THE NATIONAL COLLEGE OF ART AND DESIGN

# THE DYNAMIC RELATIONSHIP BETWEEN SUBJECT AND OBJECT IN MODERN ART



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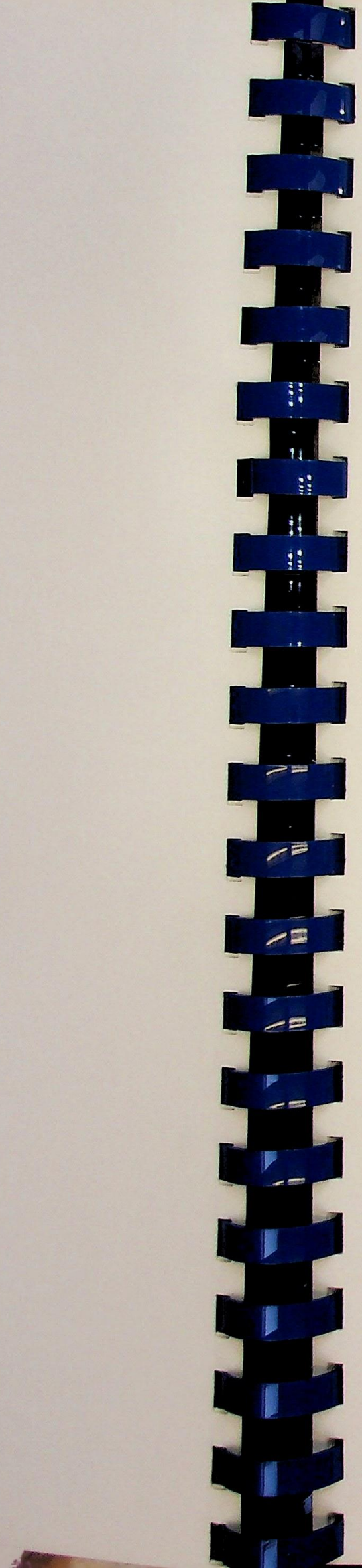

"Our fine arts were developed, their types and uses were established, in times very different from the present, by men whose power of action upon things was insignificant in comparison with ours. But the amazing growth of our techniques, the adaptability and precision they have attained, the ideas and habits they are creating, make it a certainty that profound changes are impending in the ancient craft of the Beautiful. In all the arts there is a physical component which can no longer be considered or treated as it used to be, which cannot remain unaffected by our modern knowledge and power. For the last twenty years neither matter nor space nor time has been what it was from time immemorial. We must expect great innovations to transform the entire technique of the arts, thereby affecting artistic invention itself and perhaps even bringing about an amazing change in our very notion of art."

Quote by Paul Valery from, Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction", Illuminations, p. 219.

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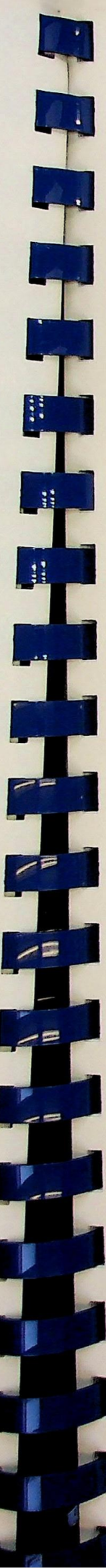

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# INTRODUCTION

There is no doubt that modern times are very different from those in which our Classical Fine Arts were developed and artists today exert greater power of action in creating a new art, altogether changed from our traditional conception of what art should be. The circumstances under which these changes were wrought and their influence on the development of twentieth century art - especially sculpture - are the prime concern of this thesis. The amazing growth in science and technology which this century brought with it had made available to the artist a profusion of materials and techniques which are almost impossible to ignore. At the same time, the physical manifestation of the arts has undergone considerable change both in appearance and treatment.

Philosophy has outlined further changes in our relationship with the world; today man is seen as having an active part in the play of forces, whereas once he was seen as helpless and passive in the face of circumstances. Perhaps it is possible to link this change in attitude towards man to a new role for art in which artist and spectator alike become part of a dynamic relationship with the work of art. Paul Valery rightly claims that today neither space, nor time, nor matter is understood for what it was from time immemorial. It is on this basis that I chose to discuss artists who have dealt, to a greater or lesser degree, with a change in approach to space, time and matter and thereby bringing about a change in art and in our relationship with it.

The first part of this thesis outlines some of the major conceptual and physical changes experienced by the world in the early part of this century and in so doing sets the scene for the radical changes that were happening in art. The Classical approach to art was to represent an illusion of reality - of space, time and matter - and to invite the spectator to partake of this illusion solely as an observer, and not as an active participant. Art of the twentieth century on the other hand presents to the viewer real matter in real space and required of him/her an active participation that takes place in real time. This participation, on the part of the spectator, is the means by which some art of this century achieves meaning. Art of the Renaissance had an existence, seperate from any spectator involvement and thereby exerted an authority over the spectator which required that he/she acknowledge that the artwork had an authority and "aura" that was purely aesthetic. It exists in the spectator's space and time and is made of everyday matter - brick, metal, glass, felt wood - and it is because of this that it is possible for the spectator to relate to the artwork in real terms and thus achieve a heightening of consciousness on a level other than the "aesthetic".

It is to explore the change in involvement of both artist and spectator to the work of art that I select some varied and illuminating examples of individual artists and art movements for their contribution to this development of a change in attitude to the use of space in art and to a new approach to the material of art. The experience of art therefore, becomes phenomenological.

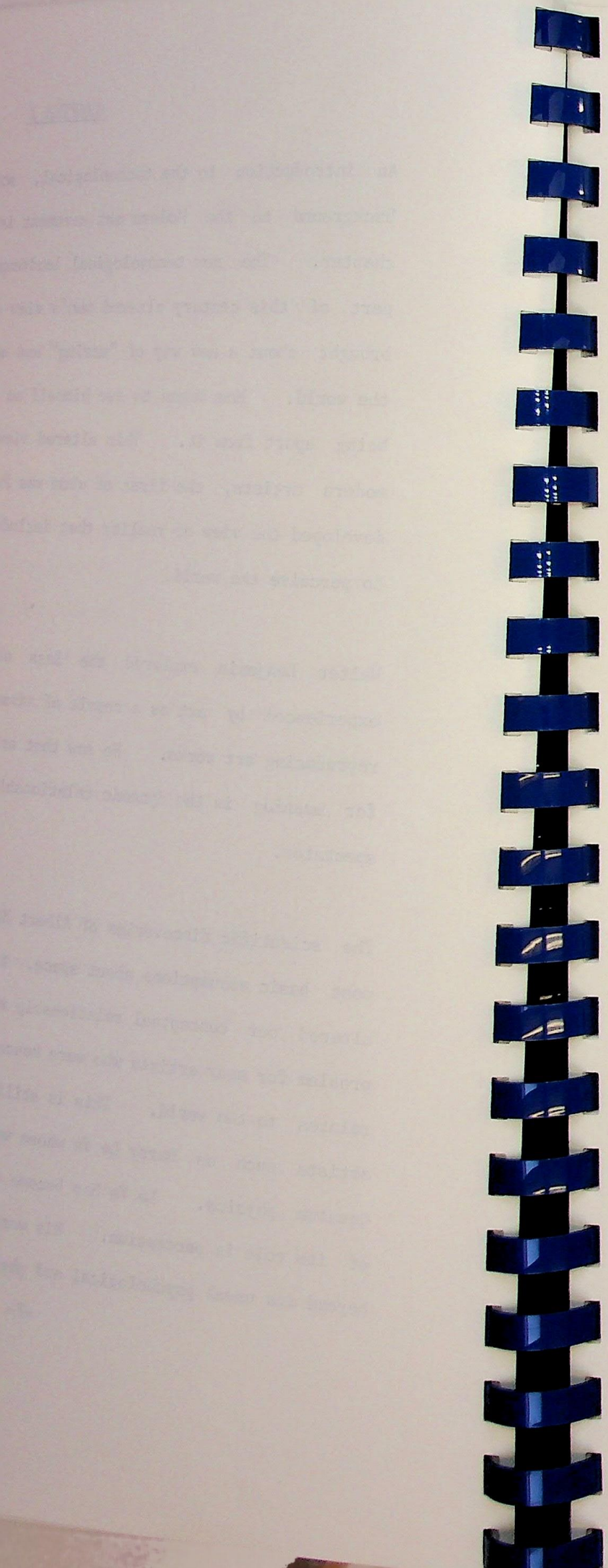
A different approach on the part of the artist is called for if he/she is to involve the spectator in a dynamic relationship with the artwork and this is the concern of the second part of this thesis. The artist, if he/she is concerned with the spectator as an active factor in the play of forces must become aware of the consequences of his/her attitude to art making. Many Modernist sculptors were active in exploring and promoting a new and dynamic approach to art and this was their contribution to a change in attitude to much twentieth century art. The Modernist approach to art has however been challenged in the past ten years and is still being challenged today; but this is the fate and meaning of attitudes about art, especially art in modern history - never to remain static.

## CHAPTER I

An introduction to the technological, scientific and philosophical background to the Modern art movement is the basis for this first chapter. The new technological landscape that emerged in the early part of this century altered man's view of himself in the world and brought about a new way of "seeing" and new possibilities of knowing the world. Man began to see himself as part of the world rather than being apart from it. This altered view of man was explored by many modern artists, the first of whom was Paul Cezanne; Cubism further developed the view of reality that included in art the artist's efforts to perceive the world.

Walter Benjamin explored the loss of authority and authenticity experienced by art as a result of advanced technological methods of reproducing art works. He saw that art had to invest its possibility for meaning in the dynamic relationship between artist, artwork and spectator.

The scientific discoveries of Albert Einstein overturned some of our most basic assumptions about space, time and matter and so radically altered our conceptual relationship with the world. This posed a problem for many artists who were concerned with the problem of how art relates to the world. This is still evident with some contemporary artists such as Barry Le Va whose work was directly influenced by quantum physics. Le Va has become acutely aware of the audience and of its role in perception. His work is an attempt to expand vision beyond its usual psychological and physiological limits.





The meaning of his work is no longer contained in the "object" but is internal both to the artist and to the spectator. Faced with the major philosophical problem of science in the twentieth century which centres on "uncertainty" - the impossibility of making absolute measurements in the observation of physical phenomena - Barry Le Va saw that, for him, art must be concerned with the dynamic relationship between artist, artwork and spectator if it is to sustain significance and meaning in the face of a changing world view. Historically speaking, the western tradition of the monolith in sculpture and the masterpiece in painting, appropriately based on representations of figures, worldly and divine, and with on the whole, solid, massive human and animal forms, are witnesses to man's view of himself as static and at the centre of a moving universe. The idea of sculpture inherited from this tradition was inevitably a "centripetal" one (that is, sculpture was tied to its centre). In painting the "static rhythms" of colour, line and volume were the only acceptable spatial forms of expression. However, as the nineteenth century closed and the twentieth century approached, many such acceptable practices and assumptions were found to be too suffocatingly compact to survive.

The speed at which society transformed itself through technology alone in the last quarter of the nineteenth century and the first decades of the twentieth century seems almost preternatural. During these fifty years or so, the western world witnessed the foundation of modern technology for peace and war alike; the recoil-operated machine gun (1882), the first synthetic fibre (1883), the Parsons steam turbine (1884), coated photographic paper (1885), the Kodak box camera and the

Dunlop pneumatic tyre (1888), the Diesel engine (1892), the Ford car (1892), the cinematograph and the gramophone disk (1894) are only a few examples. In 1895 Rontgen discovered x-rays, Marconi invented radio telegraphy and the Lumiere brothers developed the movie camera. In 1903, two inventors, Wilbur and Wright, to the stupefaction of the world, achieved man's first powered flight in a heavier-than-air machine. The cult of the machine had emerged; but to have a cult does not mean that its images automatically follow.

The changes in man's view of himself and the world between 1880 and 1914 were so far-reaching that they produced as many problems for artists as they did stimuli. For instance, how could an artist make painting that would reflect the immense shifts in consciousness that this changed technological landscape implied? How could one produce a parallel dynamism to the Machine Age without falling into the elementary trap of just becoming a machine illustrator?

Since the Renaissance almost all painting had obeyed a convention; that of one-point perspective. Perspective was a geometrical means for producing an illusion of reality, for showing things in space in their right sizes and positions. Nevertheless it was an abstraction. It was a view seen by a motionless person clearly detached from what he/she sees. Perspective gathers the visual facts and it stabilizes them. It makes a sort of god of the spectator, who becomes the person on whom the whole world converges - the immutable onlooker. But the cultural conditions of "seeing" were starting to change. The Eiffel Tower in Paris stood as a symbol for that change.

The most spectacular thing about it in the 1890's was not the view of the Tower from the ground; it was seeing the ground from the Tower. Until then, the largest man-made point from which Paris could be seen by the public was the gargoyle gallery of Notre Dame. Most people lived at ground level, or within 40' of it, which was the height of an ordinary apartment house. Few city dwellers except a few intrepid balloonists, had risen 1,000' from the earth. But now as Paris turned its once invisible roofs and the labyrinth of its streets and alleys towards the tourist's eye, becoming a map of itself, a new type of landscape began to seep into popular awareness. It was based on frontality and pattern rather than on perspective, recession and depth. The viewer's one point perspectival view of the world changed to a view of himself/herself as an element of the world.

One of the first significant artists to explore this new conception of man and to base his work on it was Paul Cezanne. His later paintings put forward a fundamental argument about the way that we actually see. The question being asked by Cezanne - is this what I see? - was an attempt to come to terms with the relativity of the viewer towards the object(s) being viewed. Through constantly questioning the nature of painting Cezanne swept away the idea of mastery, crucial to the technique of one point perspective. He replaced the certainty of perception with doubt, doggedness, concentration and lack of eloquence. Cubism was to bring Cezanne's explorations to an extreme by attempting to set out the world as a field of shifting relationships that included the onlooker. Cubism argued that a view of reality must include the painter's efforts to perceive it, both the viewer and the view are part of the same field.

The idea began in 1907, in a warren of cheap artists' studios called, Bateau Lavour, or laundry-boat, at fifteen rue Ravignou in Paris. It was instigated by a Spaniard, Pablo Picasso, then aged twenty-six. Picasso's partner in "inventing" Cubism was a slightly younger and more conservative Frenchman, Georges Braque. Both Picasso and Braque wanted to paint the fact that our knowledge of an object is made up of all possible views of it; top, sides, front, back. They wanted to compress this inspection, which takes time, into one moment, one synthesized view. This ideal was provoked by one extraordinary gesture by Picasso. Between 1906 and 1907, he worked on the "radical" Les Demoiselles d'Avignon. In this painting perspective is broken, shattered completely; colour has lost its atmosphere and become arid and lifeless; the figures are made up of angles fitted together. The hacked contours, staring, interragatory eyes of the women lend to this painting a general feeling of instability. It remains to this day, a disturbing painting.

Having cleared the ground for Cubism both Picasso and Braque spent the next couple of years, 1908 and 1909, in developing its vocabulary. In his admiration for Cezanne, Braque wanted to see if the former's way of building a painting, that fusing of little tilted facets, that solidity of structure and ambiguity of reading could be pushed further. This he did with the landscapes he painted in two locations where Cezanne himself worked; first a l'Estaque, in the south of France, in 1908, and then closer to Paris, in a village called La Roche-Guyon. Braque's and Picasso's paintings of this period are almost indistinguishable, except for fine differences in handwriting. Their images are baffling.

In these nothing is constant; every shape is a report on multiple meanings. Their's was an attempt to set out the world as a field of shifting relationships that included the onlooker. It must be remembered though that neither Braque nor Picasso were mathematicians and certainly they were no philosophers, but their art was part of the same great tide of modern thought that included such diverse figures as Albert Einstein and Walter Benjamin.

Although it may be possible to link these movements in the scientific, technological and philosophical fields with a change in the arts it is important to remember that the autonomous existence and fundamental dynamics of the artistic structure continues. Although art has a constant dialectical relation to the development of other domains of culture it also develops as an autonomous movement in itself. There is no doubt however, that in the latter part of the nineteenth century the arts of painting and sculpture entered a crisis which was seen by many as a new beginning for art. Increasingly estranged from their social context, the art of painting and sculpture suffered added displacement with the invention of photography and the harnessing of this invention to the means of mass-production. In his essay "The Work of Art in the Age of Mechanical Reproduction" (1), Walter Benjamin describes the functional dislocation of works of art which occurred when their mechanical reproduction severed them from their cult value as autonomous objects. (2).

Benjamin cites that around 1900 technical reproduction (including lithography and photography) had reached a standard that permitted it to reproduce all transmitted works of art; this caused the most profound change in their impact on the public. Benjamin argues that for the first time in world history, mechanical reproduction emancipates the work of art from its parasitical dependance on ritual - first the magical, then the religious kind. The unique value of the "authentic" work of art has its basis in ritual, the location of its original use value. To an even greater degree the work of art reproduced becomes the work of art designed for reproducibility,

> "...But the instant the criterion of authenticity ceases to be applicable to artistic production the total function of art is reversed. Instead of being based on ritual, it begins to be based on another practice - politics". (3)

What is really jeopardized though, when the historical testimony is affected is the authority of the object. The authority of a thing is the essence of all that is transmissible from its beginning, ranging from its substantive duration to its testimony to the history which it has experienced. Since the historical testimony rests on the authenticity, the former too is jeopardized by reproduction when substantive duration ceases to matter. Even the most perfect reproduction of a work of art is lacking in one element: its presence in time and space, its unique existence at the place where it happens to be and the presence of the original is the prerequisite to the concept of authenticity.

Art recognizes that the loss of authority and authenticity traditionally believed to be integral to the work of art is jeopardized by the advanced technological techniques of reproduction. In an effort to retain its claim to authority and authenticity alike, art invests its "meaning", not in the artwork alone, but in the intangible, dynamic relationship between artist, artwork and spectator. The relationship between artist, artwork and spectator is cultivated in different ways. In one instance, the materiality of the artwork is emphasized so as to bring about a phenomenological relationship with the perceiving body, thus achieving a heightening of consciousness previously unknown to man. In another instance, it is the process of art making, rather than the object, that makes a claim to meaning. In its search for meaning then, art attempts to dematerialize the art object while at the same time is reluctant to do so. This dilemma is a very real one and cannot, in fact, be solved. But, of course it is not the purpose or intention of art to bring about a consensus but to respond to challenges both from within its own field of reference and from without.

Apart from the technological, another challenge from outside the field of art came from the scientific discoveries of Albert Einstein who overturned some of our most basic assumptions about space, time and matter and so brought about a radical change in our conceptual relationship with the world. Einstein discovered that the idea of universal time used indiscriminately by all can no longer be taken for granted. His special theory of relativity of 1905 does away with the absolute quality of time and with the absolute distance between two objects that are at rest relative to each other.

This calls into question the way in which we perceive objects. In the light of Einstein's discoveries it is no longer acceptable to see things in isolation; things must be seen in relation to each other and to what is around them. A macroscopic view of the objects sees them as part of their surroundings, rather than apart from them. Georgy Kepes, in the later part of the 1950's recognizes this movement away from "thing-seeing" towards relation seeing. In The New Landscape he says that a new vision will lead us away from the system of fixed things, and towards the system of spatio-temporal patterns. The new art which would attempt to reflect man's changed relationship with the world would, of necessity, have to abandon the static object of the classical tradition and replace it with a more dynamic system of which the object might still remain a part.

The growing interest in the dynamic relationship between things and their active observer, rather than in things known objectively may to some degree be attributed to the influence of Albert Einstein's Theories of Relativity (1905 and 1916). It is possible to see a common point of departure both in the theory of relativity and manifestations of modern art. In both cases phenomena are recognized as existing, not in isolation, but relative to a situation. Classical physics assumed that space and time were seperate entities, that a three dimensional space existed independent of the material objects it contained, obeying the laws of Euclidean geometry, and that time was absolute and flowing independent of the material world, at a fixed rate.

In modern physics, these ideas were abandoned with Einstein's discovery that all space and time measurements are relative, not only to each other, but to the observer as well. Relativity theory shows that space is not three dimensional and time does not exist outside of space, but that the two form a four dimensional continuum. In the light of these discoveries objective measure could no longer be regarded as absolute. All measure of space, time and matter is relative to the observer and so is in constant flux depending on the viewer's relationship with the phenomena. The new art, prompted by such scientific discoveries seems to favour attention on the perceptual process rather than on the finished aesthetic object. The state of becoming is deemed more important than the state of being.

The challenge to the artist of Einstein's discoveries was taken up by the American artist, Barry Le Va. Although an artist of the 1960's and 1970's I choose to deal with Le Va at this point because of his close affinity with the theories and ideas of Albert Einstein. Barry Le Va became very active in attempting to bypass the art historical language of aesthetic and composition. Instead, he became acutely aware of the audience and its role in perception and he based his installations on what he called "a principle of vision" (4) which would be accessible to everyone, regardless of cultural difference.

His work in the landscape was an attempt to expand vision beyond its usual limits, psychological as well as physiological.

To achieve this end he would take an exterior situation that one wouldn't normally think of as a contained shape or mass, and create an awareness of its constituent elements - volume, edge, height, length, width - by means of a specific act which he would photograph from varying distances. The landscape works were an attempt to move away from the making of objects as much as possible.

> "I wanted to get rid of any lingering object orientation by emphasizing horizontal scale. Formwise to have no visible structure, no unification, no pattern - not to accentuate form at all" (5).

The meaning of the work is no longer contained in the "object" or visual environment of the work. It is internal both to the artist and to the spectator. For this reason Barry Le Va uses the word "notion" (which is an internal model) to describe his work; For example, the "notion" of location based on an activity, the "notion" of an event sequence. The notion of time is especially central to his work. He is concerned with art in the state of becoming rather than art as a static object and he sees the spectator's participation as essential to this view of art.

> "I am trying to make the audience an active part of the time structure from beginning to end, part of the past, the present, and the eventuality" (6).

He wanted to change the viewer's role from a passive to an active one, so that our experience of the work becomes integral to the work's existence.

Barry Le Va believes that it is possible to alter reality by changing the viewer's behaviour in relation to the work being viewed. At the root of this conviction seems to be a major philosophical problem of science in the twentieth century which centres upon "uncertainty", the impossibility of making absolute measurements in the observation of physical phenomena. (7). The inability to find an objective system of measurement, the fact that phenomena can only be considered in relation to each other and to an observing body, and the alterations of "reality" affected by the imagination are Le Va's primary concerns in his attempt to bring about a shift in the viewer's relation to the art work.

Given that in physical reality it is impossible to think abstractly about relations without providing some concrete model Le Va makes no attempt to remove all visual or physical elements from the work. Although visually simple Le Va's work reminds us that what we see is not the content of thought but a stimulus to a psychological mecahnism, "visual structures are nothing but an aid to thinking" (8). In his work, as in relativistic physics, the role of the observer is crucial, since in both, and absolute - requiring no verification outside itself - does not exist. An example of this can been seen in the Walking Stick pieces (Fig. 1) in which the length of the stick depends on its motion relative to the viewer.

Walking Stick pieces are a concretization of the idea of destroying while making - as the piece progresses it destroys itself. He made the Walking Stick pieces by taking a stick of a standard length and walking it end over end and/or zig zagging it.

The position of the stick after each move was marked by cutting an inch off its end, and leaving the piece to mark the position of the stick at that moment. By using the stick itself to mark its own movement through time and space, the series of movements could be reconstructed by the observer by retracing the events backward in time. In these pieces Le Va was attempting to make the process of motion, in a four-dimensional space-time situation, stable (both visually and physically) by using the stick to mark its own path.

It is the relationships among the visual elements and not the visual elements themselves that constitute the meaning of Le Va's work.

> "Everything I do is about relationships ... within the construction or operation of the work, there are clues to every decision made, and to why it's been made." (9).

In this sense Le Va's work shares with many other fields, especially mathematics and science, a growing awareness of relationships as being of greater importance than their terms. It is not surprising then to find the "terms" (i.e. materials) used by Le Va to evoke relationships are in themselves of no intrinsic value, have no aesthetic reference, no psychological associations, no substance and no sensuous appeal: felt, ball bearings, oil, glass, dust.

Barry Le Va shares with modern physics the ideal mode of picturing such scatterings and particles with which both are so closely concerned; that is the diagram.

Diagrams have the capability of visually rendering what cannot be seen, imagined or intuited; they are two dimensional images which can represent four dimensional space-time events. They can describe, not only relations between things, but also express development and transformation itself. The diagram is therefore an ideal mode for Le Va since relation, development and transformation are crucial issues in his work (10). Barry Le Va is concerned with "events" rather than with "things". His desire is that the work provide "a model for dialogue". For example, the large felt distributions, containing many small particles, involved a constant interchange between the felt and the floor. Like quantum fields, which are characterized by a total inability to "keep still"; Le Va's distributional pieces are in constant visual flux. His emphasis on the inseperableness of activity and location, event and site, and the fact that he makes installations entirely integral to the space they are to be situated in, has an analogue in modern physics:

> "At the macroscopic level ... material objects are not distinct entities, but are inseperably linked to their environment; ...Their properties can only be understood in terms of their interactions with the rest of the world." (11).

It was through a rigorous questioning of the nature of sculpture that Barry Le Va evolved an active mode concerned with relationships, structure and transformations. Gradually, towards the end of the 1960's, it was the scraps, the stages, the time factors, the stuff around the object that grew more important than the object itself.

He was interested in how one could make a sculpture that was not architecturally dependent upon three dimensional space, in how elements could be located in space without being minimal, in what sculpture does to the physical body of the viewer without making an object. His aim became:

> "a set of elements that would locate themselves within a space, and imply the result of an activity, change, motion, a state of flux and an isolated period of time that would have no foreseen end." (12).

Thus evolved the felt pieces of 1966-1968 in which scraps and remnants alone constitute the piece. These pieces were held together by time, location and activity. By 1967 he was engaged in further disintegrating the component parts of the felt pieces and increasing their size. The end result was a wide variety of component sizes and shapes, including ball bearings, randomly scattered, giving the impression of an unstable, constantly shifting body of material. The pieces were clearly the result of an activity or performance by the artist. The room was the arena for that activity, while the felt residues marked a sequence of events as they occurred in time. These "event sequences" demand that the viewer engage himself/herself in synchronic thinking, thus deciphering the cause and effect in the work.

The felt pieces had the sense of existing prior to and after "use" in the traditional sense of object making. Here was an implication of an absolute and infinite continuation, resulting from Le Va's asking himself, "How can one construct transition?". Answer, "by not making anything".

Barry Le Va was concerned with an idea of art the only content value of which was in its questioning.

He used change as a method of working in his felt pieces where the only control he exerted was in positioning the pieces on the floor. These pieces raised questions about the nature of the viewer's behaviour as he/she walked through and around the piece. Le Va was interested in the interdependence of objective events with the subjective states of the observer, in transition, instability, fluctuation and change in an attempt to approximate motion as the constantly changing nature of life.

In his attempt to approximate life in art Lazlo Moholy-Nagy (13) evolved a vision of art that was itself in motion, that is, kinetic art. Barry Le Va's vision is of an art that transforms itself as its relationship with the spectator changes. Rather than an art in motion then, it is the spectator who is in motion. It can only be deduced that much of the obligation to "vitalize" sculpture - make it come to life before the viewer - which was previously vested in kinetic sculptural attempts, are now being shifted to the viewer's capacity for analysing his/her private method of seeing. It remains to be known if viewers will accept this responsibility.

## CHAPTER I

## FOOTNOTES

1. Walter Benjamin's essay reprinted in Illuminations.
2. Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction", Illuminations, p.p. 220 - 227.
3. Ibid, p. 226.
4. Marcia Tucker, Barry Le Va : Four Consecutive Installations Drawings 1967 - 1978, p. 8.
5. Ibid, p.p. 10, 11.
6. Ibid, p. 27.
7. As outlined by Hans Reichenbach in, The Philosophy of Space and Time.
8. Marcia Tucker, Barry Le Va : Four Consecutive Installations Drawings 1967 - 1978, p. 30.
9. Ibid, p.20.
10. John Cage also made use of the diagram to illustrate a musical score.
11. Marcia Tucker, Barry Le Va : Four Consecutive Installations Drawings 1967 - 1978, p. 46.
12. Ibid, p. 6.
13. Lazlo Moholy-Nagy is discussed at length in the next chapter.

## CHAPTER II

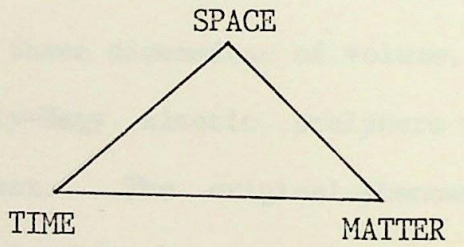
This second chapter is a return to a major precursor, at least on a theoretical level, of spectator involvement in art, namely, Lazlo Moholy-Nagy; and further, it is an inquiry into the influences he experienced from Berlin Dada and Russian Constructivism in evolving a vision of art that was dynamic in uniting both artist and spectator with the real rhythms of our era.

Moholy-Nagy believed that the art object should be in dynamic relationship with space and time and it is in this sense that he breaks free from previously held beliefs that art should be static in its own space and time. He believed in the autonomy of art and in its capacity to be effective in liberating man by the unconscious organisation of its own means. He saw that art can sharpen the eyes, the mind and the feelings of man in a "real" way and thus raise his/her consciousness to a level previously unknown in art. To achieve this end he, like the Dada artists, the Futurists and the Russian Constructivists, felt the need to evolve a new art that would adequately describe the world and actively involve the spectator in the production of meaning.

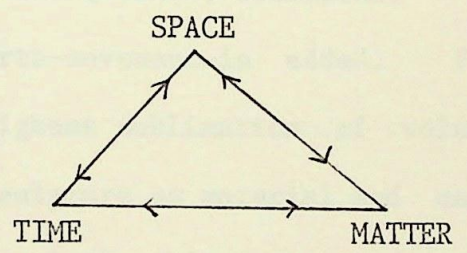
> "We must ... replace the static principle of classical art with the dynamic principle of universal life. In practice; instead of static material construction (relationships of material and form), we have to organize dynamic construction (vital constructivity, energy relationships in which the material functions solely as a conveyor of energy ... Carried further, the dynamic single-construction leads to the dynamic-constructive, energy-system, with the beholder, hitherto receptive in his powers than ever before and actually becoming an active factor in the play of forces." (1).

In an essay on "Luminism and Kineticism" (2), Willoughby Sharp echoes Moholy-Nagy's call for dynamic construction when he argues that today painting and static sculpture are no longer wholly satisfactory. What we need is an art of greater energy, an art of total environment, an art that unites us with the real rhythms of our era.

The Hungarian artist, Lazlo Moholy-Nagy had a vision of art in motion, of matter, not as an isolated phenomenon, but as part of a space-time continuum. He saw the object in dynamic relationship with space and time, thus altering previously held beliefs that art should be static in its own space and time.




STATIC MODEL




DYNAMIC MODEL

In his short book, The New Vision, Moholy-Nagy outlined five stages through which sculpture developed from being mass oriented to a lightening of its weight and from static treatment of materials towards movement. Thus, sculpture became the path to the freeing of material from its weight; mass was to become movement. In the first of these stages mass was completely blocked out. The temple of Karnak, the pyramids of Egypt, meteorites, crystilline blocks and Brancusis eggs are the examples Moholy provides of this sculptural stage. In the second stage parts of the sculpture are modelled or hollowed out.

Relationships between small and large, salient and sunken, round and angular, sharp and dull areas are made in the sculpture. The block is modelled according to a previous plan. The examples provided of this second stage include Archipenko's Torso (1920) and Metal Relief Female Figure (1922). The third stage is the completely perforated sculpture. This stage marks a heightening of the very limits of the material in the interpretation of empty and full, for example, Auguste Rodin's, Purgatory (1900); Archipenko's, Terracotta Sculpture; Constantin Brancusi's The Chimera (1918) and The Prodigal Son. In the final two stages the material is not only lighter, it is almost conquered, since it is utilized as a carrier of movement, and through these movements becomes a creator of virtual (volume) relations. To the three dimensions of volume, the fourth-movement-is added. For Moholy-Nagy kinetic sculpture was the highest sublimation of volume content. The original phenomenon of sculpture as material and mass relationships becomes sculpture as volume relationships.

The new technological technique of engineering assemblage, as an economical working principle had a fundamental influence on these new sculptural creations, for example, Rodchenko's Construction (Moscow 1920), consisting of an intertwining bundle of circles. This sculpture required, on the one hand, a developed technical knowledge and on the other, a mind that works abstractly. The passing beyond expressional ends of the individual artist enabled him to think abstractly and to free the material from its weight; another example is Moholy's Nickel Sculpture (1921).

Moholy-Nagy had a lot of support for his new ideas. The Activist movement which emerged in Hungary during the First World War, when Moholy was beginning his career as a painter proved a suitably lively environment for his developing artistic and political ideas. The two basic influences, however came from abroad. They were Berlin Dada and Soviet Constructivism.

The international effect of Dada had a liberating and stimulating effect because of its provocative vitality and self-consciousness, its revolutionary typography which defied presentation and its new spirit. From the Berlin Dadaist movement Moholy-Nagy mostly adopted the idea of freedom; that everything is possible as well as its opposite. Dada had the greatest influence on Moholy through its freedom of inspiration, freedom of new genres - collage, photomontage, theatre verses, informal theatre and publications.

Despite the fact that in the visual arts the preoccupation with material by the Dadaists is more difficult to grasp because it was much less important to them than their attacks against representation, it is important to note that the formal-creative aspects of the materials themselves began to take a more positive place within their work. The autonomy assumed by the work, as a result of greater emphasis on the actual process of creation giving meaning to the work, signified a blossoming of the appreciation of materials from which the narrative subject was banished.

Finding themselves in a politically stressful situation at the end of the 1914 war, the Dadaists were forced to take political sides and so ensured their survival as radical artists. Moholy-Nagy on the other hand, believed in the autonomy of art and in its capacity to be effective by the unconscious organisation of its own means. He believed that the phenomena of the world can be known, and changed by art, for the purpose of liberating man.

> "Art is the sense's grindstone, sharpening the eyes, the mind and the feelings ... what art contains is not basically different from the content of our other utterances, but art attains its effect mainly by subconscious organisation of its own means. If that were not so, all problems could be solved successfully through intellectual and verbal discourse alone". (3).

Dada's insistance that the collector's naive desire for the unique could no longer be justified as it hampered the cultural potential of mass consumption had far reaching effects on Moholy-Nagy. He gave up signing his paintings. Instead he put numbers and letters with the necessary data on the back of the canvases as if they were cars, aeroplanes or other industrial products. He believed that manual painting may preserve its historical significance but that sooner or later it would lose its exclusiveness. In an industrial age, the distinction between art and non-art, between manual craftmanship and mechanical technology is no longer an absolute one.

As an example of what Walter Benjamin cites as the work of art as designed for reproducibility Moholy-Nagy, in 1922, ordered his first set of paintings by telephone. He had the factory colour chart before him as he sketched his painting on graph paper.

At the other end of the telephone the factory supervisor had the same kind of paper so he took down the dictated shapes in the correct position. Moholy did not believe in the sacredness of the "individual-touch". He believed that mathematically harmonious shapes, executed precisely, are filled with emotional quality, and that they represent the perfect balance between feeling and intellect.

Machine art exerted an influence on Moholy-Nagy through Russian Constructivism. The theory of Russian Constructivism of the 1920's set itself sharply against the art and society of the past; it energetically demanded a new and more dynamic way of life. The Russian avant-garde artists, among them El Lissitzky and Kasimir Malevich, had a suspicion of using old styles to describe a new world. Malevich believed that no possibility, no situation, no knowledge can be kept for some and denied to others.

> "(We have) a sceptical attitude towards culture which attempts to open the trunk of nature with its own lock picks ... Culture brings futile destruction, trying to find the appropriate materials for the making of this key. (We believe) that the world does not have a keyhole, that there is nothing locked in it, as there is nothing to lock up." (4).

This meant that everything was now accessible to all, that the situation was clearly up for examination, for criticism; to assume that the new world could be represented (locked up) with the old language of culture was to be completely dishonest to the world as it now was, freer from particular and privileged kinds of representation.

In this moment of great flux, born from a wholesale rejection of old social and cultural values, where anything and everything was possible, El Lissitzky's posters stand for the resistence to any static form of representation. His abstract poster Beat the Whites with the Red Wedge, 1919 (Fig 2.) has the particular, modern, twentieth-century distinction of being revolutionary. It was intentionally revolutionary both in artistic and historical terms. Such questions as - What is art? and How does it function in this situation? - were asked by Lissitzky and his comrades and fit well with the larger questions of the day. The Russians tried to exploit the ability of abstract art to force the viewer to take part in the production of meaning. For example, Lissitzky's poster Beat the Whites with the Red Flag was deliberately placed outside a factory of mostly illiterate workers who could understand neither its written text nor its abstract imagery; yet, they were included as an integral part of the poster's revolutionary meaning. This new abstract style employed by Lissitzky then, was not in an effort to lock up the world (in Malevich's words) but rather to keep it open and accessible. It did not represent the world but presented its production in process.

The development of Moholy-Nagy's ideology was further influenced by Naum Gabo and Antoine Pevsner's Realist Manifesto (Moscow, 1920) which announced the death of painting without actually pronouncing it dead. Gabo renounced both Cubism which concerned itself with the object in space, and Futurism which was concerned with the object in motion for having failed to their time what was expected of them.

> "Cubism, having started with the simplification of representative technique, ended with its analysis and stuck there ... One could heed with interest the experiments of the Cubists, but one cannot follow them, being convinced that their experiments are being made on the surface of art and do not touch on the basis of it ..." (5).

Cubism had, by 1914, certainly become a style. It therefore, no longer presented a radical way of being in the world and thus, lost its impetus to influence avant-garde art. Naum Gabo's attack on Cubism could therefore, to some extent be seen as justified; but his attack on Futurism is even more scathing.

> "One had to examine Futurism beneath its appearance to realize that one faced a very ordinary chatter ... In the domain of purely pictorial problems, Futurism has not gone further than the renovated effort to fix on the canvas a purely optical reflex which had already shown its bankruptcy with the Impressionists. it is obvious how to every one of us that by the simple graphic registration of a row of momentary arrested movements, one cannot re-create movement itself ..." (6).

The Futurists were the first to identify physical movement as the main element of the new aesthetic. In his radical programme for renewal Initial Manifesto on Futurism F T Marinetti declared,

> "The world's magnificence has been enriched by a new beauty; the beauty of speed ... Time and space died yesterday. We already live in the absolute, because we have created eternal, omnipresent speed ..." (7).

The Futurist rationale for a new art was presented in moral terms. Speed, having as its essence the intuitive synthesis of every force in movement, they saw as naturally "pure" synthesis, on the other hand, having as its essence the rational analysis of every exhaustion in repose, they saw as naturally "unclean". The Italian Futurists led by their promoter and all round demiurge Fillipo Tommaso Marinetti, sought the destruction of the antique good and the antique evil, slowness, speed, for them, was the synthesis of every courage in action. It was aggressive and warlike and a synthesis of modernity in that it scorned the immobile adoration of obstacles and the nostalgia for the already seen. The Italian Futurists had a considerable influence on their Russian avant-garde contemporaries and continued to be well received on their visits to Russia. Despite this, many individual Soviet artists attacked aspects of Futurism; among them was Naum Gabo.

According to Gabo, from the moment Futurism proclaimed that "space and time are yesterday's dead", it sank into the obscurity of abstractions. Gabo believed in space and time as the criteria on which art must be built.

> "Space and Time are reborn to us today. Space and Time are the only forms on which life is built and hence art must be constructed." (8).

Neither Gabo nor Tatlin wanted depictions of speed (the Futurists) or light (Rayonists). They wanted real "forms of space and time themselves." (9).

Tatlin's achievement in this area was more successful than that of Gabo. A comparison between Gabo's sculpture Standing Wave (Fig. 3) and Tatlin's Movement to the Third International (Fig. 4) will illustrate this. Gabo's attempt at presenting movement is a wave (vertical at rest) which is vibrated by means of a motor concealed in the base of the work. The form assumed by the wire as it flexes and vibrates makes visible a vibrating volume related as much to the movement as to the wire. It cannot be denied that vibration which produces the form which relies upon extension in time, nevertheless has no evolution or development in time, and is merely an exercise in vibration. The fact that the sculpture can be switched on and off merely indicates the irregularity of its organisation in time. By contrast, movement in Tatlin's tower was concerned with continuity and not with the shape of movement. Although Gabo used movement, he anchored his vibrating rod in a static base. His work was thus fixed in a structure concerned more with aesthetic theory than with life around it. In the elevation diagrams of Tatlin's Monument to the Third International (1919-20) the spirals enter the ground directly, implying that the monument continues below the surface of its visible base. The monument is envisaged emerging from the earth iself, an ascending form moving forward and upwards resembling a telescope or mechanism for measuring the heavens. The formal theme of intertwining spirals and their steady revolution is basic to Tatlin's Tower, where it is analogous to a process of evolution through dialectical conflict. The outer spiral which revolves yearly acts as a metaphor for the mass of the people, the inner spiral which revolves monthly represents the party, while the innermost spiral revolving daily represents the party leader.

In this sense the monument represents the social structure of the USSR's communist society. It's ascending form moving both forwards and upwards reflects a concern with the state of becoming rather than with static being. All its forms and functions progress towards resolution. In this sense of their social functioning the organs of Tatlin's Tower could be said to be alive. but, unfortunately, it could not be built as there was not enough steel in all of Russia and the possibility of it being structually unsound was a very real one. Tatlin's vision remains one of the great hypotheses of modernism.

For a consideration of time and movement in Tatlin's project it is fruitful to consider the theory of history proposed by the poet Velimir Khlebnikov. Although Khlebnikov collaborated with the Russian Futurists, his vision of the future had no place for the aggressive automobiles of Marinetti's manifesto which proclaimed that:

> "... A racing car whose hood is adorned with great pipes, like serpents of explosive breath - a roaring car that seems to ride on grapeshot - is more beautiful than the Victory of Samothrace." (10).

The study of time Khlebnikov defined as: "The study of the influence of the future on the past." (11).

He considered time to be a spatial phenomenon permitting an investigation of its rhythms and structures across history.

Despite Naum Gabo's and Velimir Khlebnikov's differences of opinion with Futurism the revision of Futurist positions continued within INHUK (Institute for Artistic Culture), formed in Russia in 1920, as a branch of IZO (the Visual Arts Department of the People's Commissariat of Education, formed in 1918) with the aim of elaborating theoretical frameworks for art in a communist society. Opinion with INHUK was divided over the question of the proper direction of a progressive art practice. Two main antagonistic factions formed - "laboratory" artists and "production" artists - and by 1921 their differences had produced a definitive split in the left ranks.

The Laboratory artists, Suprematist Constructivists such as Melevich and Gabo, proclaimed the object to be an end in itself. The artist's proper role in society was to provide the designer and the engineer with ideal formal elements. The application of these elements, the uses they would serve, was not the business of the artist who worked rather in the area of pure research. Art in itself was a materially useless activity addressed to man's spirituality; nevertheless, by its means man might better his conception of the world as an ordered totality.

To the production artists, such as Tatlin and Rodchenko, such claims were a mystification serving to perpetuate idle aestheticism. This was also the belief of Walter Benjamin who, like the production artists saw the division between manual and intellectual work as essentially a class division fostered by capitalism.

As the art worker was subject to the same economic and technical restraints as were his fellow workers in other fields, so art itself must be fully integrated into everyday material life. In sympathy with the production artists, the editor of the official journal of IZO, Art of the Commune, Osip Bric represented the notion of "art into production";

> "Go to the factories, this is the only task for the artists ... Artists must become producers." (12).

It might be argued that without the European avant-garde - Fauvism, Cubism, Futurism - there could have been no modern art in Russia. While recognising these influences from the west it was in fact, the Revolution of 1917 which gave the Russian avant-garde its real vision of dynamism. Artists and poets saw in it the image of the future; one of equality and collective energy, in which the arts would act as a transformer. The Revolution had swept away the middle class and, from now on, the only patron would be the state. The new state artists were encouraged to see themselves as social engineers. Most of them genuinely believed that art could act as directly on politics as icons had on religion. Of all the tendencies in Russian art, constructivism undoubtedly seemed closest, as a metaphor, to the ideal of the October Revolution. It was dialictic made concrete: no more mysticism; but instead, the articulation of materials through direct presentation rather than representation.

It must be said at this stage that despite the continuing experimentation in Europe - of Le Corbusier in France and De Stijl in Holland for example - the centre of radical innovation in design and architecture was undoubtedly Germany. No other school or design centre in our century exerted a comparable influence on European thought than did the Bauhaus. It was a kind of official "laboratory" of experimental art established originally in Weimer, and transferred in 1925 to Dessau. The structure and philosophy of the Bauhaus, more than its actual designs, played a decisive role. During its short life - fifteen years - it utterly transformed the idea of advanced design in Europe. It was the centre of a network of men and women who wanted to remake culture in terms of industrial process.

The man who founded the school was the architect Walter Gropius and it enabled him and his colleagues to pursue the idea of a total art, subsuming all the divided arts under a new technology. The first manifesto of the Bauhaus proclaimed:

> "Let us create a new guild of craftsmen, without the class distinctions which raise an arrogant barrier between craftsmen and artists. Together let us conceive and build the new structure of the future, which will embrace architecture and painting and sculpture in one unity and will rise one day towards heaven like the crystal symbol of a new faith." (13).

The aim of the Bauhaus was synthesis. The basic problem of integrating craft, art and technology was tacked with earnestness and determination. Despite much unresolve in this area, the Bauhaus made an energetic attempt to reorganize our future cultural life.

The Bauhaus called upon the creative forces of the fine arts to become influential while they are vital. At the same time it endeavoured, through the establishment of workshops founded upon the crafts, to unite and productively stimulate the arts with the aim of combining them in architecture. It's aim was to reinstate the broad relationship with the "whole" and, in the deepest sense make possible the total work of art.

The artist Oskar Schlemmer saw the Bauhaus, animating and animated itself becoming a gauge for the convulsions of the political and intellectual life of the time, and the history of the school became the history of contemporary art. Founded in 1919 after the catastrophe of the war, in the chaos of the revolution and in the era of the flowering of an emotion-laden, explosive art, the Bauhaus became the rallying point of all those who, with belief in the future and with sky-storming enthusiasm, wished to build the "cathedral of socialism." (14). The triumphs of industry and technology before the war and the orgies in the name of destruction during it, called to life that impassioned romanticism that was a flaming protest against materialism and the mechanisation of art and life. But the Bauhaus like Constructivism in Russia could do no more than ponder the plan to embrace, penetrate, and unite art, science and technology; it could do no more than lay the foundations and prepare the building stones.

Walter Passarge, in his review of "the Bauhaus Exhibition in Weimer", 1923, stated that the turning point, especially among the younger artists at the Bauhaus, towards a more intensive pre-occupation with the objectivity is no accident. This direction, Passarge believed, was in tune with the tendencies which were becoming visible all over Europe.

> "In the metallic plasticity there lives an uncompromising down-to-earth spirit and an affirmation of reality, which comes out much more strongly than in any abstract organisation or ornamental use of technical forms - which the engineer in particular rejects as being essentially romantic." (15).

One such artist was Oskar Schlemmer who believed that it is sensible and necessary for the art of a new age to make use of technology and of the newly invented materials of a new age in order to make art servicible as form and as a vehicle for a substance which is spiritual, abstract, metaphysical, and ultimately religious in nature. As a starting point for such a direction, the "Triadic Ballet" was developed - "triadic" (from triad-three) because of the three dancers and the three parts of its symphonic, architectonic composition and the fusion of the dance, the costumes, and the music. The special characteristics of the ballet are the costumes which are of a coloured, three-dimensional design, the human figure which is an environment of basic mathematical shapes, and the corresponding movements of that figure in space. The Triadic Ballet is part of a larger entity - a "metaphysical revue" - to which the theoretical investigations and actual work of the Bauhaus stage at Dessau are also related.

The guiding principle of Oskar Schlemmer's life was the idea of "man within space". He expressed his views on man and space in an essay on "Abstraction in Dance and costume" (1928)

> "The organism "man" stands in cubical, abstract space ... man and space have their laws ... when we move in the open, in unlimited space, the dance becomes correspondingly untrammeled, exuberant, and Dionysiac - and rightly so. When we move in a room, we are nessarily under the "spell of the room", a part of the same, enveleoped and held captive by it; from this, according to sensitivity and intensity of the will of the dancer, a "space dance" results, integrating space and body into an indissoluble unity. In this dance space and body are the instruments of the dancer, which he will play better the more intensively he experiences, feels, and senses them ... space and body mathematics, the planimetric and the stereometric relationships of space together with the metaphysics inherent in the human body shall unite into a numerical, mystical synthesis ... space°". (16)

Schlemmer sees the geometry of the floor; centre mark, axes, diagonals, circles etc. as a help towards this end; also, perhaps the lines through space, which separate and divide the room in order to make it understandable and comprehensible. His intention was to analyse the nature of space and to vary the space as a whole. Schlemmer observed the appearance of the human figure - the dancer - as an event and recognized that at the very moment it becomes a part of the stage, it is as it was, a space bewitched creature.

Tatlin was a cultural pioneer in whose reliefs and constructions lay the roots of a new attitude to the material world, no longer depicted, but directly manipulated:

> "The working of a surface by means of paints, that is the real aim of painting." (17).

It became necessary for Tatlin and his compatriots Rodchenko, Popova, Exter, Vesnin and Stepanova to seek an exit not only from the canvas but from the whole tradition of European art; "Art is starting to become the presentiment and reflection of life - it is life itself." (18). In 1921 Rodchenko completely stopped painting. He evolved the slogan; "Representation is finished: it is time to construct." (19), and he went into production. He declared the,

> "... pointlessness of easel painting" and proposed "the absoluteness of production art, and of constructivism as its sole form of expression." (20).

The abandonment, by Rodchenko, Tatlin, Popova and the other artists, of stylistic priorities in favour of the investigation of surface and materials therefore seemed to avoid the errors of Cubism outlined by Gabo in his manifesto (quoted above). Construction was for Rodchenko;

> "... the contemporary attempt to organize the utilitarian deployment of materials. Constructive life is the art of the future. It is time for art to flow into the organisation of life." (21).

A major figure in influencing these Soviet artists towards a new conception of art and its relationships with life was a vigorous and popular writer on mystical interpretations of the universe, Pyotr Uspensky. He seized upon the fact that scientific research increasingly undermined the apparent solidity of the daily world; and he forged from these elements a volume that exerted persuasive power over Tatlin's generation. In Tertium Organum: Key to the Laws of the Universe he put forward his notion of time;

> "... things are connected, not by time, but by an inner connection, an inner correlation, and time cannot seperate these things which are inwardly near, following one from another. Certain other properties of these things force us to think of them as being sepereated by the ocean of time. But we know that this ocean does not exist in realilty and we begin to understand how and why events of one millenium can directly influence the events of another millenium." (22).

Uspensky's view of humanity is of a creature extending in time as well as space, yet visible to our untrained peception at only that cross-section called "now". This threat to the apparent solidity of the world, outlined by Uspensky, prompted Tatlin to abandon the illusionism of painting and to work instead with tangible materials - wood, iron, aluminium, zinc. In so doing he explored "faktura" - the history of the handling of the material world. It seems that it was necessary for the artist to confirm his own materiality in a material world. Whilst not abandoning the painting-like adherence to the wall surface Corner Counter-Relief (1914-15) nevertheless moved decisively into three dimensional space.

Tatlin began to produce counter-reliefs shortly after visiting Picasso in Paris in 1913. Both Picasso, in Mandolin (1914) and Tatlin in Corner Counter-Relief (1915) (Fig. 5) shared the components of a common language, but the ends to which each artist directed the style are completely distinct. Picasso continued to try to "represent" his world in an objective narrative manner, using sequenced "units" of pictorial images to describe - as a collection of words can become a descriptive, narrative sentence. Tatlin was not interested in the representation of anything, but rather in presentation itself.

This illustrates his theory of the Culture of Materials - that material reality, real materials in real spaces, are what counted now, not art objects in conventional situations. Tatlin's "units" of construction are like words arranged in no known narrative order, without punctuation, without resolution. They are together because they stand for raw materials, unprocessed, their energy is potential rather than kinetic.

The Corner Counter-Relief stretches across the corner of a room. It occupies that corner space and shares it with architecture and with human living space. It cuts into our world. It does not stand safely as art on a pedestal; it does not hang obediently on the wall; it does not distance itself as art. On the contrary, it enters the real world as an accumulation of real materials arranged in unstable ways. It presents itself not as art but as experience. As such Tatlin allows the world in which he finds himself in to propose the appropriate style for his art. The resulting art proposes neither specific questions nor answers as such, but resonates in the space between. This piece supports a conglomeration of elements on three wires across a corner space, with an additional vertical wire attaching the foremost projecting element to a point above the relief. No hint of a picture plane remains as the sheets of metal curving through space divide it rigorously in a variety of directions. The painter's illusionistic intersection of planes gives way to a construction in which diverse elements are actually slotted together in a real but bounded sense. For Tatlin the handling of materials dominates the manipulation of imagery, their inherent qualities are emphasized and contrasted.

They are united not by the image but by resolving the conflict of their material quality, their size, flexibility, etc.

The ideas and aims of Tatlin found immediate echoes in the works of closely related poets, Khlebnikov and Kruchenykh who began to emphasize "faktura" of the word. The ideas and theories of the Futurist poet, Velimir Khlebnikov exerted an immense influence on many Russian avant-garde artists. In 1910 he developed in his poetry the concept of the transrational, according to which the component elements of words, consonants and sounds, expressed ideas which formed a type of universally comprehensible proto-language which it was the task of the poet to uncover. Khlebnikov began to explore the word's physical properties, its sounds, its roots and its evolution through time and use. The structure of language, in terms of etymology and syntax, fascinated both Khlebnikov and Kruchenykh. If for the poets the "faktura" of the words included an awareness of their evolution through history, of their fashioning through use, for Tatlin the handling of his materials similarly had its evolution through time in many human activities. His experience at sea relied upon a highly articulate handling of wood, rope, canvas, metal and tar. This tradition of using and combining materials was beyond the sphere of art in any academic sense, yet so was his work with reliefs as was the study that Khlebnikov made with language. Tatlin did more than study materials in isolation or in simple combinations, he studied their time-honoured and unpretentious practical traditions as a living language of materials.

Creative work became investigation; each object constructed became an exploration. To work beyond style or self-expression was a radical new development, a broad investigation of the nature of creative activity, first begun by Cezanne. Materials no longer recorded emotions or dreams. Tatlin thus became a constructor and an investigator. The art object continued to exist but only as the culmination of a process of investigation. "Faktura" and construction both implied process.

Like the Russian Constructivists, Moholy-Nagy turned towards new industrial materials. He believed that materials in sculpture play a fundamental role; the form of a sculpture is determined by its material. Materials establish the emotional foundations of a sculpture, give it basic accent and determine the limits of its aesthetic action. As in the Russian conception of "faktura", Moholy believed that our attachment to materials is grounded in our organic similarity to them. Without this tight attachment to materials and without this interest in their existence the rise of our culture and civilization would probably have been impossible.

Moholy began to paint on aluminium, highly polished non-ferrous alloys, and on thermosetting and thermoplastics. In working with those materials he made discoveries which were instrumental in changing his painting techniques. This had inevitable repercussions on his thinking concerning light problems. By producing real radiant light effects through transparent dyes on plastics and through other means, one had no need for translating light into colour by painting with pigment.

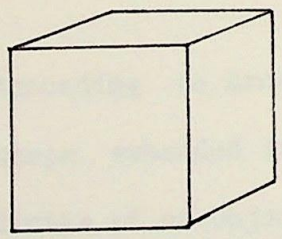
Painting transparancies on the canvas was the start of his interest in painting with light, no longer to be on the surface of the canvas, but directly in space. But first he had to break with the flat surface of the picture plane. The moulding of platics was for him the final step in the distortion of the flat plane. Moholy relates how in painting on the flat plastic sheets he was neglecting the mallable quality of the material when heated. So he heated, bent, and twisted transparent sheets having first painted on them. With this manipulation he arrived at complex concave and convex shapes, which created a constantly changing relationship between the painted planes and the background, resulting in a new type of "related" distortions. These pieces could hardly be called painting or sculpture. However, the difficulty of naming these forms could hardly be held against them. Moholy-Nagy had been for many years fascinated by phenomena not listed anywhere. Thus he did not worry very much about a name for this unknown version of a kind of sculpture painting. For him, they were "space-modulators" (23).

He tried to achieve similar effects with painting on canvas. There the free "motion" forward and backward of colour prepared a new type of spatial perception. This was in clear opposition to the Renaissance method of producing illusionistic space by the illusionistic relationships of volumes. In this way his experiments seemed to become a part of the general tendencies of contemporary painters of which he said,

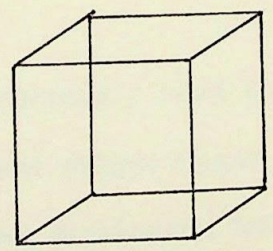
> "Many of us have departed from the old canvas and obsolete conventions, to a new space articulation, trying to define intuitively and to satisfy more adequately the specific need of our time for a vision in motion." (24). (Chicago 1944).

His goal was to create works suitable for his own time. In a letter to Antel Nemeth, dated 18 July 1924, he said "My goal is to create contemporary works for our time." (25).

To achieve this aim Moholy-Nagy, like the Russian Constructivists, had to develop a new conception of space and mass. Volume of mass and volume of space are sculpturally not the same thing; they are in fact two different materials. Mass and space are very concrete things which we come in contact with every day; they are both measurable. The following diagrams will help to illustrate this point.



(A) Carving



(B) Construction

(A) Represents volume of mass

(B) Represents the space in which the mass exists made visible.

It was not until the twentieth century that mass or space became an issue for sculptors. Up to now they explored mass as matter; space interested them only in so far as it was a spot in which volumes could be placed and projected.

It had to surround masses. Moholy and his contemporaries considered space from a totally different point of view. They considered it to be an absolute sculptural element, released from any closed volume, and they presented it from inside with its own specific properties. They were not at all intending to dematerialize the sculptural work, making it non-existent. They added space perception to the perception of masses, emphasizing it and forming it. They enriched the extension of mass, making it more essential through the contrast between them, whereas mass retains its solidity and space its extension.

The achievements of Archipenko in his systematic rethinking of the function of space in sculpture must be given special credit here. He helped to change the sculptural awareness of space by making it the prime concern of his work.

According to Archipenko, sculpture had previously been thought of as shape embedded in space. Moreover, space proper began at the outer limits of an object - very much as the Greek physicists had thought of it. This was thought to be commonsense perception. Archipenko's contribution was to reverse this relationship, surrounding, as it were, space with sculpture (all other twentieth century exploitations of space and "open sculpture" stem from this discovery). Archipenko accomplished this in two ways: by complete penetration of his sculpture, in Woman Combing her Hair, and by hollowed out negative surfaces in sculpture, as in Concaves.

The problem of time in sculpture was for Moholy-Nagy synonymous with the problem of motion.

He and his avant-garde contemporaries denied,

> "... the thousand year old Egyptian prejudice that static rhythms are the only possible bases for a sculpture. We proclaim the kinetic rhythms as a new and essential part of our sculptural work, because they are the only possible real expression of time emotions." (26).

Moholy-Nagy's major achievement in the sculpture of space, time, and matter is the Light-Space Modulator (Fig. 6) of 1930. The Light Space Modulator is one of the finest and most clearly expressed creations not only of Moholy-Nagy's individual aspirations, but of the avant-garde new aesthetics of the entire period. It is the embodiment of all the artist aspired to, the essence of the spirit of a new age, but also of his own very individual ideas. It took eight years, from 1922 to 1930, for the idea to take shape and for technology to be able to follow imagination by achieving the structure with all its lamps and mirrors. The Light Space-Modulator consists of a clean complex of rectangles and curves, rotating slowly, humming and clicking as it moved. Revolving around it are coloured lights wired to a timer; the lights were programmed to flash in a 2.5 - minute cycle. The sculpture's shiny, reflective surface bounces light reflections back at the viewer. Even when at rest and without light the Light Space-Modulator, with its broken metal surfaces and complicated joints produced impressions of the most refined kinds of transparency. With the different circular, perforated metal discs and the diagonal shafts crossing them, Moholy-Nagy's work is a mobile, spatial variant of his pictures. In it he makes use of the same geometrical figures as in his paintings, with approximately the same proportion and distribution.

Formerly Moholy-Nagy had tried to saturate the surface of the canvas with light and make it radiant. With the machine, however,it is not figuratively but in actuality that the structure modulates the beam of light; Moholy-Nagy had produced, as it were, a mobile painting.

## CHAPTER II

## FOOTNOTES

1. Richard Kostelanetz, (Ed.), Moholy-Nagy, p. 29.
2. Gregory Battcock, (Ed), Minimal Art, p. 317.
3. Krisztina Passuth, Moholy-Nagy, p. 363.
4. Leonard Folgarait, "Art - State - Class : Avant-Garde Art Production and the Russian Revolution", Arts Magazine, December 1985, p. 69.
5. Naum Gabo and Antoine Pevsner, "Realist Manifesto", Theories of Modern Art, H B Chipp (Ed.), p. 326.
6. Ibid, p. 326.
7. F Marinetti, "Marinetti's Futurist Manifesto", Marinetti, R W Flint, (Ed), p. 41.
8. Naum Gabo and Antoine Persner, "Realist Manifesto", Theories of Modern Art, H B Chipp, (Ed.), p. 328.
9. Douglas Davis, Art and the Future, p. 25.
10. F Marinetti, "Marinetti's Futurist Manifesto", Marinetti, F W Flint, (Ed.), p. 41.
11. John Milner, Vladimir Tatlin and the Russian Avant-Garde, p. 166.
12. Victor Burgin, Two Essays on Art Photography and Semiotics, p. 19.
13. Robert Hughes, The Shock of the New, p. 498.
14. Hans M Wingler, The Bauhaus, p. 65.
15. Ibid., p. 68.
16. Ibid., p. 118.
17. John Milner, Vladimir Tatlin and the Russian Avant-Garde, p. 196. This was the opinion of the art historian and critic, Nikolai Punin.
18. Ibid., p. 196.
19. Ibid., p. 194.
20. Ibid., p. 194.
21. Ibid., p. 193.
22. Ibid., p. 167.
23. Krisztina Passuth, Moholy-Nagy, p. 383.
24. Ibid., p. 383.
25. Ibid., p. 386.
26. H B Chipp (Ed.), Theories of Modern Art, p. 334.

## CHAPTER III

It is important at this stage, to look at the Italian artist Lucio Fontana from the point of view of his exploration of space and for his involvement with the art work as an active part of the environment. Space became a primary concern of his work when he opened up the surfaces of his canvases and later, when he began to make environments. In this way he encouraged a dynamic rather than a passive relationship between the artwork, the subject and the environment; and it is in this sense that he contributed to active spectator involvement with the work of art. Fontana grasped the fact that technology radically re-organized man's perceptual capabilities; and he believed that the psychic response of man becomes blunted in an age of mechanics. His intention was to unite the entire life of man in a synthesis which linked to the function of his natural conditions, constitues a true manifestation of his being. The dry, earthlike surfaces, punched holes in pattern, mixtures of raised and reflected surfaces of his canvases all attest to his desire to reveal the origins of phenomenal perception.

The latter part of this chapter deals mainly with the artists Allan Kaprow and Jonathan Borofsky, both of whom explored the possibilities of an environmental art. Kaprow in his "Happenings" and Borofsky in his installations demanded much more of art that that it stand statically before us. They both wanted it to engage in a dialogue with the environmental life process thus involve the spectator in a dynamic relationship with the art work.

Unlike Fontana, who resorted to suggestion, both Kaprow and Borofsky utilized specific substances like sight, sound, movement, people and odours in their work. In this way they, like the composer John Cage, challenged the power of art to communicate ideas and emotions and instead saw the artist as involved in a perpetual process of artistic discovery.

By incorporating space into his works Lucio Fontana initiated a dialogue with the environment that was to be continued and elaborated by other artists, many of whom worked in areas other than the visual arts. These included Allan Kaprow, John Cage and Merce Cunningham. It was the impulse of these latter artists to create an art that was as close to life as possible. In this way they wanted to reflect life's constant changeability thereby making change itself a forming principle and integral part of their work.

Unlike Moholy-Nagy and the Constructivists, who believed in the importance of the materiality of art, Lucio Fontana sought to transcend matter and to find beyond it the eternal quality of the artistic gesture itself; the process rather than the material of art was to gain more significance for him. Lucio Fontana admits to being influenced by Baroque illusionism and use of suggestion and in this sense he differs from the Constructivists in their blatant refusal to have anything to do with illusionism or suggestion of any sort.

Despite these differences, Lucio Fontana, like the Futurists and Constructivists reconstructs, historically, the fundamental dynamism of the world. He reiterates the inability of artists to match this dynamism technically and testifies to the importance of contemporary art media. Like Moholy-Nagy, the Futurists and the Constructivists Fontana wanted forms that were not fixed in static properties or readily identifiable as "art".

True to the modem European tradition of manifestos Fontana wrote White Manifesto (1946) in which he and the Spatialists echo the ideals of Moholy-Nagy and the Russian Constructivists. (1).

> "We are abandoning the use of known forms of art and we are initiating the development of an art based on the unity of time and space." (2).

In his last interview, dated 1968, Lucio Fontana claimed that his greatest achievement was the discovery of the "hole". In 1949 he opened up his canvases by cutting holes in them. (Fig. 7). By doing this he stepped outside the limitations of the picture frame and freed himself in his conception of art.

> "I made a hole in the canvas in order to leave behind me the old pictorial formulae, the painting and the traditional view of art and I escape symbolically, but not materially, from the prison of the flat surface." (3).

As a painter, working on one of his perforated canvases, Fontana wanted to open up space to create a new dimension for art and to tie in with the cosmos as it endlessly expands beyond the confining plane of the picture.

From the discovery of the "hole" in 1949 Fontana moved on, in 1951, by adding blotches and splashes of paint and glass stones to the surface of the canvas and to "slashes" in the canvas in 1958. These were not attempts to decorate the surface, but on the contrary, efforts to break its dimensional limitations. In his Technical Manifesto of Spatialism Fontana outlined the necessity for a change both in essence and form. He believed that it was necessary to go beyond painting, sculpture and poetry towards a new art based on the necessity of a new vision of man, proposed by contemporary scientific discoveries. Fontana believed in the link between art and science. In his Technical Manifesto of Spatialism he stated "We refuse to believe that science and art are two seperate things." (4).

For the first time the physics of this period revealed the nature of dynamics, and determined that movement is an innate condition of matter as a foundation for the understanding of the universe. This attack on the static quality of matter is taken up by Lucio Fontana in his second Manifesto in which he states that art will remain eternal as a gesture but will die as matter. Artists, in the past, have sought to find the material most apt to make their works endure as long as possible, which is to say they have remained conscious or unconscious victims of matter and have caused the decadence of their pure and eternal gesture into something durable in the light of the impossible hope of immortality. What the Spatialists wanted to do was to unchain art from matter, to unchain the sense of the eternal from the preoccupation with the immortal.

> "We don't care if a gesture, once performed, lives for a moment or a millenium, since we are truly convinced that once performed it is eternal."

The resources provided by modern technology were to play a major part in man's evolution of a new art. Fontana argued that with the impulse begun with modern science it was impossible for man not to go onward from canvas, bronze, plaster and plasticene to pure and aerial, universal, suspended images, just as it was impossible in the past for man not to go onward from graffiti to canvas, bronze, plaster and plasticene themseves. It was no longer possible to adopt images fixed into the needs of the past to the new needs of the present.

> "Art is not in decadence, but it is slowly entering into the new evolution of its means. Stone and bronze inexorably give way to ... new (materials which in turn demand new techniques), just as concrete, metal, and glass have created a new style of architecture. There can be no evolution in art with paint or stone; a new art will be possible only with light and television, and only the creative artist will be able to transform these techniques into art." (6).

In an effort to create what could be described neither as painting nor sculpture but "immediate art" (7) Lucio Fontana, in 1948, began a series of "Evoluzioni" which were preliminary ideas for later environments in which space becomes active. He made his first such environment with spatial elements and ultraviolet light on February 5, 1949, at the Galeria del Naviglio and titled it Ambiente Spaziale (Fig. 8.) In the origin the idea for this environment had to do with Baroque considerations of active space and the effects of suggestion.

This same aspect of Fontana's aesthetic idiom can be seen in Fonti di Energia, a luminous spatial decoration for a pavillion at "Italia '61", Turin and in the single works hung on the walls of his 1967 show at Amsterdam's Stedelijk Museum. In those pieces we have an active spatiality that goes beyond all the limits, and uses a power of suggestion on the spectator. The spectator, in turn, is caught up in it and cannot avoid psychic participation. Even though Fontana's tendency was always towards an active space that involved the public, in 1951, he made a luminous spatial decoration at the entrance of the art pavillion at the 9th Milan Triennale, with its grouping of neon tubes, intertwined, forming an aerial design of two hundred metres long, suspended above the spectators who were, therefore, unable to enter into the artist's environment and had to look at it instead.

Through these examples of luminous forms in spaces, Fontana demonstrates that a new aesthetic is in formation in which movement, colour, time and space become the concepts of the new art. In his Technical Manifesto, read at the 9th Milan Triennale in 1954 Fontana concludes that;

> "... After several millennia of analytic artistic development, we have come to the moment of synthesis", and he sees that synthesis "as a sum of physical elements : colour, the element of space, sound the element of time, and movement that develops in space and time. These are the fundamental forms of the new art, which contain the four dimensions of existence." (8).

The interest Lucio Fontana developed in the aesthetic environment encouraged an active rather than a passive relationship between man and the environment.

He created, within the greater physical space of his wider environment, a space which exists on its own terms, entirely encompassed by the artistic imagination. The artistically planned environment is always concerned with organising inner space so that either the art object is brought into relation with the overall atmosphere or it is absent altogether. Therefore, to create an environment is at the same time to enlarge a plastic statement, and to contain it within a space which possesses its own platic meaning. A plastic statement of this kind can be entirely static in character, as in the case of Lucio Fontana for example, and yet play its part in the dynamic representation of a plastic element (for exmaple, colour, light in space) and in relating that element to the spectator.

The space of a cave environment, of a Roman tomb or Gothic cathedral is a reflection of its contemporary socio-historical context; a decorated "lieu" solely for the purpose of ceremonies. The "modern" environment on the other hand, is concerned with quite different criteria; it is mainly an independent artistic statement in space which invites the spectator to pronounce a critical, aesthetic or ideological judgement. If it still contains some objects or phenomena of aesthetic value the accent lies on the overall dematerialized artistic atmosphere and not on individual treasures. Environmental art was concerned with much more than response. There was a concern for the "life" of the work of art and not only its forms. Now we equate art as much with activity as with object. We expect art to do much more than stand before us. We want it to engage in a dialogue with the environmental life process. According to Allan Kaprow it was the Cubists who began this dialogue with the environment when they stuck foreign matter onto the canvas.

> "With the breakdown of Classical harmonies the introduciton of 'irrational' or nonharmonic juxtaposition, the Cubists tacitly opened up a path to infinity. Once foreign matter was introduced into the picture in the form of paper, it was only a matter of time before everything else foreign to paint and canvas would be allowed to get into the creative act, including real space." (9).

Allan Kaprow, originally an action painter moved logically from collage to assemblage into space-encasing environments and then into "Happenings", which broke down all restrictions upon space and materials. In the freest of his works, the field is created as one goes along, rather than being there a priori as in the case of a canvas of certain dimensions. Process assumes more importance than an object to be contemplated. In the middle 1950's Allan Kaprow extended the collage principle into time when he escalated an exhibition of his assemblages into an all over environment with moving parts, for example, Penny Arcade (1956).

> "Not satisfied with the suggested through paint of our other senses" he wrote at the time, "we shall utilize the specific substances of sight, sound, movement, people, odours, touch. Objects of every sort are metaphors for the new art". (10)

Subsequently, he pushed the collage technique one step further to pure happenings which were, he wrote "in structure and content a logical extension of 'environments'". (11).

Allan Kaprow outlined certain rules-of-thumb which could be cited as pertaining to "Happenings". (12). The first of these required that the line between art and life should be kept as fluid, and perhaps, indistinct, as possible. In this way the reciprocity between the man-made and the ready-made would be at its maximum.

Secondly, the sources of themes materials, actions, and the relationships between them were to be derived from any place or period except from the arts. By avoiding accepted artistic modes, Kaprow hoped to develop a new language that would have its own standards. Allan Kaprow cited A United States Marine Corps manual on jungle-fighting tactics, a tour of a laboratory where polyethylene kidneys are made, the daily traffic jams on the Long Island expressway as being more useful as sources for "Happenings" that Beethoven, Racine, or Michaelangelo. Thirdly, Kaprow required that the peformance of a happening should take place over several widely spaced, sometimes moving and changing locales. A single performance space is too limited as it tends towards the static and resembles conventional theatre practice. For example, a Happening might begin along several points on a heavily trafficked avenue; then the several rooms and floors of an apartment house where some of the activities are out of touch with each other; then on more than one street; then in different but approximate cities; finally all around the globe. This according to Kaprow, would make for increased tension between the parts while on the other hand it permits the parts to exist more on their own, without the necessity of intensive co-ordination. A Happening could therefore be composed for a jetliner going from New York to Luxembourg with various stops along the way. Another Happening could, for example, take place up and down the elevators of five tall buildings in midtown Chicago. Furthermore, time in a Happening should be variable and discontinuous.

It is only natural that if there are multiple spaces in which occurences are scheduled, in sequence or even at random, time would acquire an order that is determined more by the character of movements within environments than by a fixed concept of regular development and conclusion,. Lastly, Allan Kaprow believed that a particular Happening should be performed only once. Whether due to chance or the lifespan of materials or to the changeableness of the events it is unlikely that a Happening could ever be repeated. To repeat a Happening would be a compromise of the whole concept of chance which was regarded as an integral part of a Happening. It follows then, that audiences should be elimitated enitrely. Ths would lead to an integration of all the elements - people, space, the particular materials of the environment and time. A Happening with only an emphatic response on the part of a seated audience is not a Happening but stage theatre.

Where space was once static and the spectator a passive observer, now it becomes kinetic and he/she a participant. If Jackson Pollock regarded the canvas as an area within which the painter acts and represents his actions, Kaprow, in pure Happenings removed the canvas, so to speak, and made the action itself into an artistic event.

> "... Space is no longer pictorial, but actual (and sometimes both); and sounds, odours, artificial light, movement and time are now utilized." (13).

From this kind of career follows the strictly contemporary idea that the artist is ultimately not a painter nor a sculptor, but a man/woman engaged in a creative adventure that will involve him/her in a variety of media. "'Artist' refers to a person wilfully enmeshed in the dilemma of categories, who performs as if none of them existed." (14). Kaprow and his generation of avant-garde artists, including John Cage and Merce Cunningham, in their revolt against aesthetics, incorporate a radically changed attitude on the part of the artist towards his audience. Instead of presuming to investigate reality and hand down his findings to the populace, the artist-heretic invites the spectator to participate actively in the creative process by interpreting the work as he pleases, or by experiencing it without interpretation.

John Cage challenged the power of art to communicate ideas and emotions, to organize life into meaningful patterns and to realize universal truths through the self-expressed individuality of the artist. Instead of the accumulation of masterpieces, he urged a perpetual process of artistic discovery. In so doing he extended the boundaries of musical art and in essence proposed the complete, revolutionary overthrow of the most basic assumptions of western art since the Renaissance. He described the purpose of writing music in the latter half of the twentieth century as "purposeless play".

> "This play, however, is an affirmation of life - not an attempt to bring order out of chaos nor to suggest improvements in creation, but simply to wake up to the very life we're living, which is so excellent once one gets one's mind and one's desires out of its way and lets is act of its own accord" (15). (1957).

Cage used silence in much the same way that contemporary sculptors were using open space, or "negative volume", that is, as an element of composition in itself. Cage claimed that everything we do is music and in this spirit, his latest compositons moved out of the field of time altogether, and into space. For example, when performing his Variations IV composed in 1963 he obtained a map/plan of the performance area (hall, theatre, clearing in the woods); he then placed over the map plastic transparencies with inked lines, dots and circles, whose intersection determined where the sound was coming from. "It doesn't matter what sounds are coming up, what's interesting is where they come from." (16). Merce Cunningham, Cage's contemporary in the field of music too claimed that "... there is no 'statement', no underlying idea or meaning." (17) in his art. He, like Cage, invited the spectator to interpret the atmosphere of each dance in any way that he/she wishes.

A third contemporary, Jean Tinguely, also believed that to try to check life in mid-flight and re-capture it in the form of a work of art, a sculpture, painting, dance or piece of music was a mockery of the intensity of life. Life is movement. Everything transforms itself, and to try to stop it, as artists in the past have done is foolish. He echoes the ideal of Moholy-Nagy's achievement in Light Space-Modulator and Tatlin's Monument to the Third International when he said "I want only to involve myself in the moving object that forever transforms itself." (18). A statement of Tinguely's artistic ideas again echoes those artists who, before him, sought freedom and the overthrow of the static ideal of classical art with all of their might:

> "Everything moves continuously. Immobility does not exist. Don't be subject to the influence of out-of-date concepts. Forget hours, second, and minutes. Accept instability. Live in time. Be static - with movement ... Resist the anxious wish to fix the instanteneous, to kill that which is living ... Be free, live. Stop painting time. Stop evoking movement and gesture ... Live in the present; live once more in time and by time - for a wonderful and absolute reality." (19).

Another, younger artist, engaged in the creative adventure which involves him with an active use of space and a variety of media is Jonathan Borofsky. Jonathan Borofsky's aim is to make people aware of the space they are in and not the space the object occupies on the wall. He thinks of his installations as three-dimensional paintings in which the viewer is allowed to participate.

> "I want to fill up the whole room and get a swirling effect, to imitate a galaxy, get an energy through the room, and activate the space with images, ideas and sounds." (20).

He activates the gallery spatially and visually by using various images, subjects and styles that jump around the space. For exmaple, in the Paula Cooper Gallery 1979, he used paintings on canvas, large and small drawings on paper, drawings directly on the walls and three dimensional sculpture. He delights in stressing the concrete essence of the object (canvas) holding an image. Thus canvases are found on the floor; empty stretchers are exhibited, paintings spin or are shown tilted, upside down, or on the ceiling. But for Borofsky, the installation is most of all involved with space and that space is wherever he is for a limited duration.

> "My studio is wherever I am. For me, to be in a space for three weeks and deal with that space is like making a painting. My work is concerned with three-dimensional interior structure, and I try to make people aware of the space they're in, in a holistic way." (21).

Borofsky's understanding of space is a very broad one. It concerns the space of the room and of the geographical locale, the space of the mind, and finally space of the cosmos. His installations of 1975 in the Paula Cooper Gallery mirrored the energetic flux of the mind. For Borofsky a lifelike somewhat chaotic atmosphere was more important than producing simple works of art. His aim was for a total artwork, "all is one", combining media, senses, and styles so as to envelop and effect his audience completely - physically, emotionally and intellectually.

Jonathan Borofsky describes the ping-pong table at the Paula Cooper Gallery, New York, 1980 (Fig. 9) as the ultimate work of art containing everything.

> "The ping-pong table is everything; installation, content, sculpture, painting, sound and participating piece. It's the ultimate work for me." (22).

The participant is free to become involved with this piece on a physical, emotional or intellectual level; he/she can play a game on this museum table. If however, the ambiguity of the "Free° Free to play" sign over the ping-pong table is realized the participant has to decide whether or not he/she feels free to pay on this planet with the arms race between east and west going on.

The choice to act lies with the spectator.

The aim of these artists - Kaprow, Cage, Cunningham, Tinguely and Borofsky was to create art that was as close to life as possible, an art that was as changeable and varied and alive as the audience. This interest in change, Matta, the Chilean surealist, saw as being,

> " ... the pre-occupation of our time and science, in mathematics, in philosopy - the morphology of form, relativity, its all the same problem." (23).

Allan Kaprow, too, recognized that change has become a forming principle of art. According to him, change manifests itself through works which are not finished, whose points are detachable, alterable, and rearrangeable. It also manifests itself through making creation, growth, and decay of the art object part of the work's experience.

## CHAPTER III

## FOOTNOTES

1. Lucio Fontana and the Spatialists attempted to re-accept the challenge of kineticism after the Consctructivists of the 1920's and 1930's had lost their impetus. The strength of the White Manifesto, written by Fontana and the Spatialists, lies in its realisation that motion and plastic art are inseperable goals. In this manifesto Fontana defined the conditions under which artists could surmount the static qualities of pigment and stone.
2. Douglas Davis, Art and the Future, p. 52.
3. Tommaso Trini, "The last interview given by Fontana" (1968). Studio International, November 1972, p. 164.
4. Lucio Fontana, Technical Manifesto, reprinted in Lucio Fontana, Guido Ballo, p. 206.
5. Ibid., p. 206.
6. Lucio Fontana, Second Manifesto, reprinted in Lucio Fontana Guido Ballo, p. 121.
7. Ibid., p. 121.
8. Lucio Fontana, Technical Manifesto, reprinted in Lucio Fontana, Guido Ballo, p. 129.
9. Richard Kostelanetz, Metamorphosis in the Arts, p. 216.
10. Ibid., p. 15.
11. Ibid., p. 15.
12. Allan Kaprow, "The Event", reprinted in Theories of Modern Art, Richard Hertz, (Ed.), p.p. 243 - 251.
13. Richard Kostelanetz, Metamorphosis in the Arts, p. 15.
14. Ibid., p. 25.
15. Calvin Tomkins, The Bride and the Bachelors Five Masters of the Avant-Garde, p. 73.
16. Ibid., p.p. 137, 138.
17. Ibid., p. 247.
18. Ibid., p. 150.
19. Ibid., p. 162.
20. Mark Rosenthal and Richard Marshall, Jonathan Borofsky, p. 153.
21. Ibid., p. 24.
22. Ibid., p. 146.
23. Calvin Tomkins, The Bride and the Bachelors Five Masters of the Avant-Garde, p.p. 23, 24.

## CHAPTER IV

This chapter deals with Carl Andre and Richard Serra, both minimalist artists, who questioned the validity of art as an object and began instead to explore the possibilities of sculpture as place. The first step taken by these artists in their attempt to displace the art object, was to promote the creative process itself. The need to experiment became more important to them than the urge to make art objects. Immateriality and impermanence became the two primary aesthetic strategies designed to combat an overemphasis on "precious objects" and to open up possibilities for experimental art and spectator participation. The approach of these artists to art was a democratic one in which everyday materials such as bricks, rocks, wood and steel were used and in which commonplace activities like throwing, leaning, scattering and piling were explored; and furthermore, they believed that there is no sense in having the best possible view of a work. It is only through walking around, through, into and along the work that the spectator gains and experience of it. The space in which the work is situated becomes an integral part of its meaning and this can only be appreciated and understood by the spectator who becomes actively involved with the piece of work.

Change has become the forming principle of a large number of art works produced in this century and continues to be a forming principle in art to the present day. This concern with change manifests itself in an active interraction between the artist, the work of art and the spectator.

As a result we have the potential for a more energising art which fulfills some of the demands of our time for a dynamic, rather than a static relationship between man and the world. The challenge to the artist in producing such art is one in which he/she must question his/her approach to art making. The artist can no longer be content to work within traditional structures like painting and sculpture without fully realising their limitations and he/she must be aware of the audience as potential active participants in making for a more dynamic art.

> "Being an artist now means to question the nature of art. If one is questioning the nature of painting (or sculpture) he/she is accepting the tradition that goes with it. That's because the word art is general and the word painting is specific. Painting is a kind of art. If you make paintings you are already accepting (not questioning) the nature of art." (1).

To achieve a more dynamic art it seems necessary for the artist to work as Moholy-Nagy and Lucio Fontana did, in the space between painting and sculpture, because it is only there that freedom from the constraints imposed by the traditions of both painting and sculpture can be found. It is only then that art that goes beyond such limitations can be made. One of Sol Lewitt's sentences on art further illustrates this point:

> "When words such as painting and sculpture are used, they connote a whole tradition and imply a consequent acceptance of this tradition, thus placing limitations on the artist who would be reluctant to make art that goes beyond the limitations." (2).

To make art today is to question the very way of life and production system in which is is involved.

This is why each new work implies a confrontation with this very mode of production, whether in its broad sense (socio-economic system), in which case the work replies to or makes a pact with this sytem, or in its strict sense (technique of artistic production), when what defines each artistic project is not it's style but rather the technique used: Nauman's sound rooms, Levine's gravityless ones or Christo's wrappings.

The Minimalist sculptors, many of them former painters, sought to take compositional relationships out of their works thus making them a function of real space and of the viewer's field of vision. Many of these artists were no longer concerned with making "objects" but with technique and process. Although primarily a land artist, the discontent with the object expressed by Dennis Oppenheim was similar to that felt by many Minimalist sculptors.

> "Gradually I found myself trying to get below ground level. Because I wasn't very excited about objects which protruded from the ground. I felt this implied an embellishment of external space. To me a piece of sculpture inside a room is a disruption of interior space (...), when I cut wedges from the side of a mountain. I was more concerned with the negative process of excavating that shape from the mountainside than with making earthworks as such ..." (3).

Carl Andre too, began to question very seriously the validity of the object and began to talk instead, of sculpture as place:

> "... A place is an area within an environment which has been altered in such a way as to make the general environment more conspicuous. Everything is an environment, but a place is related particularly to both the general qualities of the environment and the particular qualities of the work that has been done." (4).

A place, for Andre, dictates what form the work should take - either integrating with its setting or jarring against it.

Carl Andre's influential formal solution to the displacement of the art object was to use flexible unfixed units like bricks and other "particles" and to take his sculpture back to "ground level" - to the floor or the earth - rejecting the pedestal and felling the traditionally anthopomorphic stance of heroic vertical sculpture by identifying with roads and journeys. Richard Long and Hamish Fulton continue to work on the themes of roads and journeys, initiated by Andre. In his outdoor work, Richard Long managed to make a dematerialized form of sculpture that remains highly pictorial, an art that is both physical and poetic.

> "A walk expresses space and freedom and the knowledge of it can live in the imagination of anyone, and that is another space too ..." (5).

The idea behind this art is to open up the gallery doors, to let in nature and daily life, while at the same time letting art from the gallery escape into the streets and fields.

In this sense it reflects one aim of the Conceptual artist whose impulse it was to open the doors and windows of the museum to the world around it. They wanted to extend the notion of the art object beyond that of static, permanent and discreet which displayed qualities of "aesthetic rightness" and to which universal values could be applied.

This impulse is summed up by the Art and Language groups (set up in Britain in 1968, it included Terry Atkinson, David Bainbridge, Michael Baldwin and Harold Hurrell).

> "... if a bottle rack can be asserted as a member of the class 'art object', then why not the department store that the bottle rack was displayed in, and if the department store, then why not the town in which the department store is situated, and if the town then why not the country ... and so on up to the universal scale." (6).

Conceptual art is the liberation from thingness, as it is eternalized by the production of art objects. Art hardware is superfluous since art is not vested in the art object but in the artist's discovery of the process of how to form it.

The promotion of the creative process was the first step in the unseating of the art object. The urge to experiment came to dominate the urge to make an art object. Jan Dibbets expressed the core of this sentiment when she said;

> "I don't make the eternal work of art, I only give visual information. I'm more involved with the process than the finished work of art ... I'm not really interested any longer to make an object." (7).

Lucy Lippard sees immateriality and impermenance as the two prime aesthetic strategies designed to combat over-emphasis on "precious objects" and to open up new audiences for experimental art. In Overlay she sites Process Art, Earth Art, Conceptual Art and Performance Art as sharing a desire to de-emphasize the final work and emphasizing instead how it came to be.

Sculptors, among them Carl Andre, Robert Morris, Jan Baxter, Richard Serra, Eva Hesse, Dennis Oppenheim, explored gravity and random or nautrally ordained activities like scattering, piling, leaning, breaking, by which matter and shape are then formed.

The democratic form of this type of work is further expressed in its non-hierarchical format. It is art that does not reveal itself at a particular or from a particular point. There is no sense in having the best possible view for the work. Carl Andre expresses the essence of this democratic approach;

> "My idea of a piece of sculpture is a road. That is, a road doesn't reveal itself at any particular point or from any particular point. Roads appear and disappear ... We don't have a single point of view for a road at all, except a moving one, moving along it." (8).

Carl Andre's situational works, that is, sculptures where the materials, sometimes purchased or found (rather than fabricated) are brought into a particular space. These pieces exist in that situation and only for the duration of their display. The parts can therefore be seperated and retrieved, and later organized into a totally different work - what Carl Andre calls "clastic" art (clastic means broken parts which can be put together ot taken apart without cementing). Most situational scupture is distributed haphazardly over a space, where nothing in particular within that field arrests the viewer's attention.

> "So you can be in the middle of a sculpture and not see it at all - which is perfectly all right." (9).

The work becomes one with the setting. For example, Lever (1966) (Fig. 10), consisting of one hundred and thirty seven pieces of fire bricks laid side by side in a single line thirty feet across the floor and Prospect 68 made up of thirty eight wooden units (forming a narrow walk, slightly above the ground). In this latter piece, Andre exploits the property of the wood and allows the spectator to experience it by walking over the wood - the sound of the piece of work and its possible sense of friction is experienced by the spectator who walks on it. Both the work and the experience are impermanent by design and entirely depend upon the surrounding situation and the artist-spectator participation.

The rejection of "fixed-point vistas" (10) is essential to the Minimalist conception of sculpture. Unlike monolithic sculpture which was possessed by the idea of mass and presentation of a continuous surface, enclosing a volume and motivated by its centre, sculpture of extension on the other hand, is open, airy and explores discontinuous forms, often suspended in space. Centrifugal sculpture abandons the idea of sculpture altogether so that instead of enclosing a volume of its shape allows the free use of spaces as essential parts of sculpture. One becomes involved with these spaces, as if they were a kinetic compulsion to move into and around them. The eye no longer plays over the surface; no longer the constraint to think of front or back. Without recourse to illusionism sculpture has become truly spatial.

Extension of art works is achieved in different ways - by means of numerical multiplication in the sculptures of Eva Hesse, Carl Andre and Donald Judd; by means of increased physical scale of objects and phenomena in the works of Richard Serra, Christo and Smithson; by exposing artist's word in places that are open to many people's eyes and by the use of broadcasting and television techniques in Jan Dibbets' work. This abandonment of carefully crafted objects made for interior use and preservation has prompted painters and sculptors and their allied colleagues, Cunningham and Cage, to use materials more difficult to order in traditional ways - earth, loose pieces of felt, feedback electronic imagery, sound from the environment. The more these artists exchange static strategies and display spaces for conceptual and performance structures - billboards, the earth, sky, t.v., the less inevitable becomes the association between the fine arts and the physical. As a result the viewer finds himself/herself sharing the same space as art. This brings about a new perceptual situation for the spectator and challenges him/her to form a new relationship with art, based on active participation rather than passive observation.

In a radio interview with Liza Bear on February 23, 1976, Richard Serra reveals an attitude to place similar to that expressed by Carl Andre:

> "What I'm interested in is revealing the structure and content and character of a space and a place by defining a physical structure through the elements that I use ... lately, I've been using steel to make open or enclosed spaces, inside and outside." (11).

He considers the viewer's involvement with the work to be vital. An example of Serra's attitude to place and viewer alike is the installation Delineator (Fig. 11) consisting of a plate flat on the floor and a plate across the ceiling bisecting the one on the floor. The ceiling is thirteen and a half feet high, and the plates are each ten feet by thirty-six feet. The overhanging plate is about two and a half tons. The sculpture defines a definite place inside the room. The juxtaposition of the steel plates forming this open cross generates a volume of space which has an inside and outside, openings and directions, aboves, belows, rights, lefts - co-ordinates to the viewer's body that he/she understands when he/she walks through it. The only way to understand Delineator is to experience the place physically, and a person cannot have an experience of space outside of the place and space that he/she is in. As the viewer walks towards its centre, the piece functions either centrifugally or centripetally. The viewer is forced to acknowledge the space above, below, right, left, north, east , south, west, up, down. All his/her psychophysical co-ordinates and senses or orientation, are called into question immediately. The viewer senses a volume of verticality lifting up from the floor to the ceiling that he/she becomes a part of.

> "You're the shaft of the piece in the sense that you complete the piece. From the outside there's really no discernment of volume - you only sense it when you're standing on the bottom plate with the other plate above you." (12).

Sight Point (Fig. 12, 13) situated outside the Stedelijk in Holland is a further exmaple of Serra's articulation of space.

What is involved here are three steel plates ten feet wide, forty feet high and two and a half inches thick; the pieces weigh about sixty tone. The three plates lean at an angle of eleven degrees inward and to the right, forming a trangular space on the ground with three openings which are three feet wide at ground level, and about two feet three at eye level. The plates first cross at twenty feet and continue to cross until they reach their apex where they each hit at two points forming an equilateral triangle, four by four by four. Basically, what we have here is an open truncated pyramid with overlapping planes, forming an equilateral triangle which is about thirteen feet across and looks up forty feet through a triangle that frames the sky. The volume of the piece is experienced as a physical characteristic, and it's controlled, not only by the enclosure, but primarily by the light that comes in from any one of the four openings. The experience is different given the time of the day or the position of the sun.

The common denominator between Sight Point and Delineator is vertical volume. Sight Point achieves it through an enclosed shaft, in Delineator the volume is experienced when the perceiving body enters into its space which is configured by the overlap of two steeel plates. the physicality of the field force is understood by an engagement with that specific volume.

Richard Serra's sculptural pieces of 1968-1969 favoured the pouring of molten lead into the joint where the wall meets the floor, allowing the material to dry slightly, and then pulling it along the floor, its jagged edges revealing the process of its origins.

Serra's procedure implies that the eventual shapes and layout of the strips would be different with each setting. This interest in how art changes depending on its surroundings was taken up by Barry Le Va in his exploration of commonplace activities like throwing, pouring, breaking, running and blowing. A similar attitude of acceptance towards the commonplace was shared by John Cage in his use of "found sounds" in an urban or rural environment. Thus the innovative link between the duration, material and situation of these works is evident and further emphasized when one looks at the words used by art critic Max Kozloff in his review of the "Ten in a Warehouse" exhibition held in New York.

> "Instead of being dismantled, unkooked, dollied, and crated, these sculptures have to be rolled up (Bollinger), swept away into a pile (Serra), chipped and chiselled from a corner (Serra) and scraped and scrubbed from a corner (Sonnier)." (13).

These are the words one would normally use when describing everyday activities and not when referring to art. The direct response of these artworks to their setting has had a rejuvenating effect on art, bringing it out of the realm of the precious masterpiece, (which never reveals the process of its making and retreats instead into a timeless metaphorical space) and into the more direct and lived encounter. A purely visual response is no longer adequate as many artists today demand a total response from the spectator.

## CHAPTER IV

## FOOTNOTES

1. Gregory Battcock (Ed.), Idea Art A Critical Anthology, p.p. 144 - 148.
   Although not a Minimalist artist, this comment by Joseph Kosuth is particularly relevant in this context. Kosuth gave up painting in the early 1960's and worked instead with glass and water. This was in an effort to avoid composition and to make art that could be classified neither as sculpture nor painting. In 1965 he began to use words in his art as he was trying to do work with the "relations between relations" (Jeanne Siegal Artwords: Discourses on the 60's and 70's, p. 225). Kosuth was exploring the fundamental role of the object and how it works as art thus bringing into question the whole framing device of context.
2. Lucy R Lippard, Six Years - the Dematerialisation of the Art Object, p. 75.
3. Ibid., p.p. 183 - 184.
4. Ibid., p. 47.
5. Lucy R Lippard, Overlay Contemporary Art and the Art of Prehistory, p. 129.
6. 1965 to 1972 - When Attitudes Became Form, p. 31.
7. Carla Gottlieb, Beyond Modern Art, p. 364.
8. Lucy R Lippard, Overlay, p. 125.
9. Carla Gottlieb, Beyond Modern Art, p. 246.
10. Ibid., p. 246. This is a phrase used by Carl Andre.
11. Clara Wezergraf, Richard Serra : Interviews, etc., 1970-1980, p. 60.
12. Ibid., p. 61.
13. Richard Kostelanetz, Metamorphosis in the Arts, p. 72.

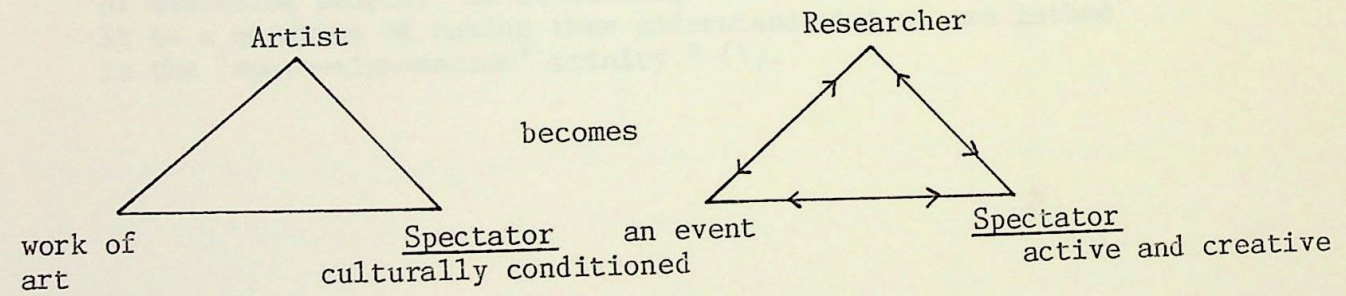
## CHAPTER V

Moholy-Nagy is cited in this Chapter as being an initiator, at least on a theoretical level, of active spectator participation. The attempts of three of his pioneers namely, Yaacov Agam, Roy Ascott and Lygia Clarke to further the principle of spectator involvement initiated by Moholy are described. The growing centrality of the body in the perceiving act became a major factor in the work of these three artists. This application of phenomenology to the psychology of perception became a prime concern of the French philosopher, Maurice Merleau-Porty and his influence on how Minimalist art came to be understood is a central concern of this chapter. This approach of phenomenology to perception gives to the spectator greater autonomy in understanding and experiencing art works and thereby enhances his/her manner of relating to the world. It is because of this approach that the art work is no longer viewed as an end in itself but as a means by which perceptual experiences are made possible.

The symbiotic relationship of sculpture and viewer becomes the real object of experience in the works of such Minimalist artists as Donald Judd, Richard Serra and Robert Morris. The size of a particular sculpture - whether object size, as in the case of Donald Judd's works, or physically enormous as in the case of the sited sculptures of Richard Serra, Robert Morris and Nancy Holt - is not important; it is the scale of the work and the response it evokes from the spectator that gives it significance. It is the material quality of the work, the space enclosed by it or surrounding it and the time it takes the viewer to explore the piece of work that gives it meaning.

Without a dynamic relationship with a spectator or spectators the work would lose all significance and its enormous size, as in the case of Robert Morris's Observatory would become an absurdity.

Some form of soliciting the spectator has always existed within the field of art. Previously, popular ritual and tribal participation in dance; theatrical or magician's performances during popular feasts had a highly organized character and left the spectator little initiative. Now the appeal is for a greater response, both contemplative and physical.




(A) Passive model (B) Active model.

The works and ideas of the vibration artist Jesus Raphael Soto mark a change in attitude towards the role of the spectator in art and help, at this point to illuminate what was a prime concern for many Minimalist sculptors in the 1960's and 1970's. Soto's penetrable structures are the outcome of a new awareness of the phenomenal world and physical and optical occasions. He deliberately plans his work of art as an object.

These "penetrables", for example, Penetrable, Pampatar, Venezuela often incorporate a tactile and even occasionally a serious element but they are still the logical outcome of the "visual" elements which he created previously. He proceeds step by step, through the 1960's and 70's from an optical to a fully poly-sensorial involvement of the spectator. This development in his work reflects a growing awareness of man's changing relationship to the world.

> "Previously the artist felt himself to be an external witness of the world, whose harmonies he recomposed in his own manner from outside - in creating relationships of form and colour on the canvas. By contrast, in our time, we feel ourselves to be in the world in the way a fish inhabits the sea. We are no longer observers, but constituent parts of the real. Man is no longer over here, with the world over there. He is within a plenum, and it is this plenum that I want to be experienced in my all enveloping work. It is not a matter of maddening people, of assaulting them withoptical effects. It is a question of making them understand that we are bathed in the 'space-time-matter' trinity." (1).

Moholy-Nagy helped initiate the participation of the spectator - at least on a theoretical level. In "Manifesto of Constructive - Dynamic Forces" published in Desturm (1922) he proclaimed a "dynamic constructive system of force."(2) in which the spectator shares in the unfolding of the elements at work. Up till then, he said man had been merely receptive in observing works of art. He saw,

> "... the beholder, hitherto receptive in his contemplation of art-works, undergoing a greater heightening of his powers than ever before and actually becoming an active factor in the play of forces." (3).

Moholy saw his own works as only experiments, demonstrational devices, to explore the relations between man, materials, forces and space. the work is no longer an object to be contemplated. It is something which evolved in time like music or dance. It is the joint product of the activity of both spectator and object.

Yaacov Agam (Israeli), Roy Ascott (British) and Lygia Clark (Brazilian) were the three pioneers of Moholy-Nagy's principle of spectator participation who went further in exploring just how involved the spectator could be. In 1953-54 Yaacov Agam began to undertake simultaneous research into what he called transformable structures (the equivalent of paintings and reliefs) and transformable objects (the equivalent of sculpture). The stress was laid from the outset on the itinerary which the spectator was to undertake in front of his structures. He/she was to take up successive positions in front of the reliefs in order to discover the sequence of changing lines, forms, colours and structures which offered themselves to him/her from different and exclusive angles. Hence it was the spectator's movement, and not the movement of the work, that was emphasized. Like Soto, simultaneous optical and tactile involvement of the spectator with the work is the goal of Agams' art.

Roy Ascott aimed to achieve a wider "cybernetic" awareness through acting on the psychology of the spectator, who was invited to regroup the elements of the technological universe and exploit certain of its meanings.

Ascott is in effect concerned with creating "triggers" and thereby initiating creative behaviour in the observer because he believes modern art to be characterized by a behaviourist tendency in which system and process are cardinal factors. As distinctions between the various arts - music, dance, poetry, painting become blurred a behaviourist synthesis can be seen to evolve in which dialogue and feedback are central factors. The artist becomes an intermediary whose work, no longer an object, succeeds in eliciting behaviour from the spectator.

The successive phases of Lygia Clark's art exemplify her growing concern with man as the living structure of a cellular architecture where, whatever is left of the object, completely loses its meaning. What is important to Clark in Cellular Architecture, Paris 1973, is the human link between the participating women and not the "object" they are creating.

Clarke's early preoccupations were with space and mathematics and centred on simple modular forms with hinged planes which enable the spectator to create new configurations of volume and surface. In 1960 she described her constructions as if they were "living".

> "My latest works have been called 'animals' because of their essentially organic aspect ... The animal has his own, well-defined cluster of movements which react to the promptings of the spectator. He is not made of isolated static forms which can be manipulated at random, as in a game; no, his parts are functionally related to each other, as if he were a interlinked. The first movement (yours) does not belong to the 'animal'. The interlinking of the spectator's action and the 'animals' immediate answer is what forms this new relationship, made possible precisely because the animal moves - i.e. has a life of its own." (4).

She goes on to say that in this context the subject and object tend to disappear. The "work" is no longer something to be contemplated, but something which evolves in time like music or dance. But it is more like music played or a dance danced, for it is the joint product of the activity of both spectator and object. It is more important to Clark that her work has the possibility of becoming part of a dialogue with the spectator, rather than remaining an object apart.

At the Venice Biennale in 1968 Clark realized a labyrinth entitled The House is the Body (La Maison est Le Corps) where the participants were invited to pass through a series of different cells which prefigured the phases of conception: penetration, ovulation, germination and expulsion. Much of the work's success depended on the spectator participation. The object, at this stage, and indesponsible medium in in Clark's work, offered tactile stimulus enabling the participant to become more aware of his/her own body and its capacity to experience. Experience of the artwork thus becomes an existential act on the part of the observer.

The centrality of the body in the perceiving act has been increasingly explored in philosophy, particularly with the application of phenomenology to the psychology of perception. As a result of his fundamental questions concerning the everyday modes of perception, the French philosopher, Maurice Merleau-Porty, has had a special and growing relevance for writers and painters - and, with the rise of Minimal Art in the early 1960's for sculptors also.

This has resulted in a shift of emphasis away from a concern for form reduction and formal relationships and towards the varieties of experience which surround the perception of form. Thus Merleau-Porty has written at length, on the problems of phenomenology that deal with the arts as alterations of the visual process.

> "To experience a structure is not to receive it into oneself passively, it is to live it, to take it up, assume it and discover its imminent significance." (5).

Traditionally the sculptor has concerned himself with the making of objects - even when these objects served only to objectify theories or non-concrete expressions of reality. In general, the sculptor has given little thought to the fact that the viewer not only is free to but must reconstruct the sculpture for himself/herself. In this respect, the act of perception and bodily gesture while standing among objects - and in turn being perceived by other people - forms the locus from which Merleau-Porty has developed his phenomonology. The perceiving person constantly interracts with objects, others, and self to create a close conceptual unity.

Merleau-Porty continually stressed the fact that perception allows us to know far more about things that we realize; therefore, a phenomonology of perception intends to give to organisms their own manner of handling the world. Merleau-Ponty's classic illustration of an artist relying on the fragmented "real" perception instead of abstract conceptualization from which to paint his pictures is Paul Cezanne. Cezanne did not mystify the world by painting idealistic images but struggled to make it as real as possible.

Most of the short history of nonrepresentational sculpture has revolved around the mechanics of "seeing" according to the logic of formal analysis. A new approach, based on Ponty's observations, would consider "seeing" as essentially an existential act by the observer. This special type of seeing is more attuned to situations than the construction of idealistic images. Through this approach the sculpted form is not an end in itself, but only the means - the vehicle - by which perceptual expriences are made possible.

Jack Burnham, in Beyond Modern Sculpture argues that since 1960 the vitalist and formal-reductionist tendencies of sculpture have approached exhaustion. Sculptors who chose not to investigate kinetics or some kind of representationalism were in search of a new post-formalist aesthetic. The urge to create "objects" that is, three dimensional entities that did not resemble sculpture had been building up for some time. In London this was best expressed by the enigmatic polychromed constructions of Phillip King and William Tucker. These artists created free-wheeling, polychromed pieces which, on the surface at least, seemed to have little to do with the much more restricted and self-conscious sculpture that appeared in New York during the 1963-1964 season.

This New York movement became known as "Object" or "Minimal" sculpture and its main protagonists were Donald Judd, Robert Morris, Ann Truitt, Tony Smith and Dan Flavin. Object sculpture admits to being itself - nothing else. Like other forms of non-objective sculpture, it seeks a seperate identity unattached to all influences except the space in which it stands.

This too was the claim of the Constructivists. However, the aura of scientific idealism that pervades their work gives it an iconic identity, an "image" flavour that denies all claims of independence.

Donald Judd is probably one of the best examples of an artist who uses space as a living component in his work. From environmental art he and Robert Morris saw the practicality of making sculpture hollow. They understood that a new vision of plastic art was feasible by applying this principle to plastic works which cannot be entered. For Judd structural regularity is substituted for balancing as the principle ordering the composition. He used symmetry in a non-relational way. He wanted things to be plain as possible and so avoid having parts that necessitate balancing. His holistic composition is were solutions to the problem of the edge in painting and the boundary in sculpture. In 1960 Judd begins to extend and simplify the polarity between the whole and its parts which he sees in Pollock's paintings. The quickening of activity in New York was, of course, very important for Judd's work. Exhibitions of paintings by Kenneth Noland, Alfred Jensen, Frank Stella, and Yves Klein and others, revealed that Judd was not alone in his concern with eliminating spatial illusion and his emphasis on a single non-expressionistic format.

Oldenburg's store opened in December 1961, displaying clothing and food made of muslin soaked in plaster and then painted. For Judd, this work emphasized how materials have meaning and strength in themselves. It is no surprise then that Judd made the transition from painting to sculpture in the years 1960 to 1962. For him,

> "the main thing wrong with painting is that it is a rectangular plane placed flat against the wall ... The shape of the rectangle is not stressed; the parts are more important, and the relationships of colour and form occur among them." (6)

This for Judd was a kind of hypocrisy, which he could not tolerate. he felt real space to be intrinsically more powerful and specific than paint on a flat surface. Working in three dimensions gave him greater freedom. He could use any shape, regular or irregular and in any relation to the wall, floor or ceiling; any material could be used, in its original state or altered through process (painting, oxidizing, heating, tearing etc.). His first three dimensional piece is a relief dated 1962 and consists of a black asbestos pipe, which bisects top to bottom a shallow, red rectangle, about nine inches deep. This was Judd's final effort to eke a strong physical presence out of two dimensions; the relief lands squarely in three dimensions. The sculptures that followed assumed a freedom in their relationship with the floor, wall or ceiling. In A Copper Box, 1972, (Fig. 14), he uses cadmium red paint to alter the bottom area of the box. This copper box which is three feet high and five feet square is open at the top to reveal the aluminium bottom. The bottom is light cadmium red; you cannot see the red until you look into the piece, but it is implied in this particular instance by the copper. The colour seems to rise as you look inside, you see this reflected expansiveness first, before the actual colour. The spread of colour into the metal is an illusion, but its effect is real and traceable.

Here, as always, Judd makes it clear that art is and has always been for him, an object, and what makes objects art is not the way they mirror the world and mimic men, but the way they seperate from the world, and involve, through visual perception, access to the artist's ideas and decisons about structuring experience.

The German poet Rilke, believed, as Donald Judd does, in the seperateness and objecthood of sculpture.

> "Sculpture was a seperate thing, as was the easel picture, but it did not require a wall like the picture. It did not even need a roof. It was an object that could exist for itself alone, and it was well to give it entirely the character of a complete thing about which one could walk, and which one could look at from all sides. An yet it had to distinguish itself somehow from other things, the ordinary things which everyone could touch. It had to become unimpeachable, sacrosanct, seperated from chance and time through which it rose isolated and miraculous, like the face of a seer. It had to be given its own certain place, in which no arbitariness had replaced it, and it must be intercalated in the silent continuance of space and its great laws. It had to be fitted into the space that surrounded it, as into a niche; its certainty, steadiness and loftiness did not spring from its significance but from its harmonious adjustment to the environment." (7) (1903).

The work of art is a "thing", (Kunstding rather than Kunstwerk) in the world but not of it, isolated from the spectator as though by a non-conducting vacuum. Rilke believed that it is the willed coherence of perception alone that structures the work and not anatomy or some imposed expressive purpose. Judd imposes a rigorously geometric format onto his sculptures. He excludes all references to the figure, to gesture, and to movement and so frees the work from traditionally held assumptions of how sculpture can be effective.

For Judd, it is more important to be personal and to present his ideas as an individual rather than to accept traditional schemes of composition which would involve a balancing of major and minor parts, one against the other, in a hierarchical structure. For Judd the best contemporary art represents individual decisions based on personal knowledge and provides a visual sensation that is immediate and comprehensible. Judd has no time for illusion; he has no investment in the old forms, in the old materials of sculpture. In Jackson Pollock's drip paintings Judd recognized something of the immediacy of materiality he wanted to achieve in his own work.

> "... the dripped paint in most of Pollock's paintings is dripped paint. It's that sensation, completely immediate and specific and nothing modifies it ..." (8) (1967).

He realized that the work of Jackson Pollock represented a departure from traditional composition. The drips are clear, but at the same time, they are subordinated to a new and total unity. While the drops are disorderly, the structure of the overall piece is more deliberate. In both Pollock's paintings and Judd's sculpture, you never lose sight of the exact physical nature of the source of the aesthetic experience; it is not obscure or mysterious.

Object sculpture attempts to present meaning as a series of perceptual expriences. Many of these are triggered by inconsistencies and slight ambiguities which put in question the harmony of all the physical attributes which make up the object. These include weight, colour, mass density, materials and gestalt complexity.

Ponty asserts that the meaning of these objects lies not in the sum total record of shots devoted to them, but in the concretion of a temporal gestalt, an aggregate of sequential views that distort each other like the inconsistencies of a Cezanne painting.

Take Donald Judd's stainless steel and pink-orange plexiglass box, Untitled (1964) (Fig. 15) for example. The two stanless steel ends are held against the plastic edges of the sides by five tension tie-wires inside. Because of the internal reflections, a number of mirror illusions are made possible, but the purpose of this box is not to evoke fragmented interior spaces . On the contrary, the simplicity of this rectangular shaped object induces the viewer to become involved with the properties of the box as a rectangular container. No clue makes any other approach possible. In fact, the more minimal an object, the less opportunity for the observer to play the game of admiration, so much a part of the image fixation of traditional sculpture. Stripped bare of all "artistic" complexity and ideal accretions, one is confronted with the box's real geometry as opposed to its given appearances.

It is only through moving around a piece of work and looking at it that the spectator can experience it and discover its significance. A statement by the Welsh artist Barry Flanagan, to an ICA Bulletin, illustrates how best to experience his own sculpture:

> "Those metal sculptures may best be seen perhaps, the way they were made, i.e. while walking around and looking." (9).

Although one naturally walks around contemporary sculpture it is not with the same sense of continuity with which one circles traditional sculpture, in which each view contains a prefiguration of all the views. Many of the sculptures of Anthony Caro and Royden Rabinoswitch, for example, are seen by the viewer in fits and starts, requiring constant stopping and taking cognizance. Only occasionally do Caro's works have a single focus towards which the eye is drawn. Usually, as in the case of Prairie and Titan (Fig. 16), there are multiple centres of interest dispersed through the space, and these take on different values according to the angle from which the sculpture is viewed. Full comprehension of these configurations require that we move around the pieces and it is as if a different piece of work is being seen with every step taken. The tilted I-beam of Titan has a particular character when viewed from inside the right angle and a very different character when viewed from the outside; the suspended rods of Prairie function in one way when they traverse the spectator's field of vision and in a very different way when they recede from him/her like perspective orthogonals. In these sculptures no one unit is so expressive that it might direct interest to itself rather than to its relation to other parts. While actually walking around these pieces the viewer accumulates a multiplicity of views which make up the work's meaning, and so he/she becomes what Moholy-Nagy envisioned as, "an active factor in the play of forces," (10) thus undergoing a greater heightening of consciousness.

Minimal art mounted a challenge to Clement Greenberg's theory of the aesthetic by shifting the emphasis of experience from the purely visual to the experience of the perceiving subject's body in relation to the materiality of the object which was to be perceived as Donald Judd suggested, as a whole and not in terms of parts while moving through the space obstructed by the objects. The objects change the viewer's perception of space. It is not surprising then that the character of sculpture has been modified from concentration on a discreet thing to expansion across a behavioural space in which the symbiotic relationship of sculpture and viewer becomes the real object of experience. Such is the case with Richard Serra's Shift (1970--1972), (Figs. 17,18). Located at King City, north of Toronto, it consists of two parts, each with three rectilinear cement sections five feet high and eight inches thick), which run from the top of each hill into a valley. The role of Shift is to make simultaneously present, on the same physical terms, and to the perceptual behaviour of the body, both the real experience of the topography of the field and the abstracted topographical constant.

> "...What I wanted was a dialectic between one's perception of the place in totality and one's relation to the field as walked. The result is a way of measuring oneself against the intermacy of the land ... I'm not interested in looking at sculpture which is solely defined by its internal relationships." (11).

The intent of the work is an awareness of physicality in time, space and motion. The work establishes a measure: one's relation to it and to the land. The boundaries of the work become the maximum distance two people could occupy and keep each other in view.

The horizon of the work is established by the possibilities of maintaining this mutual viewpoint. One walks down the hill into the piece. As one does, the elements begin to rise in relation to one's descending eye-level. As one follows the work further into the field, one is forced to shift and turn with the work and look back across the elevational drop.

The machinery of renaissance space depends on measurements remaining fixed and immutable. The steps in Shift relate to a continually shifting horizon and as measurement, they are totally transitive: elevating, lowering, extending, foreshortening, contracting, compressing and turning. "The line as a visual element, per step, becomes a transitive step." (12)

From the top of the hill, looking back across the valley, images and thoughts are remembered which were initiated by the consciousness of having experienced them. This is the difference between abstract thought and thought in experience. The mode of experiencing Shift then is conspicuously active and occurs in the dialectic gap between the perceiver's own experience of the field and its objective character. The emphasis is on how the subject can know the object through behaviour.

Of Spin Out : for Bob Smithson (1972-73) (Museum Kroller-Muller, Otterlo, Holland) Richard Serra, in an interview with Liya Bear, 30 October 1973 said:

> "I think the significance of the work is in its effort not in its intentions. And that effort is a state of mind, an activity, an interaction with the world." (13).

This statement by Serra points to the importance of his own involvement with the work while making it and to the potential active and mental involvement of the spectator when experiencing it. Spin Out (Fig. 19) consists of three steel plates laid out at twelve, four and eight o'clock in an ecliptical valley and the space in between them forms an isosceles triangle, 152 feet on the long side and 78 feet on the legs. Each plate is ten feet high by forty feet long and one and a half inches thick hot rolled steel sunk into the incline at an equal elevation.

At first the viewer sees the plates as parallel but as he/she walks left they move right. As the spectator walks into the, they open up. There is a ridge which encircles the whole space at about one hundred and fifty feet. When one walks on the ridge, there is a contraction and the space becomes ecliptically compartmentalized, which one cannot see as one walks through it. It is a different way of understanding ones relation to the place - the viewer is actually overhead looking down. The focus of this piece is the experience of living through the piece.

> "I find that the activity of working on (a piece) puts my mind in a state which, I think, has more to do with art than the intentions that could be discerned in the work when it's finished ... the focus of the art for me is the experience ofliving through the pieces .... my pieces are mostly involved with walking and looking. But I can't tell someone how to walk and look." (14).

In the early 1970s Robert Morris too, realized that the indoor art object can do no more than carry a decorative load that becomes increasingly uninteresting. He now aims at creating,

> "... a place in which the perceiving self might take measure of certain aspects of its own physical existence." (15)

The place he chose was the landscape and the type of work he chose to do was called "sited" sculpture, that is, three dimensional objects carefully situated in their surroundings. Unlike traditional sculpture applied to architecture or monuments centred in public squares, modern sited sculpture is a thing unto itself, concerned with its own internally generated form and the properties of its own materials. Unlike land art which is about the landscape itself, sited sculpture is about mass, form, volume, surface and the organisation of space. It has the look of an object or objects set down within the landscape, rather than the look of having emerged fromit. Such is the case with Robert Morris' Observatory, 1971 (Fig. 20) sited in the Netherlands. It had a diameter fo three hundred feet making it an artwork that was too large and too complex to be viewed in an instant; it required that the viewer walk through and around it. Like the Grand Rapids Project, 1974, Michigan, it provided an,

> "... experience of an interraction between the perceiving body and the world which fully admits that the terms of this interraction are temporal as well as spatial, that existence is process, that the art itself is a form of behaviour ..." (16).

Likewise, Nancy Holt's Sun Tunnels of 1973-76 (Fig. 21) consisting of four concrete pipes each nine feet in diameter and eighteen feet in length, set in Lucin, Utah, have the effect of altering the perceiver's behaviour in what is otherwise an uninhabited landscape. The presence of Holt's Sun Tunnels provides the possibility of an experience between the perceiving body and the concrete tunnels in the surrounding landscape. A new awareness of one's physical presence in relation to the concrete material of the tunnels, to the space enclosed by them and surrounding them, and to the time it takes to explore their presence is experienced. The dynamic relationship between those Sun Tunnels, their surrounding landscape and the presence of an active participating body is central to their purpose. To objectify those tunnels by quoting their dimensions in relation to those of the landscape is a meaningless gesture as it only dwarfs their significant presence as concrete physical objects of some scale. It is only when a person walks into and around these tunnels that they begin to make sense. It is only through phenomenologically experiencing them that these Sun Tunnels can be known.

Despite the somewhat idealistic notion of phenomenal perception prompted largely by Minimalist sculpture it has successfully challenged the notion of abstract illusionism. It realizes this by its emphasis on a strict materialism, achieved through listing the names and properties of industrially produced materials - for example, the names of Donald Judd's sculptures are none other than lists of the materials used :

Light cadmium red on striated plywood; Black oil on board with galvanized iron; Brown enamel on cold-rolled steel. The techniques used in handling these largely industrial materials are often used when naming them, for example, Barry Le Va's Walking Stick; Barry Flanagan's Pile, Stack; or describing the processes used, for example, scattering, leaning, pouring, tearing, rolling, throwing, shifting. The reason for using such descriptive words is to emphasize the strict materiality these works insist upon. The perceiving body is undoubtedly required to respond phenomonologically to those objects and encouraged to reject any notion of illusionism.

## CHAPTER V

## FOOTNOTES

1. Frank Popper, Art Action and Participation, p. 94.
2. Ibid., p. 13.
3. Richard Kostelanetz (Ed.), Moholy-Nagy, p. 29.
4. Frank Popper, Art, Action and Participation, p. 14.
5. Ronald Nasgaard, Structures for Behaviour, p. 8.
6. Douglas Davis, Art and the Future, p. 41.
7. Ranier Maria Rilke, "The Rodin-Book", (reprinted in) Selected Works, Volume 1, Prose, p. 100.
8. Donald Judd, A Catalogue of the Exhibition at the National Gallery of Canada, Ottawa 1975, p. 13.
9. Barry Flanagan, Whitechapel Art Gallery catalogue 1983, p. 81.
10. Richard Kostelanetz (Ed.), Moholy-Nagy, p. 29.
11. Richard Serra : Interviews, etc. 1970-1980, A Hudson River Museum catalogue, 1980, p. 25.
12. Ibid., p. 28.
13. ibid., p. 36.
14. Ibid., p. 37.
15. John Beardsley, Earthworks and Beyond, p. 27.
16. Ibid., p. 27.

## CONCLUSION

Man in this century has experienced a new and dynamic relationship with space, time and matter. He/she now sees himself/herself as an active part of the world rather than as a passive observer of events. Concurrently, in the field of art, many modern artists who are concerned, in their work, with space, time and matter are of necessity aware of the spectator as an integral part of the art work's evolution and meaning. This dynamic relationship between artist, artwork and spectator has led to a new realisation of what art can be. The Classical approach to art is no longer adequate for the artist who is involved with the evolution of an art that seems approporiate to our time.

The active relationship between artist, artwork and spectator has, since the beginning of this century, been cultivated in different ways and by artists as diversely different as for example, Barry Le Va, Lucio Fontana and Donald Judd. It is not the differences between such artists but their fundamental concern with extending the possibilities of the art object, or eliminating the art object altogether by continuous experimentation in and critical dialogue with their work, that has been a concern of this thesis. Those artist, namely Paul Cezanne and the Cubists who, in the early part of this century, began a dialogue with modern concepts were the first in a major shift away from the "naturalistic" notion of art and the first of a series of artists and art movements that concerned themselves with evolving an art closely related to the dynamic rhythms of our time.

In many European countries artists such as those in De Stijl, Dada and Futurism were experiencing a freedom previously known to art; and the dialogue between and influence of these experimental movements on the Bauhaus and Russian Constructivism helped to free such artists as Moholy-Nagy and Tatlin for example, from the demands of traditional art; thereby enabling them to aspire towards their ideal view of art, that is, art that would change society by helping to create a new and ideal social and cultural order - a total art work. These artists saw the audience as having a vital role to play in the formation of this new approach to art in the sense that without their active participation there could be no consciousness raising which is necessary if meaningful change is to take place. The approach of the Minimalist artists on the other hand, was to phenomenologically involve the spectator with the art work and thereby bring about a new awareness of his/her relationship with art and the world which would give him/her a new sense of self as an active part of the world; and as a being who, in actively engaging in a dialogue with art and the world, gives meaning to what would otherwise be absurd.

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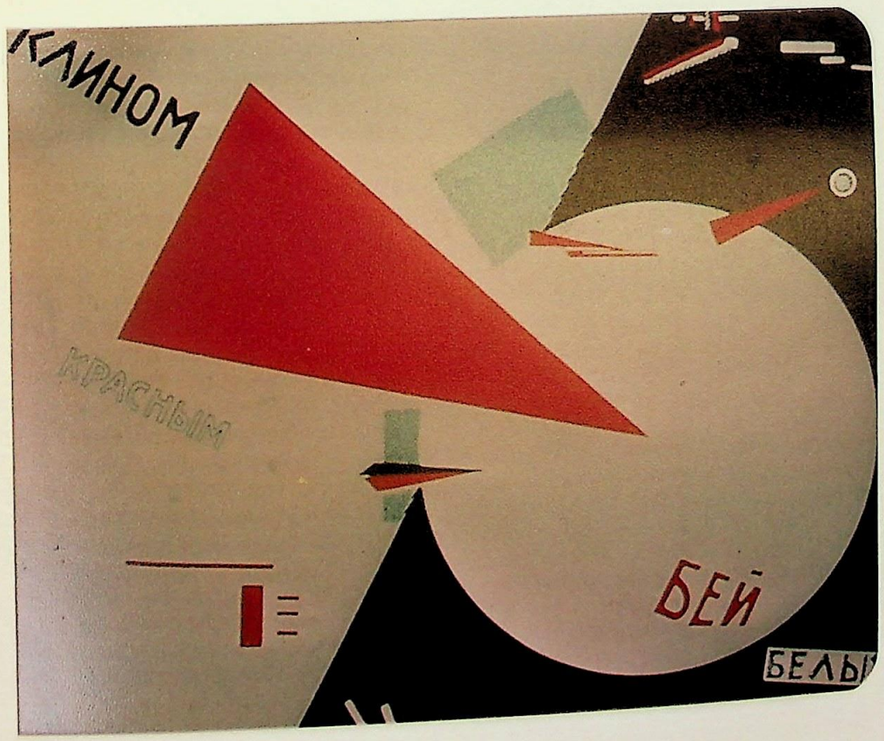


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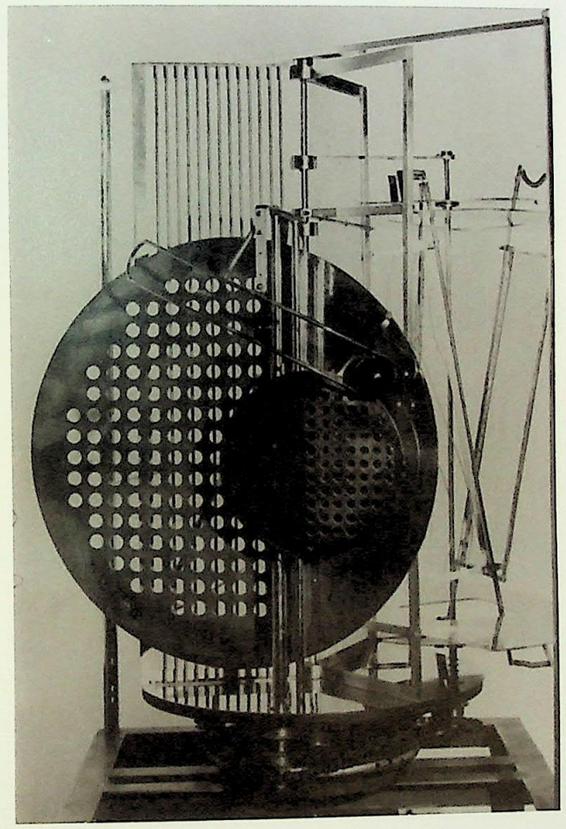

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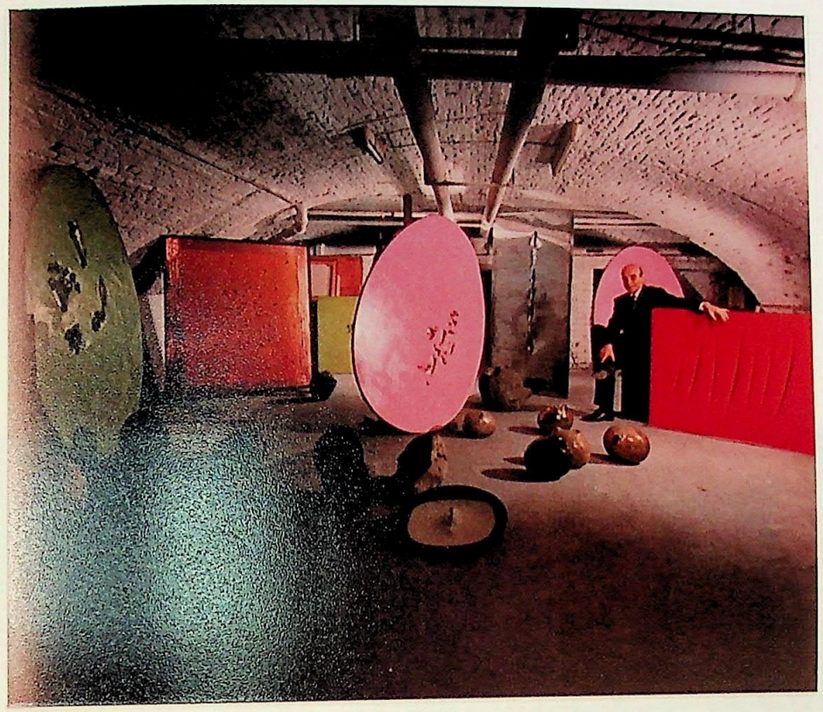

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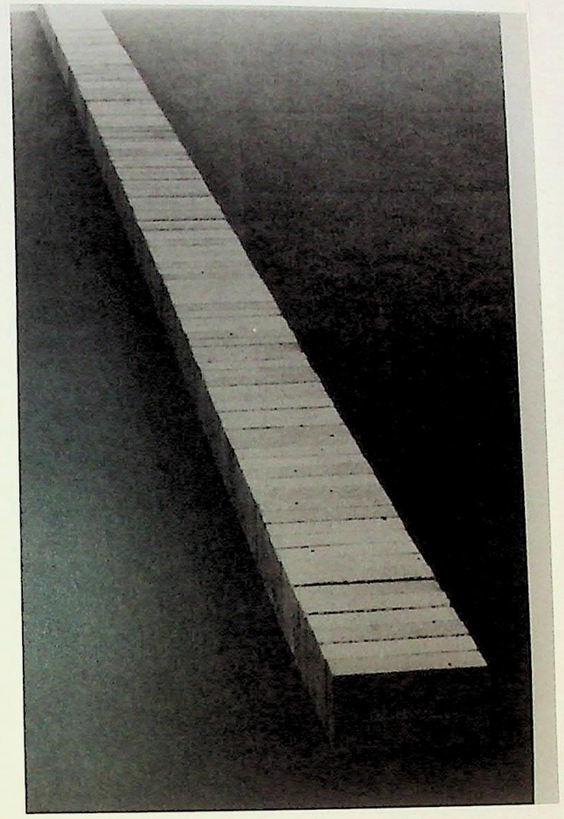

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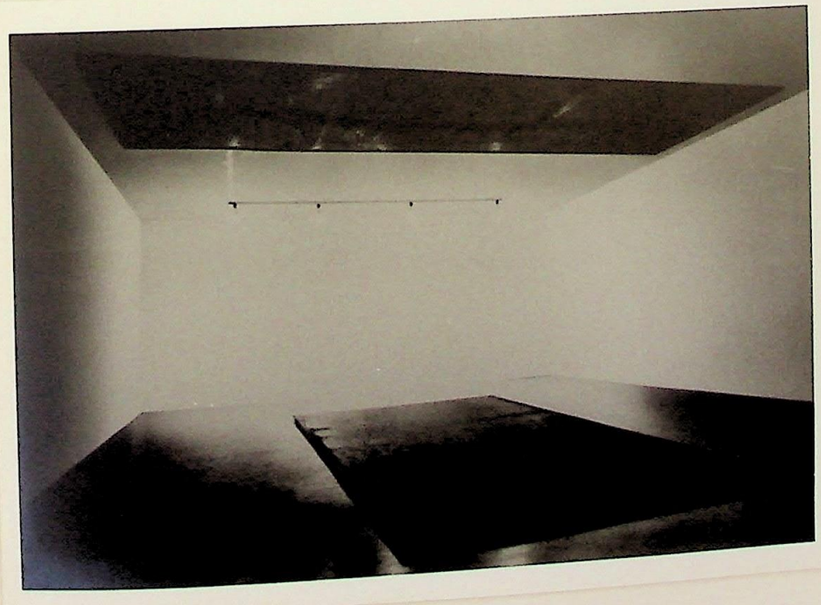

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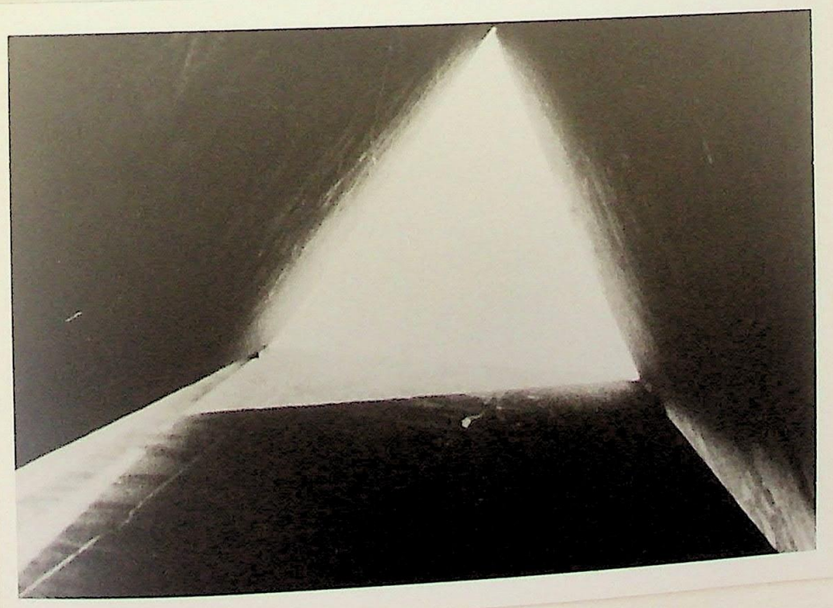

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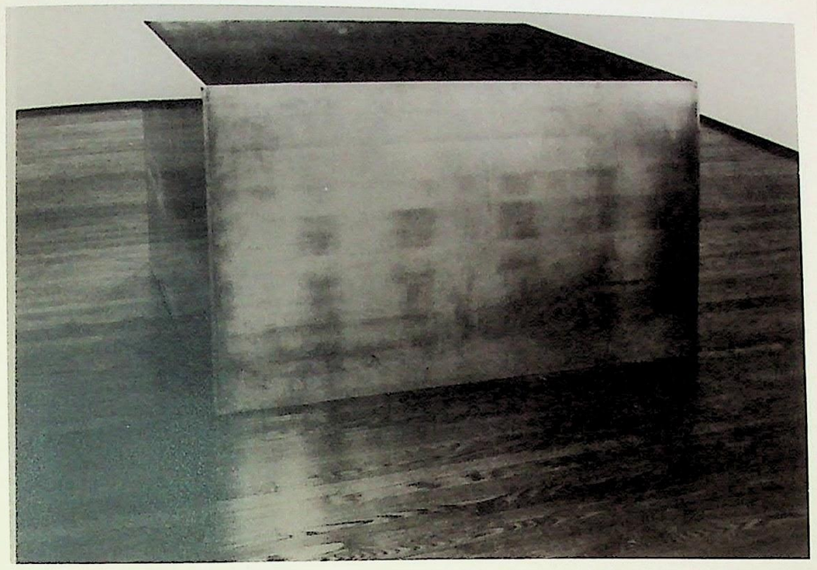

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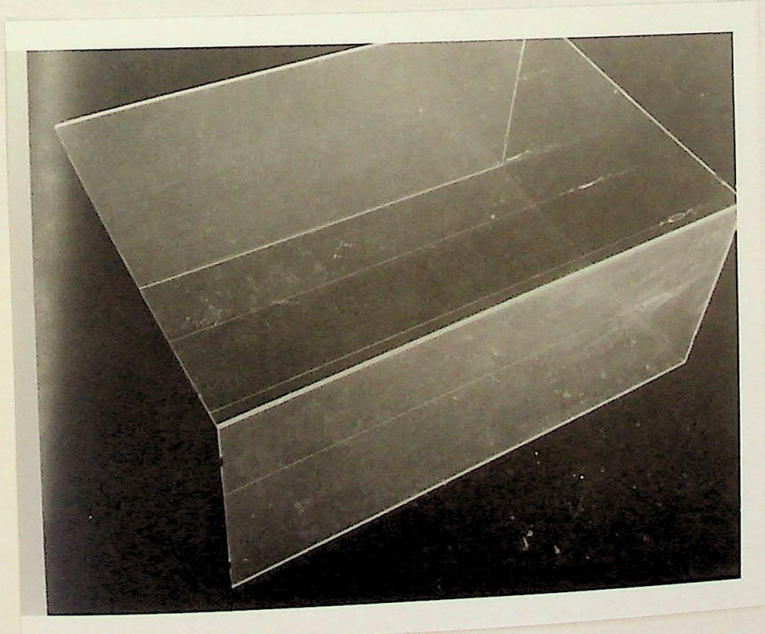

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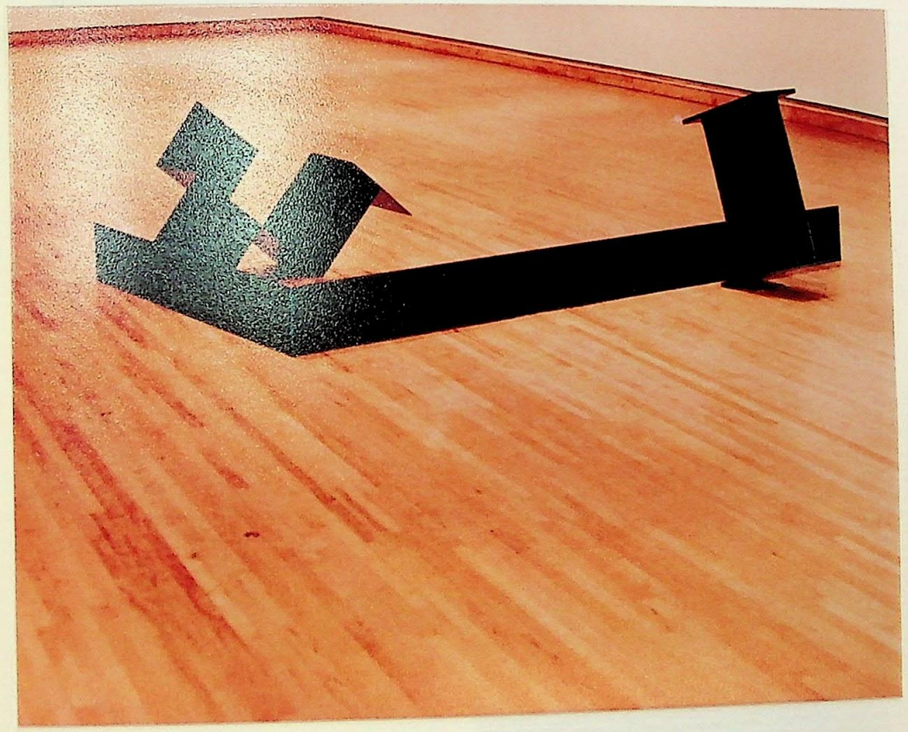

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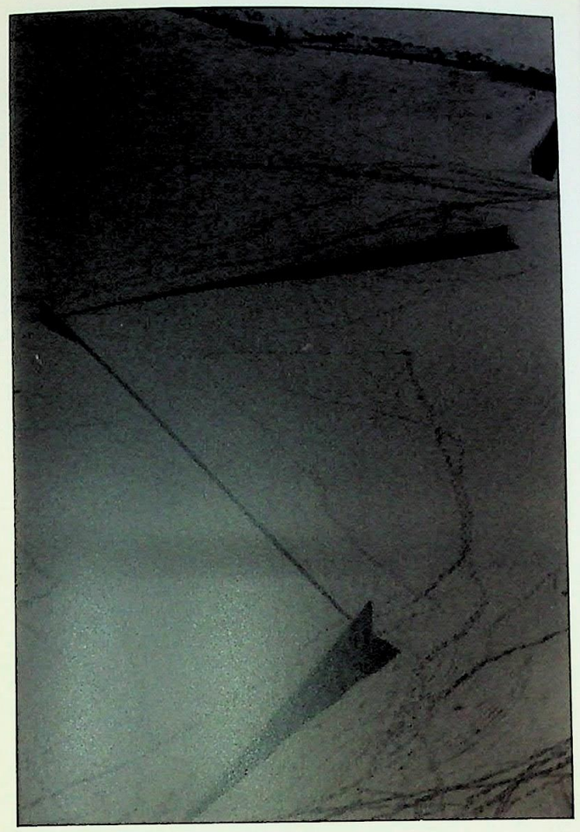

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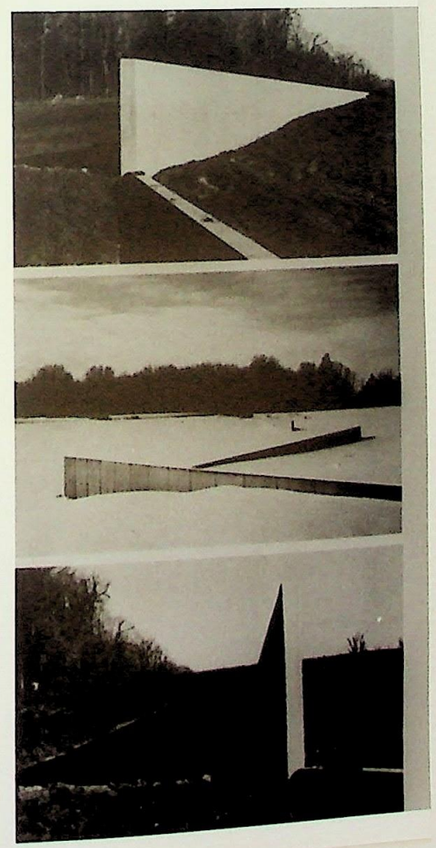

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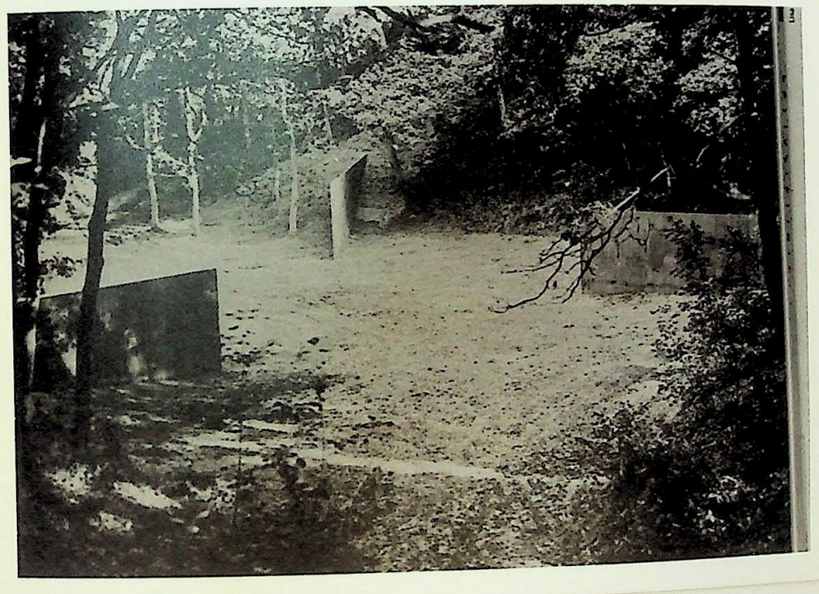

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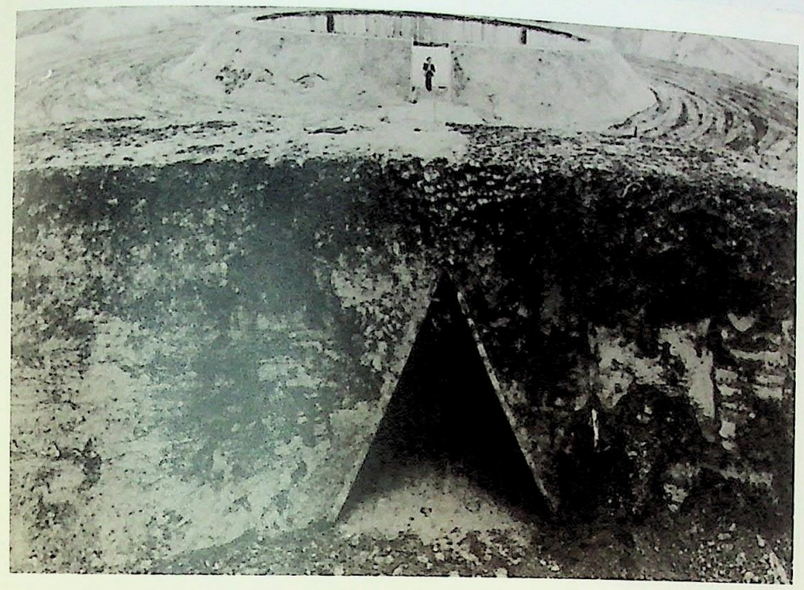

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