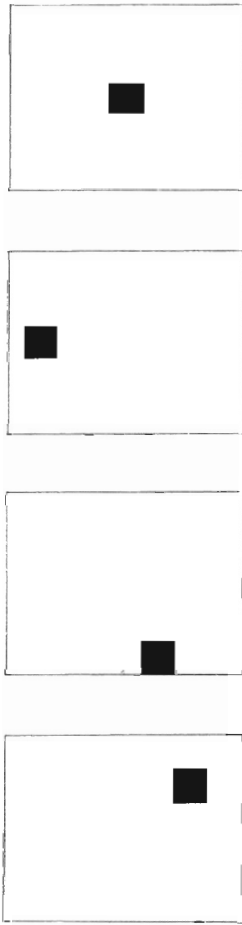
Malevich. *Sensation of Flight 1914-15*





El Lissitzky. *Illustration* 1923

Before one begins to use the visual language for the communication of a concrete message, he should learn the greatest possible variety of spatial sensations inherent in the relationships of the forces acting on the picture-surface. The storing up of such varied experience is the most important part of the training for visual expression. What is called technical education, the mastery of a particular skill or a particular habit of visual representation, should be put off as long as one learns the objective basis of the language of vision. A playful manipulation of each element: points, shapes, lines—varying them in position, in color, in value, and in texture—is the shortest way to an understanding of their interrelationships. Just as the letters of the alphabet can be put together in innumerable ways to form words which convey meanings, so the optical measures and qualities can be brought together in innumerable ways, and each particular relationship generates a different sensation of space. The variations to be achieved are endless. For while the elementary signs of the English language are only twenty-six, the number of elementary forces with which the machinery of sight is provided is prodigious.



A color spot generates different experiences of space depending upon whether it is placed in the middle of the picture-plane, to the left or right, or at the top or bottom. Each unique interrelationship yields a unique spatial feeling. The introduction of more than one spot increases the sensation of space. The spots move away from or toward each other, receding or advancing, and seem to have weight or a centripetal or centrifugal direction. A still more vital spatial event is created when these surface areas are articulated in size, color. Straight and curvular lines in a horizontal, vertical, or diagonal relationship to the picture-margin force the eye to orient and explore the surface in a different way and originate another variety of spatial sensation. An even richer spatial expression can be created by manipulating various shapes on the picture-surface. Their value, color, texture, and relative position induce spatial experiences of further intensity and variety.

