ARCHITECTURAL PHOTOGRAPHY

PHOTOGRAPHY, AS A METHOD OF APPRECIATION OF THREE DIMENSIONAL ARCHITECTURAL PHENOMINA BY TWO DIMENSIONAL VISUAL LANGUAGE.

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"The subtle interplay of light and shadow on a building is the point and architectural photographer uses on his canvas of film."

Julius Shulman.

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CHAPTER TWO: THE WAY THAT PHOTOGRAPHS COMMUNICATE ARCHITECTURE

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INTRODUCTION

The Study

The term "Photography" is defined to be the re-creation of the three dimensional universe on a two- dimensional surface using light as the medium. In this re-creating process, identification of the three dimensional aspects and the characteristics of the objective is essentially important. When the objective becomes a creation of another creator, it is of great importance to have a sound understanding of the work.

Especially in a subject like Architectural Photography such understanding should be made carefully and sensitively, as the term 'Architecture' initially intends a feeling of quality rather than mere talking about physical form of a building. Over the years, different kinds of definitions have been interpreted by various people, what Architecture is. The Swedish architect and theorist Elias Cornell defined architecture as 'The aesthetic organization of practical reality'. The English Arts and Crafts architect and theorist W. Lethaby wrote in 1891: '...so is building but the vehicle of architecture which is the thought behind form, embodied and realized for the purpose of its manifestation and transmission'. Or we call that architecture is the built environment with aesthetically and spiritually stimulating space and form. However behind all these concepts, it enhance that the built environment is something which speaks to our senses, emotions and minds which articulate by simply experiencing it.

Appreciation of architecture is a matter not only of relaying information, but also to observing its grand aspirations and imaging its real qualities, make philosophies and extract the realistic frame work of what it really projects etc.. Photographing the architectural buildings and publishing is one of the ways that makes the public familiar with Architecture. Often, it is through the printed page that critic and the public alike becomes familiar with these structures. Our ideas and reactions that is often come not only from the actual building, but also from photographs of it. Some times, the photographs will reinforce, negate, or otherwise shape images we have constructed from our own direct impressions of Architecture. At the same time it suggested way in which those buildings might be observed and appreciated.

Problem Area / Issue

The issues that have to rationalize in this study are how photographs condition the way we look at buildings and what are the techniques and methods used by photography to capture the sprit of it. Another issue that we have to clear out here is what the sprit of the building in terms of actually experiencing it and what is perceived the spirit of the building conveyed by photographs through our conditioned way of building.

Practically, the Architects have to introduce their works to public or the clients through photographs. If the photograph is not strong enough to capture all the qualities of the architectural creation the Architect is unable to properly convey the architectural depth of his creation. Where

this architectural depth is not well captured in the photographs, the difference between professional and non-professional work is may not well be distinguished. This may generate harmful effects in the profession of architecture.

Rational / Justification

It is necessary to build a framework to understand methods used in photographing buildings, appearing print form; and the way which they have conditioned how we look at buildings. At the same time it is necessary to understand the way we actually experience building through photographs and finally to understand how photographs manage to capture the sprit of the building and how we relate to the actual experience of the building.

Objectives

This study may lead to create a framework to analyze how the buildings capture its essence through Photography. It will guide the role of the photographer, to look at the sprit of the building through the architectural perception and the way it leads. At the same time this will help the Architect to think the visual images that the design would communicate with people, and people for capturing the essencewhat the building projects, etc.

Finally this will sharpen our awareness and study the massage of time, place and quality in architecture, and by a contextual understanding it may get inspiration to creative work; and will train sensitivity and develop a 'refinement of the senses'. At the same time this study will learn about the people - environment relationship and will widen the knowledge and understanding of 'the purpose of architecture'.

Method of Study

This study will be based on theoretical basis enhanced by more practical situations. The first chapter deals with the language of vision. As in the other visual arts, in photography also we have to concentrate on the language of vision or the optical representation. Capturing of architecture in to photographs have to be discussed through this visual language. Hereby the language of vision can mainly be described under the following two categories

- Plastic organization
- Visual representation

Then the next phase, from the basis of first chapter it will look upon how architectural photographs communicate architectures. First it will generally discussed bout its history how it developed as a communicating media of architecture and then it categories its various aspects in capturing the built environment. After that it will discuss various world famous Architectural photographers, how they capture the built environment according to various concepts and philosophies, and will discuss what are the techniques and methods used to capture it.

Then the third chapter will discussed the theoretical basis for quality in architecture. What are the types of qualities and their variations are discussed. Thereafter it was given more interest in phenomenological determined qualities, since it was considered as the qualities that we feel when we experience a building. Then ways and methods of capturing through still frame is discussed.

In the final phase or chapter four selected examples were taken to tryout to capture above discussed most important qualities in the building

through still frames. Finally this would lead to make and idea whether spirit or the quality in architecture totally phenomenological or whether there are any other way that these experience qualities introduce in photographs to communicate reality in more efficient way. Then finally analyze these conditions and will see whether any conclusions that can be derived to answer above discussed issues.

Limitations

Experiencing the sprit of the building is totally phertomenological. That is what we all call our theories of main stream Architecture capturing through our senses by simply walking through the building. That is, the feeling of entering to building, spatial progression, main space, axis etc. The 'sprit' can be identified as the quality of these aspects. But in this scenario it is try to explain these aspects by photographs and may be plans and sections which is some what make difficult to understand the reality and compare the difference or similarities to the one who doesn't been there.

Most of the photographs which taken by professional photographers were foreign buildings. Most of us has least amount of experience of been there. All what we know is what we see from books and films videos about it. So basically from the photographs itself we have to understand what the reality is and what the quality is in order to make a framework of what it suggests.

Even though this study deals with many photographs, it is not intended to discuss about the technical tools and its technicality of cameras and equipment and ways of taking accurate picture out of that thinking that it is a subject area which deal under photography.

CHAPTER ONE
LANGUAGE OF VISION

CHAPTER ONE

The language of vision.

Architecture is a creation, created by an Artist. It comprises values and characteristics created by the language of architecture of its own. The role of the architectural photographer here is to; interpret the above values originated in the architectural language through his medium. Photography being a two dimensional visual art, the photographer is intended to use optical communication or the language of vision as his medium.

The language of vision, optical communication, is one of the strongest potential means both to reunite man and his knowledge and to re-form man into an integrated being. The visual language is capable of disseminating knowledge more effectively than almost any other vehicle of communication. With it, man can express and relay his experiences in object form. Visual communication is universal and international: it knows no limits of tongue, vocabulary, or grammar, and it can be perceived by the illiterate as well as by the literate. Visual language can convey facts and ideas in a wider and deeper range than almost any other means of communication. It can reinforce the static verbal concept with the sensory vitality of dynamic imagery. It can interpret the new understanding of the physical world and social events because dynamic interrelationships and inter penetration, which are significant of every advanced scientific understanding of today, are intrinsic idioms of the contemporary vehicles of visual communication: photography, motion pictures, and television.

But the language of vision has a more subtle and, to a certain extent, an even more important contemporary task. To perceive a visual image implies the beholder's participation in a process of organization. The experience of an image is thus a creative act of integration. Its essential characteristic is that by plastic power an experience is formed into an organic whole. Here is a basic discipline of forming, that is, thinking in terms of structure, a discipline of utmost importance in the chaos of our formless world. Plastic arts, the optimum forms of the language of vision, are, therefore, an invaluable educational medium.

Visual language must be readjusted, however, to meet its historical challenge of educating man to a contemporary standard and of helping him to think in terms of form.

Technological discoveries have extended and reshaped the physical environment. They have changed our. Visual surroundings partly by actually rebuilding the physical environment and partly by presenting visual tools that are of assistance to our discernment of those phases of the visible world which were previously too small, too fast, too large, or too slow for us to comprehend. Vision is primarily a device of orientation; a means to measure and organize spatial events. The mastery of nature is intimately connected with the mastery of space; this is visual orientation. Each new visual environment demands a reorientation, a new way of measuring. Seeing spatial relationships on a fiat land is a different experience from seeing them in a mountainous region, where one form intercepts the other. To orient oneself in walking requires a different

spatial measurement than is required in riding in a motor-car or in an aero plane. To grasp spatial relationships and orient oneself in a metropolis of today, among the intricate dimensions of streets, subways, elevated, and skyscrapers, requires a new way of seeing. Widening horizons and the new dimensions of the visual environment necessitate new idioms of spatial measurement and communication of space. The visual image of today must come to terms with all this: it must evolve a language of space which is adjusted to the new standards of experience. This new language can and will enable the human sensibility to perceive space-time relationships never recognized before.

Vision is not only orientation in physical spheres but also orientation in human spheres. Man can no more bear chaos in his emotional and intellectual life than he can bear it in his biological existence. In each age of human history man was compelled to search for a temporary equilibrium in his conflicts with nature and in his relations with other men, and thus created, through an organization of visual imagery, a symbolic order of his psychological and intellectual experiences. These forms of his creative imagination directed and inspired him toward materializing the potential order inherent in each stage of history. But until today, the symbolic organization of psychological and intellectual conflicts has been limited in its power because it was fastened to a static system of object concepts. Today, the dynamics of social events, and the new vistas of a mobile, physical world, have compelled us to exchange a static iconography for a dynamic one. Visual language thus must absorb the dynamic idioms of the visual imagery to mobilize the creative imagination for positive social action, and direct it toward positive social goals.

Today, creative artists (including Architectural Photographers) have two tasks to accomplish if the language of vision is to be made a potent factor in reshaping our lives. They must learn and apply the laws of **plastic organization** needed for the re-establishing of the created image on a healthy basis. And they must make terms with contemporary spatial experiences to learn to utilize the **visual representation** of contemporary space-time events.

01-1. Plastic organization

01-1.1 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.

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.

01-1.2 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 provides 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.

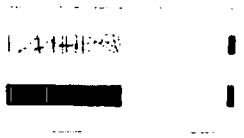
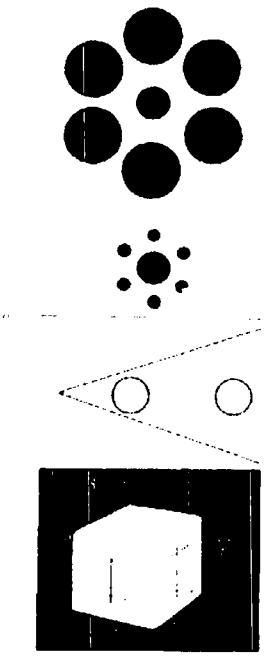


Fig-01- Visual illusion of size anti direction
Source- Language of Vision

01-1.2.1 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*

Fig – 02&03 Visual illusion of values
Source – Language of Vision

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 he 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."**

☆*M. Luckiesh, Visual illusions.*

01-1.2.2 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.

01-1.2.3 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.

Fig - 04 – The Picture Field
Source- Language of Vision

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.

01-1.3 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. Similarity, any visible unit placed on a picture-plane germinates a life of its own.

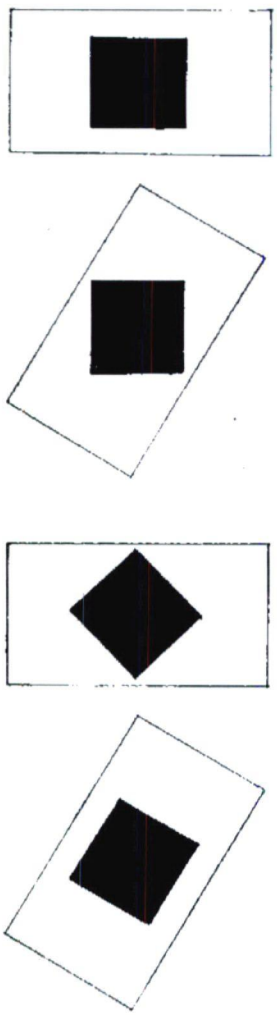
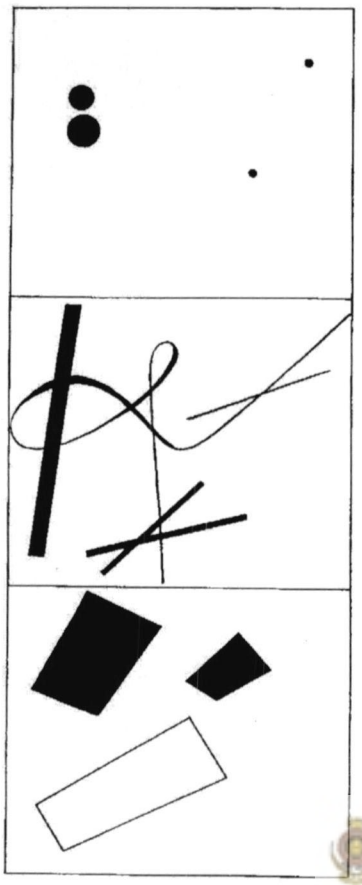


Fig- 05- The Spatial Forces
Source- Language of Vision

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.

Fig- 06
Source – Language of Vision

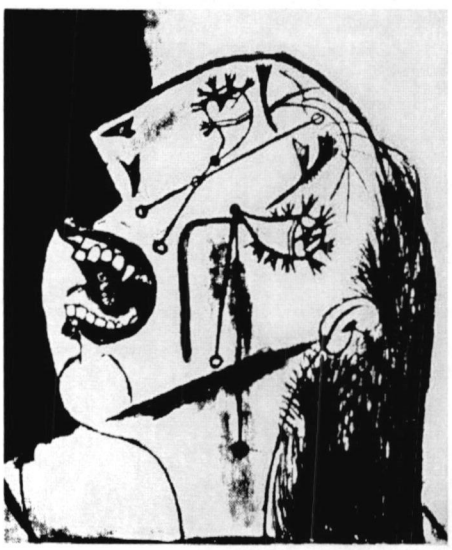


Fig- 07 Picasso. Crying Woman 1936
Source: Reproduction
The Art Institute of Chicago

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.

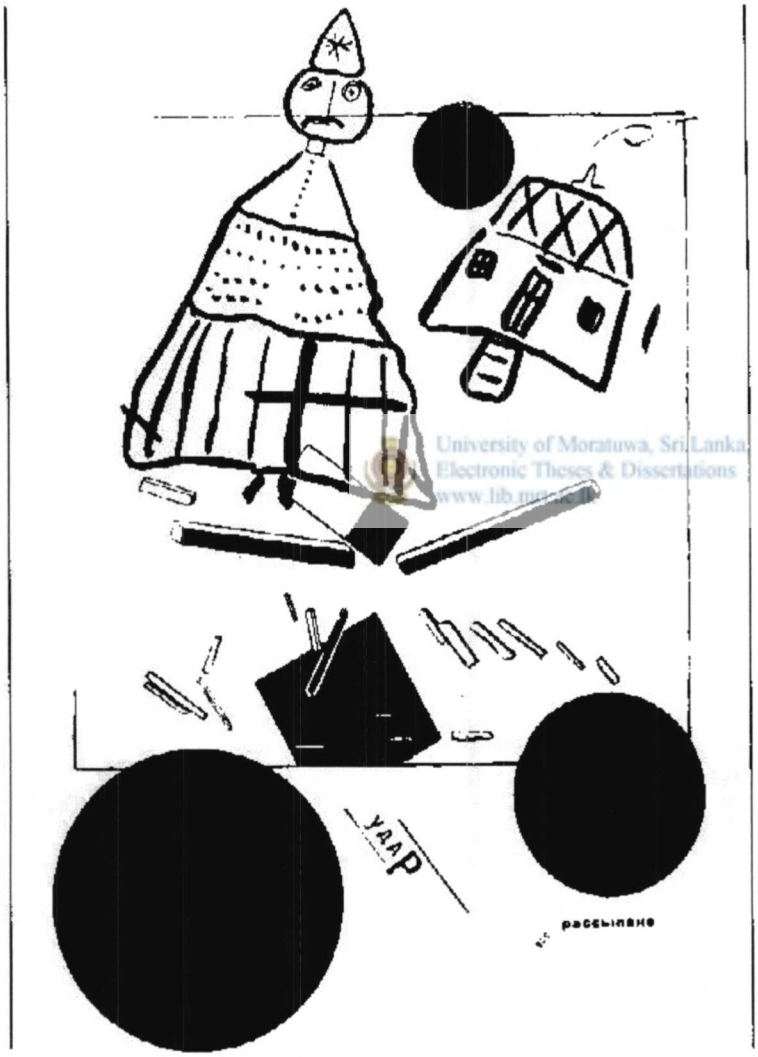
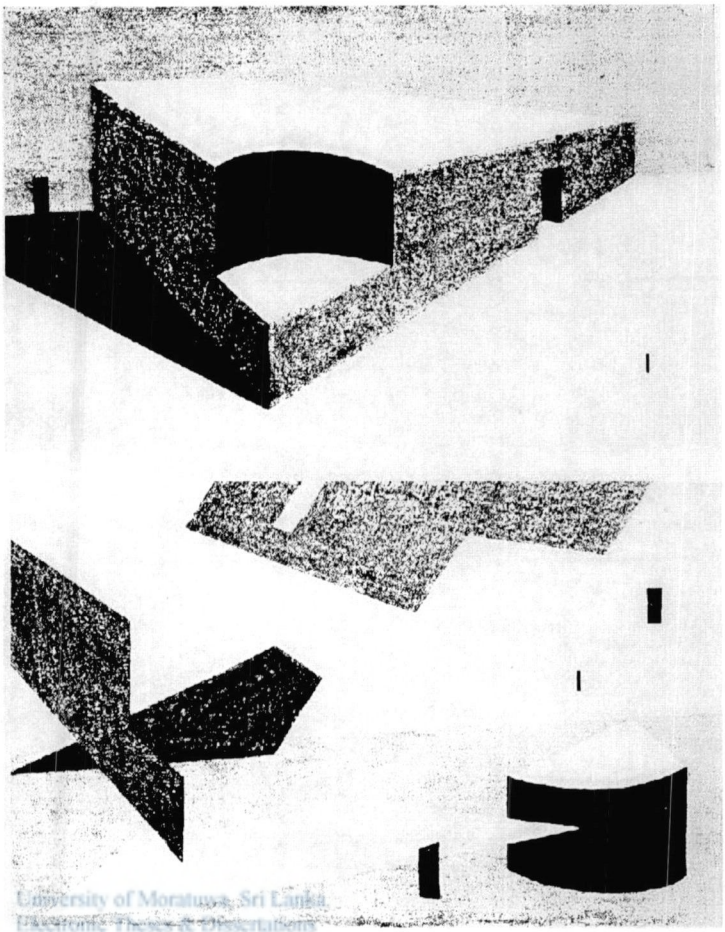


Fig - 08 El Lissitzky. Illustration 1923

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.

Fig – 09,10
Source – Language of Vision

Fig-11 Adeline Cross. Study of the advancing and receding space qualities of tone values.
Source: School of design in Chicago.



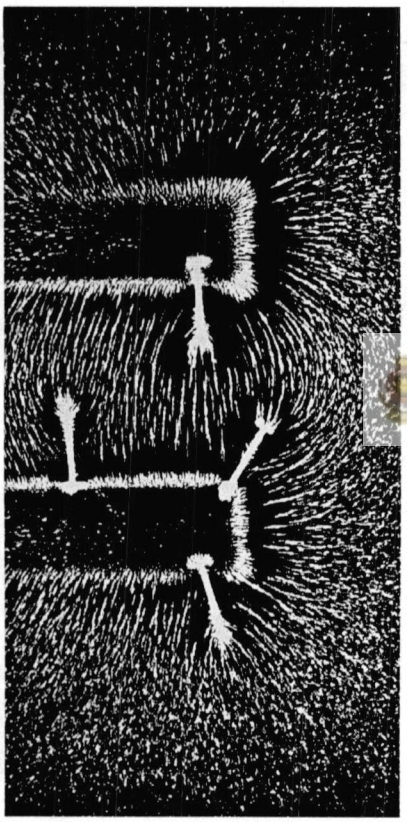
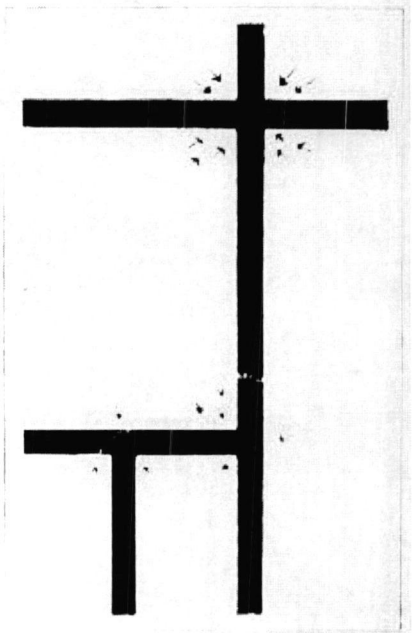


Fig-12,13- Magnetic field



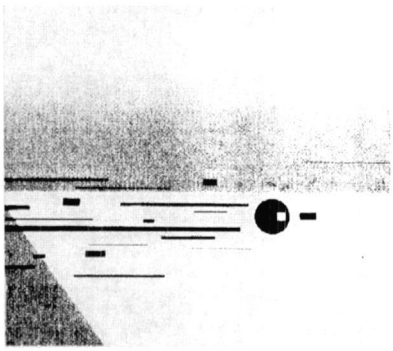


Fig -14- H.L.Carpenter.
The attraction and repulsion of the space forces.
Source: School of Design in Chicago

Fig -14- H.L.Carpenter.
The attraction and repulsion of the space forces.
Source: School of Design in Chicago

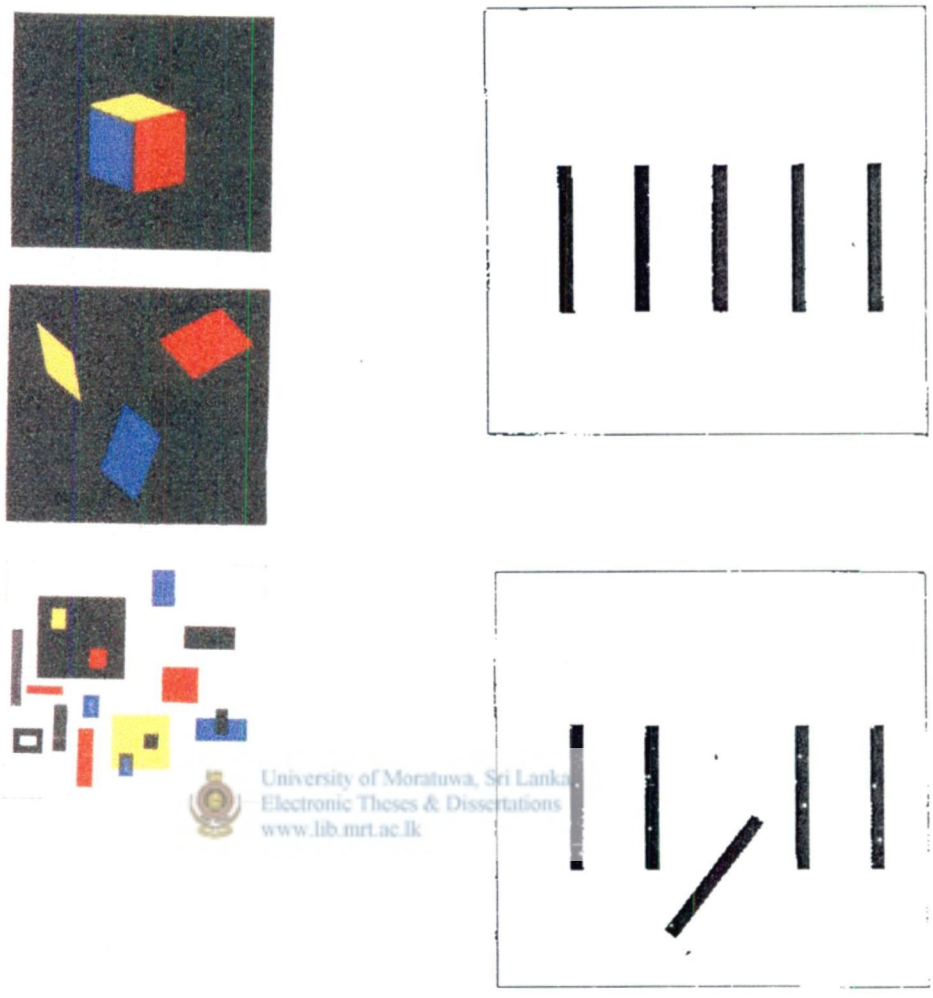
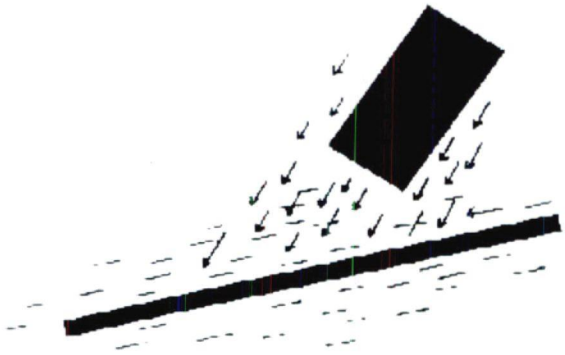


Fig -15,16,17- Study of the advancing and receding qualities of colors

01-1.3.1 Fields of spatial forces

A human being is more than his own body; he implies those actions which reach out and transform his environment. A magnetized bar of steel is more than its own mass; its electrical field belongs to it just as much as do its substance, its shape and its weight. The picture-surface becomes a vital spatial world, not only in the sense that the spatial forces are acting on it—moving, falling and circulating—but also in the sense that between these movements the field itself is charged with action. The actual visual elements are only the focal points of



The fields of the forces may be interrupted, or they may impinge upon each other. ii field intercepting another field, attracts or repels it; reinforces it or interferes with it. This interaction of one field with another causes strains and stresses. When two lines cross, for example, the fields of forces fight and the spatial energies are concentrated in the reflecting angle.

Fig -18
Source – Language of Vision

01-1.4. Internal forces

Every living organism—be it a plant, an animal, a human being, or a social structure—is a relatively constant form. As the wheels of a bicycle stand erect only through perpetual movement, so the organism keeps its form through constant motion. A plant, for example, by the perpetual process of metabolism, draws upon sunlight, water, soil, retaining only what it needs to keep its organism relatively stable. To maintain the same constant structure, every living organism must achieve a dynamic unity. The plastic image is no exception. Only by dynamic order can it become a living form of human experience. "The eye especially demands completeness," says Goethe. Internal forces are acting to restore balance after each disturbance from the outside.

Changes produced by light on the retina are balanced by physiological reactions. When light-energy induces physiological disturbances in the retina, using up certain chemical substances, etc., the organism in general and the retina in particular restore the used-up substances. When certain muscular actions enforced by the distribution of light on the visual field induce fatigue, the organism answers with a complementary movement, bringing into action fresh neuro-muscular units. As any worker changes, from time to time, the rhythm of his work, the eye, or rather the neuromuscular apparatus tends to find the same relief from fatigue, an experience of balance. Each impact upon the eye from outside is counteracted by a reciprocal movement from inside. If the eye is hit by a sudden intensive light beam, it is automatically closed. But the eye has also more positive and subtle reactions to light stimulation. If red light rays beat upon it over a prolonged period of time, it reacts, when turned away from the red surface, by seeing a green after-image immediately. The biological organism acts to restore the sensitivity of the surface which was kept in action by giving it full rest.

The dynamic tendency toward balance is not restricted to a biological level. Sight is more than pure sensations, for light rays reaching the eye have no intrinsic order as such. They are only a haphazard, chaotic panorama of mobile, independent light-happenings. As soon as they reach the retina, the mind organizes and molds them into meaningful spatial units. We cannot bear chaos—the disturbance of equilibrium in the field of experience. Consequently, we must

immediately form light-impacts into shapes and figures. Exposed to a visual field that in its light-quality is to the slightest degree heterogeneous, one organizes that field at once into two opposing elements; into a figure against a background. One speaks of white with inevitable implied reference to black, grey, or other colors. To convey the meaning of "yes," one implies a latent understanding of "no." A unified whole is thus created. Every image is based upon this dynamic dualism, the unity of opposites. Certain impulses are tied together in a stable visual whole, while other impulses are left in their unorganized fluid state and serve only as a background and are perceived as intervals. This organization of figures and backgrounds is repeated progressively until the whole visual field is perceived as a formed, ordered unit—the plastic image.

Fig -19- Fluctuation of the figure and background.

In every clear concept of the nature of vision and in every healthy approach to the spatial world, this dynamic unity of figure and background has been clearly understood. Lao Tse showed such grasp when he said:

"A vessel is useful only through its emptiness. It is the space opened in a wall that serves as a window. Thus it is the. nonexistent in things which makes them serviceable." Eastern visual culture has a deep understanding of the role of the empty space in the image. Chinese and Japanese painters have the admirable courage to leave empty large paths of their picture-surface so that the surface is divided into unequal intervals which, through their spacing, force the eye of the spectator to movements of varying velocity in following up relationships, and thus create the unity by the greatest possible variation of surface.

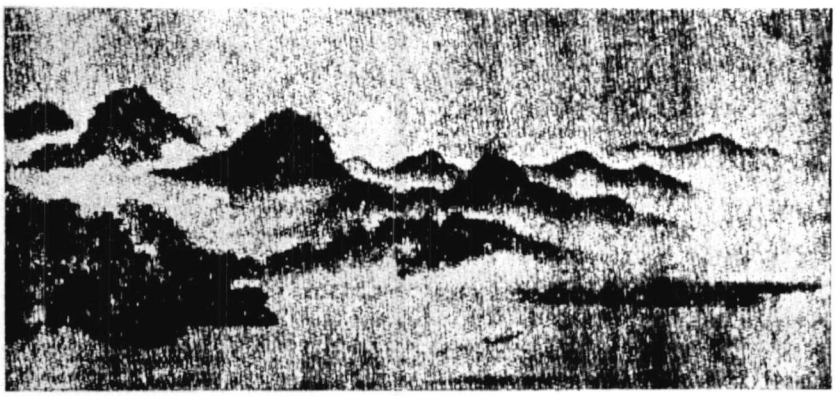


Fig -20
Mi Yujen. Landscape.
Source: The Cleveland Museum of Art.

Chinese and Japanese calligraphy also has a sound respect for the white interval. Characters are written in imaginary squares, the blank areas of which are given as much consideration as the graphic units, the strokes. Written or printed communication is living or dead depending upon the organization of its blank spaces. A single character gains clarity and meaning by orderly relationship of the space background which surrounds it. The greater the variety and distinction among respective background units, the clearer becomes the comprehension of a character as an individual expression or sign.

Fig -21- Calligraphy in Ts'Ao (running cursive) Style by Su Tung-P'o.
Source: Field Museum of Natural History, Chicago.

The meaning of space interval is coming to be understood also in architecture. For a time the idea of integration of spatial structures, organic form, in which figure and background are considered in a unity of mutual interdependence, was lost in the wild haste of technological progress. Every new invention, every new scientific discovery, every new product, was considered without reference to its implications for human life. But we are witnessing now a reorientation toward a more integrated life achieved through progressive recognition of the interconnection of figure and background. Contemporary architects are moving away from one-sided emphasis on the façade of a building, and the best examples of contemporary architecture show a perfect integration of the actual building, the active "envelope," the divisions created by the materials, and the living spaces between these materials. Light screens, curtains, glass walls are employed to amplify this integration optically and to create a living, flowing space articulated within and without: a single living unity.

The same trend is prevailing in science. Says Erwin Schrödinger:

"We are no longer afraid of broad empty spaces in our furniture or on our walls. We haven't what the German call 'platz angst'—the fear of the empty spaces—any more. . . - Now, there is something similar in our science. . . . We want no ornamental accessories. Just as we are no longer afraid of bare surfaces on our furniture and dwelling rooms, so in our scientific picture of the external world we do not try to fill out the empty spaces." ☆

☆ *Erwin Schrödinger, Physical Science and the Temper of the Age.*

01-1.4.1. The fields of the internal forces

The dynamic tendency to integrate optical impacts into a balanced unified whole acts within the field of the physiological and psychological make-up of man. The forces driving toward the restoration of equilibrium in the human organism are nervous forces, and the nervous system, like the picture plane, is limited. Just as limitations of the picture-surface serve as the necessary frame of reference in the transformation of optical impacts into spatial forces, so the characteristics of the physiological and psychological mechanisms serve as- the conditioning factors in experiencing forces of integration, that is, transforming spatial forces into plastic forces.

01-1.5 The physiological field

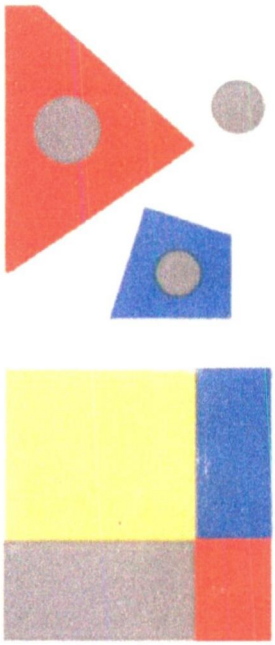
The balance in the physiological dimensions is conditioned by the limitations of the eye.

"For the eye has every possible defect that can be found in an optical instrument, and even some which are peculiar to itself; but they are all so counteracted, that the inexactness of the image which results from their presence very little exceeds, under ordinary conditions of illumination, the limits which are set to the delicacy of sensation by the dimensions of the retinal cones. But as soon as we make our observation under somewhat changed conditions, we become aware of the chromatic aberration, the astigmatism, the blind spot, the venous shadows, the imperfect transparency of the media, and all the other defects of which we have spoken." ☆

The eye is so constructed that it can focus images upon only a very small area of the retinal field. To obtain sufficient focused data, it must rotate in the area of things to be perceived. This limitation is the basis of numerous delicate muscle movements which are registered as sensations and interpreted as spatial signs. The eye, focusing red light from an infinite distance upon the retina, will, at the same time, focus violet rays from a distance of two feet. If different color-surfaces are the same distance from the eyes, as on a two-dimensional picture-plane, a muscular adjustment is required to bring the different rays successively into focus. These adjustments are registered as different sensations, and, associating their qualities with respective colors, create spatial sensations.

☆ *H. F'. Ilelmlwltz, Physiological Optics*

01-1.5.1. Color balance



Adjacent color surfaces modify each other in hue and brightness.

Like every other part of the human body, the .eye has a natural limit of working capacity. After a certain performance it becomes fatigued. But as it was pointed out previously, the physiological forces are driving for equilibrium to keep the systems essentially constant. "Every decided color does certain violence to the eye, and forces the organ to opposition," said Goethe. After each fatigue of the ocular apparatus, after each destruction of certain photochemical substances on the retina, making it insensitive to one or another color, there is a dynamic tendency to gain back the original order, the full sensitivity, a physiological balance.

"If we look steadily at some brightly colored object for a few seconds and then look away at an illuminated surface, preferably white, we see a patch of a different color, which floats before our eyes and moves as we turn them. The explanation is that the receivers on the retina are not equally fatigued. If we have been looking at red, the red receiver is more fatigued than the other so that when white light is thrown into the eye, the two other receivers are more fully stimulated and a bluish green appears." ☆

Fig -22- Adjacent color surfaces modify each other in hue and brightness.
Source: Language of Vision-Gyorgy Kepes.

"If we admit light from a cloudy sky through a narrow opening into a dark room, so that it falls sideways on a horizontal sheet of white paper, while candle-light falls on it from the other side, and if we then hold a pencil vertically upon the paper, it will of course throw two shadows: the one made by the daylight will be orange, and looks so; the other made by the candle-light is really white, but appears blue by contrast. The blue and the orange of the two shadows are both colors which we call white, when we see them by daylight and candle-light respectively. Seen together, they appear as two very different and tolerably saturated colors, yet we do not hesitate a moment in recognizing white paper by candle-light as white, and very different from orange." ☆☆

☆ **H.**Helmltoltz, Recent Progress of the Theory of Vision, 1868

☆☆ Sir F'. Bragg, The Universe of Light

This "after image," colored shadows, and various other visual phenomena, border contrast and simultaneous contrast, point toward the most significant characteristics of color surfaces as plastic forces. Through a dynamic interaction of the surfaces on the picture-plane, the colors tend toward a balanced relationship in the terms of a full retinal sensitivity. Each hue induces simultaneously or in succession its respective complementary part, returning to its origin that is the white light. Roughly speaking, a red surface will induce a blue green, a certain blue violet will create a complementary yellow, orange brings out turquoise blue. Complementary color harmony—the most universally accepted law of plastic balance—has its foundation here. Although there are minor disparities in the interpretation of what opposite hues are, color automatism in children's paintings, color expressions of almost all cultures, scientific research of the great thinkers-Leonardo, Goethe, Schopenhauer, Chevreul, Ostwald—testify the universal validity of color harmony as a conformity to the law of the human organism, an equilibrium in visual experience.

01-1.5.2. Spatial tension; dynamic equilibrium

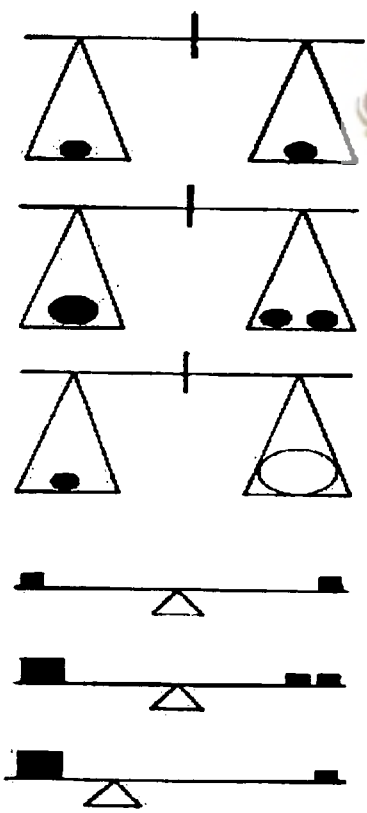


Fig -23

A two-dimensional surface without any articulation is a dead experience. The basis of every living process is an inner contradiction. The living-quality of an image is generated by the tension between the spatial forces; that is, by the struggle between the attraction and repulsion of the fields of these forces.

The experience of space, as we have already seen, is based upon the virtual movement of the different optical units from the picture-plane. These movements can be perceived only if the frame of reference, the two-dimensional picture-plane, is evident; one cannot see moving things without a background. Considered singly, each optical force automatically interrupts the two-dimensional quality of the picture-surface and completes its virtual movement by inducing its own field. It becomes impossible, therefore, to perceive the dynamic factor of this movement. Here is an important point. Just as any force can be manifested only through resistance to an opposite force, so spatial forces may be perceived only as they meet opposing spatial forces.

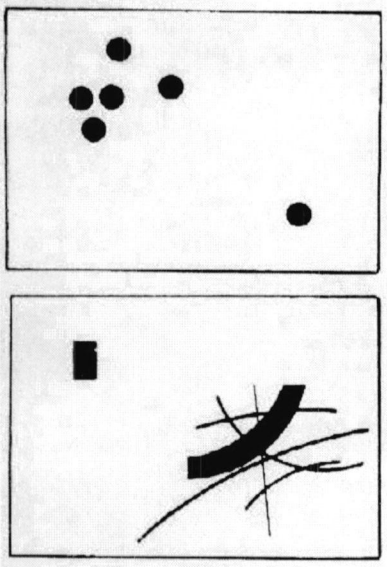


Fig -24- The point of the retina on the optical axis of the eye provides visual acuteness. The geometrical center of the picture field is customarily identified with the optical axis and is assumed as the center of gravity of all forces acting on the picture surface.
Source: Language of Vision- Gyorgy Kepes.

A random placing of spatial forces, point, line, area, will open the picture-plane, but because these forces are so haphazardly arranged, they will not reach a balanced constellation in which they are equal in strength and opposite in direction. The picture surface is made hollow; the two-dimensional background, the frame of reference in which the spatial movements can be measured, is missing. The spatial vitality cannot reach full maturity.

If the forces and their induced fields are of equal optical quality and spatial strength, a balance will be reached, but it will be without tension, static and lifeless. If, however, one knows how to estimate the forces and their energy-field, he will be able to use such opposing fields so that each will balance the other on the picture-plane. A line or shape in a certain color and position will have a field opened and advancing toward the spectator; another unit will create a field in a receding direction; another will activate a field tending upward on the surface; and yet another, down. These movements may be different in terms of their optical measures and qualities—that is, opposite in direction, weight, intensity—but, if they are equal in strength in terms of their spatial fields, a dynamic equilibrium will be reached on the picture surface.

If one sees on scales a pound of iron balancing a pound of feathers, one becomes involved in the experience because of the apparent optical contradiction in logic. One is forced to think about the nature of the opposing materials and grasp their further relationships. The sight of an adult balanced by a small child on a see-saw, because of their different distances from the center of gravity, induces a similar experience. This dynamic balancing may also be simply illustrated by crushing a piece of paper in the hand. Lying flat, that paper is inert, dead. As it is compressed, it acquires a kinetic quality. Hand and paper each exert strung fields of force which oppose each other but which are nevertheless in balance.

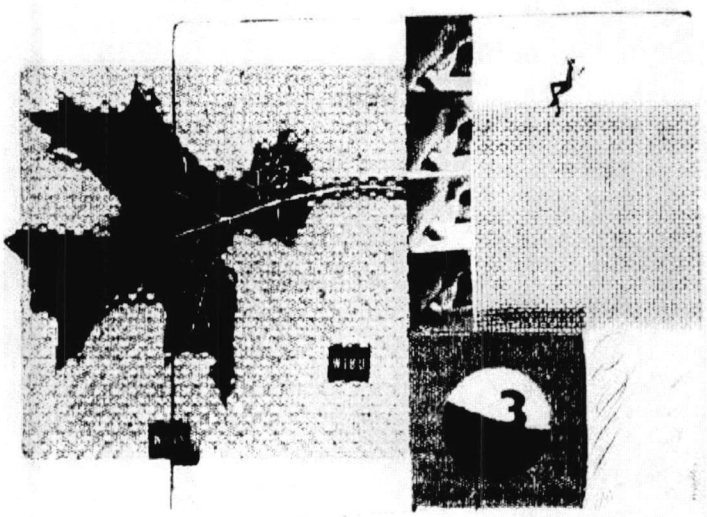


Fig -25- *Harold Walter, College 1939*

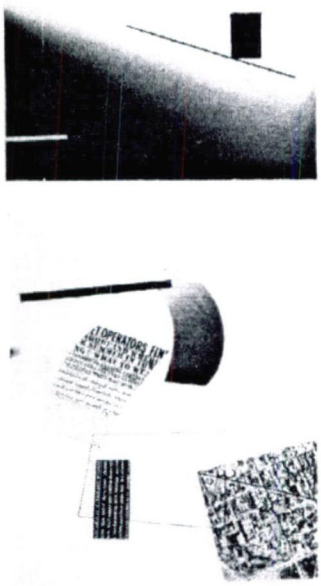


Fig -26- Ruth Robbins. Study of dynamic equilibrium in texture values.
Source: School of Design in Chicago

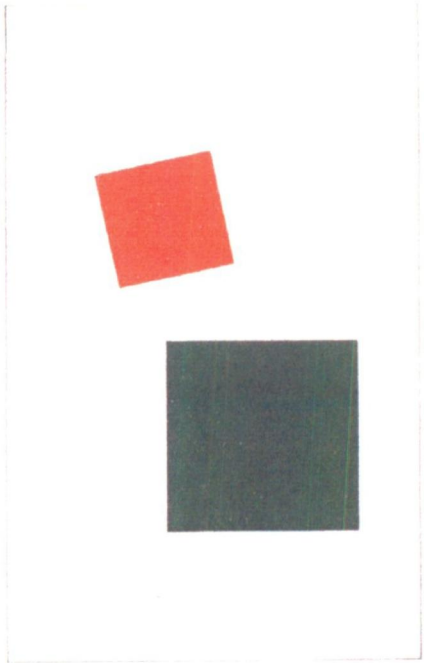


Fig – 27- Kasimir Malevich. Supremacist Composition
Source: Language of Vision-Gyorgy Kepes.

Fig -28- Jean Helion. Linoleum Cut 1932.
Source: Language of Vision-Gyorgy Kepes.

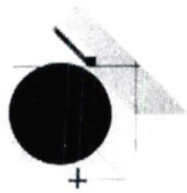


Fig -29- El Lissitzky. Proun 1923.
Source: Language of Vision-Gyorgy Kepes.

Fig – 30- Lester Beall. Advwertising Design.
Source: Language of Vision-Gyorgy Kepes.

01-1.6. The psychological field

Subjective forces tending toward balance are manifested in the emotional and intellectual faculties as well as on the physiological level. The plastic image is an organism that reaches out to the dimensions of understanding beyond the sensory radius. The fascination of a sunset or a sunrise, the irresistible interest aroused by the ever-changing shapes and colors of flames, or the rhythmical patterns and reflections of waves on the water, have a revealing meaning. We never tire of these optical transformations which, in spite of all variations, retain their unity. We follow the innumerable mutations without any feeling of compulsion. The significant aspect of such experiences is that they mobilize wider responses, thoughts, and feelings not directly connected with the actual seen image. As a little boy is able to move a large church-bell by the rhythmical addition of one pull to another, the rhythmical order of flames or waves can induce larger and larger, wider and wider, dimensions of experience. From the perception of sensory patterns, one moves to corresponding structures in emotional and intellectual realms. The experience becomes complete. To reach balance in this wider dimension, the dynamic bases, the space-time span of the plastic experience must be secured.

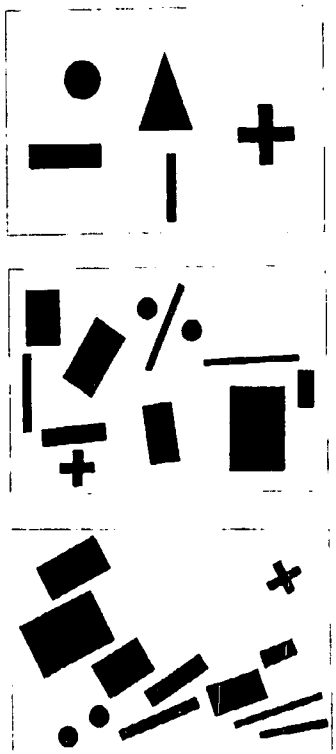


Fig - 31

The dynamic tendency to organize the optical forces into a unified whole acts within the psychological field against a background of readiness to perceive a field of attention. Attention, however, suffers from two limitations: first, its limitation in the number of optical units it can encompass; and second, its limited duration in time of focus on one optical situation. And just as the limitations of the two-dimensional picture field serve as a necessary frame of reference to the virtual locations of the optical units, so the limitations of the psychological field serve as the necessary condition to the laws of plastic organization.

01-1.6.1. The space span of plastic organization

To be seen in a purely sensory way, an optical unit must fall on the small retinal region of clear vision j>.to be seen in terms of perceptual grasp, the image must fall within the limited field of the attentive act.

"The process of visual organization might be considered as a figure against the background of the field of consciousness. In the blurred general field an area of clearness and intensity is formed—the field of attention." Within this field of attention one can see clearly, and at one time, only a limited number of visual units. The extent of this vividness and clearness is determined by the energy of the attentive act. This attentive energy is sufficient for grasping and relating only a limited number of optical units. In fact, only five or six optically distinct elements can be seen together clearly in their individual characteristics and relationships. Confronted with a complex optical field, one will reduce it to basic inter-

relationships. Just as in nature there is a tendency to find the most economic surface unity in every formation, so in the visual organization there is a tendency to find the most economic spatial unity in the ordering of optical differences. Facing the turmoil of optical impacts, ones first reaction is to form in the shortest time interval the greatest possible spatial span.

Certain optical characteristics tend to be seen together as a spatial configuration. As we look at a greatly-enlarged half-tone screen, what we actually see are different sizes of black dots and different white intervals. But instantly we organize and group these visible differences. Some units of black dots are seen in one form; some in another. Some elements are seen together because they are close to each other; others are bound together because they are similar in size, direction, shape. Only after this instantaneous organization is achieved can one see the resemblance of the picture to a human eye.

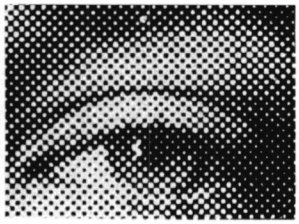


Fig - 32

This organization of optical belonging is more basic than the recognition of the objects themselves. The numerous optical devices which nature employs in the animal world to conceal animals from their enemies reveal the workings of this law of visual organization. A snake camouflaged by nature is no longer a snake. It is an aggregation of small units of color-shape. Because kinship of elementary visual qualities is more fundamental to image building than the relations of empirical experience, the patterns on its body are more easily seen together with corresponding patterns in its background than is its form—knowledge of which is acquired in one's other experience. The snake disappears into its background.

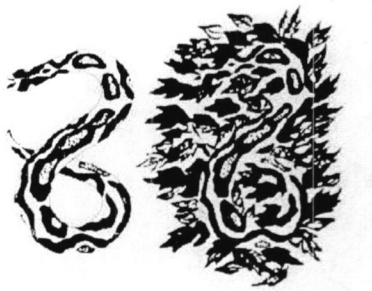
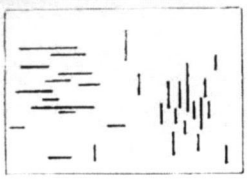
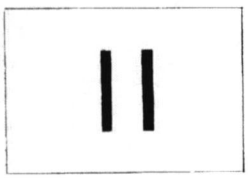


Fig - 33

Fig - 34

01-1.6.2. Nearness





Proximity is the simplest condition of organization. We hear words in verbal coherency, primarily because of the temporal proximity of their sound elements. We read words as segregated wholes because their letters are closer to one another than are the last and the first letter of two words. We form the stars of the firmament into a variety of patterns, primarily because of their relative nearness to one another. Generally speaking, the relatively closest distance between sensory units offers the least resistance to their inter-connection, and thus makes possible the beginning of crystallization into a stable form. In the field of visual experience also the proximity of optical units is the simplest condition for a crystallization of unified visual "wholes." We articulate a painting, a typographical design, first of all by the law of proximity. Optical units close to each other on a picture-plane tend to be seen together and, consequently, one can stabilize them in coherent figures.

An illustration taken from K. Koffka can elucidate the law of proximity. Two parallel lines are perceived as one unit if they are close enough together. Because the space between them is enclosed, it appears separated from the surrounding space. If one adds two more parallels outside of the first two, the figure that was made by the interval between them loses its quality as a coherent whole, and serves only as a background for the two new units.

spatial organisation is the vital factor in an optical message

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spatial organisation is the vital fa ctorin an optical message

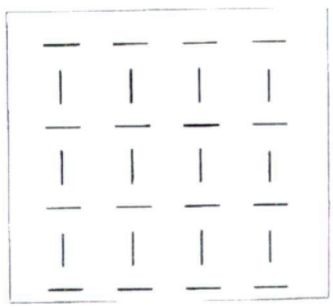
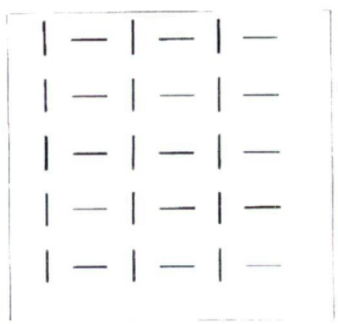
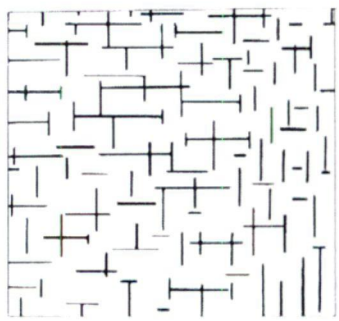


Fig -35-Analysis ofthe visual tension created by opposing organizational directions.
—Detail of Plea Mondrian's Composition 1915.
Source: Language of Vision-Gyorgy Kepes



01-1.6.3. Similarity or equality

Proximity however can yield to other factors at organization. We also tie elements into stable relationships if they have common qualities. Equal sizes, similar shapes, directions, corresponding colors, values, textures also produce the dynamic tendency to be seen together. Proximity and similarity, as factors in the creation of spatial structure, must be considered together. For units formed by proximity can be broken up through the similarity of their elements with other elements at a distance, and units formed by similarity can be broken up by extreme proximity of outside elements. This competition is important to the plastic organism, for opposite direction of organizations can bring a vital tension into the plastic experience. Considering them together. "similarity groups" seem to be more unified than "proximity groups."



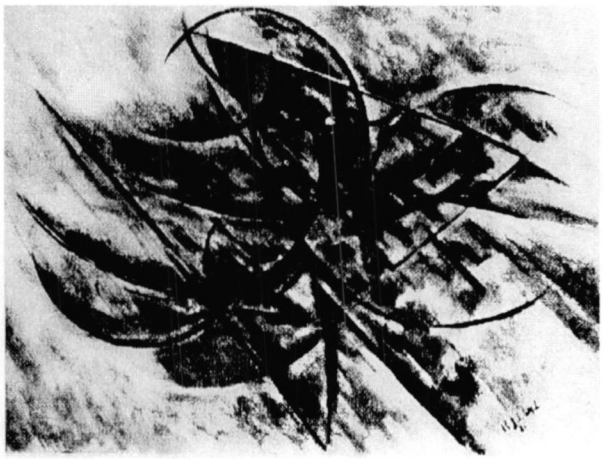


Fig -36- B.I. Wolff. Painting 1941
Source: Language of Vision

01-1.6.4. Continuance

Every linear unit has kinetic inertia. It tends to be continued in the same direction and with the same movement. A straight line tends to be seen in its continuation as a straight line; a curvular line as a curvular line; a wavy line with continuing repetition of its original rhythm. Such linear continuation helps to form the image by creating groups of a simple order. It is a most potent device in binding together heterogeneous elements and thus reducing the picture-image to the number of units which can be fully comprehended in one attentive act.

The law of continuance is also valid for the graduation or progression of hue, value and chroma. The eye moves along a direction of hue or value gradation similar to the way it moves along a line.

Fig – 37- Picasso. Drawing for a Crucifixion. 1932
Source: The Art Institute of Chicago

Fig -38- L. Moholy Nagy- Photogram. 1941
Source: Language of Vision

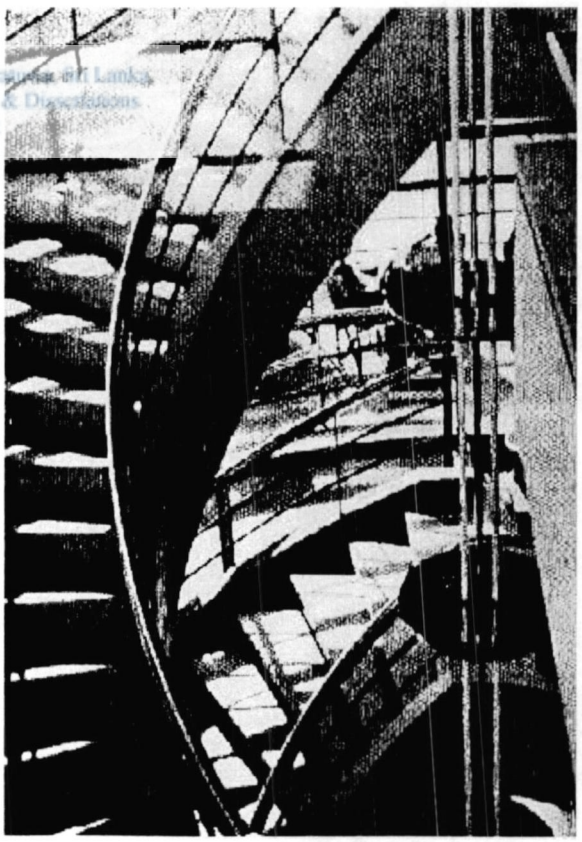


Fig -39- L. Moholy Nagy- Stairway. 1936
Source: Language of Vision

01-1.6.5. Closure

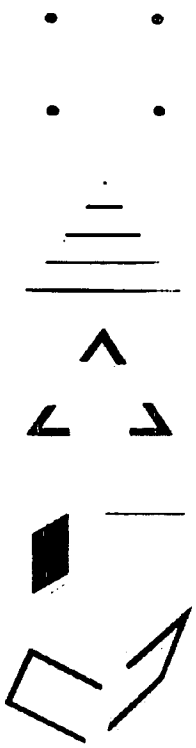


Fig-40
Source: Language of Vision

Forces of organization driving toward spatial order, toward stability, tend to shape optical units into closed compact wholes. Confronted with a complex optical situation, the beholder searches for the form with the most stable unity, or with the least disturbed relationships to the environment. Goethe observed that the after-image of a sharp square gradually becomes rounded into a circular shape. Just as a drop of water tends to adapt its shape to the most economical surface, so an optical unit tends to form the most economical closure, segregating itself as completely ns possible from its surroundings. A closed area appears more formed, more stable, than one which is open and without boundaries. A psychological filling-out of the intervals between the units occurs, and one constructs latent connections. This factor of closure may act on the flat dimension, generating from open linear units the experience of a closed shape, but it may also unify further dimensions. Certain latent inter-connections of points, lines, shapes, colors, and values are closed psychologically into bi-dimensional or tri-dimensional wholes. The factor of closure can be more significant than either nearness or similarity.

Due to the laws of visual organization, no visual unit can exist in itself on the picture-plane. Each unit leads beyond itself and implies a larger whole. Thus units not only live on the picture-plane; they also grow. They merge into wholes with a common function. Three musical tones have each it's particular wave length, its individual tonal quality; but when the three are sounded together their individual characteristics retreat and something entirely new appears—the chord. Similarly, the optical units organized into spatial configurations become more than the sum total of their component parts. These larger wholes form with other groups a still farther-reaching unit, and this process continues until all possible relationships are exhausted; that is, until the limit of attention is reached. This law of organization implies, then, that the numerical increase of elements does not necessarily lead to a loss of order of the picture whole. A uniform picture surface is flat. A gradual increase of the elements upon that surface shows clearly that, in each addition to the number or quality of units, a spatial unity can be maintained. Reaching the numeric limit of organization, previously separate units, in a kind of revolutionary leap, form a common figure—and thus a new condition for the organization of a more embracing whole. The number of units can be increased in so far as they do not interfere, forming further units. But when this point of saturation is reached, there is no further opportunity for plastic organization. A uniformity of surface is produced on a new level.

01-1.7. The life-span of the plastic image

The limitations of our nervous system define not only the number and extension of the individual optical units which can be perceived as a whole, that is, the space-span, but also the life-span of the visual experience. One cannot look at a static relationship long without losing interest any more than one can survive for long in a sealed room where the supply of oxygen is soon exhausted. The image as a living experience cannot long exist in a frozen structure. For the image to remain a living organism, relationships within it must be constantly changing. '[he eye and the mind must be fed with changing visual relationships. Only this changing variety can provide the stimulation necessary for holding attention upon the picture surface. Change implies motion. The plastic image must also be articulated, therefore, in the time dimension. The ultimate aim of plastic organization is a structure of movement that dictates the direction and the progression toward ever new spatial relationships until the experience achieves its fullest spatial saturation. As new relationships progressively unfold, the spatial integration of the image gains momentum until it finds final clarification in the plastic image as a whole. Such movement is defined and conditioned by physiological and psychological limitations. As the movement is basically an eye movement, understanding of the conditioning role of the neuromuscular structure is of great importance. Nevertheless, the direction of interest is what binds one unit to another. The ultimate range of a created image is defined by the available energies of attention.

01-1.8. Organization of optical sequence. Rhythm

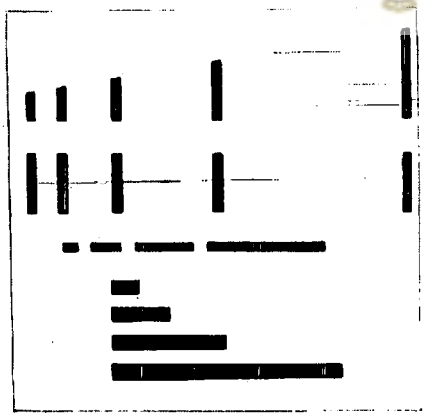


Fig-41
Source: Language of Vision.

Vision is the work process of the eye. Organizing the image means measuring and relating visible differences—hue, value, saturation, texture, position, shape, direction, interval, size—by the neuromuscular action of the eye. Unbroken activity burns out nervous energies. The eye as it works needs both action and repose. The balance of the complementary components must be recognized. Without it, the expenditure of energy, wrongly measured, leads to fatigue. With the correct effort, with a recognized metre, work is done economically and with greater endurance. Wood-chopping, hammering, swimming, rowing, walking, running, dancing are familiar activities in which the metre makes work easier and at the same time endows it with the feeling of pleasure. The proportion of action and repose-that is, the rhythm—depends upon the nature of the work. The orderly repetition or regular alternation of optical similarities or equalities dictates the rhythm of the plastic organization. In recognizing such order one learns when the next eve action is due and what particular neuromuscular adjustment will be necessary to grasp the next unit. To conserve the attentive energies of vision, therefore, the picture surface must have a temporal structure of organization—it must be rhythmically articulated in a way that corresponds, for the eye, to the rhythm of any work process.

But the significance of rhythm goes far beyond the crude material of pleasure in energy saving. Rhythm cannot be grasped as one isolated visual sensation. Its very meaning lies in the fact that it is an order of a greater temporal whole. The sparing of mental energies in judging the necessary physiological measures makes sense only in reference to the whole building process of the image.

Once a metre of accent and pause is recognized, a dynamic unity is formed, a time-binding order. Up and down, left and right, straight and curved, light and dark, small and large, short and long, condensation arid rare-faction, and other optical characteristics are tied by a common measure into an organic succession which braces the attention in a continuous flow until all relationships are evolved into a unity. Plotinus phrased this truth correctly long ago. He wrote:

"What is it, that impresses you when you look at something, attracts you, captivates you and fills you with joy?. We are all agreed, I may say, that it is the inter-relation of parts toward one another and towards the whole, with the added element of beauty in color, which constitutes beauty as perceived by the eye, in other words, that beauty in visible things as in everything else consists of symmetry and proportion."

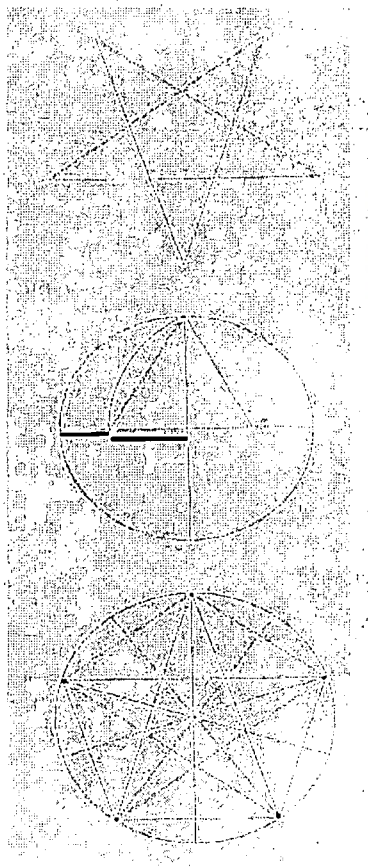


Fig-42- 1.Star of Pythagoras
2.The Divine Proportion
3.Star of Pythagoras in Regular Pentagram
Source: Language of Vision.

Rhythmical patterning of the picture surface can exist on as many levels as the differentiations of the visual field. If a surface permits any subdivision that repeats its own shape or size in a smaller form, a simple geometrical order is achieved. This subdivision implies sizes, positions, directions and intervals. On this level there can be rhythm through regular alternating or orderly repeating shapes, positions, length, angles, curves, directions, intervals. When the orderly measure of the optical units is related to their virtual movement from and to the picture-plane a higher level of rhythm is reached. We have then a rhythm of the plastic forces, a regular change of sensation of spatial movements of colors and values; advancing, receding, expanding, contracting, moving up, down, left and right. Finally we might have orderly changes or repetition of more complex configurations of visual experience; rhythmic order of tension and repose, concentration and rarefaction, harmony and discord. Rhythm may be simple, restricted to one or another metre of the optical differences. It may also be compounded, as two or more lawfully varying metres existing simultaneously. Rhythms may correspond with and amplify each other, or they may oppose each other, causing a higher level of rhythmic configuration.

There is scarcely a culture in which the visual rhythm was not conceived at least in one form or another. In the past, however, the main interest has been concentrated on a static scale of geometric proportion. Rhythm was not understood as an organic result of dynamic sensory organization,

but was regarded as the representation of certain absolute metres observed in visible nature or derived by mathematical speculations. Certain proportions observed in the human body, in crystal formations, in leaves, have been borrowed and used, through corresponding subdivisions of the picture surface. Rhythms of growth and function foreign from the growth and function of the visual organization were frozen on the picture surface. Rhythm, in terms of geometric measure only, neglected the dynamic quality of visual experience, the movements of the plastic forces.

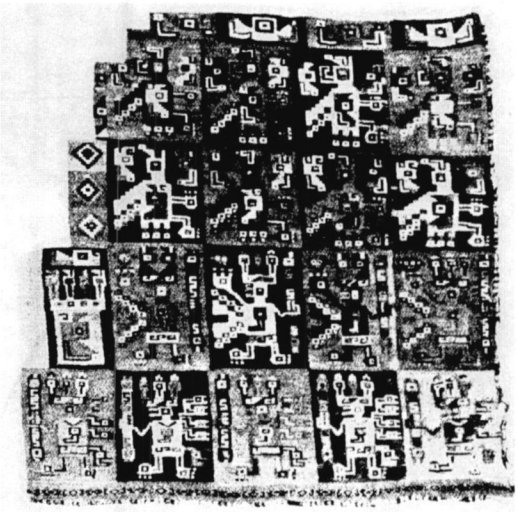


Fig-43-Peruvian Textile.
Source: Collection of The Fogg Museum of Art. The Rhode Island School of Design

There were, however, exceptions. Ancient Peruvian tapestry was conceived in a healthy respect for the rhythm intrinsic in the dynamic process of visual organization. By a careful interchange of the lines, shapes, colors, the rhythm of time is translated into space. These designs are described by Franz Boas, who says:

"On many fabrics we find patterns consisting of a diagonal arrangement of squares or rectangles. In each diagonal the same design is repeated, while the next diagonal has another type. In each diagonal line the design is shown in varying positions. If the one faces the right, the next faces the left. At the same time there is an alternation of colors, so that even when the form is the same, the tints and the color values will not be the same."

Fig-44- Seurat. Le Chahut 1890.
Source: The Albright Art Gallery, Buffalo.

After the sterile, static approach to the rhythmic ordering of the picture surface. Seurat in the last century brought rhythm back to a dynamic level. He welded shapes, directions, colors, sizes, into a rhythmic unity by a carefully planned interaction of horizontal, vertical directions, straight and curvular lines, and the advancing and receding movements of the colors.

Mondrian and Doesburg carried this dynamic principle of rhythm to final purification and maximum intensity. By reducing the picture surface to the basic opposites—pure colors, elementary shapes, and horizontal and vertical directions—by eliminating any resemblance to the familiar object world, as Mondrian writes, art today has succeeded in establishing a plastic expression, **"the clear realization of liberated and universal rhythm distorted arid hidden in the individual rhythm of the limiting form."**

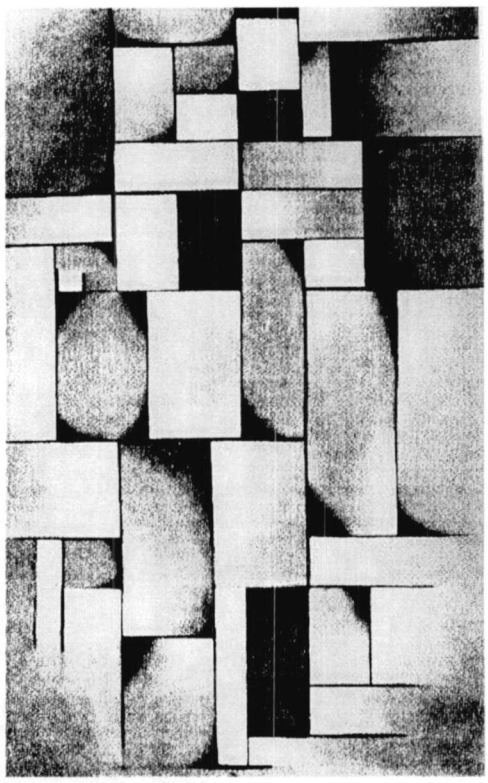
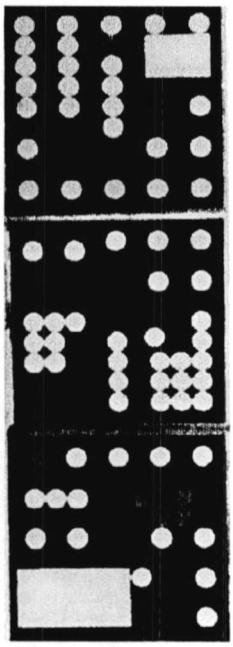


Fig-45-Theo Van Doeshurg -Cornposition
Source: Art of This Century



The invention of the motion picture opened the way to a hitherto undreamed scope and flexibility of rhythmic organization. The new possibilities of the synchronization of the temporal and spatial structure of the vision are, however, still barely touched upon. From the few pioneers who tackled the problems, Viking Eggeling and Hans Richter made the first and most important practical and theoretical clarifications. Eggeling pointed to the very core of all visual organization when he wrote, "What should be grasped and given form are things in flux."

Fig-46- Sophie Taeuber-Arp. -Cornposition 1931
Source: Art of This Century

01-1.9. Organization of spatial progression. The equivocal space

Rhythmic organization, although an essential condition for keeping the attention and thus prolonging the life span of the image, is not in itself fully sufficient to secure the maximum endurance of attention necessary for integration of a plastic form. One is well acquainted with the irritating sensation produced by the regular repetition of a sound of a drum. One knows almost instinctively that a simple rhythmic pattern possesses a regularity that soon becomes monotony. If the image is to remain a living organism, the relationships within it must have progressively changing aspects. One cannot long look at the same visual relationship without exhausting nervous energies of attention.

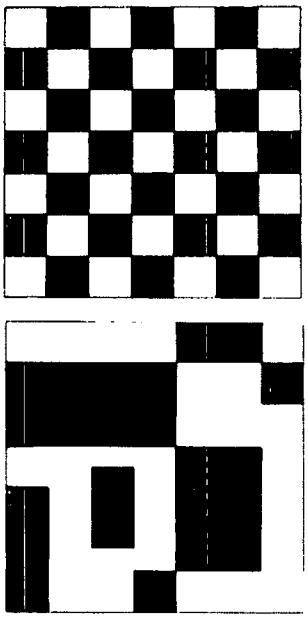


Fig-47
Source: Language of Vision

The power of rhythm in keeping attention prolonged is conditioned by the necessity to feed attention by progressively changing optical material. Change implies movement. The final task of plastic organization is, then, the creation of an optical structure of movement that will dictate the direction and progression of plastic relationships until the experience reaches full integration. The most evident characteristic of movement is its unity, its dynamic continuity. Movement, however, implies also the opposite of unity: variety of locations. The very meaning of movement lies in this inner contradiction of the dynamic unity and the static discontinuity. To experience movement, then, means to disclose its contradictory aspects, to establish their mutual relationships, to follow up the contradiction through all stages. '[he picture field is two-dimensional surface and the optical changes therefore must necessarily be within the circulation of the vision on the flat plane. The kinetic basis of plastic organization the linear paths of the eye on the picture-plane— Is the common measure that binds into a unity the changing plastic relationships. The eye follows the given path, and the kinetic sensation of the eye movement charges the line with its own experience-quality and establishes a dynamic continuity, a unity of the surface.

The function of the kinetic linear path in plastic organization may be compared with the function of melody in musical composition, and the following observations of musicians should be helpful in bringing about further clarification.

"Music, theoretically considered, consists altogether of lines of tone. It more nearly resembles a picture or an architectural drawing, Charm any other art creation; the difference being that in a drawing the lines are visible and constant, while in music they are audible and in motion. The separate tones are the points through which the lines are drawn; and the impression which is intended, and which is apprehended by the intelligent listener, is not that of single tones, but of continuous lines of tones, describing movements, curves and angles, rising, falling, poising—directly analogous to the linear impressions conveyed by a picture or drawing."❖

This linear unity can encompass all possible optical opposites on all levels of space amid can be generated by any factor of visual organization. When plastic forces fail to create the experience of depth, linear movement will organize flat shapes. Not only does each shape have its own individuality, but simultaneously the outlines of the shapes have dynamic power to lead the eye from one to another.

❖P. Goetschius, Elementary Counterpoint

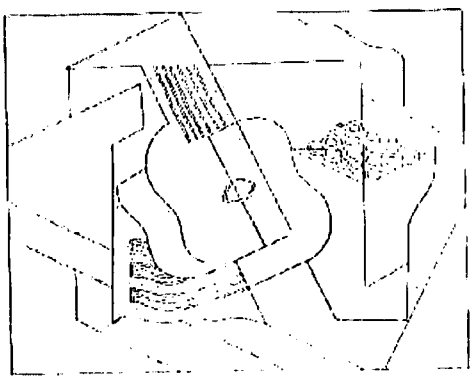


Fig-48- Linear diagram of a Painting by Juan Gris.
Source: Language of Vision

A number of contiguous shapes placed on the picture-plane are automatically connected by the movement of their continuous outlines. These lines move, first from one figure to another, forming groups, and then from one group to another, creating a progressive organization of all the elements on the picture surface. The common dynamic linear direction thus has an equivocal meaning. Each shape outline shares the direction of visual flow. This ambiguous spatial content is increased in vitality when new qualities are added to the shapes. If value differences are introduced where value uniformity previously held, if one shape is made black and another white, the remaining ones of intermediary values, the two-fold character of the space will be made more evident. One shape will appear to advance toward the spectator, another to recede, and so on, but the evident or latent continuation of the outline continues to move on the flat surface and the contradiction and identity between the depth dimensions and the picture-plane are brought to life. This two-fold characteristic can be still further increased by the addition of color, texture and other spatial qualities and by the illusory indication of form or action.

Directions of the visual flow on the surface can also be indicated in more subtle ways. A kind of psychological filling-in of the optical intervals will supply latent lines capable of performing the same role of organization as actual lines for shapes which have in their own right no common lines whatsoever. According to the law of closure, intervals of colors and values can emerge into forms, intervals of lines into shapes, intervals of points into lines, generating new figures with new kinetic outlines.

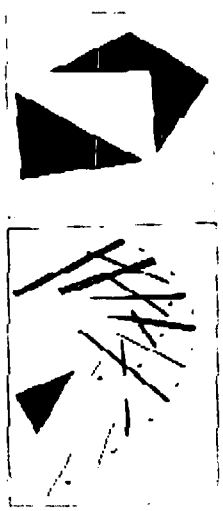


Fig-49-
Source: Language of Vision

The study of certain optical situations where the attention fluctuates between figure and background, and where each in turn emerges as the figure or the background, makes it evident that there is no fundamental difference, in an optical sense, between the figure and the background, between the positive and negative space. Linear movement is based not only upon the activity of existing lines or outlines of figures, but also upon the latent outlines of the intervals between these figures.

The kinetic outlines of the figures generated by the optical intervals constitute an integral part of the plastic organization. They live, act, and move with the same kinetic power as the lines and shapes intentionally created.

Fig-50-Sano Di Pietro.
Madonna And Child
Source- The Smith College Museum of Art

Plastic movement can be repeated in various visual qualities such as color, tone value, texture, shape, form, and so on. The eye passing from one sensory stimulation to another receives an accumulated impetus which leads it to embrace newer relationships on the picture surface. Music suggests an excellent analogy. A musical unit played by an instrument is repeated contrapuntally on other instruments, on the strings, on the brasses, on the woodwinds, even on percussion instruments. Each plastic unit with its specific sensory quality echoes the previous one; light, dark, color, shapes, forms, all mutually help one another, one taking over the movement where another stopped, leading toward complete unity.

"The groups of tones in a melody which are harmonically connected are like the links of a chain; they give the melody color and sheen. They-are the teal body of the melody, strange as it may seem to speak of body in connection with a linear phenomenon like a melody. It must not be -forgotten that a melody is only primarily linear, and that the comparison with a curved line applies only to the most obvious, external aspect of a chain of tones. The melodic thread has an ever-changing but ever-present volume or thickness."*

Fig-51- Nicolas Poussin. Drawing
Source- The William Rockhill Nelson Gallery of Art

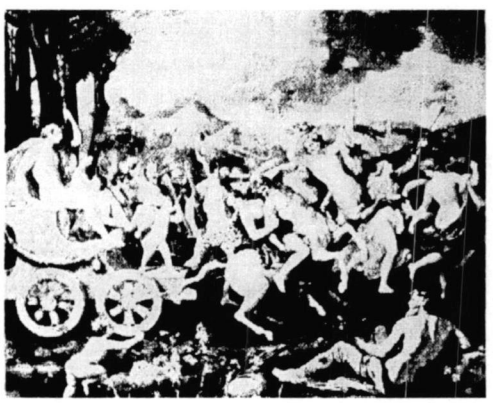


Fig-52-Nicolas Poussin. Triumph of Bacchus
Source- The William Rockhill Nelson Gallery of Art

The finest example of spatial orchestration by movement within the limitations of classical object representations was achieved by Poussin.

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*Hindemith, Craft of Musical Coin position

01-2. Visual Representation

In the foregoing section, we considered the plastic image as a living organism, the laws of its growth and structure. Such a living organism is rooted in nature amid depends upon the visible nature for its food. For a fuller understanding of the image, its role, and its effectiveness, we must learn its relationship to the visible features of our changing environment.

Man is a dynamic being struggling individually and socially for survival. To survive he must orient himself to his surroundings. He must measure and order the visual impacts of his environment to correspond with nature. lie must communicate his findings to his fellow men for the mutual reinforcement of their actions. He asserts himself in the material world by means of his sensory equipment as well as his thinking process. Thus the control of nature includes the domestication of nature through the eye, the visual assimilation of space-time events.

Visual images are tools for this progressive control of nature. Each new visual conquest creates a new horizon, a new frame of reference, a new starting point for further development. As the aspects of nature change, man needs to readjust these tools and develop new uses for them. As there is progress of the thinking process, so also there is evolution of sensory comprehension. The development of vision leads not only to further understanding of nature but also to the progressive development of human sensibilities, and thus to wider and deeper human experiences.

It is common experience that activities originally voluntary become with practice largely automatic. Arriving in a new town, one is conscious of every step one takes. Orientation is a voluntary activity, each step involving a conscious measuring of distance and direction. But with familiarity orientation becomes mechanical. One goes from place to place without conscious thought of route or landmarks. Sitting for the first time behind the wheel of an automobile, one must give concentrated voluntary attention to every motion of hand and foot. In time, however, these manipulations become automatic. The driver may talk or listen to the radio without being afraid of losing control of the car. The act of talking requires complex coordination of muscles and vocal chords. Yet iii conversation we are primarily aware of the meanings we wish to express and hardly conscious at all of the tongue and lip movements we use to form the sounds and convey the meaning.

As William James says:

"The great thing, then, in all education is to make our nervous system an ally instead of an enemy. It is to fund and capitalize our acquisitions and live at ease upon the interests of the fund. For this we must make automatic and habitual as early as possible as many useful actions as we can... . . The more of the details of our daily life we can hand over to the effortless custody of automatism, the more the higher power of mind will be set free for their own proper work."

We see as the painters, sculptors, architects, photographers, advertising designers teach us to see. The social value of the representational image is, therefore, that it may give us education for a new standard of vision. The voluntary action of the painter, as he strives to make terms with the changing aspects of space-time events, must be translated through the objective image in

the beholder's experience into a new and automatic standard of vision.

Seeing spatial relationships on a flat land is a different experience from seeing them in a mountain region where one form intercepts the other. To orient oneself in walking requires a different spatial measurement than does riding in a motor-car or an aero plane. To grasp spatial relationships and orient oneself in a metropolis today, among the intricate dimensions of streets, subways, elevated trains, and skyscrapers, requires a new way of seeing.

As the Euclidean geometry was but a first approximation in the knowledge of spatial forms, reflecting only a certain limited complex of spatial properties, the traditional forms of visual representation were but the first approximation in sensing the spatial reality.

In the last hundred years technological practice has introduced a new, complex visual environment. The contemporary painter's task is to find the way of ordering and measuring this new world. This historical challenge calls him to assimilate the new findings and to develop a new sensibility, a new standard of vision that can release the nervous system to a broader scale of orientation.

Visual representation operates by means of a sign system based upon a correspondence between the sensory stimulations and the visible structure of physical world. Space-time events of the physical world must be translated into the relationships of color surfaces on the picture-plane. Man has gradually learned to order certain visible relationships of space-time events; that is, of extent, of depth, and of movement. The historical development of representation shows a gradual conquest of these optical relationships in the terms of the two-dimensional picture surface.

This optical correspondence is by no means necessarily congruent with the spatial experience intrinsic in a plastic organization of the picture surface. A photograph of a running horse may appear inert within the four boundaries of the picture-plane, if its position, frozen on the picture-plane, has a plastic relationship with the two-dimensional surface which gives a static experience. The same photograph will be dynamic if the optical units are so ordered in reference to the picture margins as to induce a kinetic experience. It is necessary to find a congruency between these two frames of reference: the observed relationships in the actual spatial world and the spatial nature of the two-dimensional picture-plane. A visual representation of nature can be vital in human experience only if it becomes a nature form itself by reaching an organic quality, a plastic unity.

The goal is a visual representation in which the most advanced knowledge of space is synchronized with the nature of the plastic experience. Space- time is order, and the image is an "ordered." Only the integration of these two aspects of order can make the language of vision what it should be a vital weapon of progress.

Visual representation has three parallel tendencies. The first is the tendency to approximate in a two-dimensional relationship the totality of spatial experience. It is a synthesis which includes not only what one sees but what one knows about the thing seen. If one knows that a man has two legs, then he will draw them both, although only one leg be seen from the particular angle of observation. If one knows that a plate has a circular shape and a characteristic local color, he will represent that plate in its characteristic visual form, although from his particular angle of vision the plate must appear elliptical, and its color be changed by variable illumination. The conceptual characteristics of the spatial units, rather than the apparent optical characteristics, are shown.

The second tendency is toward the most precise graphic recording of objects projected on the retina. The artist tries to put on a flat surface one apparent optical aspect of the mobile, spatial world. The third tendency is toward a representation of the content of desire and will. The selection and arrangement of representational elements are guided by the artist's desire to bring release from emotional tensions by materializing in the symbolic forms of representation the objectives of his wishes.

The history of visual representation shows a changing emphasis now on one, now on another, of these components. The representational image is never identical with the spatial reality; hut approximates it according to the prevailing standards of interest and knowledge. One does not see every aspect of visible things and events; one selects and arranges the visual stimulations according to one's attitude toward these things. To the same degree that the knowledge of the environment and the habits and attitudes toward the environment change, the visual habits of representation also change.

A revaluation of representation idioms comes about only when new elements that invade the environment field are important enough to demand attention and when there are no traditions to shape visual habits in regard to them. The recent changes in science and technology demand such revaluation. New experiences, scientific, technological, and social, do not fit any longer into the old frame of reference. As our concept of reality deepens and our knowledge of space widens, a fundamental revaluation of the traditional forms of representation is unavoidable. The re-checking of the idioms of space-representation and their integration with the genuine language of the picture surface is the vital task of the contemporary artist. The following sections survey the inherited idioms of visual representation and evaluate them in contemporary terms.

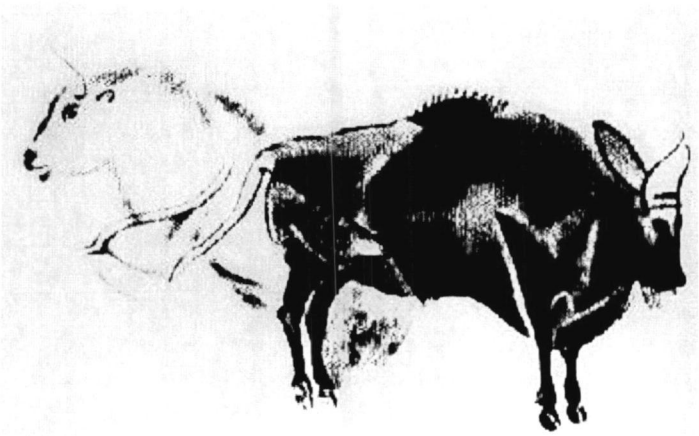


Fig-53- Spanish Cave Drawing. 30,000-10,000 W C.
Source- Reproduction The Art Institute of Chicago

01-2.1. The single unit

The narrowest form of spatial grasp is the perception of the single spatial unit. The simplest form of spatial representation is that of a single spatial element.

Primitive man had a limited understanding of space and time. For him, each experience was confined to its own space-time life, without reference to past or future or wider spatial relationships. He felt little, if any, need for comparing and measuring. His visual representation was limited, for the most part, to single spatial units. The visual comprehension of the figures he represented was not connected with the understanding of the surrounding space. He was little concerned with backgrounds, weight, top or bottom. Each element lived its own life in complete spatial independence. Represented figures were only transitory on the picture surface. The figure and the background were not in organic interdependence. This unframed character of the picture surface, the lack of a spatial frame of reference, may be the reason that prehistoric artists frequently overlapped with new paintings the work of their predecessors. Children's drawing reveals a similar attitude. Spatial elements are not yet grasped in their inter-connections. They have no unified frame of reference. Because there is no coherent spatial background to which to relate the elements, drawings on a picture-plane have only accidental organization. Children draw until the figure reaches the limits of the paper. Then they turn the paper over and fill in the available space.

Fig-54- Madonna and Child with Angels.-Italian School xiii Century.
Source- National Gallery of Art, Washington, D.C.Kress Collection.

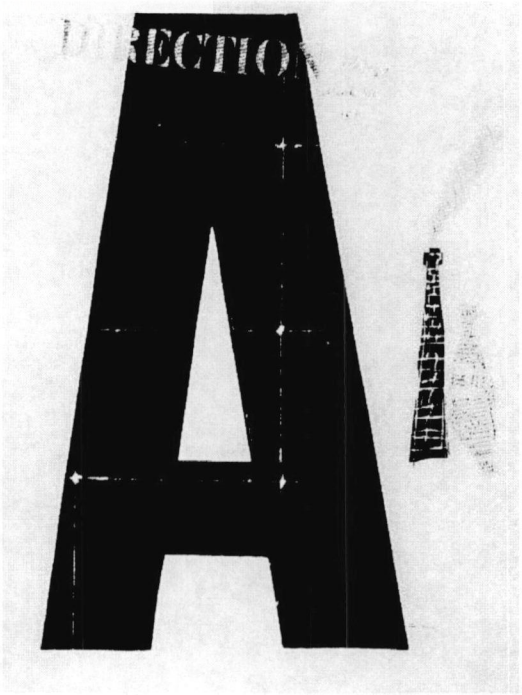


Fig-55-Advertising Design 1941-Paul Rand.
Source- Language of Vision

01-2.2. Relationship of size

We are accustomed to attribute to a larger retinal projection spatial emphasis, that is, a larger space-filling characteristic. Size, therefore, becomes the simplest statement about space—the first step of organization of the spatial world.

In early forms of visual representation, space is indicated by the extension of the color areas on the picture surface. In these early representational images, the hierarchy of size was intimately associated with the hierarchy of power, strength, and importance. Thus, the first spatial scale had a structural correspondence to the scale of values. Size relationships were used not only as a spatial sign hut also as symbols and as a means of plastic emphasis.

Renaissance perspective destroyed this structural correspondence of space, symbol, and plastic emphasis by a slavish imitation of the apparent optical image of the three-dimensional object-world. After a long eclipse, this structural use of size differences was rediscovered by contemporary painters, photographers and motion picture camera men. Advertising art, uninhibited by tradition, also found a dynamic and structural use of the contrasting size of color surfaces. The page has its own spatial world, not in a naturalistic sense as an illusion of actual distances between the represented elements, but in the sense that in it the size of picture and word are in a plastic and meaningful connection.

01-3.1. Relationship of depth by vertical location

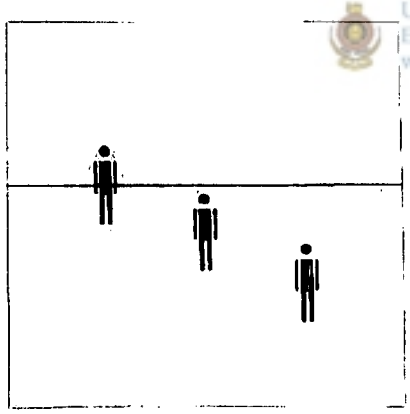
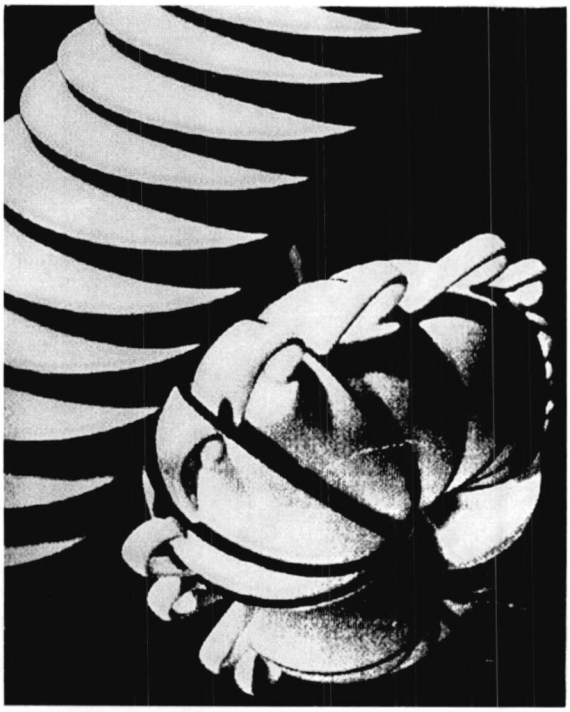


Fig- 56
Source – Language of Vision.

For the spectator, the horizon line provides a frame of reference. He judges the position of the object he sees in relation to the horizon line, and so receives an impression of its distance from himself as well as from other objects before him. Even if the horizon line is not apparent, the different elevations of the elements indicate a position in depth.

Representation on the two-dimensional picture surface has conventionally utilized the spatial meaning of the vertical location. The visible or latent horizon line was kept as the frame of reference. The picture-plane has been identified with, and conventionally fixed to, the horizontal ground plane. The bottom of the picture-plane has represented the closest visual point; consequently the degree of elevation of the visual units indicated receding spatial positions.



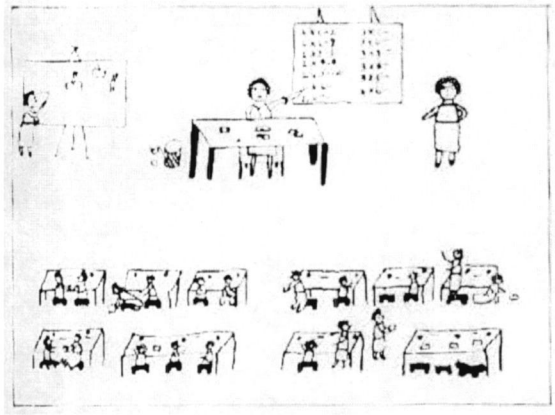


Fig-57-Drawing by eleven year old Spanish child
Source – Language of Vision

Fig-58-Ladislav Sutnar. Photograph
Source – Language of Vision

Fig-59-Aerial Photograph
Source – Language of Vision

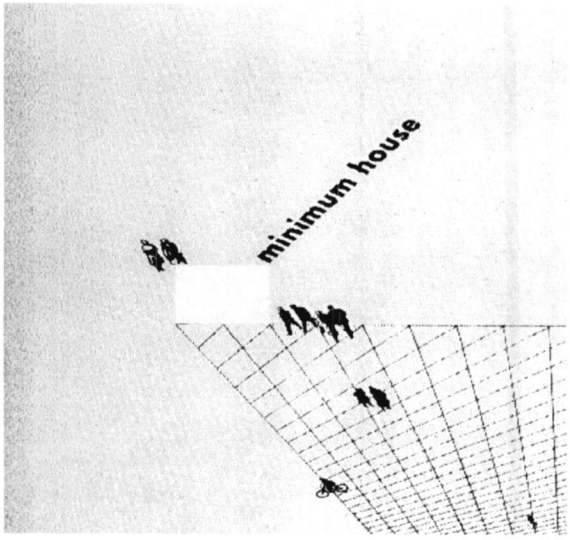


Fig-60- Ladislav Sutnar – Book Jacket
Source – Language of Vision

New technological discoveries have brought about a fundamental revaluation of vertical position as a sign of depth. Bird's-eye view and frog's-eye view in photographs and a new vision in aerial observation were the most important factors. For the airman, as well as for the photographer, the horizon line changes constantly, and consequently loses its absolute validity. No longer was it inevitable that the visual understanding of objects and their spatial relationships be based upon a frame of reference which had a constant the fixed visible or latent horizon.

Thus freed, the signs of space representation can function as plastic forces. The order of actual space and the space of the picture-plane are in close congruency.

01-3.2. Representation of depth by overlapping figures

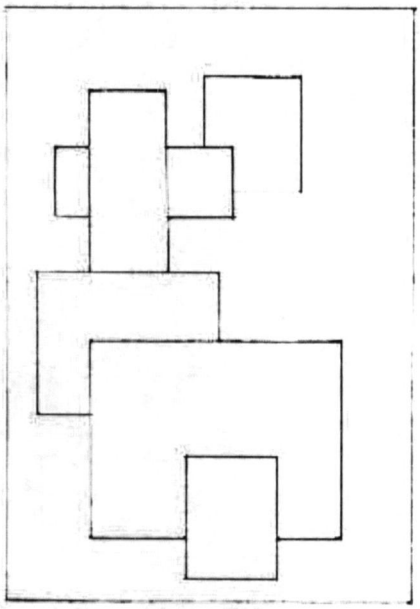


Fig-61
Source – Language of Vision

If one spatial form obstructs our view of another form, we do not assume that the second ceases to exist because it is hidden. We recognize, as we look at such overlapping figures, that the first or uppermost has two spatial meanings—itself and beneath itself. The figure which intercepts the visible surface of another figure is perceived as nearer. We experience spatial differences or depth. Representation of overlapping indicates depth. It creates a sense of space. Each figure appears parallel with the picture-plane and tends to establish a receding spatial relationship.

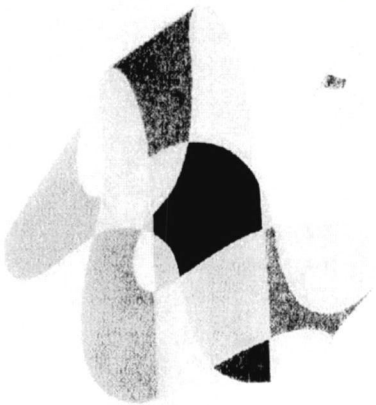


Fig-62- Clifford Eitel. -Study of transparency
Work done for the author's course in Visual Fundamentals
Sponsored by The Art Director's Club of Chicago
Source – Language of Vision

Fig -63- Last Judgment -German 1460
Source - Reproduction , The Art institute of Chicago

01-2.4. Transparency, interpenetration

"Migrating billiard balls cannot pass through one another: encounter means displacement. But migrating waves from different centers (as on the surface of a pond) can pass through one another without conflict, adding themselves to one another as they pass. And ordinarily, two gases, released into the same closed space, will expand through one another until each fills the entire space. In the physical world there are numerous examples of 'interpretation.' Is it conceivable that political expansions might also interpenetrate like waves, rather than collide like billiard balls?" —William Ernest Hocking. America's World Purpose.

If one sees two or snore figures partly overlapping one another, and each of them claims for itself the common overlapped part, then one is confronted with a contradiction of spatial dimensions. To resolve this contradiction, one must assume the presence of a new optical quality. The figures are endowed with transparency; that is, they are able to interpenetrate without an optical destruction of each other. Transparency however implies more than an optical characteristic; it implies a broader spatial order. Transparency means a simultaneous perception of different spatial locations. Space not only recedes but fluctuates in a continuous activity. The position of the transparent figures has equivocal meaning as one sees each figure now as the closer, now as the further one.

The order of our time is to knead together the scientific and technical knowledge acquired, into an integrated whole on the biological and social plane. Today there are hardly any aspects of human endeavor where the concept of interpenetration as a device of integration is not in focus. Technology, philosophy, psychology, and physical science are using it as a guiding principle. So do literature, painting, architecture, motion picture and photography, and stage design. Furthermore, it is a commonplace technical knowledge in our everyday life. Radio waves are the clearest example of this.

Fig -65- G.F. Keck. Detail of a House
Photograph by F. Keck
Source – Language of Vision

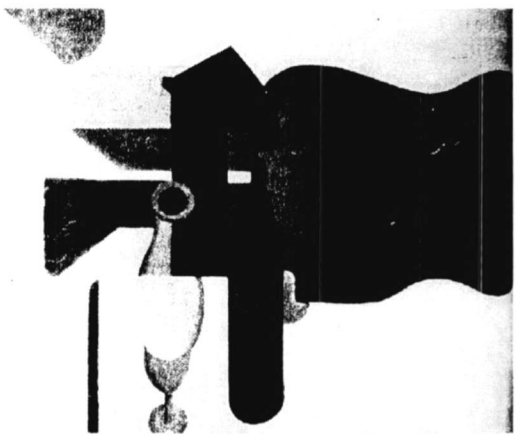


Fig - 64 - Amadee Ozenfant. Purist Still Life
Source – Art of This Century.

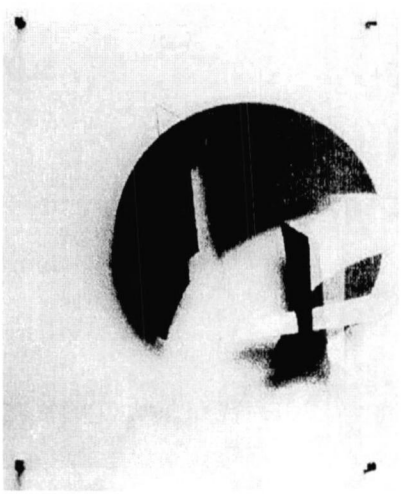


Fig -66- L. Moholy Nagy. Space Construction 1930
Source – Language of Vision

Contemporary architecture utilizes the transparent quality of synthetic materials, glass, plastics, etc., to create a design that will integrate the greatest possible number of spatial vistas. Inside and outside are in close relationship, and each viewpoint in the building offers the widest visible comprehension of space. Reflections and mirrorings, transparent and translucent building materials are carefully calculated and organized to locus divergent spatial vistas in one visual grasp.

Technical control of artificial light-sources, the projection of images by light, has contributed also to the revaluation of overlapping and the introduction of the representational device of transparency. Light rays covering an image are able to interpenetrate one another, light increases light, shadow deepens shadow. The result is greater intensity.

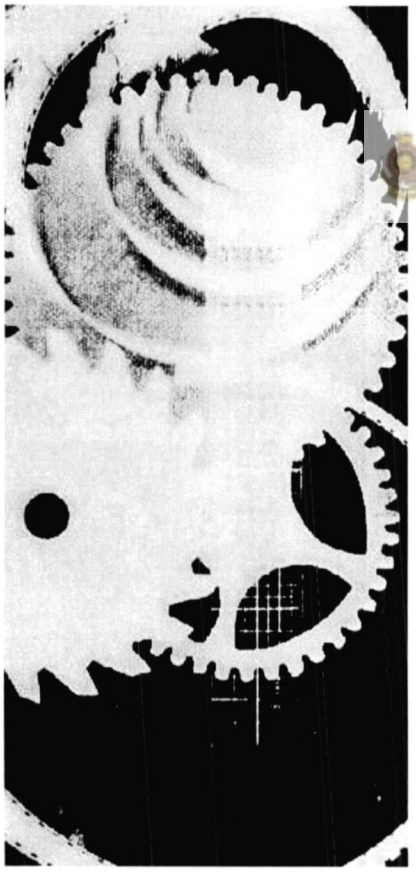


Fig-68- Gyorgy Kepes, Advertising Design
Source – Language of Vision.

Source – Language of Vision.

The photographic emulsion is characteristically able to record on one picture surface two or more superimposed projections. The resulting effect compresses two or more spatial aspects and moulds them into a broader type of space representation. X-ray photography opened up a new aspect of the visible world. Things hitherto hidden from the human eye could be penetrated and made visible. Here the transparency has a new meaning, because the depth of the object is also evaluated by its optical density.

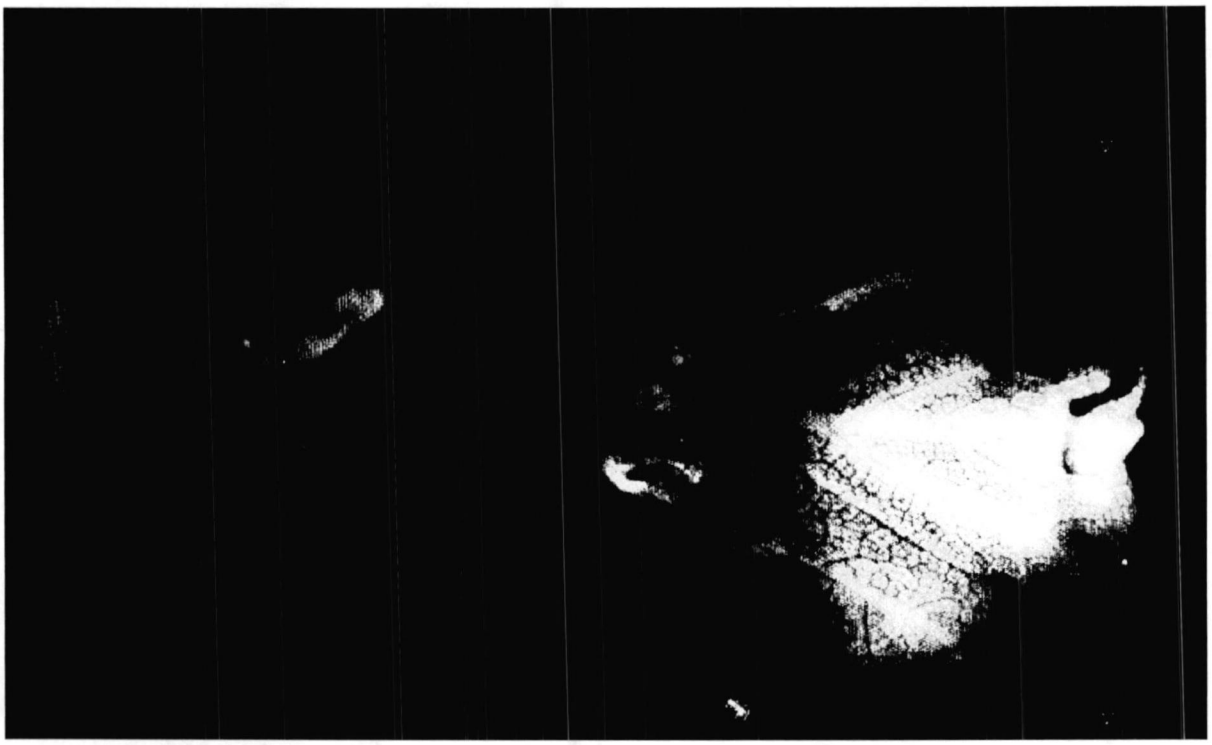


Fig -69- Jack Waldheim. Superimposed Photography – 1943
Source – Language of Vision.

Fig – 70- William Burtin. Advertising Design – 1940
Source – Language of Vision.

Fig -71- Cassandre. Air Orient – 1932
Source – The Museum of Modern Art

The technique of the printing process offers another opportunity for the creative control of transparency. One printing over another will condense a variety of spatial dimensions into one meaningful whole.

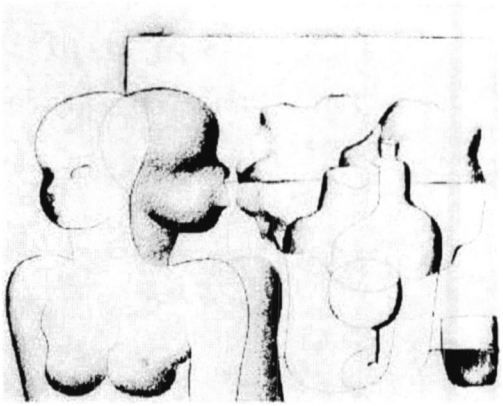


Fig – 72-Le Corbusier, Drawing.
Source – Carl .O. Schniewind

Fig – 73- E. McKnight Kauffer, Poster
Source – The Museum of Modern Art

01-2.5.1. Linear perspective

The retinal image of the objects shrinks or swells as the objects are closer to or further from the spectator. Helmholtz says:

The same object seen at different distances will be depicted on the retina by images of different sizes and will subtend different visual angles. The further it is away the less its apparent size will be. Thus just as astronomers can compute the variations of the distances of the sun and moon from the changes in the apparent sizes of these bodies, so knowing the size of the object, a human being for instance, we can estimate the distance from us by means of the visual angle subtended or, what amounts to the same thing, by means of the size of the image on the retina.

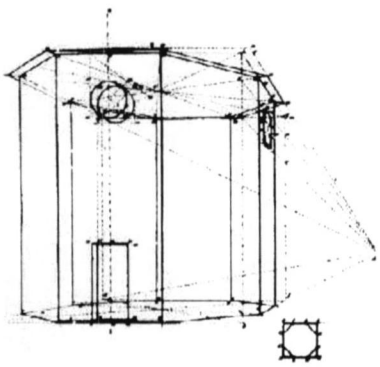


Fig -74-Perspective drawing by Piero della Francesco.
Source – The Museum of Modern Art

The use of this geometrical relationship was re-introduced by the Renaissance painters as the main device for representing spatial relationships. Their artistic goal was the optical scientific mastery of nature. Conditioned by the aspirations and outlook of the Renaissance, they sought to achieve this step by step by focusing always on one aspect, on one cut-out sector, of the unbounded wealth of surrounding nature. Like the anatomist—another pioneer of the same spirit, who made his conquest of knowledge by eliminating the living, moving aspects of the body—the artist—anatomist of the visual image-eliminated the flux of the innumerable visual relationships that the visible world has for the spectator. He froze the

living, fluctuating wealth of the visual field into a static geometrical system, eliminating the time-element always present in the experiencing of space, and thus destroying the dynamic relationships in the experience of the spectator.

01-2.5.2. Inverse perspective

In accordance with the ancient Chinese canons, Chinese and Japanese painters assign to linear perspective a diametrically opposite role from that given it by western painters. In their system parallel lines converge as they approach the spectator. They open up the space instead of closing it. The picture space is not a scientific optical diagram of the apparent positions of objects but a medium of experience, an active two-dimensional panorama for the spectator, who lives the image. The same approach was used in many early European paintings.

Fig -76- Jere Donovan, Photomontage. Action Herbert Bayer Design Class 1939 Sponsored by The American Advertising Guild
Source – Language of Vision

Linear perspective gave a unified formulation of space, but it restricted the spatial relationships to one angle of vision, one fixed point of view, that of the spectator, by creating an illusory depth between the objects and an illusory distortion of their actual shape. An unimportant detail can intercept in a foreshortened image the most significant element, thus making the whole unintelligible. We may blot out a house or a man by holding a finger close to the eye. From a certain angle of view, dissimilar forms may appear as similar optical projections and similar forms as dissimilar.

If any meaning of depth is to flow from foreshortening and diminishing by the use of perspective, the observer must be acquainted with the objects in their actual three-dimensional characteristics. A memory constancy, moreover, is attached to familiar things of our surroundings. We keep a constant size and shape in our perception however the size and shape of the retinal projection may vary with changes in our angle of vision. For example, when we see two men, one six feet away and the other fifteen, they both appear to us approximately the same size. When we look at a plate from an oblique angle, it should, by the rules of linear perspective, appear elliptical; actually we still see it

as round. When we look, the retinal projection fixes on only a small fragment of the spatial relationship that we actually perceive; we supplement the unseen part with our memory constant of a unified spatial background.

Size differences which do not register in direct visual perception and appear unchanged although they project different images on the retina reveal, when fixed on a two-dimensional picture-plane, a great power to accentuate the illusion of depth between objects.

Fig -77-Tintoretto, Hercules And Antaeus
Source – C... , Wadsworth Atheneum.

01-2.5.3. Amplified perspective

Almost as soon as the Renaissance introduced perspective, its painters began to find the fixed system of space representation less than satisfying. Some attempted to break the bonds by going to extremes. The unified space of the linear perspective was saturated by extreme distortions. The maximum contrast of small and large was applied to inject the picture space with the optimum of vitality. The perspective framework was stretched or condensed to the utmost limits, reaching the greatest dynamic expression possible within the static linear-perspective system.

Fig – 78- A.M. Cassandre, Poster - 1932
Source – ... The Museum of Modern Art.

Amplified perspective is used in photography, photomontage and in motion picture as a potent device for creating a strong sense of space.

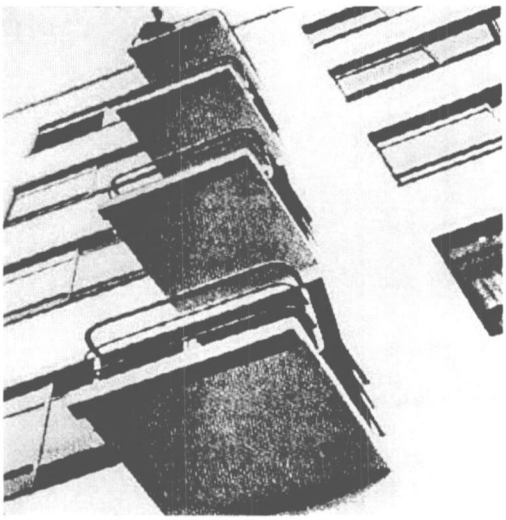
01-2.5.4. Multiple, simultaneous perspective

Other painters modified and disrupted the static spatial unity of the linear perspective by introducing into one picture a number of vanishing points and several horizons. Their aim was to bring into the picture space the widest possible spatial relationship, instinctively molding the linear perspective to the nature of the picture-plane. Leonardo da Vinci, in his Adoration, introduced a number of points of view and several horizon lines to make the landscape in the background clearly visible. Jan Van Eyck sometimes used three or more vanishing points to increase the inner space of a room. Veronese, Tintoretto, and other painters employed in one picture many vanishing points and horizon lines.

Fig -79- Di Paolo. Baptist in the Wilderness
Source - The Art Institute of Chicago

Fig -80-Tintoretto, Venus and Mars with Three Graces
Source - The Art Institute of Chicago

Their work was the first to break with the limited system of linear perspective which made the spectator pause in time and in space—a contradiction to the nature of visual experience. By multiple perspective, the static fixation was overcome, because simultaneous perspective means moving in space.



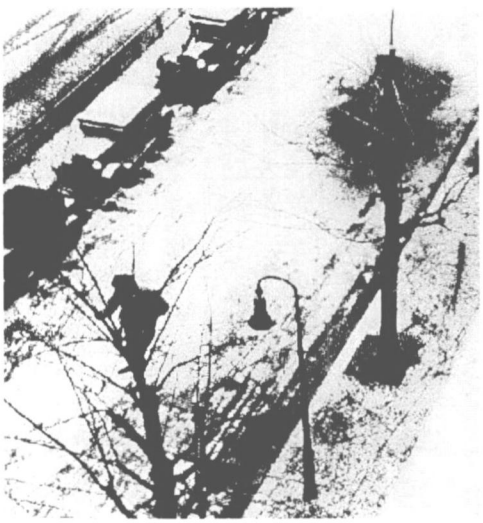


Fig - 81 & 82
Source – Language of Vision

01-2.5.5. Mechanical perfection of the linear perspective

Fig -83
M.Halberstadt,mirroring.
Source – School of Design, chicago

Vision unchained by the photographic camera was able to explore hitherto untouched territories of perspective. Latent optical aspects became apparent because the camera was able to reproduce objects from an angle of vision that the unaided eye could not achieve in reasonable comfort. if at alt. Not only the accustomed frontal and profile-views but also the view from above, the bird's-eye view, and that from below, the frog's-eye view, were recorded. The vanishing point which, in the traditional space representation, had usually been in the middle of the picture-plane was shifted left, right, up and down, into almost all possible positions. For each changing position there was not only a corresponding cut-out of the visual field but also, within this cut-out, a different foreshortening.

Motion picture photography still further increased the elasticity of foreshortening and introduced a hitherto unseen flexibility in the use of size differences for space accentuation. The "close up" broke up the traditional continuous space unity inherited through painting and theatre and extended the picture space to amplified dimension. In a sequence a "close up", "medium shot." and "long shot" bring a living, moving variety of expanding and condensing space.

Fig -84- James Brown,
Distrotion in Mirror.
Source – Language of Vision

Optical accessories within or outside the camera were employed for the further exploration of the appearances of things. Mirrors, prisms, and special lenses sketched, diffused, distorted, repeated, molded the things and created images not corresponding to direct visual perception.

01-2.5.6. Breakdown of fixed perspective

The invention and perfection of the camera was by no means the only factor tending to break down the absolute validity of linear perspective. The whole social trend of the contemporary world made such breakdown inevitable.

The Renaissance, which re-discovered the rules of that perspective, had awakened economic forces which led to an interest in every facet of understanding and control of nature. This interest, in turn, released tremendous scientific and technological progress. The progress revolutionized production and reshaped the economic and social structure and transformed man's inner and outer landscape.

The new technical devices, machines, were able to produce and reproduce, with hitherto unknown speed and in a hitherto undreamed of quantity, objects, commodities for human use. All human efforts were concentrated on producing objects. The human being himself became lost in his own evaluation of an object able to produce another object. The mechanical nature of the whole social and economic existence was assimilating man. It was breaking into the human sphere and destroying it. He became a machine, or a part of a machine. Man was losing his status as an individual. In his own life, the illusory law of individual perspective was being destroyed by uncontrolled mechanization. The apparent economic space of the individual—his belief in his ability to make his own life, guided only by his own interest, will and force— was being broken up by economic mechanism.

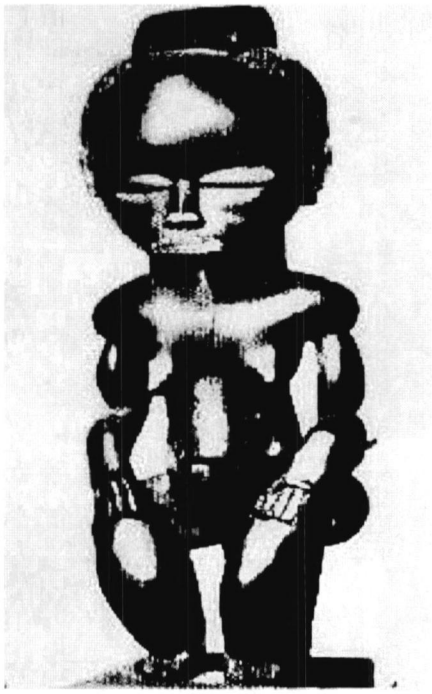
The complexity of the product outgrew human control. The wealth of production became unusable and wasted because of the lack of social understanding, that is, planned direction. The new objects and new devices had brought to the visual field a wealth of new material. There were a thousand new things to see and a thousand new ways of seeing, but most of these were also wasted because there was no ordering principle established to organize the new visible world.

Faced with this situation, the individual tried to master it. He protested against being just another object, and he searched for his position in space. Painters, themselves drawn into the conflict, used the image as a testing ground, a battlefield. They forced their interest on the object and on its position in space. They had to master and to understand the spatial characteristics of objects in order to understand themselves, and so redirect their own lives.

01-2.6. Space analysis of the object

An individual confronted with a new complex task seeks at once for some form of precedent to aid him. He makes an inventory of his past experience and that of others. Likewise, in critical times when a group is facing new, complex social or cultural problems, the solution of which is beyond habitual pattern, the first instinctive step is to look back for solutions and borrow wisdom

from distant cultures.



In their search for a new structural order in which available wealth could function, contemporary painters, confused and cornered in this turmoil of the new visual environment, also rediscovered solutions from previous cultures. Negro sculpture from Africa gave, on a small scale one answer to their problem. In these simple forms each enveloping plane does not submerge in an illusory whole but acts as an individual dynamic direction leading to another plane which in turn leads to the understanding of the whole. Each plane, in its simplicity unhindered by details, has a clear dynamic structural function.

Fig – 85- African Wood Carving, Fetish of Pahouin Tribe, Gabun
Source - Reproduction , The Art Institute of Chicago

Fig -86- Picasso, Dancer 1907
Source- Collection of Walter P. Chrysler, Jr.

Fig-87- Juan Gris, Painting
Suurce - Smith College Museum of Art

This dynamic idea of following up the planes enveloping an object was carried to further conclusions. Painters had discovered that one observation point, in spite of emphasis by distortion, was not sufficient to give the spatial essence of the object. So the painter moved around the object. Penetrated it, and used all means available to describe the greatest possible number of its relationships to the spectator, and to other objects. All the sharpened tools of perspective were focused in one simultaneous representation. Painters shifted the point of vision into a kind of cinematographic sequence, and represented the projection of several points of view in one picture.

Fig -88- Russian Ikon, St. Nikolai
Source - Hemmer Galleries, New York

With the directness of a single-minded purpose, the drawings of primitive man always display the clearest way to state the essentials of a visible thing. When a primitive man uses a kind of X-ray picture to show essential spatial entity of things or when he uses simultaneously the profile and the face of a figure, he finds the very core of the representation problem. The spectator is led on the picture surface to all the significant spatial references of the subject; the visual experience becomes a dynamic experience.

the graphic representation of a spatial situation, he is not satisfied with an accidental perspective projection. He twists and tilts the various possible visual aspects until he fully explains the objects he wishes to represent. The final result is a combination of plan and elevation. In drawing a cart, the child gives the horse, the wheels, and the persons the most characteristic projection. There is finally a fusion of the three-dimensional world and the two-dimensional picture-plane.

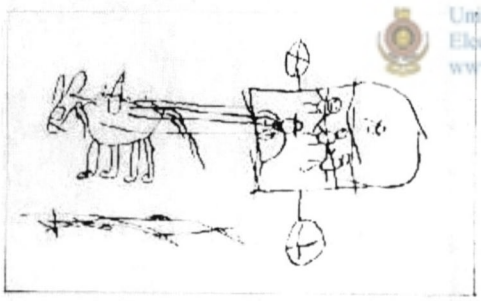


Fig -89- Mixed perspective
Source – Helga Eng. Psychology ofChildren's Drawing

Early medieval painters often repeated the main figure many times in the same picture. Their purpose was to represent all possible relationships that affected him, and they recognized that this could be done only by a simultaneous description of various actions. This connectedness in meaning, rather than the mechanical logic of geometrical optics, is the essential task of representation. Franz Boas in his book "Primitive Art" gives a lucid summary of the core of the visual representation.

"It is easily intelligible that a profile view of an animal in which only one eye is seen and in which one whole side disappears may not satisfy as a realistic representation. The animal has two eyes and two sides. When it turns I see the other side; it exists and should he part of a satisfying picture. In a front view the animal appears foreshortened. The tail is invisible and so are the flanks; but the animal has a tail and flanks and they ought to be there. We are confronted with the same problem in our representations of maps of the world.

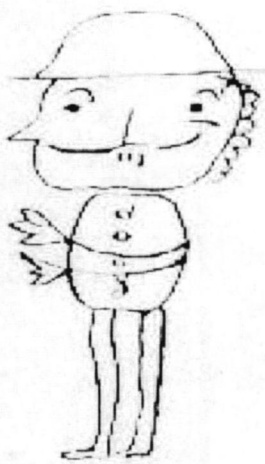


Fig -90- Mixed profile
Source – Helga Eng. Psychology of Children's drawing

In a map on Mercator projection, or in our planiglobes, we distort the surface of the globe in such a way that all parts are visible. We are interested only in showing, in a manner as satisfactory as possible, the interrelations between the parts of the globe. The same is true in orthogonal architectural drawings, particularly when two adjoining views taken at right angles to each other, are brought into contact, or in copies of designs in which the scenes or designs depicted on a cylinder, a vase, or a spherical pot are developed on a fiat surface in order to show at a single glance the interrelations of the decorative forms. In drawings of objects for scientific study we may also sometime adopt a similar viewpoint, and in order to elucidate important relations, draw as though we were able to look around the corner or through the object. Different moments are represented in diagrams in which mechanical movements are illustrated and in which, in order to explain the operation of a device, various positions of moving parts are shown.

"In primitive art both solutions have been attempted: the perspective as well as that showing the essential parts in combinations. Since the essential parts are symbols of the object, we may call this method the symbolic one. I repeat that in the symbolic method those features are represented that are considered as permanent and essential and that there is no attempt on the part of the draftsman to confine himself to a reproduction of what he actually sees at a given moment."

Fig -91-Bushman Painting
Source - Language of Vision

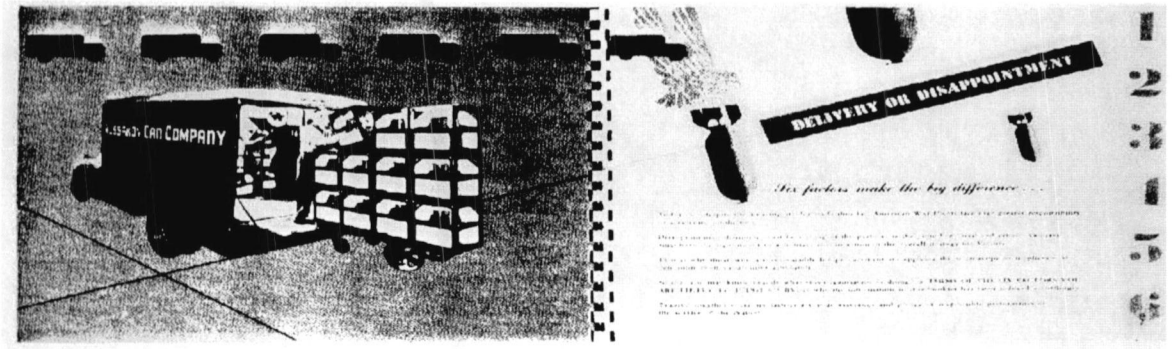


Fig -92-Morton Goldsholl Advertising Design - 1943
Source - Language of Vision

Advertising art, unhandicapped by traditional considerations, was free to develop a visual presentation in which every figure is pictured in the perspective which gives the strongest emphasis to its connectedness in a meaning.

01-2.7. Rediscovery of basic plastic forces: lines and color planes

The exploration of the spatial nature of the objects by walking—in imagination—around them, and investigating their visible volume made the image more formless. But in this formless conglomeration of the different enveloping planes, plastic forces hitherto hidden were revealed. Lines and shapes could now manifest a dynamic spatial quality which before had been submerged in the imitation .f one apparent visual aspect.

The nature amid limitations of the two-dimensional picture-plane, the specific plastic forces of color shapes due to their position and area, were again recognized as factors controlling the space building on this picture surface. "in art, progress lies not in an extension, but in a knowledge of limitations," said Braque. Instead of being derived straight from objects, shapes were moulded to fit the building of space on the picture-plane. The picture became an architecture of color planes created by the span between planes, and by their virtual movement from the picture surface. After the long period of cataloging the apparent aspects of nature, the spectator again became an integral part of the pictorial image. The image became once more a dynamic space experience instead of a dead inventory of optical facts.

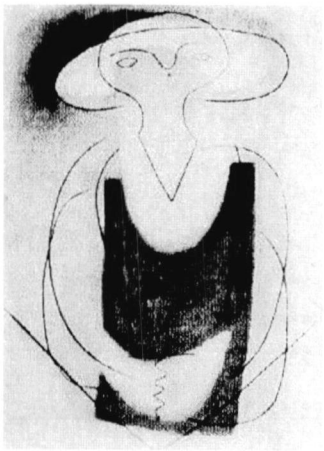


Fig -93- Picasso, Girl with Yellow Hat 1921
Source - Collection of Falter P. Chrysler, Jr.

Like the steel skeleton in architecture, which binds the walls into a spatial whole, the spatial span is achieved in the picture by the juxtaposition of lines and planes. When one plane moves by virtue of its color and shape in one direction, the linear structure juxtaposed to it brings it back.

This interlocking of planes and lines is an important step forward toward the rediscovery of the action of plastic forces. An unprecedented lightness is achieved, an open space-structure in which every movement can be followed clearly. The mass of the three-dimensional volumes and its gravitational one-sided movements are now exchanged for a dynamic space wherein the elements expand in every direction according to the mutual interactions of the receding or advancing color planes and the rhythmic flow of their lines.

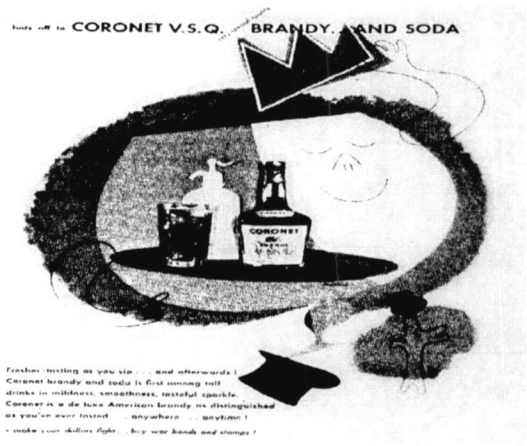


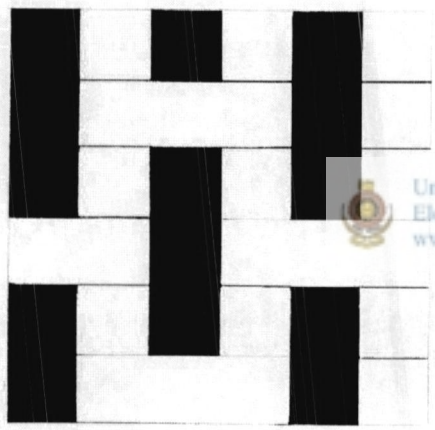
Fig – 94-Paul Rand, Advertising Design 1943
Source - Collection of Falter P. Chrysler, Jr.

01-2.8. Integration of the plastic forces

The breaking up of the unifying system of linear perspective created two major difficulties. One was that the increasing number of spatial data were too numerous to include on the picture-plane. The other was that the plastic energies, liberated from the object and from the discipline of linear perspective, ran amok. To counteract these difficulties painters introduced two devices: first, the compression of planes through interpenetrations; and second, a rhythmical linear control of the picture surfaces.

01-2.8.1. Compression, interpenetration

The increasing number of points of reference brought exterior and interior, left and right, top and bottom of the object simultaneously before the eye. Only by extending the picture-plane to infinity could all visible aspects be simultaneously encompassed. Even if this were possible it would be no solution; for such an area would extend beyond the visual range. The limited area of the picture surface dictated the possible methods of bringing these many visible facts together. The search of the painters changed its direction from extension to concentration.



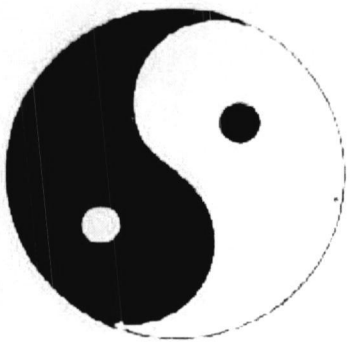


Fig –95
Source – Language of Vision

They began to compress the multitude of optical data within the confines of the picture surface by means of an interpenetration of one plane with another. They recognized, too, that color planes liberated from the object had a centrifugal action from the surface, and they sought to develop a balancing force which would bring order to this anarchy. The simplest form of integration they found was the interlocking of divergent elements, through a rhythmic interplay of opposing values, positive and negative. In weaving, the recurrence of the different colored threads creates unity by rhythmic discontinuity. The painters invented a similar device. By an interchange of opposing values, by analogy of opposites inside and out, black and white or contrasting colors, they were able to establish a common rhythm and consequently a unity. Plastic order was again achieved.

By interpenetration of different lines and planes, by interlocking of positive and negative, dark and light, a reciprocal action is produced. On a light surface dark lines or shapes, and on a dark surface light lines or shapes, become not only linked in a rhythmic discontinuity, but at the same time, by maximum contrast of each individual unit, achieve a greater intensity. The old Chinese sign gives a clear demonstration of a unity of opposites by the interdependence of each of its parts.

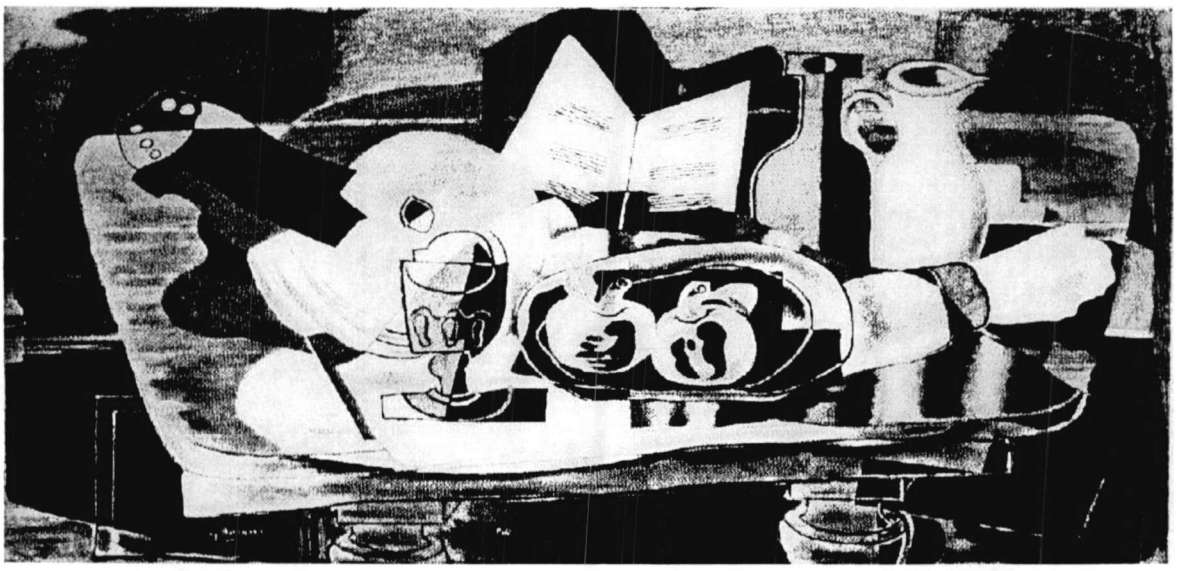
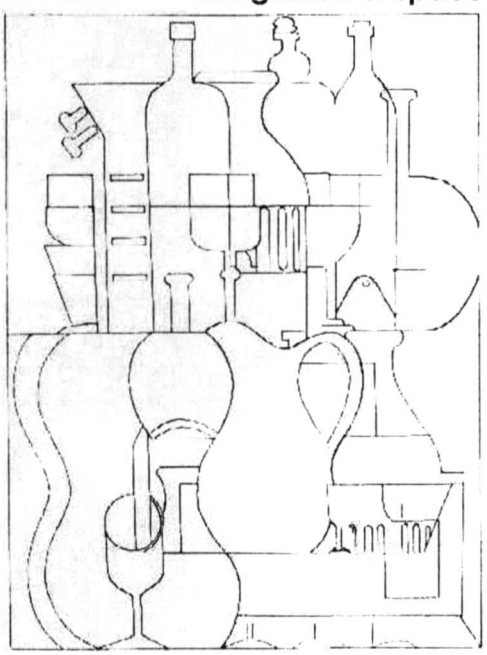


Fig –96-Braque,Still Life on Table
Source – Chester Dale Collection
The Art Institute of Chicago

Fig –97-A.M. Cassandre, Advertising Design, 1937
Source – Container Corporation of America.

01-2.8.2. Integration of space by equivocal lines. Marriage of the contours



Another device introduced for integration of the chaotic color planes was the use of a contour line common to the various spatial units. This common outline gains a double meaning like an optical pun. It refers to inside and outside space simultaneously, and the spectator is therefore forced into intensive participation as he seeks to resolve the apparent contradiction. But the equivocal contour line does more than unify different spatial data. It acts like a warp, weaving the threads of color planes into one rhythmical unity. This rhythmical flow of the line injects the picture surface with a sensual intensity.

Fig –98- Linear diagram of a painting of A. Ozenfant
Source –Language of Vision.

Fig –99-
A.M.Cassandre,Poster
Source The museum of Modern Art.

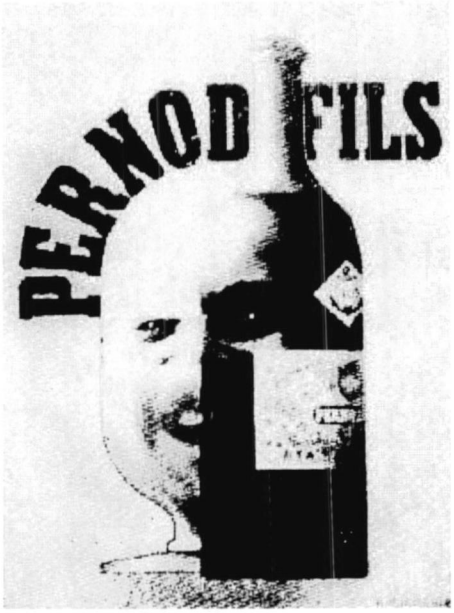


Fig –100- A.M.Cassandre,Poster
Source The museum of Modern Art.

The picture image employed for an advertising message has always posed the problem of bringing miscellaneous elements into harmonious fusion. Plastic and verbal elements operate on the same surface, each with its own force acting in its own direction. The copy, the calligraphic or mechanical quality of drawn elements, photography, colors, shapes, are different in their perspective, as well as in their plastic and associative meaning. To perceive the differences, one must compare the elements.

The contour of a face is an outline of a glass, a bottle, and also of a line of copy. The identical optical quality, the common contour line, creates a spatial unity, in the terms of the two-dimensional surface. Yet because it binds together the different elements, it forces comparison of their differences. These optical differences, through their inevitable contiguity, grow to be optical contradictions that can be resolved only in a new common meaning.

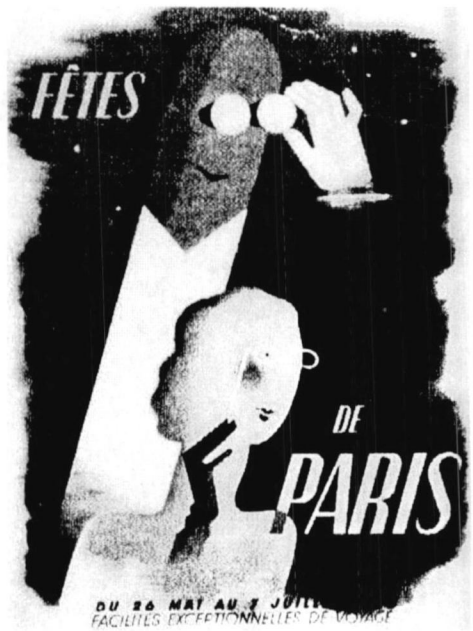


Fig –101- Jean Carlu,Poster
Source The museum of Modern Art.

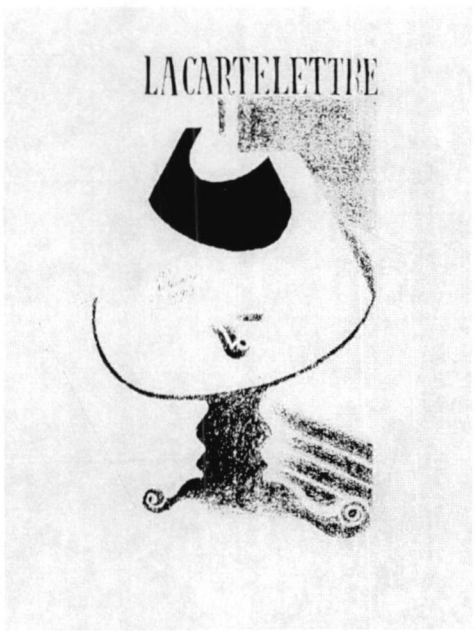


Fig –101- Jaun Gris, Lithograph.
Source The museum of Modern Art.

01-2.9. Final elimination of the fixed perspective order

Cubist painters have only attempted a new visual formulation of the widened dimensions of the environment. They correctly realized that one fixed-perspective is not sufficient to describe dynamic spatial facts, and they experimented with numerous simultaneous perspective-projections. But the resulting picture image was still so closely associated with the old object-concept that it could not cover all possible space experience in contemporary life. The more complicated the environment and the greater the differences in experiences, the more necessary it became to find a simplification of the language. A visual language which would reduce to the lowest common denominator all experience, old and new, had still to he discovered. In a mathematical equation elements are eliminated and simplified until only the main structure of the equilibrium remains. The painters followed analogous procedure. From their visual "equation" they stripped all unessential elements. They reduced the image to its most elementary structure.

The work of the cubist painters only opened the road to a more controlled handling of the plastic forces on the picture surface. Their work only suggested that the picture has a life of its own, and that the plastic forces, lines, and planes, can create a spatial sensation without portraying objects. And the greater their departure from the object resemblance, the clearer the dynamic qualities of the plastic forces became. The bolder their attempt at an organization of these forces, the more apparent became the nature of the picture-plane, as entirely different from the illusory geometrical optical order of the object-world. The picture-plane was gradually recognized as a building having its own unique structural laws which could not be mingled or interchanged with the structural laws of the familiar object-world. Building with stone, wood, or reinforced concrete always has its respective structural requirements. Building on the two-dimensional surface with two-dimensional elements also demands its own handling. The efficiency and the strength of the picture image are dependent upon the correct estimates of the laws dictated by the two-dimensional medium employed.

The painters worked next to eliminate the remaining fragments of the object-representation, which they had come to regard as dead weight. The simplification had two poles. One was a successive elimination of all accidental characteristics of the picture units, a return to the basic geometrical elements—mainly to the rectangular shape—and to the straight line. The other was the search for the utmost possible precision in the relationship of these elements to each other and to the picture as a whole.

These inherent implications of the breaking-up of fixed perspective system crystallized into diametrically opposite developments. One occurred in Eastern Europe, where a final break was being made with the inherited patterns of social life, and where the tremendous reservoir of unused human and material resources was being released. The other took place in Western Europe—in Holland—where the turmoil of the last world war had least affected a peaceful development based on past standards, and where everything was concentrated on preserving the available conditions. The goals and directions of each corresponded to the character of the social background from which it emerged.

In Russia, Malevich, Rodchenko, Tatlin, El Lissitzky, and others carried on the explosive liberation of the plastic forces. Enjoyment of expanding and stretching space until matter was eliminated entirely was their motive power. The characteristic visual devices they used were the dynamic diagonal arrangement

of the elements, their suspension in the background space, the empty void that absorbed them. This explosion into space necessarily lacked a clear order as a whole. The picture-plane was considered only as a point of departure.

In Holland, Doesburg and Mondrian were seeking to achieve the full compression of space, made possible by the limitation of the two-dimensional picture-plane. Their ideal was the most economic use of the plastic forces to bring out a dynamic balance from the receding and advancing of color planes and lines on the picture surface. Their work was based upon restriction, with equilibrium as the goal. They sought to order space in a perfectly measured relationship of color and line.

Their uncompromising analysis of the foundation of the plastic expression had a decisive influence on contemporary visual culture. From architecture to advertising-design there scarcely is any manifestation of visual activity that can avoid the implications of these two main trends.

01-2.10.Ultimate opening of the picture surface

Changing environment and new technological standards opened a new horizon of the visible world. To encompass these broader dimensions, the painters returned to the lowest common denominator of space representation. They rediscovered the spatial forces on the picture-plane, and their laws of organization inherent in the visual perception process, conditioned by the nature of a two-dimensional picture-plane. But the creative control of these laws was identified with space itself. Pure plastic sensation was dissociated from the visible environment from which it stems. The perfection of the instrument which could produce this sensation of space became a fetish—an independent value. Spatial experience was conceived only abstractly. As Malevich stated:

> **"All social ideas, great and important as they may be, are developing from the sensation of hunger; all works of art, small and insignificant as they Lay appear, emerge from a plastic sensation. There comes a time at last, to understand that the problems of art and the problems of the stomach and the reasons for each, are very different. Under suprematism, I understand the supremacy of pure sensation in the plastic arts -- - from the point of view of the suprematists, the appearance of the object-world is meaningless; the important thing being the sensation as such, independent of the circumstances."**

The underlying philosophy of this final purification of the picture-plane from the object world led to ultimate rejection of any attempt to represent objective reality. **"Everything we call nature, is, in the last analysis a fantasy picture,"** Malevich says, **"with not the least resemblance to reality."**

But as has been stated before, man asserts himself in the material world not only by means of thought but also by means of all his senses. Art is a sensuous form of consciousness, an important instrument in the conquest of nature, and representation is the creative assimilation of nature. The artistic conquest of space is not an end in itself, nor is it a matter of the senses alone. Herein lay the limitation of these pioneers of the language of vision. They had taken the first step toward freedom but they were hampered by lost faith in the integrated human existence. Their work was shaped in pseudomaterialism and resulted in isolationism of sensory experience. The division of labor, dictated by shortsighted considerations, creating a one-sided individual, gave rise also to division within the individual, an inimical relationship of sense and reason. Instead

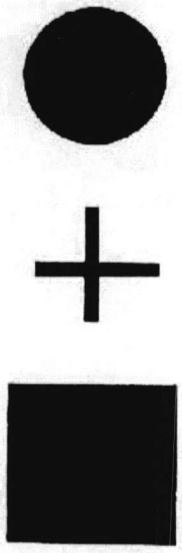


Fig-102 – Kasimir malevich,Spremalistic Elements.
Source – Art of This Century.

of using the conquest of the senses for further integration of man with his surroundings, painters in their revolt against an involved and plan less social system carried this fatal division into the sphere of creative expression.

Because they worked with fierce honesty, however; because they were content with no half-measures, but gave themselves completely to the rediscovery of the materials with which they dealt; because they brought to their perception of new visual surroundings senses cleared of the fog of tradition, the wrongness of some of their theoretical attitudes matters far less than does the soundness of the concrete foundation they built for the new representational control of the visible world.

Two innovations stand to their credit. By reducing the plastic unit to the most elementary shapes, to a geometrical simplicity, and to a few basic colors, they reestablished the genuine construction elements of space architecture on the picture-plane. By their use of the diagonal axis, contradicting the accepted horizontal-vertical space ordering, they revealed a powerful device for creating dynamic spatial experience.

The basic shapes facilitated the juxtaposition of one shape against the other and thus openly manifested the strains and stresses of the experience interrelating them. Because the diagonal axis is in contradiction with one main direction of space, each shape in diagonal position tends to revolve toward the main lines of visual organization—the horizontal vertical axis—thus heightening the dynamic tension.

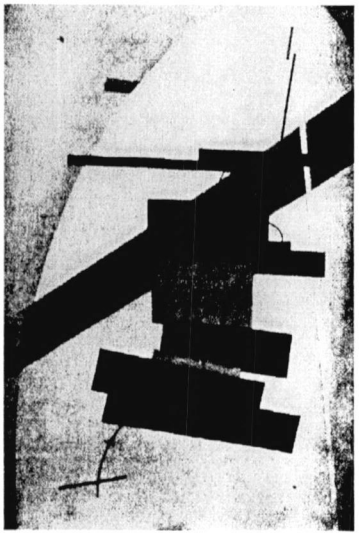


Fig-103 – El Lissitzky, Composition.
Source – Art of This Century.

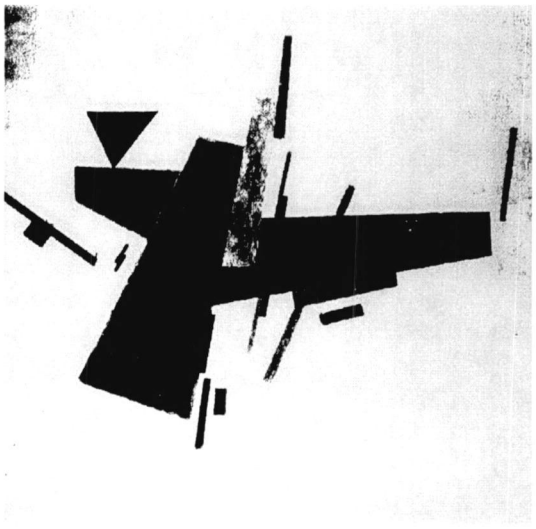


Fig-104 – Kasimir malevich,Spremalistic Composition.
Source – Art of This Century.

The research in movements, stresses, and tensions on the picture surface have had a great influence on the applied arts. Designers of post and window-display explored the newly discovered idioms and changed their methods from a static symmetry to an elementary dynamic balance.

Fig-104 – Paul Rand, Cover Design
Source – Language of Vision.

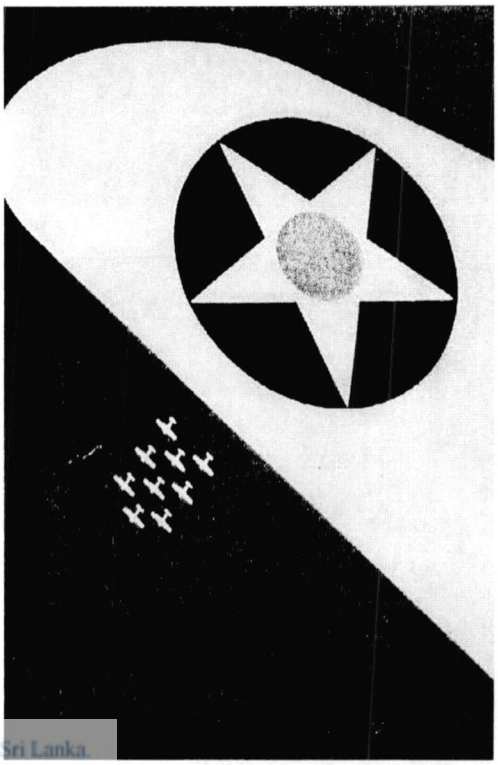


Fig-105– Joseph Binder, Poster
Source – Language of Vision.

Innovations of spatial expression contributed also to a rejuvenation of typography, for the printed page is also a picture-plane. The mechanical possibilities of the printing process and the rediscovery of elementary plastic relationships were tested in all possible connections.

The space of the printed page came to be consciously considered as a plastic problem. The elements were reduced to their basic geometric shapes. Reduction to essentials is at the borderline of the recognition of object shapes. Every unnecessary detail is eliminated. The spectator's eye is guided with an unmistakable certainty to the essential shapes and their relationships. The interplay of the basic shapes has a strong, dynamic quality based upon the clear plastic relationships of colors shapes, and lines around the diagonal axis.

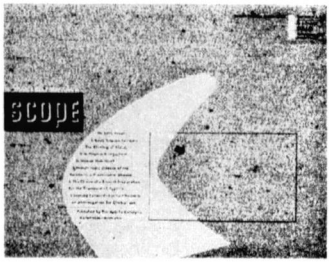


Fig-106– W. Burtin, Advertising Design
Source – Language of Vision.

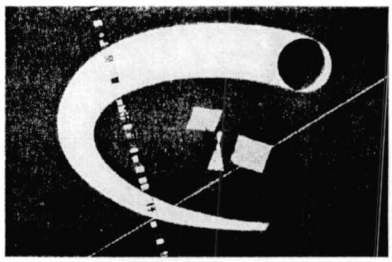


Fig-107– Taylor Poore,Poster 1939
Source – Language of Vision.

01-2.11. Space construction on the picture surface

The space which the painter tries to encompass is basically the visible order of the events he is experiencing. Painting is a form of thinking. It is, therefore, both natural and inevitable that the steps the painter takes toward formulating spatial experience are conditioned by his ideas and conceptions of the ordering of social existence.

When the expansion into unbounded space, the break with the old frame of reference, had been achieved, the painter turned again to the search for a concrete order. He reached out toward what seemed to him the only positive order in life as he saw it—the order of the machine, the cold precise construction of the engineer. Technological advance, with its precision and economy, seemed the only key to the improvement of social conditions. It appeared that lowering the cost of production would resolve social chaos. The technician was hailed as the prophet of a new social order. And the artist sought to ally himself with the prophet.

Fig-108– Rodchnko, Composition1918
Source – The Museum of Modern Art

Technique was made identical with art, and the art of technique regarded as an independent force of social change. Again the approach was incomplete. One element had been mistaken for the whole.

The painters combined the free-floating and stereometric elements, and welded them into a construction that has its model in the machine. The machine is the fountain of inspiration, not only in its surface qualities and exterior shape but also in its principle of construction. Lines. planes, and forms are combined in a new, dynamic interconnection, transparent and interpenetrable. Mechanical tools, such as the compass and ruler, came into favor as painters struggled to achieve the closest possible similarity to the machine.

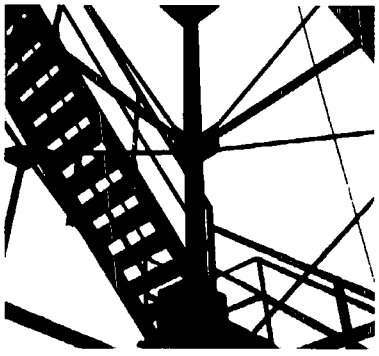


Fig-109– Frank Levstik,Steel Structure, Photograph.
Source – The Museum of Modern Art

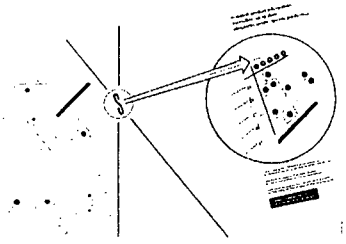


Fig-110– Ladislav Sutnar, Advertising Design.
Source – The Museum of Modern Art

The prevailing use of contemporary materials in building, steel frames, glass walls, etc., added further inspiration. The open spans, giving a lightness of construction and allowing a flow of the space within; the new load-and-support relationships, giving a clear insight into the space mechanisms of the building, acted as stimuli. In architecture, there were open, transparent surfaces instead of solid walls; on the picture-plane, likewise, instead of opaque surfaces, there came to be the transparent interpenetration of planes and the open skeletons of lines.

The open network of lines leads out to various directions in space, and a kind of optical cantileverage is achieved—a dynamic space construction.

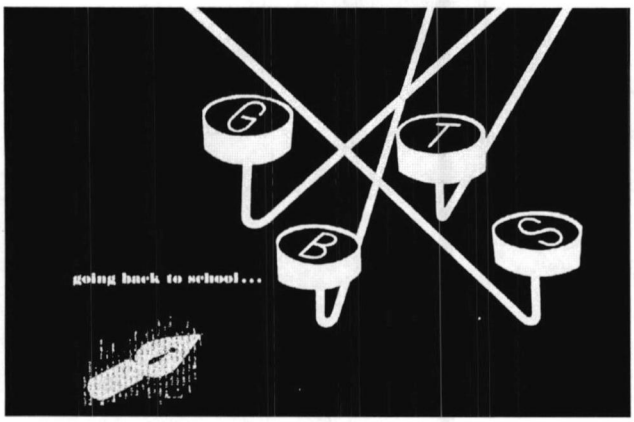


Fig-111-Paul Rand, Advertising Design.
Source – The Museum of Modern Art

01-2.12. Closing the surface: complete rapport of the spatial forces

Conditions in the world the painter lived in cried out for order. Science and technology had advanced; they had totally neglected to domesticate on the social plane the new fields into which they moved. Social ills, domestic and international struggle, unemployment and unused energies, ill-organized days, and finally, a maladjusted individual were the fruits of this neglect.

In this chaotic counterfeit social existence, where almost all materials were misused, including the human being himself, architecture made the first concrete step to build honestly in terms of the present. Pioneer architects recognized that new knowledge demanded a new building principle, that to make use of the scientific understanding of the structural qualities, such as tension, strain, weight, and load; of the new materials, steel, glass, concrete, they must first clear away all debris of inherited styles. Machines and machine production have made the imitation of past styles more and more obsolete. Forty years ago Frank Lloyd Wright said:

> **"A structural necessity which shaped Pantheons, monuments, and temples had been reduced by the machine to a skeleton of steel, complete in itself without the artist craftsman touch.....The steel frame had been recognized as a legitimate basis for a simple, sincere clothing of plastic material that reveals its essential nature and idealizes its purpose without structural affectation and pretense. The machine smoothes away the necessity for the temptation to petty structural deceit, soothes the wearisome struggle to make things seem what they are not and never can be....."**

The new discipline of structural honesty has important practical implications. In the best of modern architecture, a building starts, not from the outside—the façade—but from the inside—the ground-plan. The walls articulate this space by dividing and subdividing it. They exclude the outside, giving protection from rain, wind, and sun, but they also model the inside space and the rhythm of the life within. Horizontal and vertical walls are in a clear, functional relationship. The depth of the walls, receding and advancing planes, articulate the space in a dynamic order of living. The result is structural order, an equilibrium of the functioning organism, a living space.

Fig-112-R.B.Tague, Analysis of the Recording and advancing of a Frank Lloyd Wright House
Source – The Museum of Modern Art

Living space implies a perpetual balance of opposing directions)~ The enlarged dimensions of human knowledge demand a new equilibrium between man and nature and individual and society. As Corbusier said:

> **"The individual and the community in that correctly proportioned relationship which is the balance of nature herself—tension between two poles. If there is only one pole the results tend to be zero. Extremes destroy life, for life steers a middle course between extremes. Equilibrium indicates the presence of continuous and unfailing motion. Sleep, stupor, lethargy. and death are not a state of equilibrium. Equilibrium is the point where all forces meet and resolve themselves—poise. Thus can the future town planner read the future destiny of society."**

The painter Mondrian. expressed the same understanding in the realm of the plastic arts. He writes:

> **"Every expression of art has its own laws which accord with the principle law of art and of life: that of equilibrium. On these laws depends the degree of equilibrium that may be realized, and therefore, at what point disequilibrium may be destroyed.**
>
> **"In Nature, a complete deliverance from tragic feeling is not possible. In life, where the physical form is not only necessary but of the greatest importance, equilibrium will always be very relative. But man, evolving toward the equilibrium of his duality, will create in ever greater degree, in life as in art, equivalent relationships and therefore, equilibrium. Social and economic life today already demonstrate his effort toward an exact equilibrium. Material life will not be forever menaced and made tragic. Nor will our moral life always be oppressed by the domination of material existence"⊕**

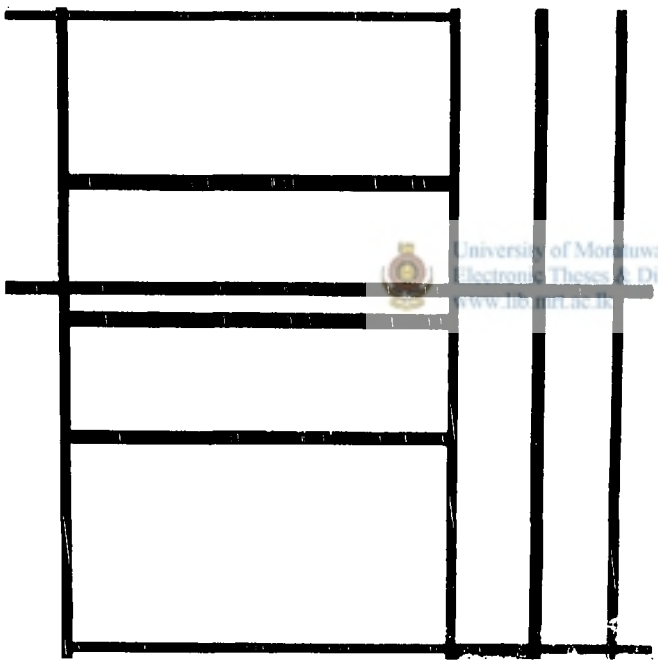
This expresses the main current of pioneer contemporary thought in every field of human endeavor; the ardent desire to understand and to order the forces blindly acting today in our life.

⊕ Piet Mondrian, Pure Plastic Art. 1942

This thought is order and honesty—in the terms of plastic expression— a perfect equilibrium of the elements—equilibrium identified with the two-dimensional surface itself.

Space is conceived by its control. Extension is expressed by its contraction to the two dimensions. The individual spatial movements of the color planes are measured and expressed by the tension created in pulling them back to the two dimensions. The goal is perfect control, a collective order. No element can live alone. Its life is also that of the two-dimensional whole, which can be only if all the elements are perfectly related and balanced. The picture-plane became like a stretched membrane. Color, shapes, and lines, extending in space toward the top and bottom, laterally, inwards and outwards in depth, effected a precise relationship in which opposing, moving spatial qualities balanced each other on the two-dimensional picture-plane with almost mathematical precision.

The vitality of any equilibrium depends upon the strength of the opposing forces which are in balance. In visual terms, it also depends upon how openly these forces assert themselves. To achieve this maximum of dynamic equilibrium the picture surface was built from basic opposites, rectangular shapes and horizontal and vertical straight lines, blue, red and yellow, pure colors.



"Hence art has to attain an exact equilibrium through the creation of pure plastic means composed in absolute oppositions. In this way, the two oppositions (vertical and horizontal) are in equivalence, that is to say, of the some value: a prime necessity for equilibrium. By means of abstraction, art has interiorized form and color and brought the curved line to its maximum tension: the straight line. Using the rectangular opposition— the constant relationship— establishes the universal individual duality: unity."

Piet Monmlrian.

Fig-113-Piet Mondrian, Composition
Source – . Art of This Century

Fig-114- Theo Van Doesburg.
Drawing and Typographical Design
Source – Art of This Century

The new ordering principle and the rediscovery of the genuine nature of the two-dimensional picture-plane have had a rejuvenating influence upon painters and upon others. Painters and designers, confronted by site perfect examples of visual rapport and creative discipline, became critical of their own work and began to understand the medium they were manipulating. The crystal-clear formulation of plastic order served as a mirror to show all the wrong conceptions and all the rejections of the honest use of the two-dimensional surface. It helped also to bring out the discrepancy between the genuine nature of the respective materials and their current uses. Typography, product design, and all other fields of optical creation, have gained by the reexamination of the inherent laws of their medium and by the search for better balance.

The painters themselves directed the first steps in this search. Doesburg as early as 1916 applied the findings to typography. His reexamination of the fundamental structural principles of the plastic arts had a far-reaching influence on advertising design and typography. Horizontal and vertical elements in a clear, contrasting relationship lead to a subdivision of the surface with dynamic balance. Symmetrical arrangements of letters and simple rectangular elements blazed the trail for a new typography whose inner spatial logic is dictated by the nature of visual perception with functional emphasis on the message. New type faces were designed, based upon the visual principles discovered by the painters.

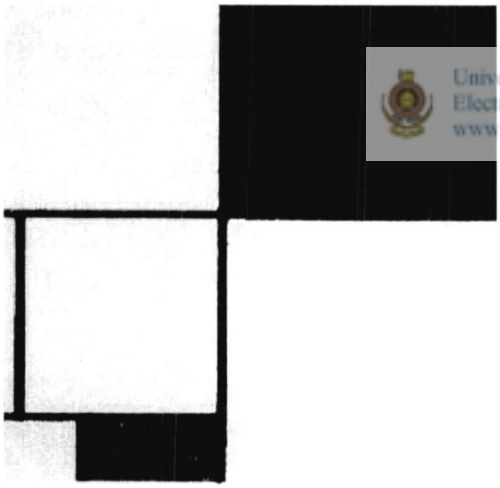


Fig-115 – Piet Mondrian,Painting
Source – Language of Vision

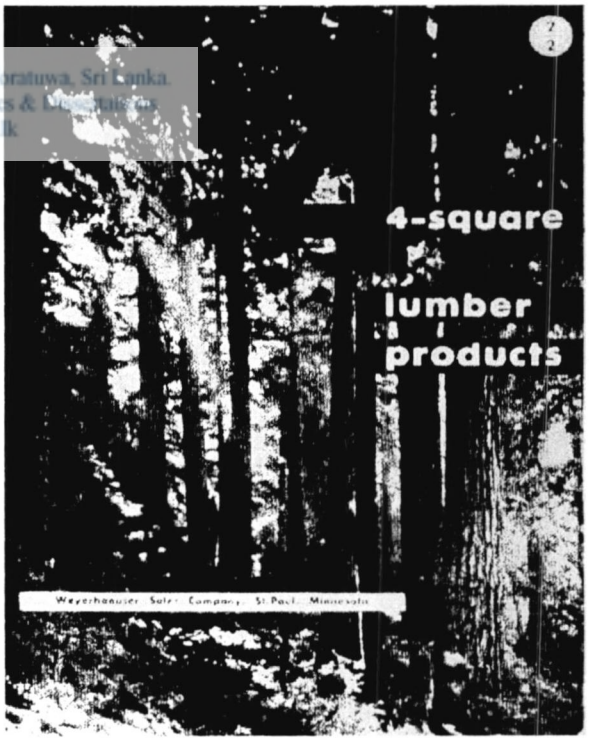


Fig-116 – Ladislav Sutnar, Cover Design.
Source – Language of Vision

Reform in the realm of typography had been sadly needed. Our present form of writing is an incompletely assimilated conglomeration of signs reflecting diverse historical backgrounds and various tools. A harmonious unity between those elements has never been achieved. Capital and lower-case letters never possessed formal unity even in the best classical type-forms. The printed letter is a historical fossil in conformity neither with the laws of visual organization nor with the technological standards of the present, nor with the new psychology of man. Instead of being free to choose its own path in moving about the page, the eye is regimented along a line of print controlled by technically archaic type-standards.

The rediscovery of order in terms of plastic experience was conditioned by the social background, by the urgent need of an equilibrium on the socio-economic plane. But this order could be achieved only by a frontal attack of the very basis of the social contradictions. Efforts that avoided open challenge to the causes of the contradictions could achieve only a semi-equilibrium by sacrificing vital aspects of an integral human life. Individual freedom, undisciplined, ran amok as license and brought about a loss of faith in individual qualities. Regimentation, the sacrifice of the individual, became the new social concept of regression and half-measures. This concept anchored itself even in the realm of plastic thought.

To achieve a perfect balance with the two dimensions in the picture, individual plastic qualities were sacrificed. The wealth of the variety of shapes, the richness of colors and values were reduced to stereotyped plastic equations of rectangular shapes. Order became an end in itself instead of a guiding principle. It created its own world—a world of puritan restrictions. This restrained clarity of equilibrium placed rigid restraint upon further ordering. Seeking to eliminate all impurities, it tended to eliminate also many varieties of visual experience.

Clearly needed was the framework of an equilibrium which had room for the individuality of the elements. That equilibrium begins to appear. Doesburg opposed two systems, the horizontal-vertical and the diagonal. Helion began to fill out, step by step, the abstract ground, working with a new variety of the plastic elements, modeling the Rat shapes, and twisting and stretching the rectangles into new shapes and binding them in to forms.

Fig-117 – Theo Van Doesburg, Composition Arithmetique
Source – Language of Vision

Fig-118 – Jean Helion,Linoleum Cut
Source – Language of Vision

01-2.13. Adaptation to the contemporary environment

Innovations in representational idioms caused important progress toward the optical mastery of contemporary space time experiences. But *visual* communication can only be efficient if it submits itself to [lie new landscape and the new psychology of contemporary man. And simultaneously with the mastery of the new wider space, visual communication was forced to make some significant adaptations to the contemporary scene.

The number in an audience defines not only the quality and the intensity of the voice of the speaker, but also the nature of speaking. The character of a dialogue is naturally different from that of a speech to a mass meeting. Easel painting, the expression of a historical period, developed a form of visual dialogue. It spoke a language of tête-a-tête. It was the historical manifestation in the pictorial art of the spirit of individualism. But the historical background is changed. The individual dimensions are losing their inflated significance. As points are in a line or lines in a plane, the individual was recognized as irreplaceable only in the terms of the wider dimension. Social interdependence brought up a new meaning of the individual, the social individual. To speak to this new man a different language was required, a language that must penetrate in depth of individual regions but at the same time speak to the largest possible group. This means speaking simultaneously to many. The number of the audience demands an amplification of the sound and a leveling down of the language to common interest and common idioms. The microphone helps to adjust the voice to the greater dimensions of the audience. The mass spectator demands the amplification of optical intensity and a leveling down of the visual language toward common idioms. Such idioms demand simplicity, force, and precision.

> **"In my search for brilliancy and intensity I made use of the machine as other artists have happened to employ the nude body or still lives. . . . I never amused myself copying a machine. I invent images of machines us others, with their imagination, have invented landscapes.... The mechanical element in my work is not a prejudice nor an attitude, but a means of giving a sensation of force and power."⊗**

01-2.14. Simplicity and intensity

Traffic signs, newly important in a world on the move, are the simplest visual statements designed for the mobile observer. They are intense in color, simple in shape, and each one of them clearly constitutes a unit.

Machines, motor cars, streetcars, elevated trains, aero planes, flickering-light displays, shop windows, became common features of the contemporary scene. Together with the new richness of light-effects from artificial light sources, the increased dimension of the landscape with the skyscrapers and their intricate inner spatial order above, and the subways underneath, they gave an incomparably greater speed and density to the light stimulations reaching the eye than any previous visual environment had ever presented.

⊗ *Fernand Leger. Propos d'artistes. 1925*

There is no time now for the perception of too many details. The duration of the visual impacts is too short. To attract the eye and convey the full meaning in this visual turmoil of events, the image must possess, like the traffic sign, simplicity of elements and lucid forcefulness.

01-2.15. Precision

Industrial production introduced new objects: machines and machine products, standardized and ready-made units. They were produced with the utmost precision and control dictated by functional needs, utility, and economy. In the confusion of the surrounding object-world these things appeared as the only man-made creations of perfection, coordination, and sense. The mechanical functional clarity of the machine, the perfect harmony of its parts, and the unmistakable rigidity of its inner relationships were an inspiration to men searching for similar qualities in the picture image. Clarity, precision, and economy were compelling values in a world suffocating under the dead weight of undisciplined individualism. Leger says:

> **"Technique must be more and more exact, the execution must be perfect. .....I prefer a mediocre painting perfectly executed to a picture, beautiful in intention, but not executed. Nowadays a work of art must bear comparison with any manufactured object. Only the picture, which is an object, can sustain that comparison and challenge time or . . . I deny absolutely the subject and perspective; I introduce the object as a factor reacting on a plastic ensemble."**

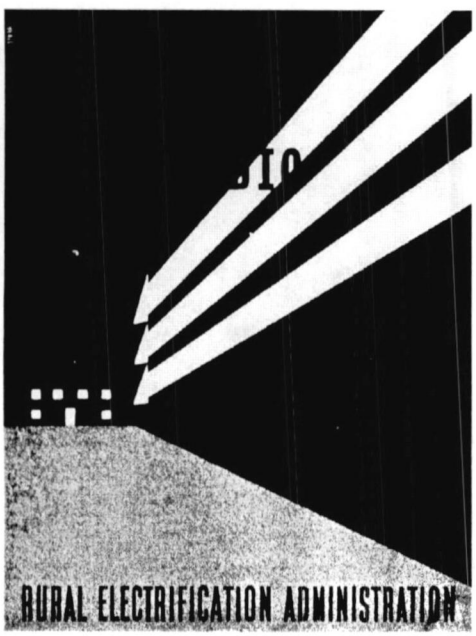


Fig-119 – Lester Beall. Poster
Source – Language of Vision

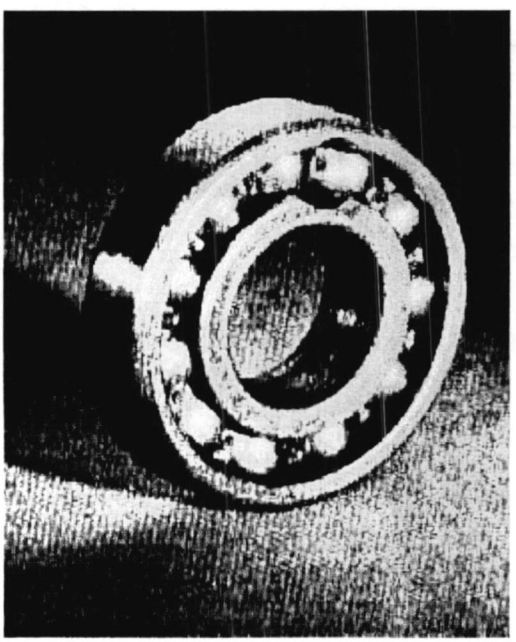


Fig-120 –F. Levstik, Photograph
Source – Language of Vision

01-2.16. Light and color

Spatial experience is intimately connected with the experience of light. Without light there is no vision, and without vision there can be no visible spacei Space in a visual sense is light-space. Ordinarily this light-space is not apparent to the eye. We perceive spatial relationships only when light is intercepted by some medium. What we actually see as spatial world is the way in which the light is dissected and redirected, that is, modulated by these mediums. The sensory modes of registering the modulated light, the various sensations of color, then, become the means for the spatial ordering of objects and events.

But the experience of light, color means more than sensory data of the spatial world. The word light or color connotes richness, health, and wholeness. Light, thus color, is not merely a spatial sign of the environment; it is a basic human need. In hunger for color is expressed one of man's deepest grasps of reality.

> **"Light, therefore, using the full meaning of the word, transmits energy which is the mainstay of life, and gives to living beings the power of observation; and it is akin to the matter of which all things animate and inanimate are made. The universe is its sphere of action. We do it no more than justice when we speak of the Universe of light."**⊗

Light is the life-giving basic energy for any organic existence. Orientation, in its basic meaning, is man's adaptation of the solar energies bottled up in the infinite variety of nature-forms. The experiencing of light—in other words the sensation of colors—stands for the organism's security and thus has a quality of affirmation. To experience color is to interpret the very core of physical reality in terms of sensory qualities. When one sees colors, unhampered by the notion that they reside in the objects, one s sensory reaction has overtones which originate in one's understanding of light as the basic condition of life. The sensation of color is always, therefore, a symbol of satisfaction of the nervous system.

01-2.16.1 The sources of color experience

Color is an experience—a psychological event. Light and the different distributions of light, by absorption, dispersion and diffraction, are colorless. They become color only as they pass through the structure of the visual receiving set and are registered by the brain. Experiencing color has, then, three basic sources. First is the physical raw material, the radiant energy modulated by the environment. Second are the data supplied directly by the senses. And third are the data furnished by memory, including associations induced by some correspondence between the structure of the current sensory stimulation and previous ones, or by the repeatedly experienced connection between a particular sensory stimulation and an event.

⊗ *Sir William Bragg, The Universe of Light*

01-2.16.1.1. The physical modulation of light

Light may be perceived directly as light source—the sun, fire, electric light, luminous gas, etc.—colored or shaded by its own intensity. Light may be modulated on a submicroscopic scale and perceived as constant intrinsic value or color. The white of paper, the green of leaves, the black of velvet—are results of the modulation of the oncoming light by the submicroscopic structure of the respective substances. Light may be modulated on a grosser scale by the three-dimensional extension of the objects. Then one perceives the sculptured form through modeling by shading.

Light may be modulated and articulated by the various substances, as in the casting of shadows or reflecting, diffusing light; that is, it may be observed as the blocking-out, bleaching, bending of the previously optically latent light bodies. Then one perceives the space-filling light.

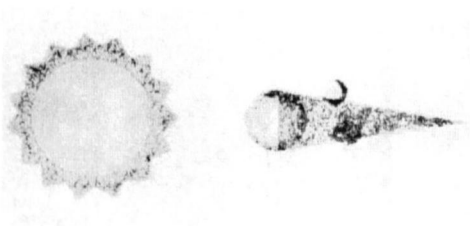


Fig-121- Physical Modulation of Light
Source – Language of Vision

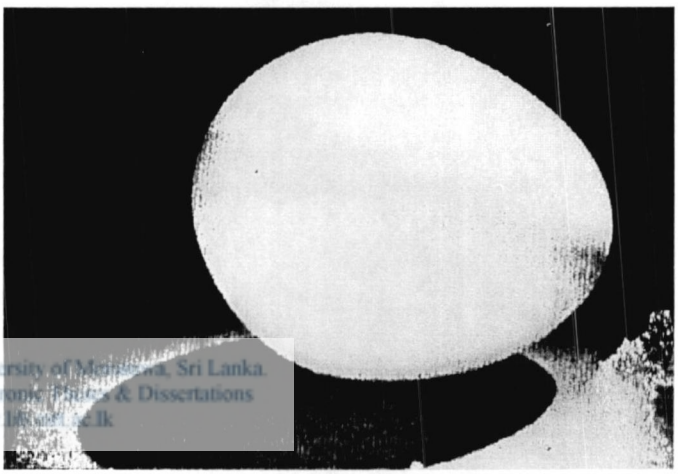


Fig-122- Frank Levstik ,Photograph
Source – Language of Vision

Fig-123- Milton Halberstadt ,Photograph
Source – Language of Vision

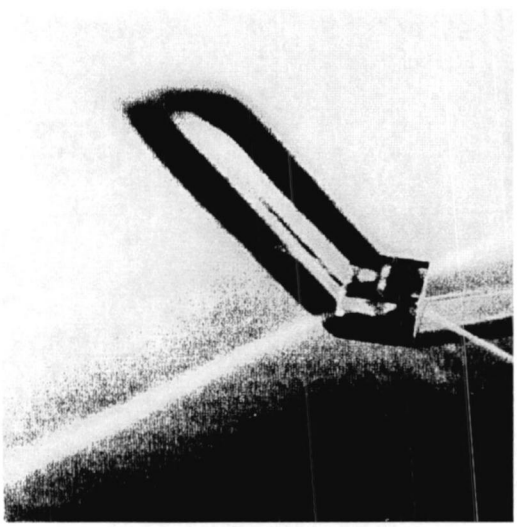


Fig-124- R.B.Tague & W.Keck. Light Study.
Source – School of Design in Chicago.

01-2.16.1.2. The source of color-sensation in the structure of the sensory receiving set

We distinguish three different qualities of color sensation: hue, or color; brightness, or value; and saturation, or depth. All are based on the physiological evaluation of the physical sources.

Hue, or the actual color, is induced by the differences in wave length of the radiant energies amid by the particular structure of the retinal surface upon which these act. This unique interaction of the light agent and the retinal structure gives the foundation of the feeling quality of red, yellow, blue, and so on. The duration of the stimulation plays a decisive role in sensation of hue. Light stimulation must have a certain endurance to induce the sensation of color; short intervals produce only the sensation of brightness.

Brightness, that is, the sensation that one color appears lighter or darker than another, governs the value of the color. It is conditioned partly by the intensity of the stimulation, partly by the neural structure of the retina. The unequal sensitivity of the retina to different wave lengths determines to a great degree which colors appear more luminous or brighter than the others. Yellow, for instance, appears brighter than blue or green.

Saturation is the measure of the actual color content in a given sensation. When we see one red as redder than another, we experience particular sensory quality as manifested in a lesser or greater purity, making the colors more or less rich and full. Red and pink, intense yellow and pale yellow are perceived as different feeling-qualities. The endurance of the stimulation affects the saturation of color. Very long stimulation will reduce the saturation. Too low or too high an intensity tends progressively to eliminate saturation. Furthermore, the structure of the retina modifies saturation. Some colors lose their depth through the stimulation of the periphery of the retinal field.

01-2.16.1.3. Dynamic interaction of color sensations

One never registers isolated color sensations. The visual field normally consists of numerous optical qualities and thus color sensations can only be perceived in a dynamic interaction of different types of retinal stimulations. The dynamic interrelations of color sensations are, then, the source of the most important characteristics of color experiences; that is, contrast and spatial value.

Hue, brightness, and saturation of a surface are modified by the adjacent surfaces. The contrast effect is always in the direction of the greatest opposition of colors. If a red and a green surface are juxtaposed on the same picture surface, the red appears redder than it would be if viewed iii a color background of closer hue. Similarly, green appears greener when viewed in a yellow, a blue or a brown background. If a grey surface is surrounded by color surface, the grey will assume a tint complementary to the embracing color. If the surrounding color is red, the induced color of grey will be greenish; if the surrounding color is green, the induced color will appear reddish; if blue, yellowish, and so on. The contrast effect will be most powerful when the grey is of a brightness equal to the adjacent color and when this color is highly saturated, that is, when the brightness contrast is reduced to a minimum. The degree of contrast effect is in

direct relationship to the nearness of the colors to each other on the picture surface. If the color surfaces are divided with black or color lines, the contrasting result will be diminished in direct proportion to the width of the lines. The contrast result is most thrilling when the saturation of the colors is the greatest. Hues on the blue end of the spectrum manifest a stronger contrast than the colors on the red end of the spectrum.

Color surfaces are modified also in their areas. A light-colored figure on a dark area appears larger than a dark-colored figure of the same size on a light background. A white surface appears to expand most, and a black to contract most. Yellow appears larger than green, blue smaller. Brightness and saturation are important factors in these relative changes. Each brightness-difference amplifies the other's intensity, thus improving the resulting irridation, that is, expansion of the colors.

Goethe observed that the yellowish red seems to "bore into the eye." On the other hand, "just as we like to pursue a pleasant object moving away from us, so we like to look at blue, not because it is pressing in upon us, but because it draws us after it" An eye constructed to bring red light from infinite distance to a focus on the retina can do the same with violet rays from a distance of only two feet. For this and some other intricate physiological reasons, hue, brightness and saturation in their dynamic interrelationship in the visual field are perceived as advancing, receding or circulating, or they appear to be of different weights—falling or floating.

> **"It is thus seen, that color processes play a double role in the color-space function of vision; they contribute the matter or stuff of the visual field and at the saint time determine the way in which the field is organized both bidimensionally and tridimensionally.**
>
> **Which is to be regarded as primary, color, or space, it is too early to decide, but the evidence now at hand points to the increasing recognition of the importance of color for spatial discriminations."⊗**

01-2.16.1.4. The memory source of color experience.

The retinal impressions are instantly overlaid by the memory of previous experiences. Blue suggests at once the blue sky; green, the green grasses; white, the white snow. We experience color stimulations primarily with reference to the object world, and consequently color signifies the color of the objects.

This memory overlay also tends to keep the object-color relatively un-changed despite changes of illumination. A white surface, although tinted by the changing atmospheric light to reddish, yellowish, or bluish, is perceived constantly as white.

⊗ *Harry Helson, Problems of Color Constancy, Journal of the Optical Society of America, Vol. .33, No. 10*

"Until very recent times the complexion of man was conceived as essentially permanent. At least the strong changes that actually occur in different positions have not been painted until very recent times. A person of fair complexion standing between a green bush and a red brick wall has certainly a face green on one side and red on the other, and if the sun shines on his forehead it may be at times intensely yellow. Still, we are, or at least were, not accustomed to depict these eminently realistic traits. We rather concentrate our attention upon what is permanent in the individual complexion as seen in the ordinary diffused daylight. We are accustomed to see the accidental momentary lights weakened in favour of the permanent impression."⌀

Color appears to reside in the objects entirely independent of illumination.

From the memory also comes another kind of association. Seeing an object means more than placing it in a frame of reference of the three-dimensional world. Even while one is seeing color as substance, one also sees it as cold or warm, bright, gay, sad, depressing, irritating, pleasing, crude, refined, wild, tame, exciting, relaxing, dirty, clean, rich, and possessed of innumerable other feeling qualities. These associations have their origin partly in the neuromuscular process, but partly also in the sum total of the dominant other sensations connected with the color seen. The red of the flower, the blue of the sky, the white of the snow bring hack feelings one already has for these things. When one says he sees cold water or a burning red, he is saying that his perception is an intersensory blend, a fusion of two or more sensory experiences.

01-2.16.2. Value relationships

Man is, as we have seen, primarily object conscious. He measures the surrounding world in terms of things and thus gradually learns to orient himself in his environment. He also learns to evaluate the brightness differences reaching his eye by referring them to objects. As he relates the magnitude of things around him to his own size, and attaches a psychological size and shape constancy to each familiar object, so he endows the objects he knows with color and brightness constancy. The constant color and brightness relationships are serving as an elementary gauge for ordering spatial relationships.

Children's paintings, art works of primitive tribes, Assyrian and Egyptian paintings, early European paintings and those of Eastern Asia, entirely neglect the representation of illumination. They use the value gradation only to segregate one shape from another and thus indicate depth and distance between the things. Brightness values as used by these early painters stood in a clear symbolic role for the object as a whole and were not overloaded with details of minute observation or handicapped by the fixed geometrical system of the illumination perspective. Therefore each shape in its respective value could function forcefully and structurally.

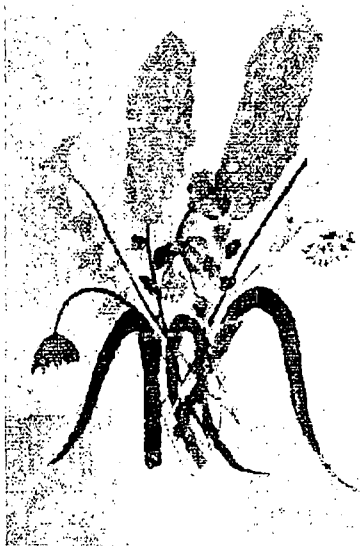


Fig -125- Painting by a Child

Source - The Munson-Williams-Proctor institute School of Art

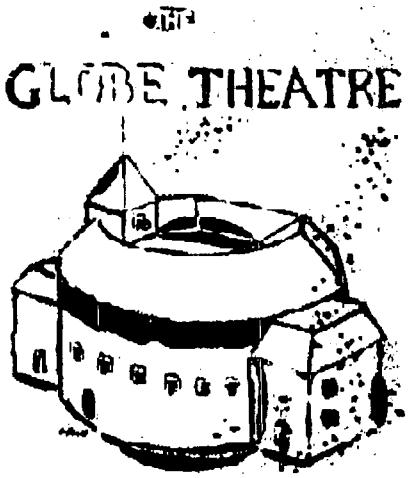


Fig -126- Lester Bell, Advertising Design

Source - The Smith College Museum of Art

Fig -127- The Game of War, Detail From The Adventures of Kibi

Source – The Museum of Fine Arts, Boston.

01-2.16.2. a. Illumination perspective; modeling by shading.

Under ordinary conditions, objects in our environment do not receive uniform illumination from every angle. A solid object will receive more light from one side than another, because that side is closer to the light source and thus will intercept the light and cast shadows on the other sides. This variation of tone-values created by uneven illumination is what the eye actually perceives.

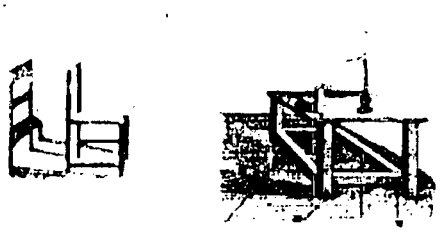


Fig -128-Shading in Perspective

Source –Language of Vision

The surface of a sphere, a cube, or any other form, gives its own characteristic distribution of light. A spherical surface reflects light in an even flow from light to dark. An angular surface reflects light with sudden contrasts of the light and dark values. Each basic form has a basic light and shadow pattern. An evenly flowing tone-gradation evokes in us a sense of gently curved form. A sudden abrupt change of tone we translate as meaning a sharp or angular surface.

If relatively opaque forms intercept die pathway of light, shadow-bodies are formed. The nature of the light-source, the distance between it and the

Fig -129-Raphael Santi, Alba Madonna.

Source – The National Gallery, Washington, D.C. Mellon Collection.

object, and the angle of the oncoming light rays define the spatial character of the shadow. Thus, the length, the shape, the brightness value of the cast shadow give us additional information about the forms of solids and also indicate the extent and form of the spatial intervals between solids.

Since the discovery of perspective, painters began to represent the optical image of light moulded arid bent by the various mediums of the environment. They developed progressive skill first in delineating the three. dimensional sculptural appearance of the object-world, later in mastering light and shadow as space-articulating forces, and finally in representing space as luminous by dissolving solidity into light substance.

In their search for optical fidelity of representation painters were forced to condense more and more the time of observation. They had reduced it almost to infinity. Visual experience, however, is a space-time experience. A distance—an extension in space—has meaning only if a certain time is needed to cover it. The very existence of matter is inseparable from time. It is impossible to conceive a material object as existing instantaneously. '[he more accurate became the representation of the play of light on the object, therefore, the farther representation departed from a true visual expression of spatial extension. It could never achieve an intimate welding of space-time experience.

Fig -130-Rembrandt, Portrait of the Artist.

Source – The Metropolitan Museum of Art

Representation went through a development similar to that of the linear perspective. Painters began to chafe against the fetters laid upon space representation by the fixed illumination unity. In breaking these fetters, they achieved the progressive emancipation of the colors and values as plastic forces

01-2.16.2. b. Modifications of illumination perspective

Everyday experience with both daylight and artificial illumination leads us, as a rule, to expect the direction of light to be from above. Every shift from this standard light condition is registered and interpreted by us as an exaggeration of spatial dimensions. Lighting from below, from the back, or from one or another unexpected side creates a dynamic spatial effect. The painters exploited this amplification of the illumination perspective. In a similar fashion, as the linear perspective was stretched or condensed to its utmost limits until it reached the greatest dynamic power possible within its limitations, the illumination perspective was bent, moulded, stretched to its utmost. An equivalent to the amplified fore-shortening was thus employed in the terms of light and shadow. Instead of a smooth moulding of the forms by gently curved gradation, condensed and stretched value scales were introduced. Another step the painters made corresponded to the device of simultaneous perspective. Corresponding to the simultaneous use of a number of vanishing points and several horizons, they employed in one picture multiple contradictory illumination perspectives. They modified and adapted the distribution of values to the demands of the picture-plane.

01-2.16.2. c. Revaluation of the illumination perspective

The light- and shadow-effects in a representational image imply an abstraction. They are from a fixed point of view, and they indicate the arresting of the position of the spectator, the light-source and the position of the object. But light-and-shadow relationships are in reality transitory, accidental and illusory. The representation of an object under such fixed illumination means its arrest in time, and is consequently a very limited aspect of spatial events. The cubist painters became aware of this contradiction. They recognized that the total disappearance of illumination, or the perfectly even illumination of the surfaces of an object, would make that object inarticulate; would, in effect, cause it to vanish. But they recognized also that brightness relationship is not quite the same as illumination-effect. The arbitrary control of light and shadow can explain the object without arresting it in time. The painter, therefore, devised a graphic metod of fusing the foreground and background by means of an arbitrary extension of light and shade. By subtly graded and consciously controlled values, planes are made to tilt forward or backward without ultimately defining the volume, so that the forms appear to dissolve in the background space. These small shadow-facets are like dynamic direction-signs, guiding the eye to all possible extension in space. It is possible, however, to

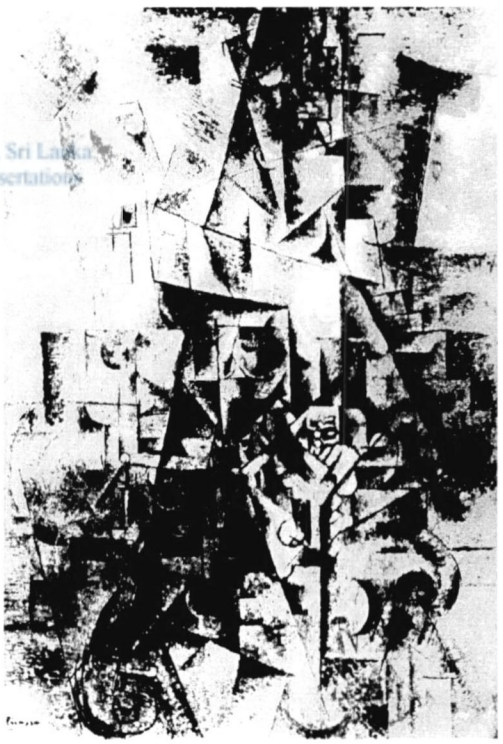


Fig -131-Picasso, Pierrot.
Source – The Guggenheim Museum of Non-Objective Art

decompose the solid in such a way that the onlooker can find no spatial unity in terms of the illusory modelling by shading. Spatial unity can then only be accomplished by creating a living spatial-tension between the virtual movements of the advancing and receding values. Striving to find order, one keeps the centrifugal forces of tone values in spatial balance as if suspended by invisible forces. Each brightness value has a clear structural meaning in the organization of this space.

Exactly the same thing happened as had taken place when these same painters broke with linear perspective. Liberated from the fetters of the absolute perspective and modelling by shading, brightness values revealed an intrinsic power of creating spatial experiences on the picture surface without suggesting the three-dimensional object-world. Value gradations, in sharp or blurred definitions, were recognized as genuine plastic forces, and the picture surface achieved a structural clarity and a new sensuous intensity.

01-2.16.2. d. Influence of photography

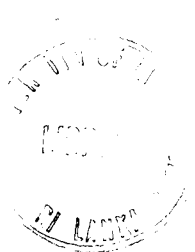
While the painters were working toward the breaking up of the representation-habit of modelling by shading, photography reached a hitherto Undreamed of perfection in rendering visible forms by light and shadow.

Photographic representation brought into focus things and events in their actual appearances, revealing much hitherto unnoticed or blurred in our observation. For the first time, men were able to freeze the moving processes of nature into light-and-shadow patterns. What the eye was never able to do, the optical system of the camera and the photo-sensitive emulsion could do. It could record with objectivity and precision the infinite variety of brightness differences reflected from surfaces.

This advance in photographic recording made certain revaluations necessary in visual habits. By its very mechanical perfection it made obsolete the pursuit of the painter's inherited goal: representation of the illusory appearances of familiar things. The more precise the photographic recording, however, the more obvious became the inherent limitation of an absolute perspective. One form can intercept the light and cast a shadow on another in such a way that the spatial character of the object in shadow will be unintelligible. Photography within its own sphere was struggling to find a solution for this problem by unchaining the light-sources and arbitrarily organizing the distribution of light and shadow. The best photographers succeeded in attaining a pliant plastic treatment of light and shadows.

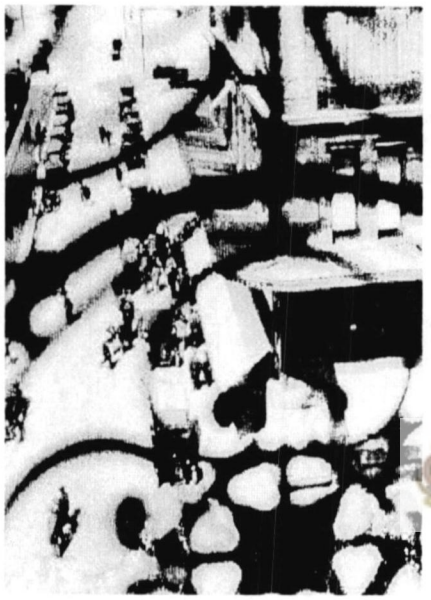
01-2.16.2. e. Sharpness and lack of definition

Objects seen from a distance become gradually blurred and indefinite. The Renaissance artists had observed this and introduced it as a device of representation. Through their work it became a stereotyped statement. Photography, however, invalidated in many respects these accepted standards of aerial perspective, just as it had invalidated those of linear perspective.



The eye is an optical instrument so constructed that it can focus only on one plane. We are not able to see near and distant objects sharply at the same time. We never realized this fully until another optical instrument, the camera, brought it forcibly to our attention by freezing the relationship of blurred and clear images on the picture surface of a photograph. Then, we could both see and study an image in all its subtleties of tone modulation. We became sensitive to the spatial significance of sharpness and lack of definition.

Space representation was broadened by this new plastic idiom. Painters found that the principles thus uncovered could be used in visual creation regardless of whether or not there was actual object-representation, for their power lies in ability to give a legitimate space-experience rather than any function of helping the eye in the recognition of objects.



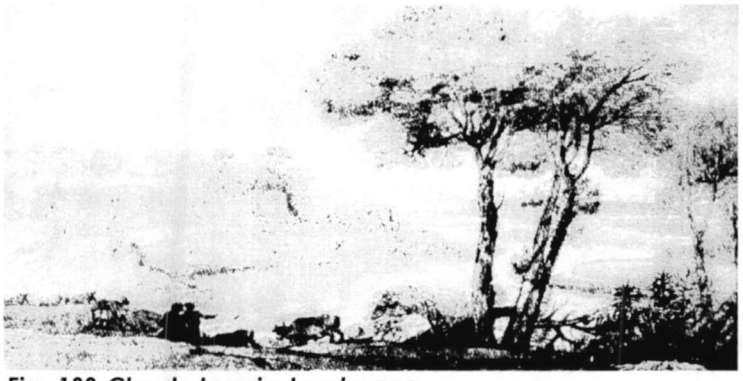


Fig -132-Claude Lorrain, Landscape.

Source – The Cleveland Museum of Art

Fig -133-L. Moholy Nagy, Marseille Pattern, 1929.

Source –Language of Vision

01-2.16.2. f. Texture

Technological progress contributed greatly to the introduction of another visual idiom: texture. A wider knowledge and more extensive use of materials and structures, the discovery of synthetic materials, and machine culture with its new wealth of surfaces, made familiarity with the new landscape imperative. The unaided eye could not follow, no manual skill could have the precision of coordination to represent, all the intricate surface-qualities of the new man-made materials and objects—a gramophone record with its innumerable variety of sound tracks, for example, or a polished machine-made metal object with its perfect surface quality. Only the camera could cope adequately with the visual domestication of

Fig -134- Texture Contrast.

Source –Language of Vision

the new wealth of the object-world. Only the camera could keep pace with the speedily unfolding visual properties of the newly created forms and structures.

Photography did more, however, than quicken sensibilities to the texture wealth of the environment. Two points of one or two objects, if close enough together, will be fused as one when they are beyond the visual threshold of discrimination. Photography gave a new, broader meaning to this phenomenon. Explorations with macro-, micro-, and aerial photography opened up visual fields hitherto beyond human reach. In ordinary visual observation, the sc*le of things is clear in reference to the spectator. Manual representation had traditionally been based also upon a scale related to the spectator. The photographic image, however, is cut out from the familiar spatial frame of reference and there is frequently no cue for deciphering the spatial scale. A micro-photo and an aerial-photo can be easily confused. Space is condensed or expanded according to the optical accessories used in its recording.

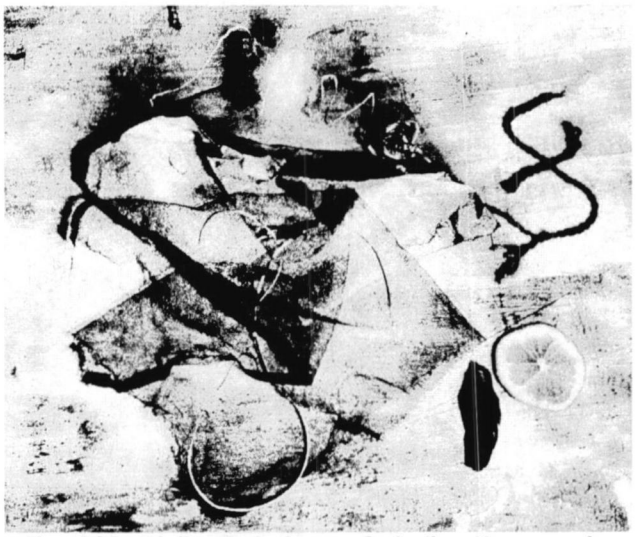


Fig -135- Walter Peterhans, Ophelia- Homage to Rimbaud

Source –Language of Vision

Because of the relativity of the spatial scale the varied qualities of texture values had become the only visible signs able to indicate spatial relationships. Form modeled by shading could no longer be regarded as the sole space-ordering agent of brightness-value differences. Visual form became only a borderline ease in a new, more extensive visual context— texture surface.

Following the pioneer photographers, painters began to assimilate in the picture-image texture qualities inherent in every material. This new sensory property enriched the image. For texture has a unique dimension. The particular rhythm of light and dark that makes up visible texture is beyond our ability to distinguish in any form of visual organization in terms of modelling by shading. It has a fine grain of sensory impact which can be comprehended only in its structural correspondence to other sensory feelings. The surface-texture of grass, concrete, metal, burlap, silk, newspaper, or fur, strongly suggestive of the qualities of touch, we experience visually in a kind of intersensory blend. We see, not light and roughness, restfulness—sight and

01-2.16.2. g. Influence of artificial light-sources

Contemporary man lives in a city environment which offers through each artificial light source an optical scene at night incomparable to any previous visual experience. Buildings that were modelled under the sun into a clear sculptural form, under the simultaneously acting artificial light-sources lose their three-dimensional quality. Contours are obscured. The light spots, coming from inside and outside simultaneously,

and the fusion of luminosity and chiaroscuro, break up the solid form as the measuring unit of space. The fluctuating, vibrating light-patterns cannot be fitted together into an optically modelled form. A spatial interpretation can be achieved only by assuming a more dynamic spatial unity than the illusory forms sculptured by light and shadow. Brightness differences, the sharp or the blurred definitions, the texture of light span the space by their intrinsic advancing—or receding—values. Here also was a strong environmental influence forcing the painter to reconsider and discard his old habit of modelling by shading.

Artificial lighting not only introduced a new approach to spatial representation but contributed to a broadening and a redirection of visual experiences and consequently to a radical readjustment of man's visual sensibilities.

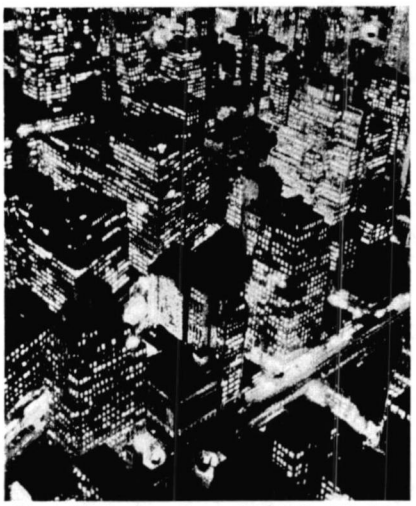


Fig -136- Bernice Abbott, Night View

Source –Language of Vision

Fig -137- R.J.Wolff, Painting.

Source – T.B. Foley

"With our present methods of producing tremendous brightnesses within very small areas, and controlling these almost completely both as to intensity and as to spatial position, man's triumph overnight has been rendered practically complete. At the same time a whole new field of investigation has separated itself out from the traditional optics, *viz.*, that of illumination engineering, a study which stands in closest relation to physiological and psychological optics. Leading illumination engineers are now willing to recognize that their science can no longer be considered as simply a branch of applied physics, as was the ease in the days when it was believed that the determination of photometric values exhausted the problems of the field. It is realized now that a study of the effects of light on the human organism is equally important, so important, in fact, as to constitute a separate branch of illumination engineering."⊗

Fig -138- Gyorgy Kepes, Experiment With Light- 1940.

Source –Language of Vision.

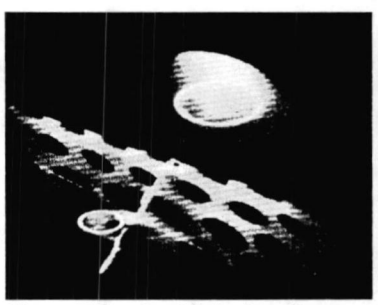


Fig -139- L. Moholy Nagy, Photogram - 1923

Source –Language of Vision.

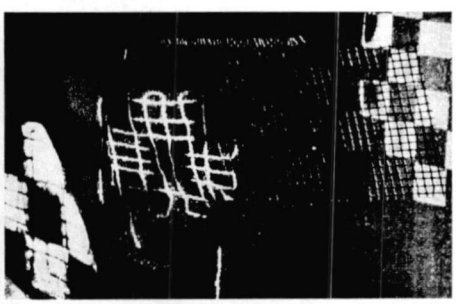


Fig -140- N. Lerner, Study of Light Volume

Source–School of Design in Chicago

⊗ *David Katz, The Word of Color, London,*

Photographers, painters, and other experimenters with light are important pioneers in testing the psycho-physiological effects of plastic organization of light. Helmholtz reminded the scientists a long time ago that **"A careful study of the paintings of the great masters - - - is of great importance for physiological optics."** The study of the expressions of the contemporary masters is no less significant. Not only could they aid research in psychological optics, but help to retrain us to a better understanding of the shaping of our physical environment.

> **"Brightness exciting stimuli have an effect, not only in the same manner on all sense organs, not only from the sense organs upon the muscles, and vice versa from the muscles upon the eye, but there is induced by such stimuli a modification of the whole organism.. .. My clinical observations also prove that the study of the reactions of the organism to brightness and darkness exciting stimuli is calculated to clear up problems, which have a scope far beyond the psychology of perception and that here we have to do with fundamental biological processes of manifold significance for clinical practice as well."•**

01-2.16.3. Representation of the relationship of colors

Early forms of representation invariably showed the local color of the object in spite of changes of illumination, just as they retained the constant brightness value, the actual size and shape of the object, regardless of perspective distortion. In the painting of the Paleolithic man, Assyrian and Egyptian artists, Greek vase painters, early European painters, children and primitives, color stood in a clear symbolic role for the objects as a whole and was not overloaded with details of minute observations. The color-areas were not handicapped in their elementary sensory qualities.

The more precise the observation of the appearance of the object and the sharper man's ability to distinguish optical effects, the less the color-areas on the picture surface could function in full sensory intensity. Just as the size and form of the object were altered by linear perspective, so the local color lost its absolute reference to the object. Since the Renaissance, representational tendencies have been focused upon the exact portrayal of the modification of local colors by the effects of illumination. Light and shadow, the reflection of one color on another, the color of the light-source, and other optical modifications were carefully recorded as painters strove for accurate representation of the optical appearances of objects from one fixed point of view. Unconditional surrender to the appearances of the thing was an inevitable consequence, and through such submission to a shallow naturalism, the sensory quality of the colors was gradually drained out.

• *Walter Barnstein, Journal of General Psychology, 1936*

It is a familiar experience that the sensory quality innate in a sign, in a word, in an event, comes in time to be absorbed by the thing for which it stands. Only by repeating a familiar word over and over again, for instance, can one bring back into it the sensory quality of its sound, make it independent of context, and restore its original sensory intensity. One must look at a familiar landscape from a position which gives an unfamiliar retinal image of the familiar relationships of its component objects if one is to sense the original intensity of the colors of that land. scape. Only then will the colors, before embedded in their objects, be set free to speak in their own pure language, the language of the senses. The consistent search to represent all apparent aspects of the visible surroundings led, paradoxically, to the liberation of the sensory quality of color. In the control of the play of light on objects, painters had included the space between the objects in the object-world. They had widened the representational grasp of objects by including the atmosphere, the air, as a light-modulating substance. They were trying to represent with pigment the space-filling light.

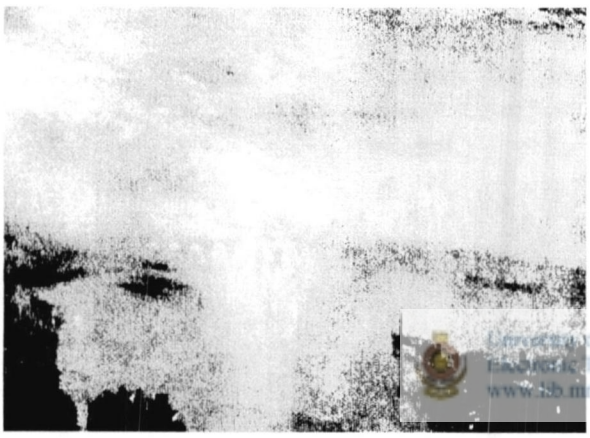


Fig -141- T.M.W.Turner,Burning of The House of Parliament- 1834.
Source- The Cleveland Museum of Art

Fig -142- Georges Seurat, *Detail of* ***Sunday on The Grand Jatte***
Source- The Art Institute of Chicago

This attempt to find an adequate articulation of reflected light on pigments that could match the living, vibrating, sensory richness of the transmitted atmospheric light—the new subject matter—led ultimately to a new basis of representation. The painters scientifically discovered the laws of color mixing. They realized that they could not represent the luminosity of the transmitted light of atmosphere by mixing colors in the ordinary way, by the subtractive pigment mixing. In the scientific researches of Chevreul and Helmholtz they found their answer: color could be mixed on the retina. The device they invented to create this optical mixture of color light on the retina was the breaking up of the previously smoothly modelled color surface into small color dots or lines. These were combined in an order that fused them on the retina into a luminous quality. This innovation opened the road in two directions. One was the rediscovery of the color plane as the basic building element of the plastic image— in its embryonic form a color spot of the

impressionist paintings. The other was the conscious application of the additive color mixing which made it clear that the image is man-made, that the human factor is an integer element in the image, and that representation of spatial experiences cannot be the facsimile of the spatial reality, but must be a corresponding structure based upon the human receiving set.

The actual result in painting, meanwhile, was in most cases merely a shorthand record of vibrating color effect. Visual experience was formulated only in terms of the eye as a physiological apparatus, and the picture was simply a replica of the color dots on the retina blown up in the scale of the picture-plane. Here plastic organization reached the zero point.

01-2.16.3.a. The space dimension of color

But here also new directions of plastic organization were inherent. The color spot now lived its own true existence. It could be tested in various functions on the picture surface. Dissociated from fixed illumination, the color surfaces manifested first of all their intrinsic spatial value. This inherent space dimension of color was controlled and explored for building solids on the surface. After long aberrations when color was used only as coloring, and indicated the color of an object, color now constituted the object. The weight and the bulk of the mass were modelled from and by the advancing and receding colors. Forms could now grow from colors, and the structural use of color be made to give a sense of spatial reality that no previous representational method had achieved. To make the colors work in this structural sense it is necessary to understand all their spatial actions. The interest of the painters since impressionism has been concentrated on the testing of colors in their advancing, receding, expanding, and contracting actions.

New significance now attached to the fact that colors are perceived on the picture surface in a dynamic interaction with one another, so that each color quality has only a relative value, because it undergoes modifications due to its interrelationship with other color surfaces. This research necessarily included learning how one color modifies the other by being placed next to it. It sought also knowledge of active and passive characteristics— when and how one color arrests the eye with a greater power than another. The more knowledge he acquired, the bolder the painter became in dissociating the color surfaces from the object-belonging. The color dots of the impressionist painters, through the color facets of Cezanne; the decorative color pattern of Gauguin and Matisse, reached full growth in the work of the cubist and attained a final purity and power in the work of Malevitch and Mondrian.

01-2.16.3.b. The feeling dimensions of color

The emancipation of the color spot from slavish subordination to the object and fixed illumination brought another important result. It gave painters the initial impetus to go beyond the frontiers of another tradition of color-expression.
It was pointed out previously that through an intricate interaction of the structure of the sensory receiving set and memory factors, color sensations are endowed with unique feeling qualities. We are able to see, or it appears that we are able to see, what the eye structurally is not capable of seeing. We see warm and cold, quiet and loud, sharp and dull, light and heavy, sad and gay, static and dynamic, wild and tame colors. On the other hand, we have acoustical and olfactory sensations that have colors, brightness, saturation and spatial qualities of height, width, length, weight, direction, and movement.

There is a common structural basis of all kinds of sensations. We have a faculty of perceiving structural qualities common in sight, hearing, touch, and taste. Sight and hearing particularly show and inexhaustible reservoir of interchangeable structure of sensations. The sensations may call forth intensive emotional response, without rising into consciousness. Painters, musicians, poets, and scientists, aware of the significance and creative potentialities inherent in this structural correspondence, searched and worked for a creative control, for a synchronization of the senses. Goethe made important contributions. A. W. Schlegel, the German romanticist of the early nineteenth century, invented a scale of colors corresponding to human vowels, and he attributed a special significance to every particular conjunction of the vowel color. "A" represents the light clear red, and signifies youth, friendship, radiance. "I" stands for celestial blue, symbolizing love. "0" is purple, "V" stands for violet, etc. Recent scientific research offered new important data. Von Hornbostal made extensive study of the common factor of the different sensory data. lie states his finding in one of the experiments as follows: "To a particular smell, say benzol, the correspondingly bright gray is chosen on the color disc, and to the same smell, from the series of tuning forks, the correspondingly bright tone." Franz Boas brings observations from another field. He writes:

> **"Most of us will feel that a high pitch and exaggerated length, perhaps also the vowel i (English ee) indicate smallness, while low pitch and length and the vowels a, o, u (English oo) indicate large size. - . Large or small size, or intensity~ may be expressed by variations of sound. Thus Nez Perce, an Indian language spoken in Idaho, changes n to l to indicate smallness; Dakota has many words in which s changes to sh, or z to j, indicating greater intensity.... Undoubtedly the particular kind of synesthesia between sound, sight and touch has played its role in the growth of language."**∅

∅ Franz Eons, General Anthropology, 1938

in the traditional representation these intersensory qualities of colors were fastened to the objects, in the same way as the intrinsic spatial values of brightness and hue were embedded in the objects and thus hampered by linear perspective and modelling by shading. Contemporary painters broke these old ties. Colors taken from the object context may call forth emotional responses coming deeper than from the conscious state. Painters employing these intersensory qualities of color were able to arouse emotional reactions of a great intensity and variety. This approach had a great rejuvenating influence. The expressionist painters in search of a color structure which could induce strong emotional responses went boldly ahead and moulded colors and shapes in a hitherto undared flexibility.

It is interesting to note that this approach was in its first steps the psychological equivalent of the perspective vision that approaches the visible world from a fixed point of view. The fixed point of view, in this last phase of individualism, was psychological. One saw what he was able to see from his psychological position. As linear perspective distorted, shaped, and modified actual spatial characteristics according to a particular angle of vision, so the psychological equivalent of linear perspective distorted, modelled, and modified color appearance and color characteristics of objects according to the individual's current attitude, emotion, wishes, desires; the angle of psychological vision. The consistent development in this subjective treatment of color appearance of things led to a negation of color as fixed objective reality, just as the consistent search for the representation of perspective appearance had led to the negation of the perspective-idea, the fixed optical reality. But after an utterly subjective appraisal of the early expressionist painters, painting a face blue, red, or yellow, and an animal green, black, or any other color which is not its natural color, but is what one may call a psychological angle of vision, the object-content falls out entirely. Color remains as a universal keyboard of feelings. Color representation reaches a higher level of objectivity. And once more, disintegration opened the way for fuller integration. Color was regained as a basic material of plastic creation, a spatial element that can be organized structurally as well as used as an elementary sensory quality with an emotional effect on the beholder.

Fig -143- W.Kandinsky, Picture with three spots
Source- TheGuggenheim Museum of Non-Objective Art

01-2.17. Representation of movement

Matter, the physical basis of all spatial experience and thus the source material of representation, is kinetic in its very essence. From atomic happenings to cosmic actions, all elements in nature are in perpetual interaction—in a flux complete. We are living a mobile existence. The earth is rotating; the sun is moving; trees are growing; flowers are opening and closing; clouds are merging, dissolving, coming and going; light and shadow are hunting each other in an indefatigable play; forms are appearing and disappearing; and man, who is experiencing all this, is himself subject to all kinetic change. The perception of physical reality cannot escape the quality of movement. The very understanding of spatial facts, the meaning of extension or distances, involves the notion of time—a fusion of space-time which is movement. **"Nobody has ever noticed a place except at a time or a time except at a place,"** said Minkowsky in his **Principles of Relativity.**

01-2.17.1. The sources of movement perception

As in a wild jungle one cuts new paths in order to progress further, builds roads of perception on which he is able to approach the mobile world, to discover order in its relationships. To build these avenues of perceptual grasp he relies on certain natural factors. One is the nature of the retina, the sensitive surface on which the mobile panorama is projected. The second is the sense of movement of his body—the kinesthetic sensations of his eye muscles, limbs, head, which have a direct correspondence with the happenings around him. The third is the memory association of past experience, visual and non-visual; his knowledge about the laws of the physical nature of the surrounding object-world.

01-2.17.1.a. The shift of the retinal image

We perceive any successive stimulation of the retinal receptors as movement, because such progressive stimulations are in dynamic interaction with fixed stimulations, and therefore the two different types of stimulation can be perceived in a unified whole only as a dynamic process, movement. If the retina is stimulated with stationary impacts that follow one another in rapid succession, the same sensation of optical movement is induced. Advertising displays with their rapidly flashing electric bulbs are perceived in continuity through the persistence of vision and therefore produce the sensation of movement, although the spatial position of the light bulbs is stationary. The movement in the motion picture is based upon the same source of the visual perception.

The changes of any optical data indicating spatial relationships, such as size, shape, direction, interval, brightness, clearness, color, imply motion. If the retinal image of any of these signs undergoes continuous regular change, expansion or contraction, progression or graduation, one perceives an approaching or receding, expanding or contracting movement. If one sees a growing or disappearing distance between these signs, he perceives a horizontal or vertical movement.

"Suppose for instance, that a person is standing still in a thick woods, where it is impossible for him to distinguish, except vaguely and roughly in a mass of foliage and branches all around him, what belongs to one tree and what to another, and how far the trees are separated. The moment he begins to move forward, however, everything disentangles itself and immediately he gets an apperception of the content of the woods and the relationships of objects to each other in space."⊗

From a moving train, the closer the object the faster it seems to move. A far-away object moves slowly and one very remote appears to be stationary. The same phenomenon, with a lower relative velocity, may be noticed in walking, and with a still higher velocity in a landing aeroplane or in a moving elevator.

01-2.17.1.b. The role of relative velocity

The velocity of motion has an important conditioning effect. Motion can be too fast or too slow td be perceived as such by our limited sensory receiving set. The growth of trees or of man, the opening of flowers, the evaporation of water are movements beyond the threshold of ordinary visual grasp. One does not see the movement of the hand of a watch, of a ship on a distant horizon. An aeroplane in the highest sky seems to hang motionless. No one can see the traveling of light as such. In certain less rapid motions beyond the visual grasp, one is able, however, to observe the optical transformation of movement into the illusion of a solid. A rapidly whirled torch loses its characteristic physical extension, but it submerges into another three-dimensional-appearing solid—into the virtual volume of a cone or a sphere. Our inability to distinguish sharply beyond a certain interval of optical impacts makes the visual impressions a blur which serves as a bridge to a new optical form. The degree of velocity of its movement will determine the apparent density of that new form. The optical density of the visible world is in a great degree conditioned by our visual ability, which has its particular limitations.

01-2.17.1.c. The kinesthetic sensation

When a moving object comes into the visual field, one pursues it by a corresponding movement of his eyes, keeping it in a stationary or nearly stationary position on the retina. Retinal stimulation, then, cannot alone account for the sensation of movement. Movement-experience, which is undeniably present in such a case, is induced by the sensation of muscle movements. Each individual muscle-fibre contains a nerve end, which registers every movement the muscle makes. That we are able to sense space in the dark. evaluate direction-distances in the absence of contacted bodies, is due to this muscular sensation—the kinesthetic sensation.

⊗ *Helmlzoltz, Physiological Optics*

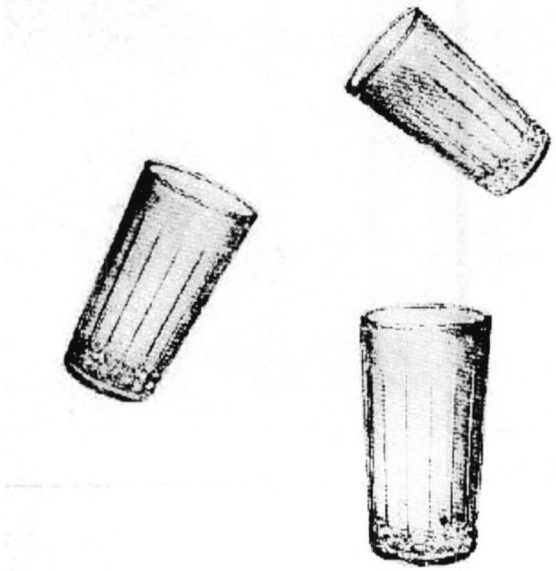


Fig -144 - E.G.Lukacs, Action.
Source–Herbert Bayer Design Class

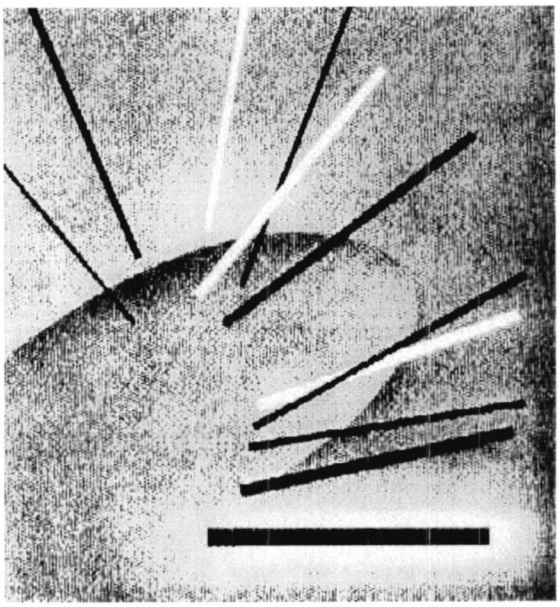


Fig -145 – H.L.Carpenter,Movement.
Source–Language of Vision

01-2.17.1.d. Memory sources

Experience teaches man to distinguish things and to evaluate their physical properties. He knows that bodies have weight; unsupported they will of necessity fall. When, therefore, he sees in midair a body he knows to be heavy, he automatically associates the direction and velocity of its downward course. One is also accustomed to seeing small objects as more mobile than large ones. A man is more mobile than a mountain; a bird is more frequently in motion than a tree, the sky, or other visible units in its background. Everything that one experiences is perceived in a polar unity in which one pole is accepted as a stationary background and the other as a mobile, changing figure.

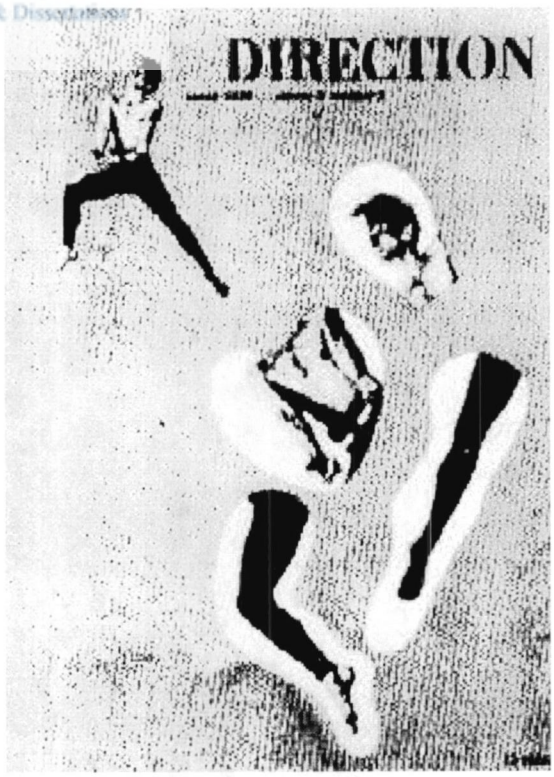


Fig -146 – Paul Rand ,Cover design.
Source–Language of Vision

01-2.17.2. Traditional representational devices

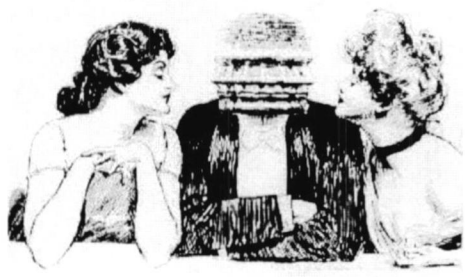


Fig – 147-Ch. D. Gibson.
Source - The Gentleman's Dilemma
cc. 1900

Through all history painters have tried to suggest movement on the stationary picture surface, to translate some of the optical signs of movement-experience into terms of the picture-image. Their efforts, however, have been isolated attempts in which one or the other sources of movement-experience were drawn upon; the shift of the retinal image, the kinesthetic experience, or the memory of past experiences were suggested in two-dimensional terms.

These attempts were conditioned mainly by the habit of using things as the basic measuring unit for every event in nature. The constant characteristics of the things and objects, first of all the human body, animals, sun, moon, clouds, or trees, were used as the first fixed points of reference in seeking relationships in the optical turmoil of happenings.

Therefore, painters tried first to represent motion by suggesting the visible modifications of objects in movement. They knew the visual characteristics of stationary objects and therefore every observable change served to suggest movement. The prehistoric artist knew his animals, knew, for example, bow many legs they had. But when he saw an animal in really speedy movement, he could not escape seeing the visual modification of the known spatial characteristics. The painter of the Altamiro caves who pictures a running reindeer with numerous legs, or the twentieth century cartoonist picturing a moving face with many superimposed profiles, is stating a relationship between what he knows and what he sees.

Other painters, seeking to indicate movement, utilized the expressive distortion of the moving bodies. Michelangelo, Goya, and also Tintoretto, by elongating and stretching the figure, showed distortion of the face under the expression of strains of action and mobilized numerous other psychological references to suggest action.

The smallest movement is more possessive of the attention than the greatest wealth of relatively stationary objects. Painters of many different periods observed this well and explored it creatively. The optical vitality of the moving units they emphasized by dynamic outlines, by a vehement interplay of vigorous contrast of light and dark, and by extreme contrast of colors. In various paintings of Tintoretto, Maffei, Veronese, and Goya, the optical wealth and intensity of the moving figures are juxtaposed against the submissive, neutral, visual pattern of the stationary background.

Fig- 148 HaHarunobu. Windy Day Under Willow
Source - The Art Institute of Chicago

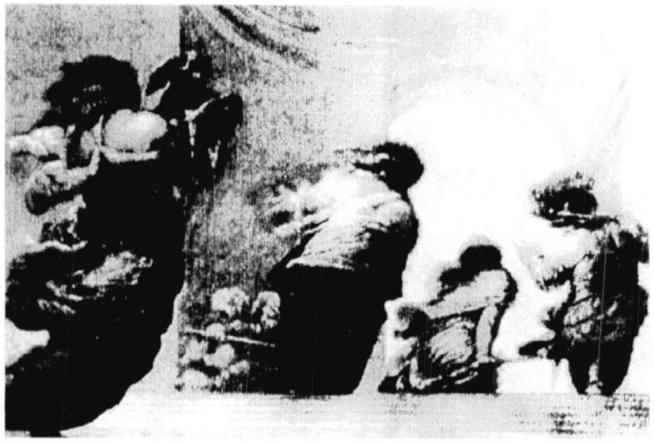


Fig- 149- Maffei, Painting
Source – Language of Vision

The creative exploitation of the successive stimulations of the retinal receptors in terms of the picture surface was another device many painters found useful. Linear continuance arrests the attention and forces the eye into a pursuit movement. The eye, following the line, acts as if it were on the path of a moving thing and attributes to the line the quality of movement. When the Greek sculptors organized the drapery of their figures which they represented in motion, the lines were conceived as optical forces making the eye pursue their direction.

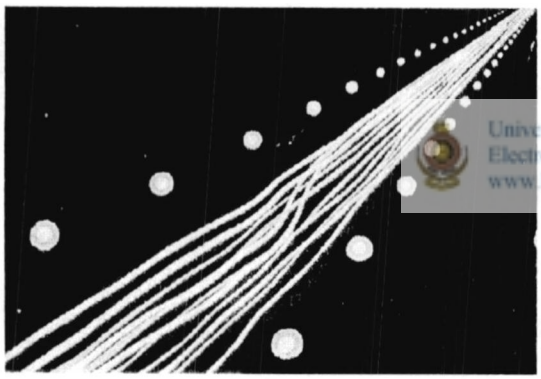


Fig- 150- G. McVicker, Study of Linear Movement
Source – The Art Directors' Club of Chicago

Fig- 151- Lee King, Study of Movement Representation
Source –School of Design in Chicago

We know that a heavy object in a background that does not offer substantial resistance will fall. Seeing such an object we interpret it as action. We make a kind of psychological qualification. Every object seen and interpreted in a frame of reference of gravitation is endowed with potetitial action and could appear as falling, rolling, moving. Because we customarily assume an identity between the horizontal and vertical directions on the picture surface and the main directions of space as we perceive them in our everyday experiences, every placing of an object representation on the picture surface which contradicts the center of gravity, the main direction of space—the horizontal or vertical axis—causes that object to appear to be in action. Top and bottom of the picture surface have a significance in this respect.

01-2.17.3. Contemporary attempts of movement representation

Whereas the visual representation of depth had found various complete systems, such as linear perspective, modelling by shading, a parallel development had never taken place in the visual representation of motion. Possibly this has been because the tempo of life was comparatively slow; therefore, the ordering and representation of events could be compressed without serious repercussions in static formulations. Events were measured by things, static forms identical with themselves, in a perpetual fixity. But this static point of view lost all semblance of validity when daily experiences bombarded man. with a velocity of visual impacts in which the fixity of the things, their self-identity, seemed to melt away. The more complex life became, the more dynamic relationships confronted man, in general and in particular, as visual experiences, the more necessary it became to revaluate the old relative conceptions about the fixity of things and to look for a new way of seeing that could interpret man's surroundings in their change. It was no accident that our age made the first serious search for a reformulation of the events in nature into dynamic terms. This reformulation of our ideas about the world included almost all the aspects one perceives. The interpretation of the objective world in the terms of physics, the understanding of the living organism, the reading of the inner movement of social processes, and the 'visual interpretation of events were, and still are, struggling for a new gauge elastic enough to expand and contract in following the dynamic changes of events.

01-2.17.3.a. The influence of the technological conditions

The environment of the man living today has a complexity which cannot be compared with any environment of any previous age. The skyscrapers, the street with its kaleidoscopic vibration of colors, the window-displays with their multiple mirroring images, the street cars and motor cars, produce a dynamic simultaneity of visual impression which cannot be perceived in the terms of inherited visual habits. In this optical turmoil the fixed objects appear utterly insufficient as the measuring tape of the events. The artificial light, the flashing of electric bulbs, and the mobile game of the many new types of light sources bombard man with kinetic color sensations having a keyboard never before experienced. Man, the spectator, is himself more mobile than ever before. He rides in streetcars, motorcars and aeroplanes and his own motion gives to optical impacts a tempo far beyond the threshold of a clear object-perception. The machine man operates adds its own demand for a new way of seeing. The complicated interactions of its mechanical parts cannot he conceived in a ½tatic way; they must be perceived by understanding of their movements. The motion picture, television, and, in a great degree, the radio, require a new thinking. i.e., seeing, that takes into account qualities of change, interpenetration and simultaneity.

Man can face with success this intricate pattern of the optical events only as he can develop a speed in his perception to match the speed of his environment. He can act with confidence only as he learns to orient himself in the new mobile landscape. He needs to be quicker than the event intends to master. The origin of the word "speed" has a revealing meaning. In original form in most languages, speed is intimately connected with success. Space and speed are, moreover, in some early forms of languages, interchangeable in meaning. Orientation, which is the basis of survival, is guaranteed by the speed of grasping the relationships of the events with which man is confronted.

01-2.17.2.b. Social and psychological motivations

Significantly, the contemporary attempts to represent movement were made in the countries where the vitality of living was most handicapped by outworn social conditions. In Italy, technological advances and their economical-social consequences, were tied with the relics of past ideas, institutions. The advocates of change could see no clear, positive direction. Change as they conceived it meant expansion, imperialist power policy. The advance guard of the expanding imperialism identified the past with the monuments of the past, and with the keepers of these monuments; and they tried to break, with an uninhibited vandalism, everything which seemed to them to fetter the progress toward their goals. "We want to free our country from the fetid gangrene of professors, archaeologists, guides and antique shops," proclaimed the futurist manifesto of 1909. The violence of imperialist expansion was identified with vitality; with the flux of life itself. Everything which stood in the way of this desire of the beast to reach his prey was to be destroyed. Movement, speed, velocity became their idols. Destructive mechanical implements, the armoured train, machine gun, a blasting bomb, the aeroplane, the motor car, boxing, were adored symbols of the new virility they sought.

In Russia, where the present was also tied to the past and the people were struggling for the fresh air of action, interest also focused on the dynamic qualities of experience. The basic motivation of reorientation toward a kinetic expression there was quite similar to that of the Italian futurists. It was utter disgust with a present held captive by the past. Russia's painters, writers, like Russia's masses, longed to escape into a future free from the ties of outworn institutions and habits. Museums, grammar, authority, were conceived of as enemies; force, moving masses, moving machines were friends. But this revolt against stagnant traditions, this savage ridiculing of all outworn forms, opened the way for the building of a broader world. The old language, which as Mayakovsky said **"was too feeble to catch up with life,"** was reorganized into kinetic idioms of revolutionary propaganda. The visual language of the past, from whose masters Mayakovsky asked with just scorn, **"Painters will you try to capture speedy cavalry with the tiny net of contours?"** was infused with new living blood of motion picture vision.

01-2.17.4. Representational devices

In their search to find an optical projection which conformed to the dynamic reality as they sensed and comprehended it, painters unconsciously repeated the path traced by advancing physical science.

Their first step was to represent on the same Picture-plane a sequence of positions of a moving body. This was basically nothing but a cataloging of stationary spatial locations. The idea corresponded to the concept of classical physics, which describes objects existing in three-dimensional space and changing locations in sequence of absolute time. The concept of the object was kept. The sequence of events frozen on the picture-plane only amplified the contradiction between the dynamic reality and the fixity of the three-dimensional object-concept.

Their second step was to fuse the different positions of the object by filling out the pathway of their movement. Objects were no longer considered as isolated, fixed units. Potential and kinetic energies were included as optical characteristics. The object was regarded to be either in active motion, indicating its direction by "lines of force," or in potential motion, pregnant with lines of force, which pointed the direction in which the object would go if freed. The painters thus sought to picture the mechanical point of view of nature, devising optical equivalents for mass, force, and gravitation. This innovation signified important progress, because the indicated lines of forces could function as the plastic forces of two-dimensional picture-plane.

The third step was guided by desire to integrate the increasingly complicated maze of movement-directions. The chaotic jumble of centrifugal line of forces needed to be unified. Simultaneous representation of the numerous visible aspects composing an event was the new representational technique here introduced. The cubist space analysis was synchronized with the line of forces. The body of the moving object, the path of its movement and its background were portrayed in the same picture by fusing all these elements in a kinetic pattern. The romantic language of the futurist manifestos describes the method thus **"The simultaneosity of soul in a work of art; such is the exciting aim of our art. In painting a figure on a balcony, seen from within doors, we shall not confine the view to what can be seen through the frame of the window; we shall give the sum total of the visual sensation of the street, the double row of houses extending right and left the flowered balconies, etc.....in other words, a simultaneity of environment and therefore a dismemberment and dislocation of objects, a scattering and confusion of details independent of one and another and without reference to accepted logic,"** said Marinetti. This concept shows a great similarity to the idea expressed by Einstein, expounding as a physicist the space-time interpretation of the general theory of relativity. **"The world of events can be described by a static picture thrown onto the background of the four dimensional time-space continuum. In the past science described motion as happenings in time, general theory of relativity interprets events existing in space-time."**

Fig- 152- Marcel Duchamp, Sad Young Man in a Train
Source - Courtesy of Art of This Century

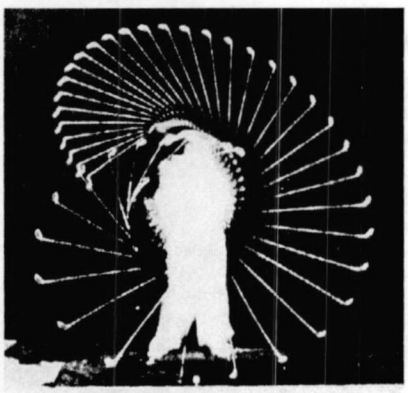


Fig- 153- Harold E. Edgerton, Golfer
Source –Language of Vision.

Fig- 154- Soviet Poster
Source – Courtesy of Art of This Century

The closest approximation to representation of motion in the genuine terms of the picture-plane was achieved by the utilization of color planes as the organizing factor. The origin of color is light and colors on the picture surface have an intrinsic tendency to return to their origin. Motion, therefore, is inherent in color. Painters intent on realizing the full motion potentialities of color believed that the image becomes a form only in the progressive interrelationships of opposing colors. Adjacent color-surfaces exhibit contrast effects. They reinforce each other in hue, saturation, and intensity.

The greater the intensity of the color-surfaces achieved by a carefully organized use of simultaneous and successive contrast, the greater their spatial movement color in regard to picture-plane. Their advancing, receding, contracting and circulating movement on the surface creates a rich variety, circular, spiral, pendular, etc., in the process of moulding them into one form which is light or, in practical terms, grey. "Form is movement," declared Delaunay. The classical continuous outline of the objects was therefore eliminated and a rhythmic discontinuity created by grouping colors in the greatest possible contrast. The picture-plane, divided into a number of contrasting color-surfaces of different hue, saturation, and intensity, could be perceived only as a form, as a unified whole in the dynamic sequence of visual perception. The animation of the image they achieved is based upon the progressive steps in bringing opposing colors into balance.

The centrifugal and centripetal forces of the contrasting color-planes move forward and backward, up and down, left and right, compelling the spectator to a kinetic participation as he follows the intrinsic spatial-direction of colors. The dynamic quality is based upon the genuine movement of plastic forces in their tendency toward balance. Like a spinning top or the running wheel of a bicycle, which can find its balance only in movement, the plastic image achieves unity in movement, in perpetual relations of contrasting colors.

Fig- 155- A.M. Cusssndre. Poster
Source – Courtesy of Art of This Century

01-2.18. The process of making

The spatial world consists not of instantaneously created units, but of processes of becoming, indefatigable transformations of spatial configurations. Nature forms; flowers, trees, rocks, mountains, cloud formations, animal or human bodies as well as man-made forms; buildings or implements, are only temporarily configurations in the perpetual flux of becoming and disappearing. Every form, therefore, is an inevitable visible record of origin. The spatial configurations of the branches of the trees, the forms of melting metals convey their story of emergence as well as a footstep in the snow or in the sand, the shape of ink spilled from the bottle, or the line pattern drawn by a pencil on a paper. The space-time past—movement—is inherent in every form.

But the space-time background that resulted in a configuration can be so great that it falls beyond the threshold of our ability to grasp it. There are numerous forms in nature whose native history is entirely concealed because the scale of complexity in their origin is too vast. One cannot sense instantaneously in a leaf, in a rock, the kinetic background of their becoming.

Fig- 156- F. Levstik, Photograph
Source: The Art Directors' Club of Chicago

01-2.18.1. The material process of making; surface treatment

Making is a spatial activity, and the visible pathway of the movement of a tool on a medium is a spatial message. One cannot avoid seeing. beyond every spatial configuration, the force, the speed and direction of movement which created it. Every created picture image serves, therefore, as an optical expression of movement. The action and the power of the tool, the structure and the texture of the surface resisting the tool. determine the structure of the visible path. Consequently, each tool and each material has its own idiom of movement. The created image is manmade, and here the dynamic spatial background attains a new significance. Making implies body movement. Body movements in turn are evoking a kinetic pleasure, nervous satisfaction. Seeing any man-created visual sign. one unavoidably identifies himself with the maker. One follows the visible tracks of movements and relives again all steps of the neuro-muscular coordination of the original making. A line or a surface suggests the degree of control in its creation. It may have boldness and fluency dictated by the self-confidence of skill, or it may be hesitating, uncontrolled. Thus a line or a surface has an innate kinetic quality independent of what it represents and its plastic relationship on the surface.

Surface-treatment, that is, the visible path of the creative act, determines the genuineness of the expression. In the western culture, representation, with its slavish and obedient portrayal of the object-world, has hampered honest use of the surface-treatment. With meticulous care the painters eliminated all signs of the making. They tried hard to camouflage the fact that the created image is a different reality than the actual subject-matter. In this forgery an important organic quality of the image was lost. In classical art, however, are many examples to prove that its great masters understood the kinetic quality implicit in the surface-treatment. Most of these works were produced at the peak of the painters' development and never became for them standards of pictorial expression. Only contemporary painters through long consistent fight have made surface-treatment an integral factor of visual expression. The same pioneer work which resulted in the liberation of the basic plastic elements, color, planes, and lines, also reclaimed surface-treatment.

The conscious demand for genuine respect of the process of making, however, grew from a more general need than that of the language of vision. Short-sighted profit-hunting — the nineteenth century cannibalism — destroyed almost all living aspects of the work-process, the creative activity. Blind devotion to quantity led to man's enslavement to the machine. The increasing mechanization of production, with alt its compulsion of uniformity, rapidly led to the disappearance of real craftsmanship based upon respect for the truth of material, tool, arid maker. This shame of the true nature of making, this disregard of the inherent qualities of tools and materials became a dangerous epidemic in every field of human endeavor. From the making of the simplest, every-day object to the widest dimensions of expression, a false attitude was dominant. Not only did it stamp out all rhythmic pleasure in the making, the enjoyment of the work, but it also eclipsed the understanding of the materials and tools. At the early part of the last century Carlyle, and a little later Ruskin and Morris, recognized the devastating consequences of the license of machine-production to creative activity and thus to the life of man. They clearly discerned that the maladjustment of every material and tool man uses implies the maladjustment of man himself. They realized that man must rediscover in every work-process the pleasure of labor, the experience of forming, art, to arrive at an integrated existence. **"That thing which I understand by real art is the expression by man of his pleasure in labour. I do not believe he can be happy in his labour without expressing that happiness;..... A most kind gift is this of nature, since all man, nay, it seems all things, too must labour ; ....."** wrote William Morris. This generation faces the task of realizing this vision and extending it on the widest social plane. It is an important task, for it involves not only the revitalization of visual art as such, but even more truly the developing of quickened sensibilities trained to the mission of clearing away falsehood and sham from human relationships.

As each individual record has its own intrinsic movement-quality— linear traces evoke an experience of different velocities and rhythm; a sprayed or printed surface the feeling of an almost instantaneous emerging—the combination on the same surface of a variety of treatments creates a visual experience qualified by tension.

01-2.18.2. The psychological process of making

The physical process of making, the execution of the image, is only part of the becoming. Physical tools and medium condition this growth; they do not define its final direction. Man's mind makes the image; his nervous system is the basic tool.

The image grows in the sense that man sees what lie wants to see. As each tool has its own unique way of living on the picture surface, so each individual has his own way of binding optical signs into shapes arid images he would like to see. As hans Arp said so convincingly, **"Art is a fruit growing out of man, like the fruit out of a plant, like a child out of the mother."**

If one looks at a cloud formation, or the pattern made by chance with an ink blot, and finds in them faces, mountains, animals, one creates images which are modelled by unconscious mental processes. The created in-rage, a painting, has similar genesis; it is dictated by emotional necessities, thus stemming from unconscious realms.

One cannot bear chaos in one's psychological space any more than one can bear chaos of the optical impacts of geographical space. Man organizes the optical chaos by forming meaningful spatial wholes. So does he organize the chaos of his psychological space, by forming visual images of his desires, temporary equilibriums in the perpetual conflicts of pleasure and reality; impulses and social taboos. The results of his creative imagination are accepted by him as real forms of his existence. As Freud stated, **"Only in one field has the omnipotence of thought been retained in our civilization, namely in art. In art alone it still happens that man, consumed by his wishes, produces something similar to the gratification of these wishes, and this playing, thanks to artistic illusion, calls forth effects as if it were something real."**

The same social events that caused the draining of the rhythm—the pleasure of making—from the physical process of making also sapped the internal process of making of its most essential nourishment. The static object concept, the fixed perspective of the psychological space, froze the biomorphic rhythm of visual imagery. TI-re fetish of our time—the mechanical manufactured commodity—stamped its pattern on the creative process. It was not by accident that one of the first rebels against the wrongs of the industrial revolution, Ca4yle, wrote in 1831, **"The artificial is the conscious mechanical; the natural is the unconscious, dynamical. Unconsciousness is the sign of creation; consciousness at best that of manufacture."** Today the protest has taken vehement form. Contemporary artists, revolting against the fetters of static concept, throw away all conscious control. Artistic endeavor was reduced, only to a sheer assistance of chance happenings. The artist acts the role of the midwife. He only assists at the birth of a living form that grows from deeper strata than his conscious efforts could reach. He invents techniques that give the fewest obstacles to the free flow of organic formation.

Plastic thinking, thinking with the senses, stated the desires and the will of men opposed to machine control. Having achieved the scientific mastery of a new vast territory of nature and its ordering into a one-sided technological dimension, man was searching for renewed contact with the pulsation of the dynamic forces of nature processes. He recognized that scientific technological progress needed to be revaluated in biological dimensions. Instead of the old fixed point of perspective, he developed, to meet his need, the perspective of growth instead of static order, the dynamic rhythm. The artist rediscovered nature. But he turned away from the naturalistic representation of the forms of the trees, flowers, and animals, and took as his new subject-matter the visible processes of the growth.

Fig- 157- Paul Klee,Male and Female Plant
Source- Art of This Century

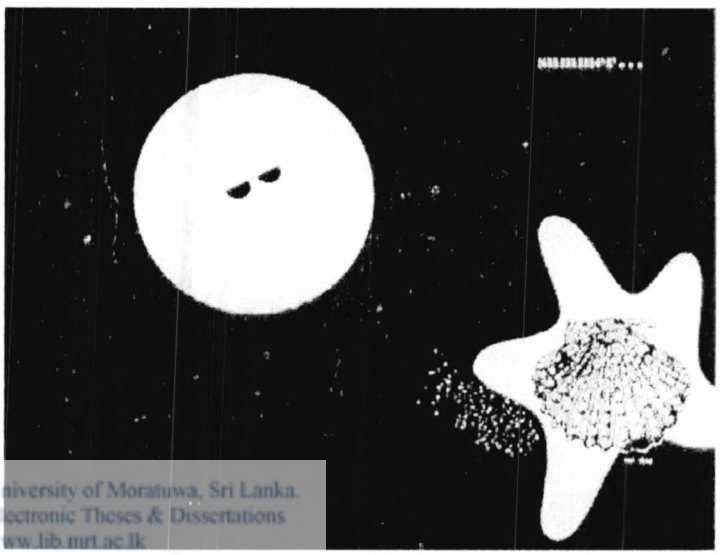


Fig- 158- Paul Rand, Advertising Design
Source - Art of This Century

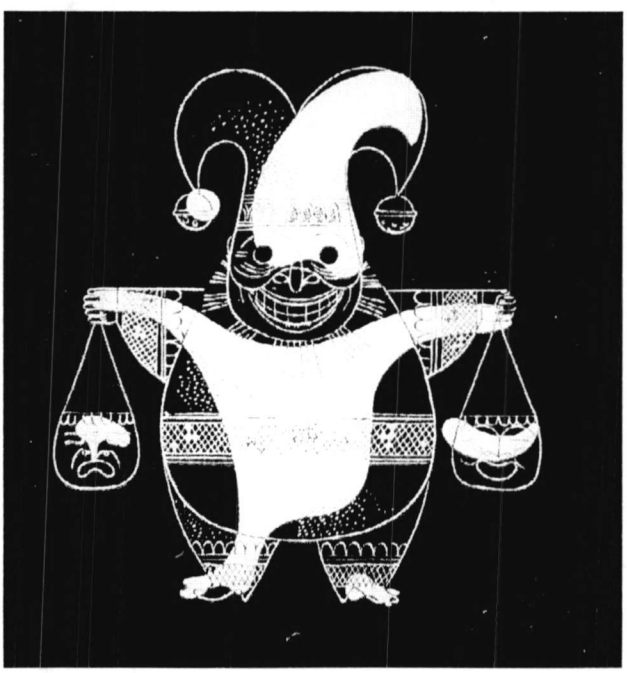


Fig- 159- Joseph Feher, Advertising Design
Source- Art of This Century

CHAPTER TWO

THE WAY THAT PHOTOGRAPHS COMMUNICATE ARCHITECTURE

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02-1. Architectural photography- An introduction

In the drama of international Style Architecture it can be find lot of variation of styles from centuries of past to the present, colorful, inventive, aspiring modern and post modern Buildings. Often, it is through the printed page public alike become more familiar with these structures. People's reactions and ideas come more often not from the actual buildings, but from a photograph from it. Some times photographs will reinforce negate, or otherwise shape images that construct from direct impression of Architecture. At the same time photographs has its own image; all that knows is what photographs tells us.

Edward Bradley, an Oxford scholar of theology, wrote in 1855 that:

> ***"It will obvious that Photography can be made most serviceable to Engineers and Architects, in illustrating - either for themselves or their employers - the progress of the works on which they may be engaged. Accurate ideas may thus be obtained of newly built mansions, churches, or public edifices. indeed, estate agents are already awake to the advantages of the art; and, in place of the gaudily colored idealizes which they were in the habit of exhibiting as the correct representation of the villas and mansions of which they had the disposal, many of them now set forth before you the less attractive, but more faithful Collotypes. May such truth - telling prosper as it deserves!"⊗***

The images and perceptions we have of the built world are often derived from photographs. How buildings are planned and used often has to do with information found in photographs. While it is almost impossible to qualify how this occurs and to what degree, that it does occur is perhaps worth keeping in mind when determining the purpose and effect of architectural photographs.

In these scenario Architectural photographs has undeniable responsibility since people more often see the built world through his eyes. His focus is ours and his frame is ours and frequently the images that remember most clearly are the images that he built with great deliberation.

⊗ *Photographic Pleasures", Curhbert Bede, P 84*

02-2. Development of Architectural Photography.

Before the photography take place the role of documenting the world it was painting recorded all the history of the man's civilization. This will carry back to thousands of years of in the pre historic arena. Even before the camera was invented travelers record the built environment, historic monument, landscape with great deliberation baring the most tiresome task. With the invention of the Camera the way of use to see the world has change in different format of painting to Black & White still frames, which made new ideology of appreciation among people. This was more developed more emphasized when (1856-1860) English photographer Francis Fifth documented the great archaeological monuments of Egypt - the Minarets of Cairo, Pyramids of Sphinx of Giza, and Colossi at Thebes and at Abu Simbel. Even though the starting point of Architectural Photography was not exactly not known, late 1840 to 1850 can be considered as the turning point towards the subject in many parts of the world.

As skilled practitioners of Architectural Photography, Fransis Fifth, Edourd - Denis Baldus [Photography collection of ***"The Architectural heritage of France, region by region."*** and Hen Le secq, ***'Photography collection of Cathedrals of France'*** maid a huge interest among the people even in the very early period of history of Architectural Photography.

With the advance of industrialization through out Europe, the photograph of traditional culture, - and Architecture - was salvage. But the photography of architecture address itself as strongly to the present; that recorded the disruption of urban culture, the demolition and deterioration of pre industrial cities, and the new urbanization that followed.

There is accuracy in the analogy between mapmakers and photographers. Maps did not simply terrain and its borders, but suggested routes by which these might be explored and transferred. Likewise, photographs do not simply give us the facts, but suggest ways, which we might absorb and accommodate them. The frame, the composition, the angle at which the subject has been recorded - all of these gives us a visual context for the information.

By the early twentieth century, Photographic sensibilities had subtly shifted. Author and curator Richard pare notes that,

> ***"For the pioneers of Photography (Working in the mid 19th century), the obsession with clarity of rendition drove them to great lengths of extraordinary feat of endurance... Their overriding concerns were clarity directness, and rationality in a great photograph, artistry of the photographer is never out of balance with subject, what is sought is the maximum of information conveyed in an objective way."***

By a half century later, the clarity and the aesthetic sensibility pale some what from the subject at hand so much as artists' perception of them. The purpose of the photograph was no longer simply to perceive images of past and present. Rather, the photographic image tended to become more expressive, recording not simply the building, but the photographer's impression of it. How these impressions entered the frame, subtly or more dramatically, marked new generations of work. The issue of whether it entered the frame at all, and if so, to what degree, was first argued in the early days of the present century, and is one that remains lively in the profession of architectural photography as it is practiced today.

As Alvin Langoon Coburn, describes...

> ***"So as various photographers around the turn of the century seriously committed to the potential of photography as a creative art. If it was allowed to flow its natural bent, the camera described not Man but men, not Nature but countless precise biological and geological facts. This tendency was not in harmony with the artistic sprit of the time, which preferred an idealized view."***

This idea may have been true for the Man and for nature, it was. less true for Architecture. Architecture of that period was it self idealized with the translation of Bauhaus Cannon to the International Style. architecture and photography enjoyed a new fusion. The camera had little problem recording architecture as abstraction, simply because much international Architecture was itself abstract.

The abstractions of the international style seemed almost made for photographic expression. Windows and doors were no longer so concisely framed; rather, they hovered, floated, and worked to extend space. Interior spaces opened up with sheets of glass acting as wall that flowed and wrapped, and whose movement was defined as much by light as by more material substances. Spatial relationships, light and shadow, surface texture, the plasticity of materials - all of these became architectural elements just as surely as steel, concrete, masonry, wood. Just how these could best be recorded by light and its absence on a piece of film made for provocative visual investigations.

Architectural Photography after the Second World War served a purpose somewhat different from that of its earlier days. Architecture of modern movement had been launched into the corporate-built world with a post-war restraint and efficiency. The purpose in photographing these buildings, then, was not simply to record the built world; rather, clarifying and detailing not only the physical facts of architecture, but its less material truth as well. The photograph no longer

simply documented, but it also frequently instructed. What it instructed more often was the art of seeing while photographs by nature suggest a context for the facts they provide, it was the context more in demand for much modern Architecture. Most of the modernist buildings in the urban landscape were taken almost as a more of aggression. Often, the photographs soften this image and presented an alternative view. By highlighting a detail or deliberately framing an entrance or a plaza photographs singled out the significant facts in an unimposing and accessible way.

This fusion between Architecture and Photography raises another important question that is the effect of the photography on architecture. it is not easy to precise in terms how photography has influence Architecture. Nevertheless, by putting a frame around the building, the camera suggests way in which it might be perceived. The photograph gives the building in a precise composition with or without occupants, viewed in remote splendor or in closer. It chooses the salient details, and the angle. at which these are photographed, leads the viewer's eye in the most documents the building, but by visually cataloguing what is important, it suggests way in which might see and remember it.

02-3. Basics of architectural photography

In the field of photography, photographing buildings and its environment can be categories into main arias which have various aspects of its imagery and quality in various conditions. In general description it can be defined as types of recording of buildings and its environment into still life.

02-3.1 General Composition of Buildings.

Plate-1 Lunuganga- Archt: Geoffrey Bawa

The most important part of photographing building is the general composition The ideas communication with still pictures have lot of variations in its composing, balance, lighting conditions, background and the story tries to tell behind etc... which all have to play at the same time. A badly framed out of these will ruined every thing and mislead totally out of it. More often this frame is where the

Plate-2 Triton Hotel, Ahungalle- Archt: Geoffrey Bawa

building anchor to the surrounding built fabric and evoke the connection and relatiionship which strengthen it appearance.

02-3.2 Exterior of Buildings.

Building, exteriors are very much famous in representing architecture. At the same time it has lot of possibilities that can be depicted accordingly. With the very same building with very same angle the quality which represent; the time of the day, seasonal variations, weather conditions, functional variations and even at night with artificial lighting conditions dress-up the building in different manner to one another. With combination of position and the angle there are unlimited still frames that can be captured with the very same building to convey thousand of story behind it to the viewer.

Plate-3 Scheme of Residential Buildings

02-3.3. Interior of Buildings.

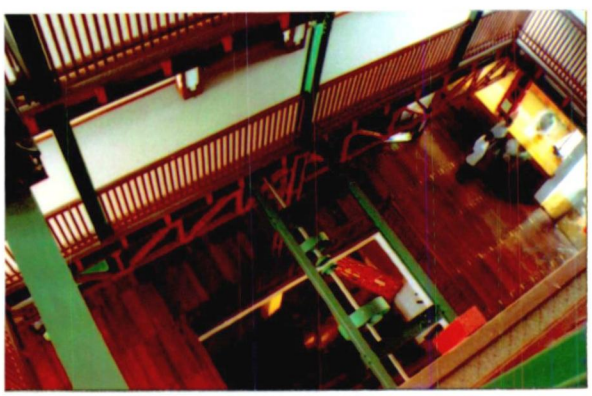


Plate-4 Tea Factory Hotel,
Nuwara-Eliya

Building interiors very much contrast from exterior photography. Unlike exteriors it is very much difficult to compose the total space into single frame. Therefore to convey the total imagery extra effect and techniques has to be taken in photographing it. Lighting conditions and the distance will be

Plate-5 Triton Hotel, Ahungalle- Archt: Geoffrey Bawa

the main problem that can be identified in photographing interiors. With the different tones of artificial lighting systems, variation qualities can be added to the still frame depending with the situation, which emphasis different approach to convey messages to people.

02-3.4 Details of Buildings.

Plate-6 Pekada, Padeniya Temple

When camera compose its frame in a particular spot of entire building/scenery, the eye capture its essence through the given picture. Hence this made to see lot of things which doesn't seen earlier, which has given understand of a New World with the little though behind it. Rather than in real situation this aspect has given exposure to make a theme in side a theme in building experience to the public.

02-3.5 Night view of Buildings.

Plate-7 Hotel Royal Lotus, Girithale

People see the world in the presence of light. Therefore from the definition it self, the imagery or the picture that see is a illusion created by light. Hence it is understand that it is not the real, but what made to real is what believe as the world. So in the different conditions of light t that see will create entire different picture which made total different at night with artificial lights. At night building speaks themselves in their own way of speaking which may complete opposite in daytime.

02-3.6 Buildings in Black and White

People see the world in presence of light. Interpretation the presence and the absence with light is the fundamental application of Black and White photography. In the presence of color in a picture there is always tendency to distract the eye in one color to another. This attraction or distraction can be happen due to various reasons. In Black and White photography the total image has been brought into one tone which emphasis the details more in the picture. Due to this reason photographers like to take Black and White photographs when they need to tell what they want from the picture, to the viewer.

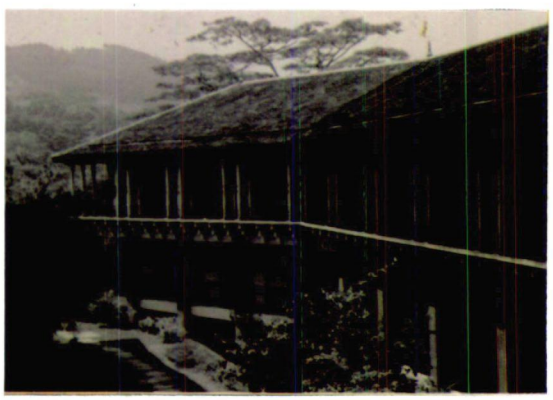


Plate-8 Hotel Le Kandyan, Kandy

02-3.7 Buildings and People

Buildings along do not project what it really meant for. People are the connecting factor that its image really projects. This is emphasis as the qualitative factor of connection between man and its building. The very same building can be function in several ways at several times. Each represent different environment for different activity; but what static is the core of the building and its presents to the environment. At the same time people give scale and lively environment to the picture and from that ultimately a massage to the viewer.

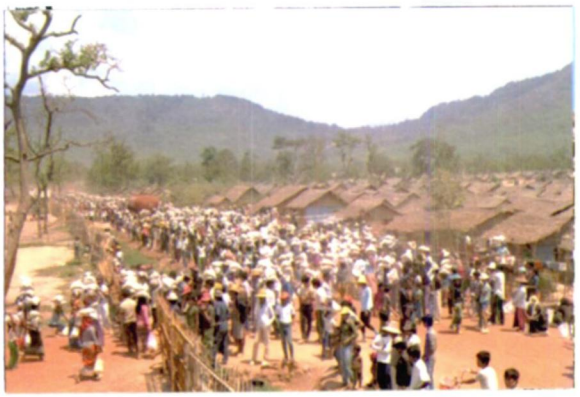


Plate-9 People with rural market buildings

02-3.8 Buildings in Abstract.

Abstract views are special compositions that derive from existing conditions, which make the viewer a second thought behind it. in other words it is an image appear on film rather than how it looks to the eye.

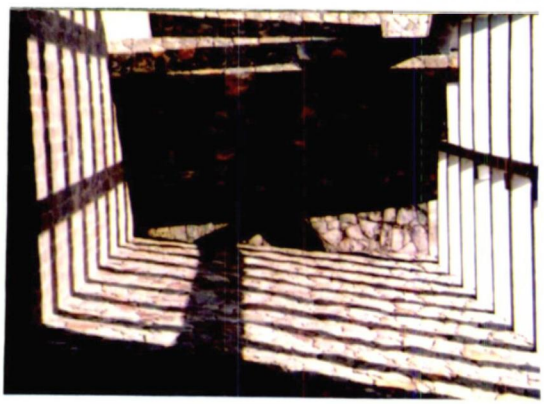


Plate-10 Light House Hotel ,Galle

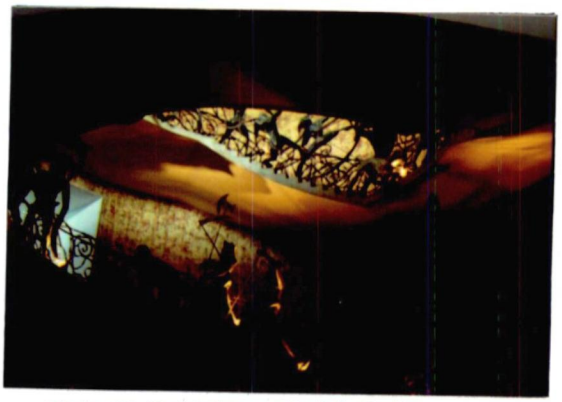


Plate-11 Light House Hotel ,Galle

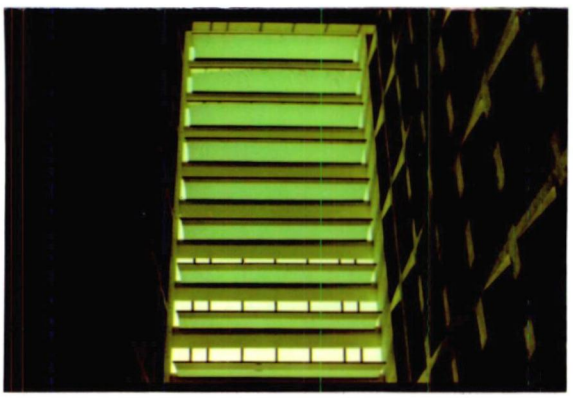


Plate-12 Oberoi Hotel, Colombo

02-3.9 Buildings and Reflections.

Plate-13 Kandalama Hotel,Dambulla

In the contemporary world of Architecture, Glass has made the existing built fabric and its image into an another dimension. Reflection from one another has given much variety and beauty to a building than expressing themselves as what history of architecture did. This can be identified as a building within a building in the contemporary architecture.

02-4 Concepts, Methods & Techniques in the Built World of Architecture.

It is the purpose of Architectural photographer to reveal the intend of the Architect. But this is not always accepted and more often it is a matter of debate among Photographers. But critic Paul Goldberger observes, ***The architect is not necessarily the best judge of his work***. Goldberger states that rather than photographs that depict the building *"pristine, in its own reality"*, he prefers photographs that reveal the full potential of the building, ***"the building as a part of a lager world, including people see and*** use ***the building, and whose sense of it may not match the architect's,".*** This is one of the choices, which debate in the profession as it is practice today. Whether to accept and represent the architects vision of building or to represent a broader vision. Naturally the tone of the question shifts somewhat from building to building, from architect to architect, as it takes into account the latitude of architect's concerns. Goldberger further says that ***"the photographers responsibility is to give the building the first chance to speak for itself'*** The photographers works work is shown here have assumed this responsibility, and indeed, the buildings shown in their photographs speak concisely, eloquently, sometimes more lyrically, sometimes more spicily for themselves.

02-4.a Eztra Stoller

Plate 14 - Boston, Five Cents Savings Bank.
Source - The Photography of Architecture, Akiko Bush

Ezra Stoller is considered as the Dean of Contemporary Architectural Photography. He has earned this title perhaps for doing all with precision, wit, and clarity in Architectural Photography. And in doing so, he has established the ground rules of the profession as it is practiced today.

Stollers achievement is not only documenting and represent the facts of Architecture but reveals more subtle intent of the architect also become a part of his documenting course. Great Architects, he points out, always try to teach people how to live. The great Photographer will try to teach people a new way of see, and Stollers collection of work is explicit visual evidence of this lesson.

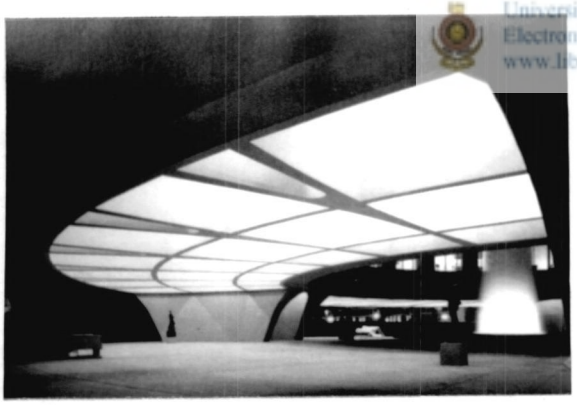


Plate 15 - Hirschhom Museum, Washington, D.C.
Source - The Photography of Architecture, Akiko Bush

From Stoller's widely published pictures, public resistance to the stark modern buildings was considerably sottened and from his images not only made the public familiar with architecture, but they suggested the ways in which these buildings might be observed and appreciated.

After the introduction of Modem Movement Architecture, the international style of Architecture spoke an entirely new building language based on modern science, Engineering and Technology. Le Corbusier had redefined the house as "a machine to live in". Dense mass was to be replaced by open box; structure was left exposed, material determined aesthetic; glass and steel were the skin and bones of these new structures. Stollers photograph3 not only recorded this language, but transcribe it with a fluent and literary of professional manner.

Plate 16 - Smith House, Connecticut.
Source - The Photography of Architecture, Akiko Bush

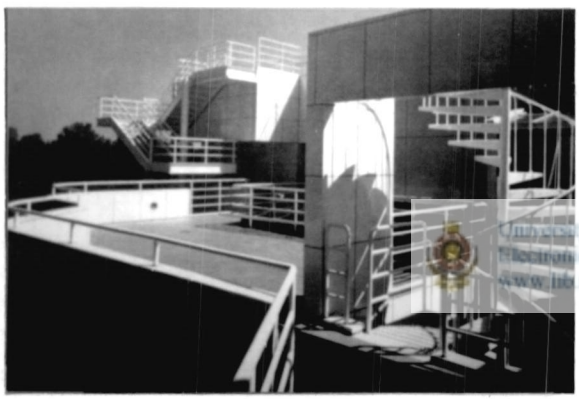


Plate 17- New Harmony Atheneum, Indiana, USA
Source - The Photography of Architecture, Akiko Bush

As Stoller describes his approach, ***"I'm interested in the statement the architect has made, what ever progress he can show, and what ever originality there is, what ever new things he has to say that is important in the field. I'm more interested in the message than in the architect".*** As he further agues: ***"Architecture, as any art should be interpreted with a minimum of intrusion",*** he himself less preoccupied with creating visual documents that stand on their own artistic merit; but they almost always do in sprit of his intentions.

Even though Stoller's objective to represent the intended of architects, it doesn't implied that photographers own experience, background and of his own intuitive skills are not put into practice. His more concern is the understanding of the subject that extracts the photographers' knowledge and understanding of it.

According to Stoller's expressions," ***If I take a photograph of Angkor Wat, I'm not doing in the same state of mind that I would photograph a house. It must be little closer to Le Corbusier's chapel; they are both religious, ceremonial building, so you look at them in those terms, everything come out of the subject."*** Thereby Stollers objective to represent the intent of the architect as well as consider the user of the architecture in the same time.

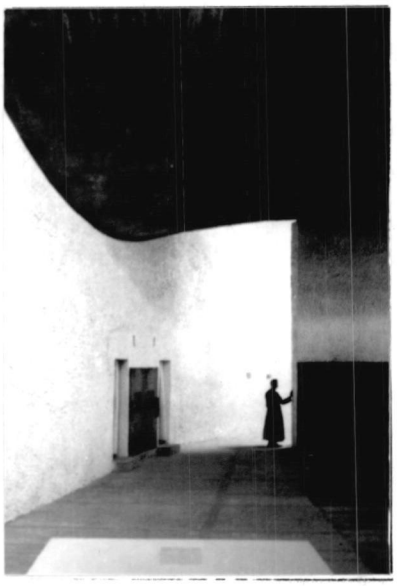


Plate18 – Ronchamp. France
Source - The Photography of Architecture, Akiko Bush

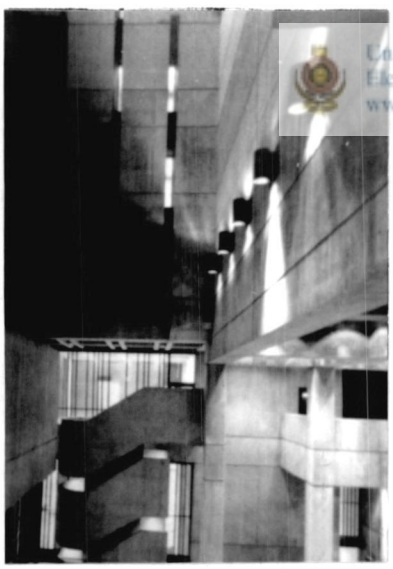


Plate19 – bostonCity Hall,Massachusetts.
Source - The Photography of Architecture, Akiko Bush

"A work of architecture is a spatial experience and one must wonder through it and about it until its organization becomes clear". Visual documentation of architecture is an intellectual discipline above all rather than an exercise in spontaneity. It is system of seeing of visual organization of space that the photographer along makes. As Stoller observes ***"Architects don't have a photographic vision. A really good architect is almost automatically bad photographer. They are trained to see in space and depth, and photographers trained to reduce all these things in depth down to flat sheet paper".***

The viewer is not so much observing the space as entering it. Architecture is a spatial experience; it is junctures of form and spaces, how they connect one to another, and how they depart from one to another. Likewise, photography is a spatial experience in that it must annotate these movements to a two-dimensional surface.

02-4.b Judith Turner

Turner's architectural Still life is a record of fragments of Architecture. Architectural details are considered as complete items in the subject (a Cornice or capital of a column, a porch or a gable). A fragment is piece of the whole; but rather a part or a potion than may be suggestive of the whole.

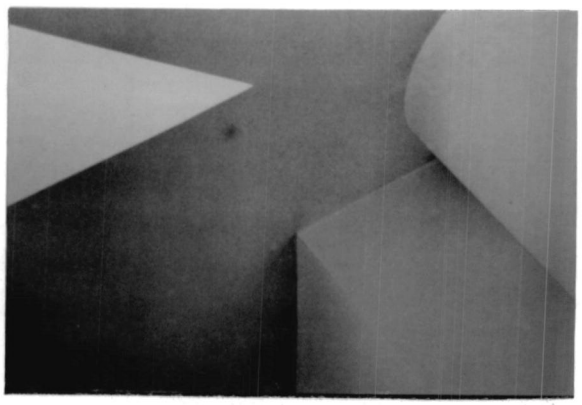


Plate 20- USA. Operation Centre., Virginia, USA.
Source - The Photography of Architecture, Akiko Bush

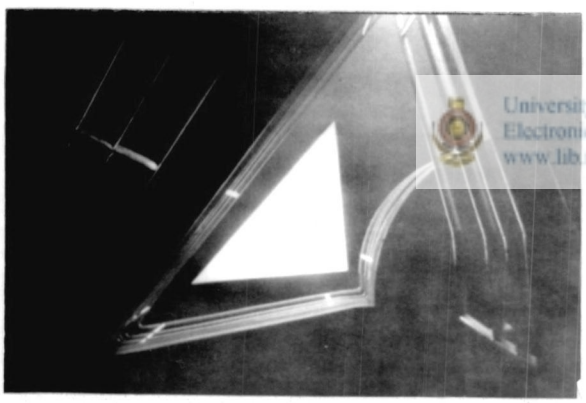


Plate 21- USA. Operation Centre., Virginia, USA.
Source - The Photography of Architecture, Akiko Bush

Not only these pieces of build world that gave fascinated and interest on Turners focus, but less material components of architecture as well. As she explains ***"Architecture is a perfect subject mater for the things I'm interested in; Ambiguity form, light and geometry. I can explore these through architecture; architecture is a point of departure."***

"I do not believe that at first only architect has a total image of an entire architecture simultaneously - to my experience or knowledge it doesn't work that way. They may be a series of images one after the other over a period of time, but that period of time, no mater how small, it a necessary ingredient for the evaluation toward a totality. It must be understood that - so called total architecture is ultimately made up of parts and fragments and fabrications."⊕

In his introduction he suggests that the architect's image of a building is, in fact a series of images. These fragments may compose them selves into a whole as a building in the mind's eye. These fragments are subjected of Judith Turner's work. She observes that, if an architect designs a building with a series of images in mind, then it follows that one photograph of one fragment can capture the architecture.

⊕ *Judith Turner-Photo 5 people*

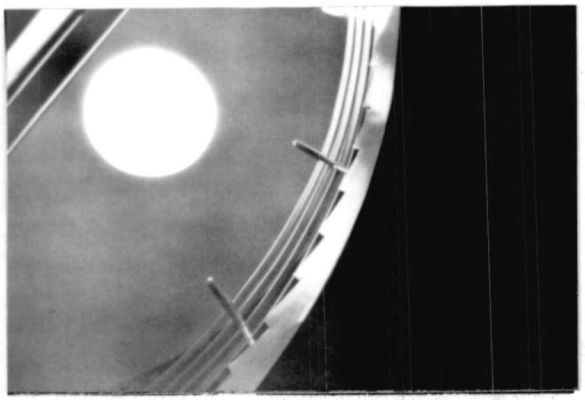


Plate22 - USA. Operation Centre., Virginia, USA.
Source - The Photography of Architecture, Akiko Bush

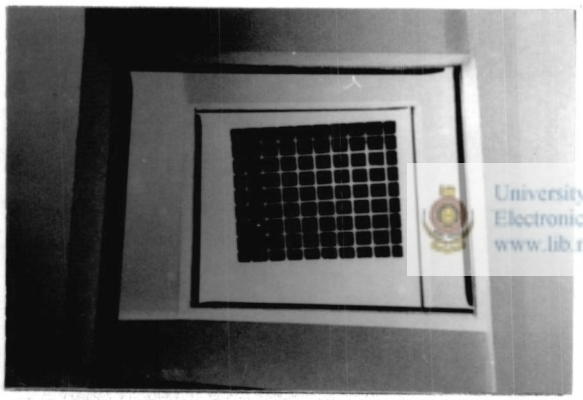


Plate23 – Apartment House, Tel Aviv, Israel.
Source - The Photography of Architecture, Akiko Bush

What separate Turner's work from the work of other photographers who use architecture is simply as the point of departure. She clearly uses architecture as a departure point. Her visual rendering of space, light, and form set out to capture fragments and essence of architecture. While her work is clearly interpretative, the

Interpretation

coincides gracefully with the intention of architect she works with. Her works doesn't refer very strongly to any large-scale composition. She capture details, textures, patterns, the quality of light rather than the over all images; it's the sprit of the building rather than its' more practical side. Turner's clients are not the architectural press, nor advertisers, nor public relations firms, but architects themselves who find in her abstract compositor illuminating portraits of their work.

Turners photographs are interested neither an approximate nor in-approximate diagram at the place. It is sprit rather than substance she locates through them. To doing so Turner has reduced architecture to its most elementary components. Two-dimensional shapes, used sparingly and concisely, make up a fundamental vocabulary that reflect a longstanding interest in graphic design and painting. According to Turners eye architecture is made up of flat planes; wail, ceilings, floors, and columns connect to compose three-dimension forms. Even the skies are cloudless. ***"I want the sky to read as flat plane. That's part of my interest informs. If there is cloud, then the surface becomes a sky rather than flat plane".***∅

∅ ***Judith Turner p.10***

Use of Light and Form is become the simple vocabulary of reducing the visual world to its most elementary components. Then it was no surprise that the architecture of or influenced by the modem movement has become the frequent subject matter. Photography and architecture have found such a graceful fusion in Turners works is perhaps because her terms - form, geometry, light and ambiguity are also the terms used by architects.

Plate24 - Apartment House, Tel Aviv, Israel.
Source - The Photography of Architecture, Akiko Bush

Her photographs are indeed deliberate notations on the rhythm and repetition of form. Progressions of form, intersections and connections, frontal and oblique views are evident in her work. Likewise geometric studies of form and space inform her work. Her line of vision follows straight, curved and broken lines, squares, circles, triangles and horizontal, vertical, and diagonal planes are all noted.

How architecture is no formed and transformed by light is given a special consideration in capturing it. At the same time how the built world take it's shape in light, how people perceive it how the perceptions are shaped and directed by the quality of light, and how illusions are created, revealed and accepted often as standings for the real things. This may give the quality of works in most enduring value and at the same time these photographs not only records buildings but also they record the way buildings are perceived in this manner.

Plate 25 - Coliseum Book Store, New York
Source - The Photography of

In this way the perception of the built world would lead to another way of registering in the process. It traces positive become negative and negative become positive. It suggests a solid become void. A shaft of light appears to have the strength of a marble column; the curve of a stone arch conveys a lightness that disputes its physical mass. Not only these photographs

give an accurate transcription of material, the texture of glass and granite, the feel of plaster and steel as well. Yet simultaneously the images are abstract composition with a value of their own, maintaining a same distance from the material world of architecture.

According to Turners words, ***"... for me space is ambiguous. It's difficult for me*** to ***think of it as any thing straight forward or well defined. I understand forms as connecting and juxtaposing, both interesting and penetrating, and space as something formed in and around and through them".*** And this perhaps is what transforms her fragments into powerful visual images. Space is best defined by what surrounds it. The walls and ceilings that shape it, the arches, doors, and windows that extend it. Architectural space reason for that imagery.

02-4.c Norman McGrath

As Norman McGrath says; ***"I think that the whole basis of architectural photography has to do essentially in formation. Its purpose is to convey the facts of the architecture".*** The most evident feature of McGrath's photography is that the facts of Architecture observed by him. One can think that compile data of the photographers observation may conflict with architect's viewpoint on the building. But more often it is a data collection which supplements rather than contradicts that of architect. McGrath's approach to the architectural photography dismisses the notion that the photographer must choose between representing the intent of the architect or convey his own interpretation.

Plate 26- Piazza d'Italia, New Orleans, Louisiana.
Source – The Photography of Architecture, Akiko Bush

McGrath's more abstract photographs usually convey structural information about the buildings. His eyes for detail are more than just pictorial. His professional background as a structural engineer evident in the photographs as well. It is hardly surprising that ceiling are the structural element he finds most provocative.

Interior Photography presents McGrath with far greater challenges than exterior. As he points out the variable of exterior photography are weather, lighting

Plate 27 - Firremans Training Centre, Randalls' Island, New York. USA
Source - The Photography of Architecture, Akiko Bush

Plate 28- Ford Foundation, new York,. USA.
Source - The Photography of Architecture, Akiko Bush

Plate 29- Pennsylvania Station, New York. USA
Source - The Photography of Architecture, Akiko Bush.

conditions, seasonal variables that tend to be predictable, and operable, if there is a reasonable deadline. "By and large, once you have selected the best angle for the building it's a question of waiting for conditions to be right to photograph".

McGrath's light tending to be diffused in such a way that it is difficult to determine whether or not the photographer has introduced supplemental light. These photographs may be long on visual excitement, they are short on information, and their effectiveness in a layout is largely determined by how they are balanced with more substantial documentation. He also uses object and furnishings in the photograph are a suggestive rather than literal way. A chair or table may occupy too treat a position in the photograph; the arm of the chair and corner of a table are enough to get the idea across. More over by only showing part of the object, the photographer is suggesting that there is more space in the room than meets the eye.

The photographs itself bear the quality of volumetric. It evokes the experience of bearing inside the space. The viewer has little dough as to the size of the room. More often in the interior photographs usually includes some potion of the ceiling or indication where it is. Multiple points of focus are another feature, which capture the viewer eye. The talent is that how he uses without being confusing in his documenting course of architecture.

McGrath put high value in Black & White photography. He often considered it the most effective vehicle of the design storey. On the other hand color can distract what the picture feel or what the design tells, when it is reducing into still frames

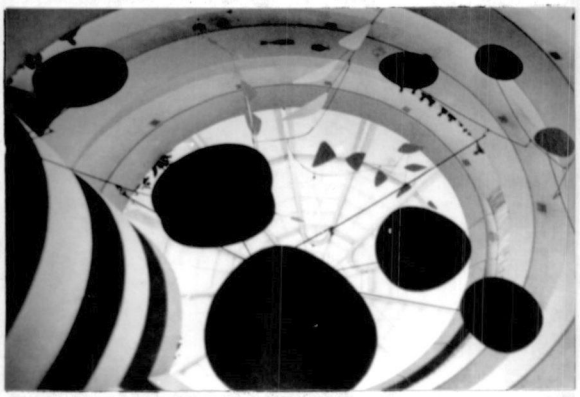


Plate 30- The Guggenheim Museum, New York, USA.
Source - - *The Photography of Architecture, Akiko Bush*

Plate- 31 Citycorp Center, New York, USA.
Source - - *The Photography of Architecture, Akiko Bush*

02-4.d Peter Aaron

Plate32- Salzman House, Colorado, USA.
Source - - *The Photography of Architecture, Akiko Bush*

According to Peter Aaron Lighting is the single most important factor, which determines how we see. Lighting can evoke a spectrum of moods and feelings of tranquility and relaxation, anxiety and apprehension. On the other' hand it can be reduce or reinforce the level of it. Recent technology has brought more variety and wider range of fluorescence, tungsten - halogen and mercury vapor sources in the surfaces and space of contemporary architecture and design. This immaterial quality of space made material by recording its presence and absence by photographer Aaron composes.

Peter Aaron's visual

documentation of architecture often suggests that the space have been structured by light rather than by the more material elements that we conventionally think of as shaping the space. Multiple light sources rather than additional strobes (flashes) give varied effects on space, which can be a seen preciously captured by his photographs. It is not only handling of light that reflects on his works, but how he records architectural space is a very important feature that can be speak out. His background formal training as a cinematographer shares with architectural photography to make sense of special movement, how spaces is a building connect and separate flow and remain static in photographs.

Plate 34- Vietnam Veterans Memorial Washington, D.C., USA.
Source - - *The Photography of Architecture, Akiko Bush*

Aaron is talking about understanding the space and understanding light. Understanding existing light is the keystone in Aaron's approach He preserves the lighting specified by architect and reluctant to use flashes. As he explains, "..if there anyway that can shoot without flashes... I will". His compositions are also frequently distinguished by elevation angles in which he camera is paralleled to the room. Balance and composure are implicit in environmental photographs. Information is found and revealed quality in layers. The viewer is drawn into the photograph through its various strata. Symmetrical itself a balanced and equally symmetrical composition

Plate 35 - Diane Von Fustenberg Boutique, New York,USA.
Source - - The Photography of Architecture, Akiko Bush

that mirrors the space as a series of layers seen head-on can be the most precise way to document it.

Aaron's composition appears to have painterly quality as well. Objects like pair of Boots, a table with a book, or pieces of decorative molding set in the foreground to anchor the eye for a moment. As architect John Belle of the New York says that, *"Aaron's photographs establish a clear relationship between* ***objects in the foreground and those in the background. One take you directly to the other."***

Photographs have been composed in such a way that the eye is drawn from to rear, approaching the layer almost systematically. People are more often interact in architectural documentation to out line the use of a space or evoking a sense of its occupancy. But Aaron's use it for more sculptural effect which give more lyrical, visual, anchor or focus from the picture.

Edward Mills concurs: ***Aaron doesn't take details or oblique shots that simply dramatize the space without giving you any information about it. But they trying to explain the space, he often ends up with a beautiful photograph. In his work, you often have both"***

A building is not static, but a place in which people live and carry on their lives. While it is in the nature of film to take the viewer from one frame to another. Aaron's photographs suggest a similar continuity A life outside the frame. Mills notes that there is a clear difference between the way architect and photographer perceive space; ***"An architect thinks of space as something expanding, ad deals with it as something dynamic and functional. Its layering is sequential. A photographer is more likely to think of this layering in terms of composition. It tends to be more static. What unusual about Aaron's work is that it convey both"***

Architectural photographs itself give the viewer a new eye, a new way of seeing. With Aaron's understanding of light and how it create its own space, structure and surface and his eye for composition, that frequently enables the viewer to see the space in a new way and at the same time more total sensibility of Architecture.

Plate 36 - Linda Dresner Boutique, New York. USA.,

Source - The Photography of Architecture, Akiko Bush

Plate 37- The Kit Carson Foundation, New Mexico, USA

Source - The Photography of Architecture, Akiko Bush

Plate 38- Site Office, New York, New York. USA.,

Source - The Photography of Architecture, Akiko Bush

Plate 39- General Corporate Offices, San Francisco, USA.,

Source - The Photography of Architecture, Akiko Bush

02-4.e Julius Shulman

"The subtle interplay of light and shadow on a building is the point and architectural photographer uses on his canvas of film," says Julius Shulman. ***"A shadow in a photograph is almost subliminal, and introduction to the mystique of vision. Every inch of my composition has to be graphic..., a strong composition which does not necessarily have information, but is a graphic construction of forms and lines. It spells out something which attracts the eye."***•

• (Julius Shulman,.. .)PP51

Plate 40 - Art and Architecture Magazine's Case Study House, California..,

Source - The Photography of Architecture, Akiko Bush

Ahulman's photographs illustrate more on graphical sensibility. He works to make photographs appeal to the eye on two levels. The first is as concise architectural statement. The second is the visual obstructions that occur at this point invite the eye, not by their factual account of the building, but by their strong visual interplay of form, space, and lint.

Architectural photographs should be more a design statement rather than photographic statement. A strong graphic composition may not simply render the architecture but may sometime transform it. A transformation, which supports what was originally there. Thereby it is not a exaggeration so much as idealization. According to Shulman's "not to glamorize, but to glorify"

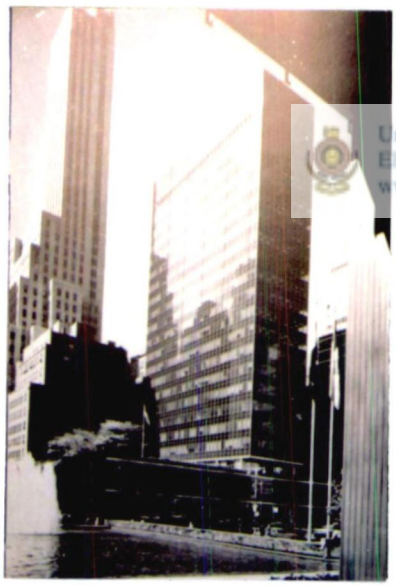


Plate 41 - Bank of California. San Francisco, California

Source - The Photography of Architecture, Akiko Bush

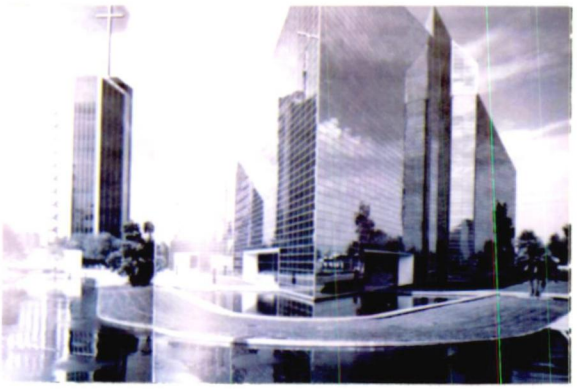


Plate 42 - Crystal Cathedral, Garden Grove, California.

Source - The Photography of Architecture, Akiko Bush

As Shulman explains ***' I'm on the side of Architecture, I'm on the side of good environment. Therefore, if I feel a building has a certain quality, which contributes to the society or to the community or to the client, I want the architect to be given credit. I'm not trying to exaggerate his work, but to idealize it".***⊗

⊗ ***Julius shulman***

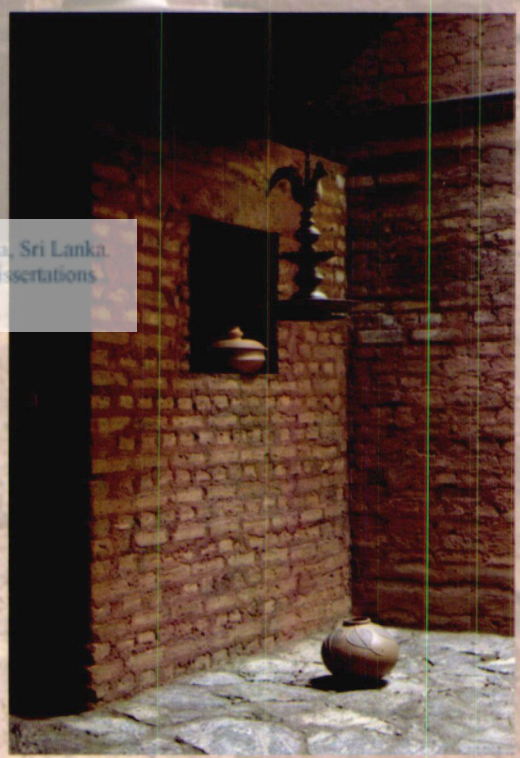
02-5 Philosophy In Architectural Photography

Architecture and Photography can be identified as the two-different parameters in the field of Architectural Photography. Architecture has its own philosophic background and concepts for what it stand for. But this not the very same that often photographer graphs and interpret still frames. Photographers more often have their own way of expressing it and own way of looking at it. This would be differentiating from one another according to their own philosophies.

Judith Tuner suggests that the image of a building can be compose in fragments of built components in still frames. Her visual renderings of space light and form set out to capture fragments and essence of Architecture. Eztra Stoller thinks as considering the 'use of architecture' is more important in photographing it. Norman McGrath thinks it more different manner. His philosophy is that the whole basis of architectural photography has to essentially information. Its purpose is to convey the facts of architecture.... According to Peter Aaron's point of view, level of lighting is the key factor which enhances the feeling, moods in a picture. His visual documentation of architecture suggests that lighting shape the space than more material elements. Similar kind of interpretation with slight variation made by Julius Shulman. His philosophy is architectural photographs should be more design statement rather than photographic statement. The subtle interplay of light and shadow on a building he sees as a graphic statement on the film.

There are complete abstract philosophies as welt that can be find in other architectural photographers. Robert Perron thinks that architectural elements, which shaped by function (staircase) is the most important in a building photographing. They represent the functional account of space.

Likewise photographers communicate architecture in various philosophies. Whatever the philosophy is people grasp the idea of built world through what they produce in still frames. But from the architects point of view, Architecture is much more speaks abuts its quality. At the same time it is much more speaks to our senses, when experiencing it. The level of quality is the factor that what it speaks about. Therefore photographs should capture these aspects rather than all these philosophies which photographers think about. So what the sprit of quality which suggests about architecture, is important to understand before producing it into still life.



CHAPTER THREE

A DEFFINITION TO THE QUALITY OF ARCHITECTURE AND WAYS OF CAPTURING IT THROUGH THE MODE OF STILL FRAMES

CHAPTER THREE: A DEFFINITION TO THE QUALITY OF ARCHITECTURE AND WAYS OF CAPTURING IT THROUGH THE MODE OF STILL FRAMES

03-1 Architecture- A brief definition

When using the term 'Architecture' it has already a feeling of quality rather than mealy talking about buildings and its physical forms. Over the past there have been different kinds of definitions interpreted by various people, what Architecture is. The Swedish architect and theorist Elias Cornell defined architecture as '*.. .the aesthetic organization of practical reality'.*

The English Arts and Crafts architect and theorist W. Lethaby wrote in 1891:

'...so is building but the vehicle of architecture which is the thought behind form, embodied and realized for the purpose of its manifestation and transmission'.

Or it can simply call that architecture is the built environment with aesthetically and spiritually stimulating space and form. However behind all these concepts it enhance that the built environment is something which speaks to our senses, emotions and minds which articulate by simply experiencing it.

03-2 Quality, In Architectural Point of View

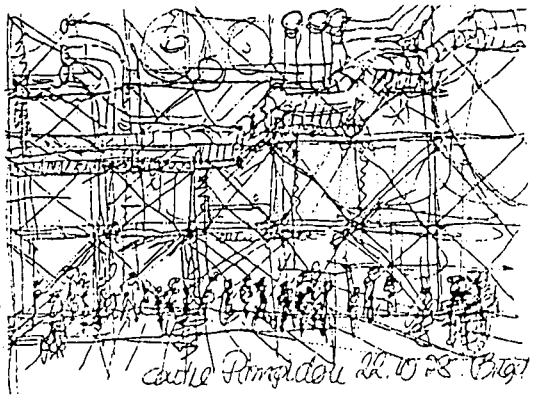


Fig.160 - Centre Ponipidou Paris
Source; Companion to contemporary Architectural thought' ,Ben farmer

Experiencing the sprit of the building is totally phenomenological. That is what we capture the sprit of the building through our senses, emotions and feelings when simply walking through it and occupying the space. The sprit of the building is the qualitative aspect of this experience. Therefore what quality in architecture is so much important to understand in order to make a frame to capture out of it.

03-2.1 Architecture; Conceptions, place and Role.

Finn Werne, a Swedish architect, wrote about 'the invisible architecture', or 'the inner architecture' we all carry with us as dreams and memories.

> ***"The conceptions and pictures and their relations to the visible and outer architecture determine whether we feel at home or not and feel pleasure or not. if there are no relations between the invisible and visible architecture, we become indifferent. To care about the environment is to identify not only with the neighborhood and one's own house, but also with people and places, with the ancestors and descendants... The feeling of belonging requires a confirmation in the visible architecture".*** ⊗

In this case these mental pictures, conceptions or mindscape plays a major role in our emotional and aesthetic evaluation, intellectual interpretation, and the way that the buildings and places are used.

According to the Canter (1977:158), the identification of a place consists of three factors, and the nature of place is the relation between:

1. people's conceptions of
    - what should happen
    - what it should 'look like' or be
    - which behavior is suitable or expected
2. the physical attributes, or the architecture, as form space, materials, color,furnishing, etc.;
3. the activities.

⊗ ***Wane 1987: 283***

This interaction is dynamic and changes if one of the parameters changes. People conceptions are created and changed by what Canter calls the self-fulfilling prophecies. In other words, 'out expectations are a result of patterns of commonly occurring actions and in terms give rise to actions which fit in with these patterns. This is the reason why conceptual system on the one hand is so powerful and on the other hand is so intertwined with concepts of actions.

Architects and lay people evaluate differently, partly because, it is expected that architects have gained experiences and knowledge which should give a deeper understanding. But as the figure shows that there is also a danger of a specialist conformity telling 'the Wright and the wrong' way of experiencing and evaluating buildings and places.

Fig 161 - Specialist conformity can tell us the right and the wrong way of evaluating buildings and places

Source- 'Normdenken der Experten', Carre Bleu

03-2.2 Process of Activities in Architecture

According to the Danish architect and theorist Jan Gehl, the interaction between the physical environment and the activities usually going on in public and semi-public out door spaces. He further describes that the quality of physical environment is dependent on the development of an activity process. The process is described by three steps in below.

	The quality in the built environment	
	Bad quality	Good quality
The necessary activities	⊙	⊙
The optional activities	○	●
The following activities (social)	○	⊙

Fig -162 The process of activities
Source: Gehl 1980

All places, indoor and outdoor, are potentials for this process, whether a kitchen or a bathroom, a street or a square. Architects' abilities to imagine this activity process are dependent on an observant mind, and interest in and knowledge about human activity in built environment.

03-2.3 The Experiencing the Quality in Architecture

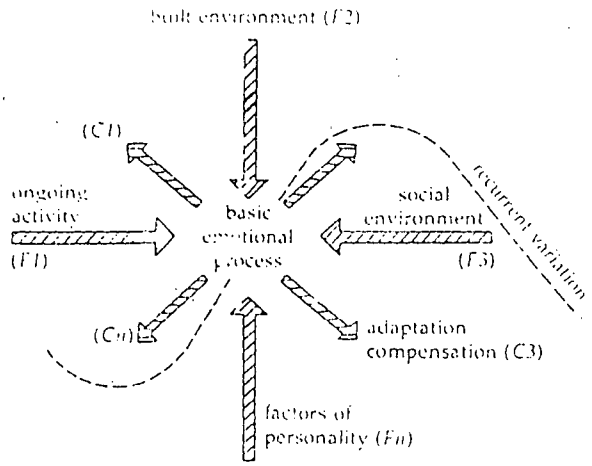


Fig 163 - Model of man environment interaction.
Source: kuller 1976

The Swedish environmental psychologist Rikard Kuller shows in the model of man-environment interaction (Fig above) that human beings are partly affected by physical environment (F2) and partly by the social network (F3). He says that, in addition, they are influenced by the activities (Fl) in which they engage. This influence, which varies in extent over time (recurrent variation), is modified by their own personal resources, constitution, experiences, etc.(Fn). While the environment activates them in various ways, human beings at the same time endeavor to retain control over their situation by adaptation or compensation (C1-Cn)

What the model indicates is, in part, that activation from various sources must be balanced and adapted to the resources of the individual. (Kuller 1976; Watzke and Kuller 1986:20)

The feeling of quality, or the opposite, arises from the confrontation between object and user. This experience of quality and the quality we attach to the object are two aspects of the same thing. The degree, in which quality seems related to the experience, or more the object, may be a question of time, involvement and worldview.

The quality seen from different angles can be categorized as below.

a The ***situational determined quality,*** influenced by instant action and the use's constitution;

b The *epoch ally determined* ***quality,*** ruled by a set of chosen examples.

c he ***historically determined*** *quality* rises above situation and norms and seems to have a long-lasting validity;

d The ***phenomenological view on quality,*** where the dialogue is dependent on the sensitivity of the user to the phenomenon - the interplay of existence and meaning.

Situational determined quality means that the experience of quality originates in the interaction between people and the built environment in the place where it act.

Epoch ally determined quality implies that the experience of quality is linked to or guided by a certain period of time. The observer's sensitivity is prepared for certain patterns and rules, if it is not accordingly as expected than it makes people disappointed or angry. (Fig)

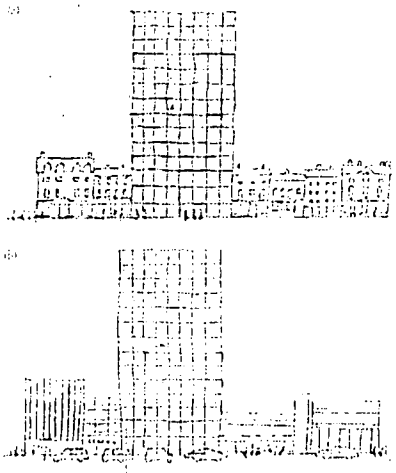


Fig 164- (a) An unexpected irregularity can make us disappointed or angry; (b) A new norm is established once new ideas have established themselves over a period of time.

When the new ideas emerge and so called a abnormalities have shattered the norms of quality for a period of time, a new style or paradigm takes place. This process means that the question the context of and disassociate is compared with the previous architectural examples.

Historically determined quality implies that certain objects, buildings and monuments seems to have as long-lasting valid quality or 'eternal quality'. The quality of pyramids, the Pantheon or the temples of Acropolis never questioned. Present perception and conception of quality of course influence the 'internal quality' as well. It is beyond dispute, regardless, of subjective or interdisciplinary experiences.

Phenomenological determined quality is called as 'general quality'. It is exists as two concepts according to its characteristics; the phenomenological view and the 'law' aspect.

The phenomenological view is what the mind grasp the innate quality through the senses.

> ***"The experience of place is not a question of taste. The place is existing as an objective matter, it is like that whether we like it or not, and it reveals its secrets and its richness. If we have open minds and listen to its 'sprit'.•***

This means that the quality exists in the place where it is capable of experiencing and evaluating.

• Norberg - Schulz 1986-309

The belief that certain 'laws' governs a person's experience of quality in any given environment has reappeared regularly in different periods throughout history.

1. During aniquity, Vitruvius; in the Renaissance, Palladio; and in he Modernist phase, Le Corbusier - all developed 'law of principles' in the belief that beauty and harmony are derived from geometrically and mathematically proportioned ratios.

2. Based on contemporary, empirical research, environmental psychologists have proposed a balanced relationship between familiarity and novelty to achieve satisfactory or beautiful architecture.

3. In phenomenology, view of the people and environment relationship, which represent the idea that the experience of architecture follows ordered and general laws.

The experience of quality is independent from the philosophical or the critical treatment of the concept of quality which originates in the confrontation between the individual and the object, building or place. And because of that it concerns both the characteristics of the individual, the object and the situation.

03-2.4 Some Views in Architecture

According to American psychologist Daniel Stokols, The aesthetic nature of Architecture has three basic approaches,

a The minimalist view - The built environment serves as protection against climate and as a safe setting for social and daily life.

b The instrumental perspective - Architecture serves as an instrument to obtain not only behavioral and economic efficiency, but also an enhanced level of occupant 'comfort, safety and wellbeing. The quality of architecture comes from its capacity to reach these goals.

c The spiritual view - Architecture or 'the socio-physical environment' becomes an end in itself rather than a tool, and emerges as a whole.

Recent architectural and social science theories also highlight the symbolic and spiritual of environment design.

'The designers are turning away from positivism and functionalism and are becoming increasingly interested in history culture, myth and meaning. A new sensibility in design is asked for in which human activity human feeling, color and light together create ordinary human sweetness' ⊗

The third view which directly transfers to the architect, the responsibility for the creation of 'quality'. Hence this needs to have an idea of,

1. User situation and general human needs;
2. Conditions of the concept of place, physically, socially, and symbolically;
3. Technical and economical premises on realizing the design concept;
4. Cultural and artistic nerves needed for creating spiritual architecture.

These views on architectural value and spiritual qualities can be simplified in a matrix given below.

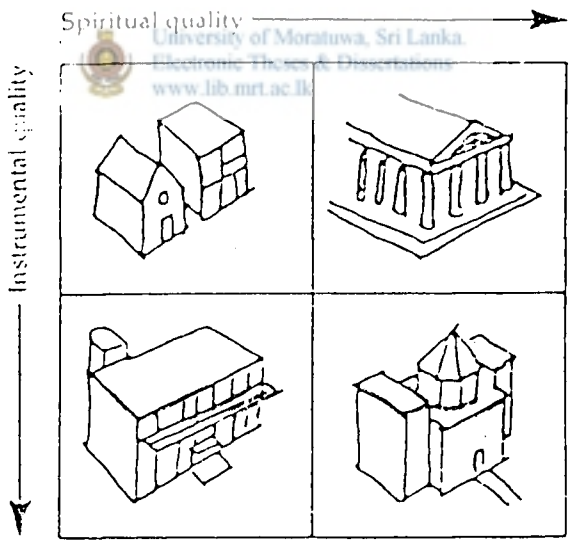


Fig-165 Matrix of instrumental and spiritual quality
Source - Companion to architectural thoughts, Ben farmer

⊗ *Stokols 1988:31-2*

Further it can be depicted on **'cube of experienced quality'**

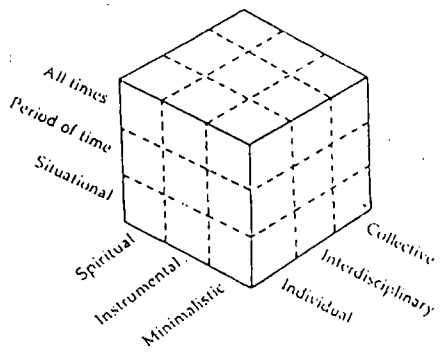


Fig 166- 'Cube' of time-social agreement - level of spirituality
Source - Companion to architectural thoughts, Ben farmer

The relations between three parameters can be stated as follows;

1. Time - from the present situation to a period of time (epoch), to 'all times';
2. The level of social agreement - from individual, to interdisciplinary, to collective;
3. The level of quality - from minimalist, to instrumental, to spiritual.

As the argument comes full circle, it can be question again what does 'composed and built with 'quality' mean.
As the Norwegian philosopher, Trond Berg Eriksen suggests as,

> ***"Quality describes what the thing, the arrangement, the institution really should be - a requirement which they seldom fulfil. It is much easier to see where it the quality is missing, or has failed, than where it is present.*** ∅

It may be easier to describe the lack of quality and the absence of 'architectural nerve' than to describe their presence and character. Quality exists and is experienced by virtue of its contrast - lack of quality.

The statement 'lack of quality' makes a series of hypotheses about missing quality.

∅ *Eriksen 1989:1*

The lack of quality is experienced when;

1. Things break down or crack unexpectedly;
2. Things grow old in an ugly way;
3. Things require an effort we are unable or unwilling to make;
4. Things are annoying (not fit for the time or place, perhaps not fit at all) because of their appearance and bare existence;
5. Things seem accidentally designed and not properly thought through;
6. Thing is bad copies;
7. Things are pretentious on the surface without having consistency all through.

'Things' might be exchanged by architecture. By starting with the negative aspects, it was easier to formulate the seven positive hypotheses.

Quality is experienced when:

1. Architecture can be used for a long span of time;
2. Architecture grows old beautifully;
3. Architecture is easily legible and simple to use;
4. Architecture pleases us in its expression and its bare existence (the pleasure of the right thing in the right place at the right time);
5. Architecture seems well considered and properly designed;
6. Architecture is original, especial and with its own identity;
7. Architecture is consistent all the way through.

These seven negative and positive hypotheses describe a view of architecture which emphasis the traditional values, such as durability, authenticity, professionalism and unity and a functionalist view emphasizing honesty, legibility and functionality. In addition the originality, meaning the need for innovation, novelty and the ability to exceed.

It is not directly evident how these requirements may be combined, so that the total result will have the desired quality. But one-sided emphasis on either traditional or innovatory artistic values without a mutual interaction may equally bring unwanted results.

03-3 Capturing the quality in Architecture

From the facts that above discussed qualities in architecture, the phenomenological determined quality is considered as the most important aspect to capture through still frames in order to give a sense and the essence of the place to the second person who is dealing with photographs. The other factors are not predominantly trying to discuss in this particular limited subject area; hence it is not that much a problem in grasping through photographs.

There are a lot of factors that photographers have been used in order to make the place reality through still frames. Most of them can be seen and discussed in earlier chapters that what techniques use to do it. Besides all these, the most important aspects in capturing the 'quality' and the spirit is discussed below.

03-3.1 Lighting

Lighting is the prime element that we see the world. Photographs are in a way recording measures of these lighting levels. According to the various levels of lighting different qualities of environment is created. But most of time it is neglected in capturing it due to various reason. Some times it may be a technical reason that there must be need a fair amount of light to create chemical reaction on a film, which made enough to appear the image. At the same time without the light it is difficult to detail the object in a photograph. In a situation like this most of the photographers use flashes which completely destroy the reality of quality, but could be a solution for problems associate with low level of light.

In this example (Plate) the flash is not use in taking the picture. The interior is lighted only the light that coming through the window glass. This exterior light that coming through the glass has created a gloomy, dark interior, which has been captured the quality of it in the photograph.

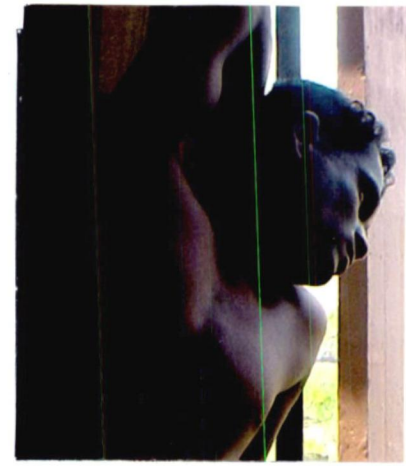


Plate 43 . Interior photograph without using a flash.

Plate 44 - Interior photograph with a flash

Plate shows actually an artificial environment, which cannot see the real quality of the interior at all. In this kind of situation the viewer find more details in the picture than the Plate 1 a, despite the fact that it is not the real conditions of the space.

The prime source of lighting, which makes appear the world, is the sun. With the angle of the sun rays fallen to the built environment or the earth the various environmental qualities would appear accordingly. Since the photographs it is a recording measures of a fraction of a second, the time of the day has become a real statement of the quality in appearing it.

Plate 45- The morning sun makes the built environment much live quality in the fabric.

Plate 46 - The quality of the same fabric at dusk

From the above two plates, it can be clearly seen that the same built environment could capture in still frames in different ways of its quality which created with the movement of the sun. Not only sun angle which change its quality, but even the sun path could change the appearance of the quality in built environment through out the year. This is called the seasonal changes, which hardly can see the difference in Sri Lankan context. But in other countries this result in major changes which also speak out in different ways of qualitative aspects in the built fabric contrast.

In the night, buildings and its' surrounding speak out on its own way of lighting. More often it is the inside which expresses to out. Different colors and lighting conditions make different qualities not only as a whole but also as parts of it as well.

Plate 47 - Artificial light itself has the ability showing the mood or emotion of a place different to that of daytime

03-3.2 Weather

Weather itself has a different approach to its way of presence. This will be totally different what lighting express. Most of the time this would more effect to the out side quality of a building than inside. Raining, snow, windy, desert kind of hash condition are all change its surrounding appearance, some what contrast to one another. Seasonal changers are also combined with weather conditions, which effects to its quality of appearance in a place or a building.

Plate 48 - Bright sunny with hot weather condition.

Plate 49 - Rainy condition with people in built environment.
Source - Practical photography Freeman J.

03-3.3 People and their moods.

In real conditions, built environment always associate with people. But most of the time photographers try to photograph buildings and explain it without people due to various reasons. When it is speaks about the quality of a space people are considered as the key factor, which express the reality and feelings.

Plate 50 – Lunuganga, Archt: Geoffrey Bawa

Plate 51 – Lunuganga, Archt: Geoffrey Bawa

According to the theories, the form of a space or a built component has a direct influence to its function. The function of a space has a direct influence to the people who use and associate it. In this scenario behavior of the people in a space can be considered as an indicator to measure the quality of a space.

In the mode of photography there are various ways of capturing the moods of the people. Like wise behavior or the activity, which take place, can be captured in still frames to indicate the spirit or the quality or the space. In the photographs shown below the quality and the behavior, movement and static condition of the people in the interior space are expressed.

Plate 52 – Lunuganga, Archt: Geoffrey Bawa

Plate 53 –

CHAPTER FOUR

CASE STUDIES.

KANDALAMA HOTEL

STEEL HOUSE

TIMBER HOUSE

CHAPTER FOUR (CASE STUDIES)

04- 1 KANDALAMA HOTEL – DAMBULLA.

Plate-54-Entrance lobby, Kandalama

Plate-55-Entrance tunnel, Kandalama

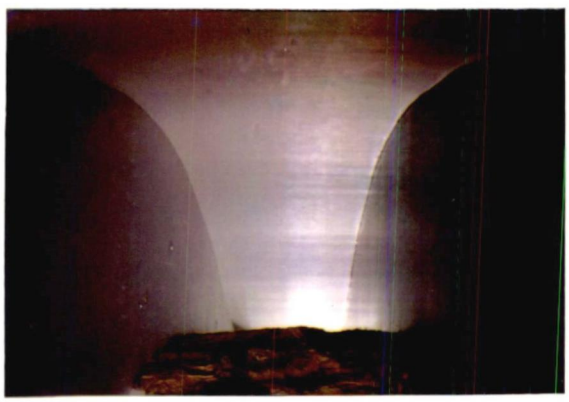


Plate-56-Abstract view, entrance tunnel, Kandalama

Kandalama is a first-rate instance of a countryside hotel, sensational to Sri Lanka. It is at Dambulla, in a dry zone which for 2000 years has relied on irrigation. One of the great tanks, stretches out in front of the hotel and together with dynamic rock out crop determines its location. The environment is heat throbbing, a lake on one side another periphery of it is the range of mountains covered with greenery and huge rock boulders. For nature lover, doing any structure there was an assassination.

But what we see, therefore is a wholly appropriate response to a different situation where it feels like a part of land itself. Architect Geoffery Bawa has used contrast, hard against soft. The natural waterfront acts as a smooth sheet of water against the hard rocky boulders.

The hotel has designed by making it a part of the surrounding forest and opposite the still water body: even the distant ring mountains.

As a whole, the building structure doesn't dominate itself. It acts as a platform, where the visitor is getting a

Plate-57-Entrance tunnel, Kandalama

Plate-58-Entrance tunnel, Kandalama

Plate-59-Entrance tunnel, Kandalama

more pleasurable level to enjoy the nature, towards Sigiriya and Dambulla over the Kandalama reservoir.

The entrance to the hotel actually begins from the turning point from the main road. The narrow gravel road with two lines of tall trees, is the first space of signaling about the hotel and its environment. The two rows of trees make the dark shadow on the road, while the glimpse of the sun falls through them.

The natural and hardy gravel road leads to the hotel for about 01 km distance, with short views of various ends of the hotel building. The entrance lobby is reached by a climb upwards along the hillock. The entrance and the reception lobby is an open building with a flat slab roof. This part has built in between the two hillocks, with the natural boulders are exposed. The reception desk is also a linear one with antique timber finish. The tunnel way leading towards the main visitors' lobby starts here. It is a well combination of built and natural elements. On the other hand, smooth and hard surfaces. The tunnel is lighted artificially with very small spotlights, but it is only for breaking the monotonous. But the tunnel itself has lighted with the daylight reflected by the smooth walls and floor. The glimpse of daylight reflected on the

Plate-60-Main lobby, Kandalama

Plate-61-Main lobby, Kandalama

Plate-62-Main lobby, Kandalama

smooth wall and floor, attracts the eye and eventually the visitor walks towards the main lobby through the tunnel. The tunnel is a curves one and the view of the horizon. Over the lake and mountain is suddenly visible, with making a dream. The tunnel is the magnificent play of day lighting design. The main lobby is a place where the visitors entertain the nature at its maximum level the surfed green terrace, and the pool with black bottom, makes a suitable picture plain for the natural view.

There are number of restaurants with the name beginning " " such as "Kaludiya", "Kanchana" etc... All the restaurants have ventilated artificial, but lighted naturally. The large glazed walls around the restaurants get maximum daylight in to it. These glasses have fixed top to bottom. So that one sits at a table can see the lake and forest beneath his foot. Therefore the finishes and detailing of the built structure don't dominate. The ceilings are flat and white, to get maximum light reflections towards the tables. Therefore the artificial lighting is not required other than in the night time. The most interesting thing is the light reflected from the boulders with trees, marks a huge painting in the hill side formed by the concrete structure.

Plate-63-Main lobby, Kandalama

Plate-64-Bar, Kandalama

Plate-65-Restaurant, Kandalama

The bars in Kandalama has designed with more walls around them, to get the gloomy and darker environment that requires for entertainment of that nature. There are only few openings with framed views of mountains, to obtain light.

Bedrooms are located along two wings, named "Sigiriya wing" and "Dambulla wing" , which got these names with the view of the rocks respectively. The rooms are simple in plan from the interior arrangement. The view of the forest and the lake, get in to the room, through the large glazed window which runs floor to the soffit. Unlike in the other hotels, the speciality is the bathroom also, has designed with these types of windows. These windows provide the daylight at a maximum level in to the room, and the bathroom. Therefore the space inside the room and the bathroom is more similar to the environment outside. The entertaining the environment has cleverly achieved by these large glass panels. On the other hand the dark color tiling and other accessories within the room and the bathroom controls the lighting levels in to a comfortable level to the eye, rather than reflected by light surfaces. Therefore the environment inside

Plate-66-Corridoor, Kandalama

Plate-67-Stairway, Kandalama

Plate-68-Corridoor, Kandalama

the room is more livable although the built structure and detailing are more rigid.

Circulation spaces play a vital role in the Hotel Kandalama, as the built structure runs approximately about 1 km and along the rock boulder. Therefore about 40% of the total floor area, is circulation area. The long run corridors, lead to bedrooms and other areas, have designed to get different lighting levels of the wall, fixed cement grills, and columns projecting shadows have been used to get these effects. It is interesting to study the voids providing lighting effects both on wall and floor at once.

In capturing the architectural qualities of Kandalama Hotel; the theoretical factors discussed in above chapters is of importance.

Here the photographer should be able to identify the methods and techniques used to harmonize the natural environment and the built environment as well as the spatial qualities assigned to the spaces based on functions and meanings, with a careful sense. Further an analytical study is necessary in order to assign the specific qualities to each space; colors, reflections, glair , volume, texture etc... Then the above qualities should be converted to the visual language.

Plate-69-Corridoor, Kandalama

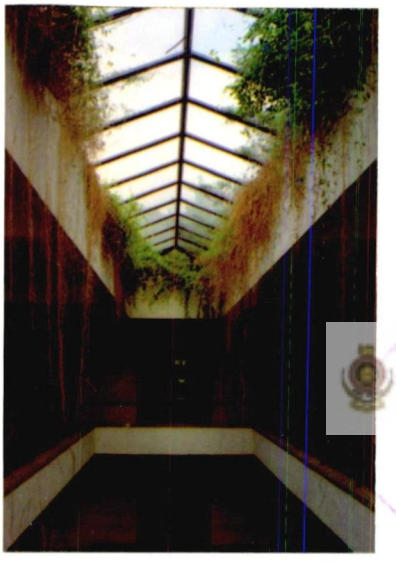


Plate-70-Roof light, Kandalama

Plate-71-Roof terrace, Kandalama

In Kandalama, light is applied strongly as a powerful element of architectural language, which is in turn a powerful element of visual language remarkably. As far as the spatial qualities are concerned, there is a strong influence of using light as an element in Kandalama. Therefore a photographer can capture the spatial qualities in Kandalma to his camera in such a way that a connoisseur of poetry entertains a poem composed in his own language.

This series of photographs is an attempt made to capture such spatial qualities.

Plate-72-Corridoor, Kandalama

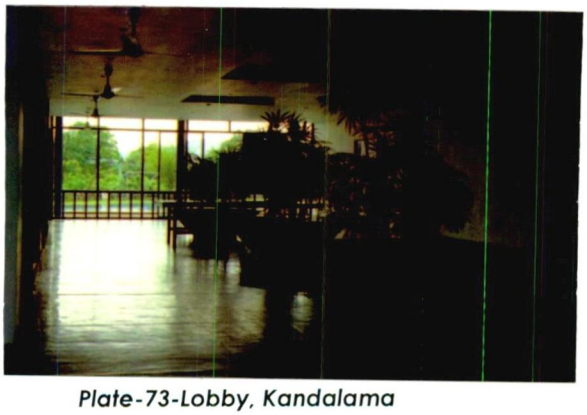


Plate-73-Lobby, Kandalama

04- 2 STEEL HOUSE - PELAWATTA.

Plate-74-Front view, Steel House

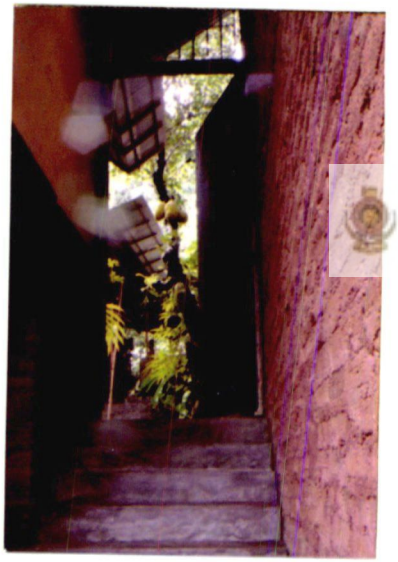


Plate-75-Entrance, Steel House

Plate-76-Courtyard, Steel House

This house named as a **"Steel house"** Resides at pelawatta. Archt: Vijitha Basnayake is the creator of this house. This is specially designed to a spinster nature lover and attempt has been made to form a natural environment in a small built space.

The main entrance of this house is located at a corner of the site. This entrance leads in to an open courtyard. This generates simultaneous the feeling "entered" together with the feeling of open space. It gives the feeling of "entrance to an open space." The architect endeavors continuously to hold the feeling in all the movements inside the totality of the house. In achieving this the architect has resort to a variety of architectural techniques.

The photographs included here themselves attempt to identify the architectural qualities and techniques which have been discussed in the previous chapters, practically.

Plate-77-Courtyard, Steel House

Plate-80-Detail, Steel House

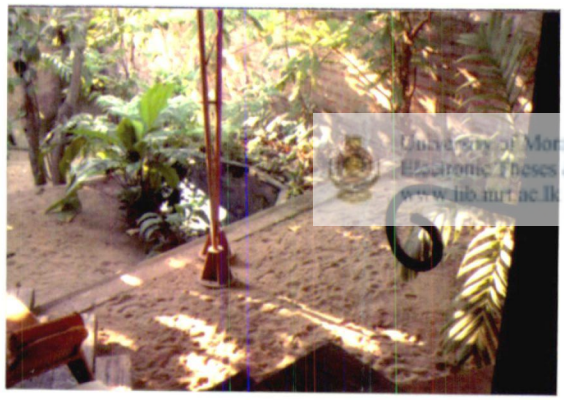


Plate-78-Courtyard, Steel House

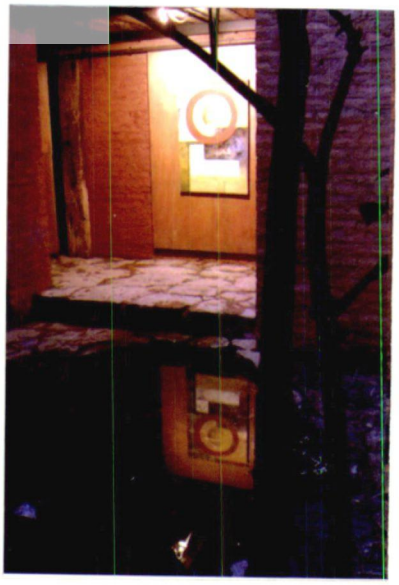


Plate-81-Reflecting pond, Steel House

Plate-79-Detail, Steel House

Plate-82-Detail, Steel House

Plate-85-Living, Steel House

Plate-86-Courtyard, Steel House

Plate-83-Courtyard, Steel House

Plate-84-Courtyard, Steel House

Plate-87-Lving, Steel House

Plate-88-Room, Steel House

Plate-91-Living, Steel House

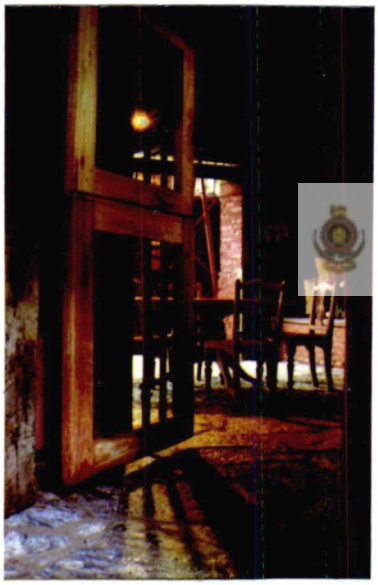


Plate-89-Dining, Steel House

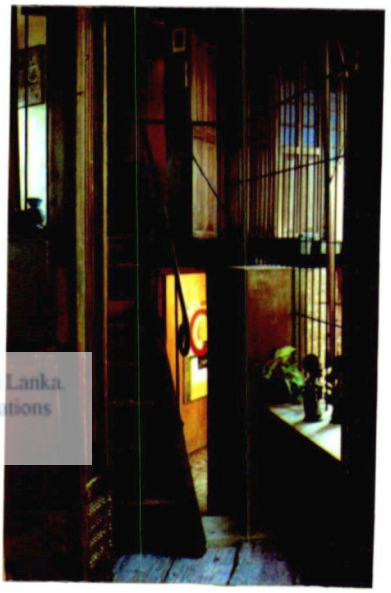


Plate-92-Stairway, Steel House

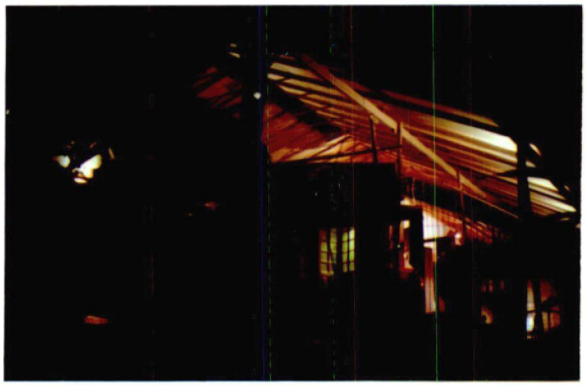


Plate-90-Night view, Steel House

Plate-93-Detail, Steel House

Plate-94-Room, Steel House

Plate-96-Courtyard, Steel House

Plate-95-View from room, Steel House

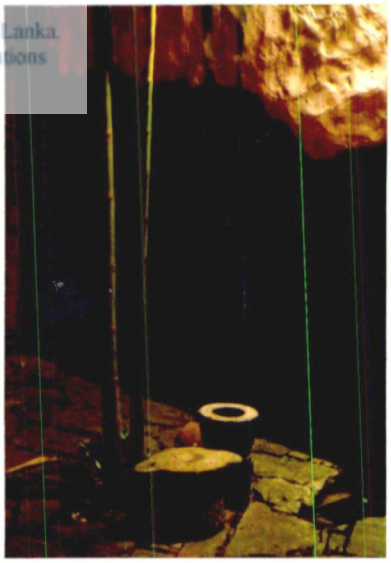


Plate-97-Courtyard @night, Steel House

04- 3. TIMBER HOUSE - PELAWATTA.

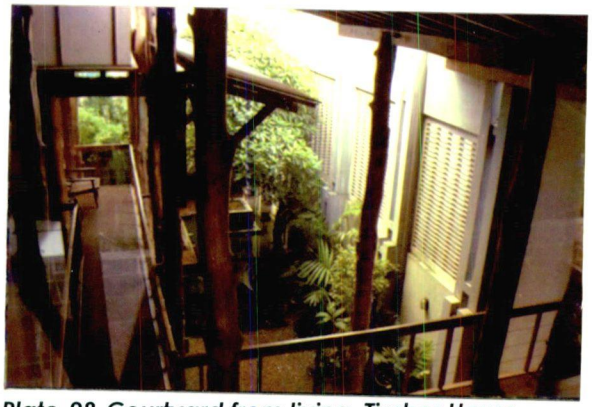


Plate-98-Courtyard from living, Timber House

Plate-99-Main corridor, Timber House

Plate-100-Stair way, Timber House

This study covers a building known as "Timber House" located at Palawatta. This creation has been done at the request of the client, who is a doctor for a small family by archt: Vijitha Basnayake. Detailing plays a major role in this building made only up of timber.

The creation of this house has lead rest of the site in to a courtyard. The architect here has made an attempt to do a work of art through a concept of "complexity."

The complexity is encouraged creatively by the efficient use of overlapping spaces and timber detailing. Daylight has been used to enhance the spatial qualities in different time of the day.

To demonstrate the spatial qualities and the characteristics of the building that further cannot be put in to words, are attempted capturing through this collection of photographs.

Plate-101-Details, Timber House

Plate-102-Corridor, Timber House

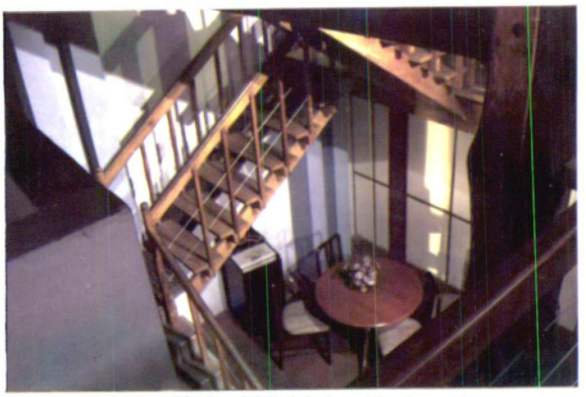


Plate-105-Dining,Timber House

Plate-106-Main corridor, Timber House

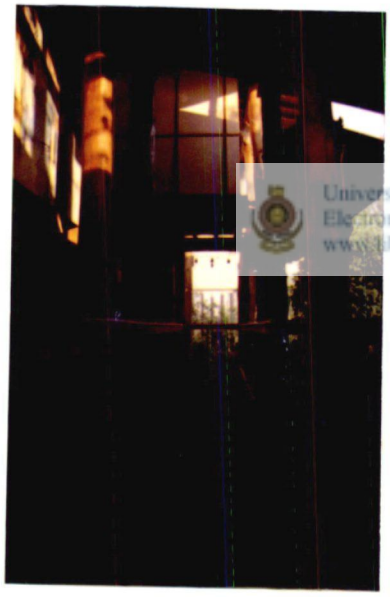


Plate-103-Main corridor, Timber House

Plate-104-Living, Timber House

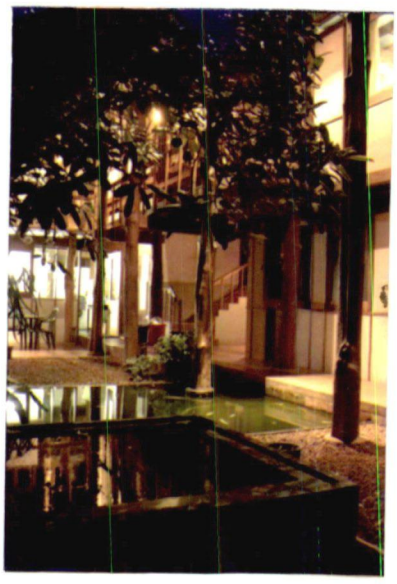


Plate-107-Courtyard,Timber House

Plate-108-Columns, Timber House

Plate-111-Details,Timber House

Plate-112-Exterior, Timber House

Plate-109-Main corridor@night, Timber House

Plate-113-Exterior @ night, Timber House

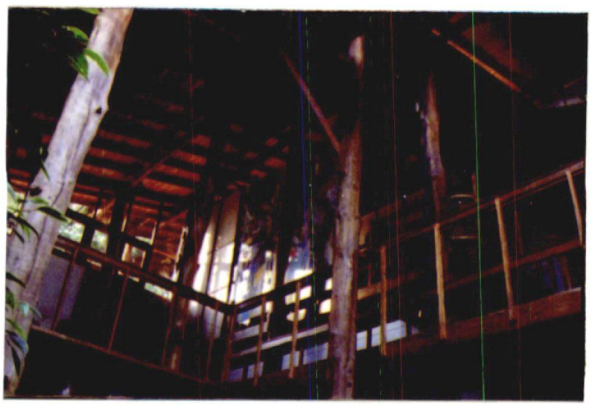


Plate-110-TV Area, Timber House

Plate-114-Daylight pattern, Timber House

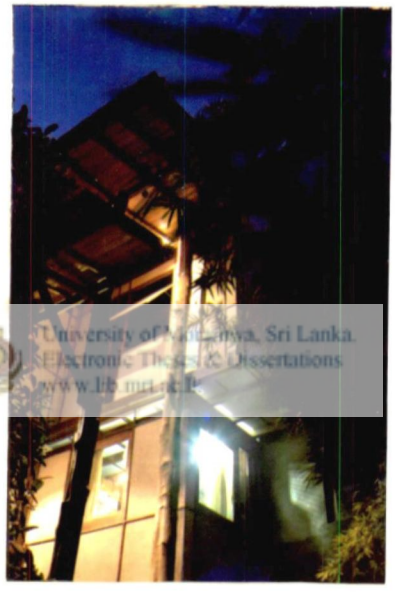


Plate-115-View @ night, Timber House

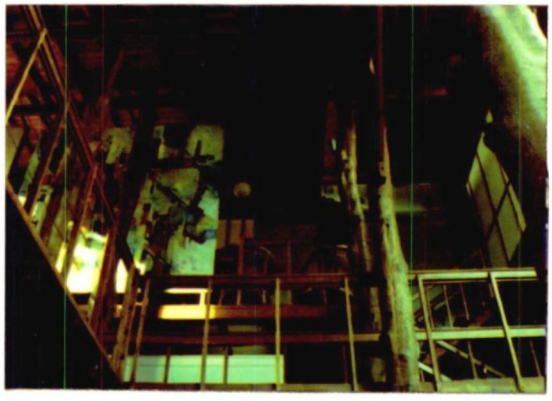


Plate-116-TV Area, Timber House

CONCLUSION.

Architecture is an art which can project a phenomenological scope in to intellectual depth. And it is subjected to the human senses and has to do with visuals, sounds, smells and touch etc... The language of architecture is rich with various elements such as spatial qualities, orchestration of spaces, progressions through the spaces etc... Using these elements, an architect is expected to encourage perception so that a meaning is reached.

There are occasions that we have to reproduce the creations done in architectural language using visual language. For instance an architect may presents his imaginations in drawings as well as he may use photography to describe a creation already done. Since photography is a familiar medium to the general public compared to technical drawings or conceptual abstract drawings, architects prefer photography in conveying their massage (creation) to the public. But hereby the architect is to provide a clear idea, unless the proper architectural qualities are captured in the photographs.

The talent of an architect lies in the way how he orchestrates the spaces with certain qualities. An architect with widespread knowledge blessed with creativity sometimes concentrate on spatial orchestration more than that of form making. As long as the photographer is unable to capture the spatial dimensions of architecture, the difference between the work of a non-professional who sees nothing more than form making in architecture and an advance architectural creation of a professional architect may disappear. This may lead to miss appreciation of architecture. There transmission of a totally distorted image of architecture to the public is unavoidable.

The language of vision is the basis of capturing qualities and emotions in photography. Therefore in this we have to concentrate much on visual language, because it serves as the tool that bridges the gap between photography and architecture. As the common aspect o photography and

architecture are found in the scope of visual language. It can be considered to be the core factor of architectural photography.

Therefore this study which looked in to the mutual understanding between architecture and photography of three dimensional architectural language by two dimensional visual language, is better be treated as an attempt made towards the development of architectural profession.

In architectural photography, the photographer should be able to see things in a parallel sense to the architect. Then only the qualities created by the architect are successfully reproduced by the photographer. The photographer is then free to use his own techniques and methods once he has grasp the essence of the particular architectural creation within the language of vision.

The study identifies some such methods used by architectural photographers, as use of public, conditions of whether, quality of lighting etc...

In the processes of capturing the quality and the sprit of architecture people play a major role in still life. People make the function alive and function gives the space alive. It is true that photographing a function is a process of documenting a fraction of a second, which is impossible to derive the total picture out of it. But when it is talking the mood of the space, or the quality of the space, the reactions of people and their impressions in faces make out of something, which attached to the sprit of the place. It is not one particular idea that interprets out of it. Thousands of ideas such as movement patterns, peoples concentration and their feelings, moods of sad, happiness, enjoyments or any expression from their physical actions can be captured to make communicate to the third person who has know nothing about the place to grasp something about the quality.

Weather conditions and lighting conditions also play a huge role in making the spirit of a place into still life. This physical, environmental conditions make big changers in qualities in architecture, by capturing through photographs. According to these factors the spirit in a place has a great chance in communicating with architecture.

Generally through a visual image that people see they create their individual pictures in their minds. Probably they may be different from

each other even of the same image. But healthy architectural photograph is expected to resonance all such individual pictures with the original architectural creation as far as possible.

This study is focused on to communicate the needs of architectural interest of capturing the quality in building. At a certain distance and within certain limitation it is a successive story or a subject area for photographers to use their skills and knowledge to capture it effectively. For the architect this is an interesting subject area for communication and inspiration for creative work. And finally for all it will be an intelligent method of understanding the space and qualities of architecture through still frames.

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