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THE CONSTRUCTIVE APPROACH

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INTRODUCTION

The school of Constructive art was the first movement in art to declare acceptance of the scientific age and its spirit as a basis for its perceptions of the world outside and inside human life. The Constructivist artist took into account science and its achievements in advanced creations, and incorporated the new image of the world with the mentality of 20th century mankind. He found the means and the methods to create new images, and to convey them as emotional manifestations of our everyday experience. These means being shapes, lines, colours, forms, that are not illusory nor in fact are they abstractions; they are a factual force and their impact on our senses is real. This impact can be verified as any natural phenomenon. Shapes, colours and lines speak their own language. They are events in themselves and in an organized construction they become beings - the psychological force is immediate, irresistible and universal to all species of mankind. They are not the result of a convention as words are, they are unambiguous and therefore, their impact can influence the human psyche. They convey a well organized and clearly defined image - not just some image, any image, but a new and constructive image, which by its very existence as a plastic vision should provoke in us the forces and desires to enhance life, assert it and assist its further development.

The Constructive ideology rejected the belief that the personality alone and the whim and the mood of the individual artist should be the only value and guide in an artistic creation. It also accepted the fact that what we perceive with our five senses is not the only aspect of life and nature to be sung about; that

life and nature conceal an infinite variety of forces, depths, and aspects never seen and only faintly felt which have not less but more importance to be expressed and to be made more concretely felt through some kind of an image, communicable not only to our reason, but to our immediate everyday perceptions and feelings of life and nature.

It is the recognition of a 20th century civilization together with the acceptance of the age of science which the Constructivist artists share, that has led me into starting this essay. I am interested in finding the issues involved in the Constructive approach to art and how they compare with the approach of other art in the 20th century which appears to share principles that have been set by Constructive art.

Today the word "Constructivist" refers to the work of a group of Russians between 1913 and 1922, which include Tatlin, Malevich, Rodchenko, El Lissitzky, Naum Gabo, Antoine Pevsner and briefly Wassily Kandinsky. Their work was, in general, geometrical and non-mimetic. It also refers to the Dutch art of "De Stijl" which developed independently from that of the Russians, and to the ensuing painting and sculpture^P in Europe and America.

I propose to look into the ideas behind the art produced by these two groups, but also into those of art produced by movements that have developed more recently in 20th century - and in appearance differ from each other - such as Hard Edge Painting and Primary Structures, because although classified apart from Constructivism I believe they are in fact heavily indebted to Constructive thinking. Also I will look into the school of Concrete art, because although it is seen as a separate movement to that of Constructivism the work produced by Concrete artists

has been in many occasions identical with what was meant by Constructivist art.

Among all the artists that took part in the broad movement of Constructivism, Naum Gabo is notable for his clear vision of the movement, expressed most eloquently in his writings, especially in the article entitled "The Constructive Idea in Art" first published in *Circle* in 1937. As this article provided the starting point for this essay it is reproduced here in full:

Our century appears in history under the sign of revolutions and disintegration. The revolutions have spared nothing in the edifice of culture which had been built up by the past ages. They had already begun at the end of the last century and proceeded in ours with unusual speed until there was no stable point left in either the material or the ideal structure of our life. The war was only a natural consequence of a disintegration which started long ago in the depths of the previous civilization. It is innocent to hope that this process of disintegration will stop at the time and in the place where we want it to. Historical processes of this kind generally go their own way. They are more like floods, which do not depend on the strokes of the oarsmen floating on the waters. But, however long and however deep this process may go in its material destruction, it cannot deprive us any more of our optimism about the final outcome, since we see that in the realm of ideas we are now entering on the period of reconstruction.

We can find efficient support for our optimism in those two domains of our culture where the revolution has been the most thorough, namely, in Science and in Art. The critical analysis in natural science with which the last century ended had gone so far that at times the scientists felt themselves to be in a state of suspension, having lost most of the fundamental bases on which they had depended for so many centuries. Scientific thought suddenly found itself confronted with conclusions which had before seemed impossible, in fact the word 'impossibility' disappeared from the lexicon of scientific language. This brought the scientists of our century to the urgent task of filling up this emptiness. This task now occupies the main place in all contemporary scientific works. It consists in the construction of a new stable model for our apprehension of the universe.

However dangerous it may be to make far-reaching analogies between Art and Science, we nevertheless cannot close our eyes to the fact that at those moments in the history of culture when the creative human genius had to make a decision, the forms in which his genius manifested itself in Art and in Science were analogous. One is inclined to think that this manifestation in the history of Art lies on a lower level than it does in the history of Science, or at least on a level which is accessible to wider social control. The terminology of Science alone plunges a layman into a state of fear, humility and admiration. The inner world of Science is closed to an outsider by a curtain of enigmas. He has been educated to accept the holy mysticism of these enigmas since the beginning of culture. He does not even try to intrude in this world in order to know what happens there, being convinced that it must be something very

important since he sees the results in obvious technical achievements. The average man knows, for instance, that there is electricity and that there is radio and he uses them every day. He knows the names of Marconi and Edison, but it is doubtful whether he has ever heard anything about the scientific work of Hertz, and there is no doubt that he has never heard anything about the electromagnetic waves theory of Maxwell or his mathematical formulae.

Not so is the attitude of the average man to Art. Access to the realm of Art is open to every man. He judges about Art with the unconstrained ease of an employer and owner. He does not meditate about those processes which brought the artist or the group of artists to make one special kind of Art and not another, or if occasionally he does he never relinquishes his right to judge and decide, to accept or reject; in a word, he takes up an attitude which he would never allow himself to take with Science. He is convinced that on his judgements depend the value and the existence of the work of art. He does not suspect that through the mere fact of its existence a work of art has already performed the function for which it has been made and has affected his concept of the world regardless of whether he wants it to or not. The creative processes in the domain of Art are as sovereign as the creative processes in Science. Even for many theorists of Art the fact remains unperceived that the same spiritual state propels artistic and scientific activity at the same time and in the same direction.

At first sight it seems unlikely that an analogy can be drawn between a scientific work of, say, Copernicus and a picture by Raphael, and yet it is not difficult to discover the tie between them. In fact Copernicus' scientific theory of the world is coincident with Raphael's concept in Art. Raphael would never have dared to take the naturalistic image of his famous Florentine pastry-cook as a model for the 'Holy Marie' if he had not belonged to the generation which was already prepared to abandon the geocentric theory of the universe. In the artistic concept of Raphael there is no longer any trace of the mythological religious mysticism of the previous century as there is no longer any trace of this mysticism in Copernicus' book, *The Revolution of the Celestial Orbits*. In the work of both, the earth is no longer the cosmic centre and man is no longer the crown of creation and the only hero of the cosmic drama; both are parts of a larger universe and their existence does not any more appear as the mystical and dematerialized phenomenon of the mediaeval age. At that time one and the same spirit governed the artistic studios of Florence and held sway under the arches of the Neapolitan Academy for the Empirical Study of Nature led by Telesio. This tie between Science and Art has never ceased to exist

throughout the history of human culture, and we can discern it in whatever section of history we look. This fact explains many phenomena in the spiritual processes of our own century which brought our own generation to the Constructive idea in Art.

The immediate source from which the Constructive idea derives is Cubism, although it had almost the character of a repulsion rather than an attraction. The Cubistic school was the summit of a revolutionary process in Art which was already started by the Impressionists at the end of the last century. One may estimate the value of particular Cubistic works as one likes, but it is incontestable that the influence of the Cubistic ideology on the spirits of the artists at the beginning of this century has no parallel in the history of Art for violence and intrepidity. The revolution which this school produced in the minds of artists is only comparable to that which happened at approximately the same time in the world of physics. Many falsely assume that the birth of Cubistic ideology was caused by the fashion for negro art which was prevalent at that time; but in reality Cubism was a purely European phenomenon and its substance has nothing in common with the demonism of primitive tribes. The Cubistic ideology has a highly differentiated character and its manifestation could only be possible in the atmosphere of a refined culture. In fact it wants an especially sharpened and cultivated capacity for analytic thought to undertake the task of revaluation of old values in Art and to perform it with violence as the Cubistic school did. All previous schools in Art have been in comparison merely reformers, Cubism was a revolution. It was directed against the fundamental basis of Art. All that was before holy and intangible for an artistic mind, namely, the formal unity of the external world, was suddenly laid down on their canvases, torn in pieces and dissected as if it were a mere anatomical specimen. The borderline which separated the external world from the artist and distinguished it in forms of objects disappeared; the objects themselves disintegrated into their component parts and a picture ceased to be an image of the visible forms of an object as a unit, a world in itself, but appeared as a mere pictorial analysis of the inner mechanism of its cells. The medium between the inner world of the artist and the external world has lost its extension, and between the inner world of the perceptions of the artist and the outer world of existing things there was no longer any substantial medium left which could be measured either by distance or by mind. The contours of the external world which served before as the only guides to an orientation in it were erased; even the necessity for orientation lost its importance and was replaced by other problems, those of exploration and analysis. The creative act of the Cubists was entirely at variance with any which we have observed before. Instead of taking the object as a separate world and passing it through his perceptions producing a third object, namely the picture, which is the product of the first two, the Cubist transfers the entire inner world of his perceptions with all its component parts (logic, emotion and will) into the interior of the object penetrating through its whole structure, stretching its substance to such an extent that the outside integument explodes and the object itself appears destroyed and unrecognizable. That is why a Cubistic painting seems like a heap of shards from a vessel exploded from within. The Cubist has no special interest in those forms which differentiate one object from another.

Although the Cubists still regarded the external world as the

point of departure for their Art they did not see and did not want to see any difference between, say, a violin, a tree, a human body, etc. All those objects were for them only one extended matter with a unique structure and only this structure was of importance for their analytic task. It is understandable that in such an artistic concept of the world the details must possess unexpected dimensions and the parts acquire the value of entities, and in the inner relations between them the disproportion grows to such an extent that all inherited ideas about harmony are destroyed. When we look through a Cubistic painting to its concept of the world the same thing happens to us as when we enter the interior of a building which we know only from a distance – it is surprising, unrecognizable and strange. The same thing happens which occurred in the world of physics when the new Relativity Theory destroyed the borderlines between Matter and Energy, between Space and Time, between the mystery of the world in the atom and the consistent miracle of our galaxy.

I do not mean to say by this that these scientific theories have affected the ideology of the Cubists, one must rather presume that none of those artists had so much as heard of or studied those theories. It is much more probable that they would not have apprehended them even if they had heard about them, and in the end it is entirely superfluous. The state of ideas in this time has brought both creative disciplines to adequate results, each in its own field, so that the edifice of Art as well as the edifice of Science was undermined and corroded by a spirit of fearless analysis which ended in a revolutionary explosion. Yet the destruction produced in the world of Art was more violent and more thorough.

Our own generation found in the world of Art after the work of the Cubists only a conglomeration of ruins. The Cubistic analysis had left for us nothing of the old traditions on which we could base even the flimsiest foundation. We have been compelled to start from the beginning. We had a dilemma to resolve, whether to go further on the way of destruction or to search for new bases for the foundation of a new Art. Our choice was not so difficult to make. The logic of life and the natural artistic instinct prompted us with its solution.

The logic of life does not tolerate permanent revolutions. They are possible on paper but in real life a revolution is only a means, a tool but never an aim. It allows the destruction of obstacles which hinder a new construction, but destruction for destructions' sake is contrary to life. Every analysis is useful and even necessary, but when this analysis does not care about the results, when it excludes the task of finding a synthesis, it turns to its opposite, and instead of clarifying a problem it only renders it more obscure. Life permits to our desire for knowledge and exploration the most daring and courageous excursions, but only to the explorers who, enticed far away into unknown territories, have not forgotten to notice the way by which they came and the aim for which they started. In Art more than anywhere else in the creative discipline, daring expeditions are allowed. The most dizzying experiments are permissible, but even in Art the logic of life arrests the experiments as soon as they have reached the point when the death of the experimental objects becomes imminent. There were moments in the history of Cubism when the artists were pushed to these bursting points: sufficient to recall the sermons of Picabia, 1914-16, predicting the wreck of Art, and the manifestos of the Dadaists who already

celebrated the funeral of Art with chorus and demonstrations. Realizing how near to complete annihilation the Cubist experiments had brought Art, many Cubists themselves have tried to find a way out, but the lack of consequence has merely made them afraid and has driven them back to Ingres (Picasso, 1919-23) and to the Gobelins of the sixteenth century (Braque, etc.). This was not an outlet but a retreat. Our generation did not need to follow them since it has found a new concept of the world represented by the Constructive idea.

The Constructive idea is not a programmatic one. It is not a technical scheme for an artistic manner, nor a rebellious demonstration of an artistic sect; it is a general concept of the world, or better a spiritual state of a generation, an ideology caused by life, bound up with it and directed to influence its course. It is not concerned with only one discipline in Art (painting, sculpture or architecture) it does not even remain solely in the sphere of Art. This idea can be discerned in all domains of the new culture now in construction. This idea has not come with finished and dry formulas, it does not establish immutable laws or schemes, it grows organically along with the growth of our century. It is as young as our century and as old as the human desire to create.

The basis of the Constructive Idea in Art lies in an entirely new approach to the nature of Art and its functions in life. In it lies a complete reconstruction of the means in the different domains of Art, in the relations between them, in their methods and in their aims. It embraces those two fundamental elements on which Art is built up, namely, the Content and the Form. These two elements are from the Constructive point of view one and the same thing. It does not separate Content from Form - on the contrary, it does not see as possible their separated and independent existence. The thought that Form could have one designation and Content another cannot be incorporated in the concept of the Constructive idea. In a work of art they have to live and act as a unit, proceed in the same direction and produce the same effect. I say 'have to' because never before in Art have they acted in such a way in spite of the obvious necessity of this condition. It has always been so in Art that either one or the other predominated, conditioning and pre-determining the other.

This was because in all our previous Art concepts of the world a work of art could not have been conceived without the representation of the external aspect of the world. Whichever way the artist presented the outside world, either as it is or as seen through his personal perceptions, the external aspect remained as the point of departure and the kernel of its content. Even in those cases where the artist tried to concentrate his attention only on the inner world of his perceptions and emotions, he could not imagine the picture of this inner world without the images of the outer one. The most that he could dare in such cases was the more or less individual distortions of the external images of Nature; that is, he altered only the scale of the relations between the two worlds, always keeping to the main system of its content, but did not attack the fact of their dependence; and this indestructible content in a work of art always predicted the forms which Art has followed down to our own time.

The apparently ideal companionship between Form and Content in the old Art was indeed an unequal division of rights and was based on the obedience of the Form to the Content. This obedience is explained by the fact that all formalistic movements in the

history of Art, whenever they appeared, never went so far as to presume the possibility of an independent existence of a work of art apart from the naturalistic content, nor to suspect that there might be a concept of the world which could reveal a Content in a Form.

This was the main obstacle to the rejuvenation of Art, and it was at this point that the Constructive idea laid the cornerstone of its foundation. It has revealed an universal law that the elements of a visual art such as lines, colours, shapes, possess their own forces of expression independent of any association with the external aspects of the world; that their life and their action are self-conditioned psychological phenomena rooted in human nature; that those elements are not chosen by convention for any utilitarian or other reason as words and figures are, they are not merely abstract signs, but they are immediately and organically bound up with human emotions. The revelation of this fundamental law has opened up a vast new field in art giving the possibility of expression to those human impulses and emotions which have been neglected. Heretofore these elements have been abused by being used to express all sorts of associative images which might have been expressed otherwise, for instance, in literature and poetry.

But this point was only one link in the ideological chain of the constructive concept, being bound up with the new conception of Art as a whole and of its functions in life. The Constructive idea sees and values Art only as a creative act. By a creative act it means every material or spiritual work which is destined to stimulate or perfect the substance of material or spiritual life. Thus the creative genius of Mankind obtains the most important and singular place. In the light of the Constructive idea the creative mind of Man has the last and decisive word in the definite construction of the whole of our culture. To be sure, the creative genius of Man is only a part of Nature, but from this part alone derives all the energy necessary to construct his spiritual and material edifice. Being a result of Nature it has every right to be considered as a further cause of its growth. Obedient to Nature, it intends to become its master; attentive to the laws of Nature it intends to make its own laws, following the forms of Nature it re-forms them. We do not need to look for the origin of this activity, it is enough for us to state it and to feel its reality continually acting on us. Life without creative effort is unthinkable, and the whole course of human culture is one continuous effort of the creative will of Man. Without the presence and the control of the creative genius, Science by itself would never emerge from the state of wonder and contemplation from which it is derived and would never have achieved substantial results. Without the creative desire Science would go astray in its own schemes, losing its aim in its reasoning. No criterion could be established in any spiritual discipline without this creative will. No way could be chosen, no direction indicated without its decision. There are no truths beyond its truths. How many of them life hides in itself, how different they are and how inimical. Science is not able to resolve them. One scientist says, 'The truth is here'; another says, 'It is there'; while a third says, 'It is neither here nor there, but somewhere else'. Everyone of them has his own proof and his own reason for saying so, but the creative genius does not wait for the end of their discussion. Knowing what it wants, it makes a choice and decides for them.

The creative genius knows that truths are possible everywhere,

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but only those truths matter to it which correspond to its aims and which lie in the direction of its course. The way of a creative mind is always positive, it always asserts; it does not know the doubts which are so characteristic of the scientific mind. In this case it acts as Art.

The Constructive idea does not see that the function of Art is to represent the world. It does not impose on Art the function of Science. Art and Science are two different streams which rise from the same creative source and flow into the same ocean of the common culture, but the currents of these two streams flow in different beds. Science teaches, Art asserts; Science persuades, Art acts; Science explores and apprehends, informs and proves. It does not undertake anything without first being in accord with the laws of Nature. Science cannot deal otherwise because its task is knowledge. Knowledge is bound up with things which are and things which are, are heterogeneous, changeable and contradictory. Therefore the way to the ultimate truth is so long and difficult for Science.

The force of Science lies in its authoritative reason. The force of Art lies in its immediate influence on human psychology and in its active contagiousness. Being a creation of Man it re-creates Man. Art has no need of philosophical arguments, it does not follow the signposts of philosophical systems; Art, like life, dictates systems to philosophy. It is not concerned with the meditation about what is and how it came to be. That is a task for Knowledge. Knowledge is born of the desire to know, Art derives from the necessity to communicate and to announce. The stimulus of Science is the deficiency of our knowledge. The stimulus of Art is the abundance of our emotions and our latent desires. Science is the vehicle of facts – it is indifferent, or at best tolerant, to the ideas which lie behind facts. Art is the vehicle of ideas and its attitude to facts is strictly partial. Science looks and observes, Art sees and foresees. Every great scientist has experienced a moment when the artist in him saved the scientist. 'We are poets', said Pythagoras, and in the sense that a mathematician is a creator he was right.

In the light of the Constructive idea the purely philosophical wondering about real and unreal is idle. Even more idle is the intention to divide the real into super-real and sub-real, into conscious reality and sub-conscious reality. The Constructive idea knows only one reality. Nothing is unreal in Art. Whatever is touched by Art becomes reality, and we do not need to undertake remote and distant navigations in the sub-conscious in order to reveal a world which lies in our immediate vicinity. We feel its pulse continually beating in our wrists. In the same way we shall probably never have to undertake a voyage in inter-stellar space in order to feel the breath of the galactic orbits. This breath is fanning our heads within the four walls of our own rooms.

There is and there can be only one reality – existence. For the Constructive idea it is more important to know and to use the main fact that Art possesses in its own domain the means to influence the course of this existence enriching its content and stimulating its energy.

This does not mean that this idea consequently compels Art to an immediate construction of material values in life; it is sufficient when Art prepares a state of mind which will be able only to construct, co-ordinate and perfect instead of to destroy, disintegrate and deteriorate. Material values will be the inevitable result of such

a state. For the same reason the Constructive idea does not expect from Art the performance of critical functions even when they are directed against the negative sides of life. What is the use of showing us what is bad without revealing what is good? The Constructive idea prefers that Art perform positive works which lead us towards the best. The measure of this perfection will not be so difficult to define when we realize that it does not lie outside us but is bound up in our desire and in our will to it. The creative human genius, which never errs and never mistakes, defines this measure. Since the beginning of Time man has been occupied with nothing else but the perfecting of his world.

To find the means for the accomplishment of this task the artist need not search in the external world of Nature; he is able to express his impulses in the language of those absolute forms which are in the substantial possession of his Art. This is the task which we constructive artists have set ourselves, which we are doing and which we hope will be continued by the future generation.

THE DEVELOPMENT OF A CONSTRUCTIVE THINKING

Pre War Constructivism

In the beginning of the 20th century, Cubist artists Braque and Picasso were abstracting from nature. But, no matter how much they had abstracted, they always retained a representational-

THE DEVELOPMENT OF A CONSTRUCTIVE THINKING

- Pre War Constructivism
 - Suprematism
 - Neo-Plasticism
 - Post War Constructivism
-

In 1912 by earlier converts to Cubism prove how strong the criticism against Cubism had become:

Albert Gleizes: "Let the picture imitate nothing and let it present solely its raison d'être."

Nathan Russell: "It is purposely that there is no subject (image), it is to glorify other realities of the spirit."

Guillaume Apollinaire: "The straight line is the only means that can lead to the positive virgility of a new architectural construction of sculptural masses and spaces."

It was the rejection of Cubism together with the influence by Marinetti's readings of Futurist manifestos to the Russian Futurists in Moscow and St. Petersburg in 1914 - and partly Kandinsky's "Concerning the Spiritual in Art" which was written in German in 1911 and translated in part into Russian in 1912 - that prepared the ground for the Russians themselves to make their jump into completely non-objective art.

THE DEVELOPMENT OF A CONSTRUCTIVE THINKING

Pre War Constructivism

In the beginning of the 20th century, Cubist artists Braque and Picasso were abstracting from nature. But, no matter how much they had abstracted, they always retained a representational component, however much modified. Artists and art critics like Naum Gabo, George Rickey, Harold Osborn, came to strongly criticize Cubism for not facing the fact that once the object as subject had been dethroned, it should be liquidated. The standard still-lifes had only been an excuse for studying form and Cubist survivors like Ben Nicholson, Rufino Tamayo, Wilfred Lan, or Marino Marini still remain subject-haunted. Three statements made in 1912 by earlier converts to Cubism prove how strong the criticism against Cubism had become:

1. Albert Gleizes; "Let the picture imitate nothing and let it present nakedly its *raison d'être*."

2. Morgan Russel; "It is purposely that there is no subject (image), it is to glorify other realms of the spirit."

Umberto Boccioni; "The straight line is the only means that can lead to the primitive virginity of a new architectural construction of sculptural masses and zones."

It was the rejection of Cubism together with the influence by Marinetti's readings of Futurist manifestos to the Russian Futurists in Moscow and St. Petersburg in 1914 - and partly Kandinsky's "Concerning the Spiritual in Art" which was written in German in 1910 and translated in part into Russian in 1912- that prepared the ground for the Russians themselves to make their jump into completely non-objective art.

Fig. 1

Vladimir Tatlin, in Moscow, in 1913, made and exhibited such configurations as Umberto Boccioni had described - hanging reliefs of wood and iron - and, at that time, he coined the word "constructivism". Both work and word were inspired by the three-dimensional developments from collages Tatlin had seen in Picasso's studio in Paris earlier that year; but Picasso, while occasionally flirting with art without subject, stuck to Cubism. It was Tatlin's colleague, Alexander Rodchenko, who used the term "non-objectivism" (later adopted by Malevich) and made drawings with compass and straight edge only - an echo of the constructions of Euclid's geometry.

Fig. 2

In the 1920s "Constructivism" was taken as the title of two movements which came to fruition, although their ideas and aims were opposed. Soviet Russian Constructivism came into being as the formalization of views advocated by the Productivist group of artists, led by Vladimir Tatlin, which had been maturing since 1917 and were subsequently adopted as the official policy of State. Tatlin's group called for the abolition of art as an out-lived aestheticism, belonging to the culture of capitalistic society, and they were calling on those artists who were doing constructions in space to drop this "occupation" and start doing things useful to the human being in his material surroundings - to make chairs and tables, to build ovens, houses etc. In 1920 they produced a manifesto with the title "Programme of the Productivist Group" and intended as a riposte to the "Realist Manifesto" of Gabo and Pevsner, which had been put out earlier in the same year. The Productivists' manifesto opened with the statement: "The task of the Constructivist group is the communist expression of materialistic constructive work." In the

Fig 3 Realist Manifesto Gabo had used "construction" and "the constructive idea" as key terms for the expression of his ideas, although then and later he avoided "Constructivist" and "Constructivism". The adoption of his own term as the title of the rival group was one way of marking their opposition.

The most important idea in the Realist Manifesto was the assertion that art has its absolute, independent value and a function to perform in society whether capitalistic, socialistic, or communistic - art will always be alive as one of the indispensable expressions of human experience and as an important means of communication. The other important pronouncement in the manifesto was the assertion that space and time constitute the backbone of the constructive arts.

The reason the term "Realism" was used for the manifesto was apparently because the word realism was used by all artists who were then building up a sculpture into space out of their imagination - in the same way as an engineer does when he builds a construction - because they were convinced that what they were doing represented a new reality. This is the real core of the philosophy of Constructivism.

The other movement which named itself Constructivism had ramifications in most countries of Europe and is usually referred to as "European", or latterly "International" Constructivism, to distinguish it from the Russian movement. Gabo's attitude, not only became acceptable by International Constructivism, it also influenced its activity to a great extent. In 1922 Gabo left Russia for Germany not as a refugee but on an open declaration to Anatoli Lunacharsky, who was then Commissar for Enlightenment, that since himself and other artists were not any more recognized

by the new social order and there was no possibility either for them to teach or to appear in discussions or even to exhibit their works, he should give him permission to leave the country at least temporarily. A year later his brother Pevsner joined him in Berlin.

Fig. 4

No significant school of European Constructivism accepted the condemnation of non-utilitarian art or showed much interest in the applied arts, while the early abstract work of the Russian artists, particularly Suprematism, has by general consent been brought under the umbrella of Constructivism in European usage. Only El Lissitzky was able to accomodate himself to both Russian and European Constructivism, and he did so by abandoning the central tenet of Soviet Constructivism in articles written for European consumption. He stated: "We have called our review "Object" because for us art means the creation of new "objects". That explains the attraction that realism, weightiness, volume and the earth itself hold for us. But no-one should imagine in consequence that by objects we mean expressly functional objects. Obviously we consider that functional objects turned out in factories - aeroplanes and motor cars - are also the product of genuine art. Yet we have no wish to confine artistic creation to these functional objects."^{3.}

In the mean-time in Europe, Constructivism came into being with a minority statement made by Van Doesburg, Lissitzky, and Hans Richter at a Congress of International Progressive Artists at Dusseldorf in 1922 (one is not to dismiss here the fact that many of the ideas go back not very explicitly to 1918 when the Dutch periodical "De Stijl" - which appeared

independently from the Russian Constructivism - was founded by Theo van Doesburg as the organ of Neo-Plasticism). The kernel of their declaration was contained in the following: "We define the progressive artist as one who fights and rejects the tyranny of the subjective in art, as one whose work is not based on lyrical arbitrariness, as one who accepts the new principles of artistic creation - the systematisation of the means of expression to produce results that are universally comprehensible."

The Suprematism of Malevich and the Neo-Plasticism of Mondrian were the two most important individual movements which were considered to fall within the ambit of pre-War International Constructivism. At first sight their ambitions may appear different but in fact they share Constructivist principles. I will discuss the two movements in individual subchapters.

Although the French contributed little to the development of Constructivism, Paris offered a welcome shelter in the late 1920s and early 1930s for expatriate Constructivist artists and in 1930 the association "Cercle et Carré" was formed with its own periodical under the editorship of the young Belgian Neo-Plasticist artist Michael Seuphor. This was followed in 1932 by "Abstraction-Création-Art Non-Figuratif". A large number of artists was then brought together that worked in a very wide range of different styles.

Michael Seuphor in an editorial of the first issue of "Cercle et Carré", in 1930, emphasized yet again the subordination of impulsive composition to cool, planned construction. It also introduced a further idea which had been prominent in

the minds of Malevich, Mondrian and the other forerunners of geometrical abstraction. It was the idea that Constructivist art is in harmony with and provides insight into the ultimate nature of reality, not indeed by reproducing external appearances but by identity of "structure". Charles Biederman, the theorist of post-War Constructivism, took up this idea which seemed so important to him that eventually, in 1952, he rejected Constructivism for a new doctrine which he named Structurism.

What Seuphor wrote in the editorial is of great interest. He maintained that the ultimate consequence of nature's evolution up to this point is summed up within ourselves. Therefore, Man can do no other but rely on nature and for his own equilibrium he should always be in a constant harmony with nature. Man's greatness lies not in being close to the gods but in the simple desire to have clear knowledge, in the ability to make exact measurements of things, to compare them methodically, and to draw from them general conclusions that the mind has the faculty of retaining in the form of abstractions so that it may reproduce them at will. The awareness of this faculty enables the artist to intensify within himself the instinctive, the intuitive, the emotive and the pathetic, and to canalise them into a superior order, into a constructive, supernatural conception of life. To construct is to evaluate relationships, to calculate equivalences, to coordinate positive forces with neutralizing realities, to organize all the data in such a way that unity, perfect stability is obtained. Every work worthy of man must be verifiable, that is to say it must carry within it its own clearly analysable evidence.

Well governed sensibility, when it assumes an active part in us, becomes a form of right thinking or "pure reason", or of moral equilibrium. By uniting it in the work with its structural principle we achieve what Seuphor called an "architecture". To establish upon the basis of a severe structure, simple and unadorned in all its parts and according to a principle of close unity with this undisguised structure, an architecture that, by the technical and physical methods peculiar to the age, expresses in a clear language the imminent and immutable truth and reflects in its particular organisation the order of the universe.

In the late 1930s a number of Constructivist artists that included Gabo, Pevsner, Moholy Nagy, Gropius, and Mondrian moved to England. They settled in London and came in touch with Ben Nicholson, Barbara Hepworth, Henry Moore and the critic Herbert Read. When the war broke out they moved to the United States and thus no indigenous Constructivist movement came to life in Britain until the 1950s. In 1937, though, Gabo in collaboration with Ben Nicholson and the architect J. L. Martin edited a collective volume "Circle", called an "International Survey of Constructive Art", Mondrian's contribution "Plastic Art and Pure Plastic Art" remains the most important source for the theoretical basis of Neo-Plasticism, while Gabo's editorial, "The Constructive Idea in Art", extended the concept of Constructivism even more widely than had been done hitherto and today it is appreciated as the most explicit statement about Constructivism. (seen in the introduction)

It is appropriate here to summarize the principles of Constructivism:

- I. Constructivism is non-iconic. No information about the appearances of anything in the world is conveyed in a Constructivist work. The work only conveys itself.
2. Constructivism is opposed to the kind of expressiveness which is exploited by Expressive Abstraction. The expressive qualities of the materials from which a work is made are of no interest. The expressive characteristics of the visual elements of the picture image are reduced to a minimum. Expressiveness is eliminated so far as possible from shapes, colours, texture, and facture. Geometrical or near-geometrical shapes are generally preferred. Many Constructivists restrict themselves to a few unmodulated primary colours and tend to choose smooth, machine-like, impersonal finish. In a Constructive work emotion derives from structure or organization. The excitement is of an intellectual order.
3. Constructivist composition must not be impulsive and improvisatory like that encouraged by Expressive Abstraction. It must be planned and deliberate and must follow objective structural principles which can be intellectually appreciated and controlled. To mark this difference the word "construction" was preferred to "composition".
4. A Constructivist work must be explicit, precise, clear, lack ambiguity or vagueness, be comprehensible and simple. (This principle was not followed by all Constructivists, although it was by most).
5. Constructivists believe that their works reveal by their structure the reality behind the appearance of things, although they carefully do not reproduce the appearances.

6. Perhaps as a distant inheritance from Russian Constructivism, some Constructivist artists believed that in conjunction with a refurbished ideal of architecture Constructivist art should take the initiative in creating an environment appropriate to the new society and to the new type of man that was expected to emerge in the post-War era. This was expressed in the last issue of "Abstraction-Création" by Jean Gorin published in 1936.

As I have already mentioned the two most influential individual movements on the development of International Constructivism were the Suprematism of Malevich and the Neo-Plasticism of Mondrian. Suprematism is a Russian phenomenon but has been accepted by the ideology of International Constructivism. The main difference between the two movements is that Malevich emphasized the dynamic quality of elementary forms while Mondrian insisted on excluding all contained elements with expressive character of their own and throwing the whole burden of composition on a system of relations among non-expressive orthogonals.

Suprematism ^{4.}

Although Malevich was very clear in his understanding of what he was doing when painting, he produced a philosophy that was meagre, in that to the questions of why, his answers were unclear. Yet, his ideas remain interesting both because he was the first artist deliberately to found a school of geometrical abstraction and because his influence on various trends of European Constructivism persisted through up to the Mini-

malists of the 1960s.

Malevich borrowed the term "non-objective" from Kandinsky. By "non-objective" he meant non-representational or non-iconic abstraction, a world of art devoid of forms which image or suggest the appearances of the natural world. He maintained that representation "obscures the true nature and function" of art. Suprematism is "the rediscovery of pure art which in the course of time had become obscured by the accumulation of things". "Under Suprematism", he said, "I understand the supremacy of pure feeling in creative art". By "pure" feeling he did not mean emotions and affective associations which attach to people and things, ideas and events, in ordinary life. It is not clear though, whether he meant feeling as what we'd call an immediate response, or, as affective response to the formal qualities of a composition which carries no representational or associative connotations. Malevich believed that this emotion, so aroused, is also cosmic in character and brings one into contact with a realm of absolute and unchanging values. This kind of mysticism is not uncommon among abstract artists of a geometrical persuasion. They wanted their art to reveal "Universal Truths" and to achieve a "New Classical Order". Both Malevich and Mondrian (though in their own individual ways) had their work closely bound up with a mystical conception of the relationship between art and spirituality.

Suprematism arose in Moscow in 1913 when Malevich was working on stage designs for Kruchenykh's Futurist opera "Victory over the Sun". His preliminary drawings made for the stage sets are the first Suprematist works. But, Suprematist painting did not make its appearance until the winter

of 1915/16 at the Petrograd exhibition "Zero-Ten". This was the last Futurist exhibition and symbolized the birth of Suprematism. In the intervening years Malevich was also doing works which he described as "transitional realism" to distinguish them from his earlier Cubist-Realist works. These were in the manner of Synthetic Cubism, combining unrelated objects with no common significance apart from their formal structure and shape.

The earlier Suprematist paintings consisted of elementary

Fig. 5 geometrical figures - a square, a cross, a circle - done in

Fig. 6 black and white. Later on they became more complex and dynamic compositions, using also the elongated rectangle and introducing a few primary colours. From 1916 on the colour tones began to

Fig. 7 be more subtly graded and the dynamic relations more intricate, while shadowy, half invisible geometrical shapes loomed in the background. The trend culminated in his famous "White on White"

Fig. 8 pictures which were exhibited in 1919, each consisting of a single white square with outlines barely visible against the white background. In 1919 Malevich said, "the plane, forming a square, was the source of Suprematism, new realism of colour, a non-objective creation".

This radical break with all that had gone before involved an entirely new conception of the nature of art. Art was no longer "a mirror of nature". The art work became an independent artefact divorced from extra-pictorial reality. Nor were the pictorial elements of a Suprematist work abstracted from natural appearances. The work as a whole became an anonymous construction demanding recognition for what it was in itself. In the Suprematist vocabulary the word "realism" acquired a new mean-

ing, that repudiated all that it had hitherto stood for, even in Cubism. An art work was "realistic" by being itself, a real thing, without pretensions to be or to represent or to copy anything other than itself; not because of veridical representation or authentic semantic information. It was real because it was an artefact without artifice or illusion.

Malevich went even further than the repudiation of semantic function. He demanded the repudiation of all illusion, the annihilation of "virtual" or three dimensional picture space. Although he made no attempt to do away with expressive character, for the square itself had a distinct expressive "personality", as it were - and so did the brushwork - he believed that the geometrical elements of a Suprematist picture must have no volume, create no planes receding into depth. The space of Malevich, as he believed, was flat and entirely two dimensional. Colour also had to be flat, unmodulated, to coincide with the geometrical form banishing all colour composition in which each area of colour is influenced through simultaneous contrast by every other area, and all combine into a harmonious whole. Instead^{colour} was seen as defining an area belonging to the pictorial element, as when we say a piece of textile material, or any object is red or green or black.

It may be difficult to accept such claims when Malevich has not done away with expressive character and who has also emphasized dynamic quality. In many of his works he used elongated rectangles with the effect of lines, thus, the elements seem to be in free flight and the planes acquire a rotative or centrifugal movement which suggest some kind of illusion. (This dynamic quality also characterized some of the Suprematist works

of Rosanova, Puni and Pogova). However, Suprematism, did reject artifice and illusion with the same intensity as did the Productivist works "Hanging Constructions" of Rodchenko and "Corner Reliefs" of Tatlin, although Malevich himself opposed social utility as a function of fine art.

Neo-Plasticism

In 1917, Piet Mondrian together with Van Doesburg founded the periodical "De Stijl". Three years later in 1920 he published the essay "Le Neo-Plasticism". In 1937 he contributed an essay "Plastic Art and Pure Plastic Art" to the Constructivist journal "Circle" where he formulated his views in a most concise way.

Mondrian is the principal figure in the Dutch movement of Neo-Plasticism. He explicitly distinguished two tendencies in art. One he called objective and he described as the "direct creation of universal beauty", and the other subjective, that is the "aesthetic expression of oneself". Sometimes, he said, both tendencies are necessary and that art demands a harmonization of the two. More characteristically his view was that the history of art shows an evolution directed towards the intensification of the objective element and its purification. Thus, he maintains that the dualism which has manifested itself in art is only relative and temporal and the opposition of the two trends "is actually an unreal one".

For Mondrian universal beauty does not arise from the particular character of the form, but from the dynamic rhythms of its inherent relations, or from the mutual relations of forms. He preferred non-figurative work to figurative art, and ultimately Geometrical Abstraction which "uses simple

and neutral forms, or ultimately, the free line and the pure colour". He believed that very simple geometrical forms are the most free from subjective associations and emotion. Here he finds justification for his own system of vertical and horizontal lines or bands and primary colours, for these elements are the most "neutral" of all and throw the emphasis most completely on the relations among these elements.

Fig.12

He loved the clarity and precision of simple geometrical forms and had a repugnance for the emotional and expressive kind of abstraction practised by Kandinsky. He constructed compositions which consisted solely of systems of relations to avoid even the expressive character, or "personality" of a square or a circle. The static quality and contemplative character of Mondrian's Neo-Plasticism are a noteworthy contrast to the suggestive movement and dynamic quality of Suprematism. Restricting himself to orthogonals he repeated the rectilinear format of the picture without introducing interior contrast or self-sufficient contained images.

Van Doesburg later modified the theory of Neo-Plasticism and named it Elementarism. This modification admitted diagonals and lines at an angle to the vertical, thereby breaking the strict isomorphism between image and format which was regarded as so important by the abstract painters of the 1960s that they introduced the shaped canvas in order to maintain isomorphism when they admitted the diagonal image.

Fig.13

Mondrian claimed that his art had a "cosmic" character in the same way as Malevich. He talked of "constant truths" and "fixed laws" concerning forms and their relations in composition. The exaltation of the orthogonal and the primary

colours together with many of Mondrian's ideas were based on the theories of the Neo-Plastic philosopher and mathematician Dr Schoenmaker, who was also Dutch. He published "Het nieuwe Wereldbeeld" (The New Image of the World) in 1915 and "Beeldende Wiskunde" (Plastic Mathematics) in 1916. For Mondrian, though, his concern was not just with theory but with practice, concrete reality. He also foresaw a time when the distinctions between painting, sculpture and architecture would have disappeared and the art of Geometrical Abstraction itself would invade and permeate the whole environment, being no longer distinct from it. This can be testified in his essays that I have mentioned above.

Post War Constructivism

After the Second World War a new type of sculpture was being developed which had its antecedents partly in the work of the Constructivists Gabo, Pevsner, and Moholy Nagy, and partly in the pierced and holed sculpture of Henry Moore and Barbara Hepworth. This new sculpture was not content that space should penetrate the bulk of a work being as it were absorbed and incorporated into its substance. Rather, by the use of transparent materials and by wires on thin metallic strips to define the form, space was converted into the major sculptural material, moulded and transformed.

But, it wasn't until the 1960s that sculpture changed the very concept of its identity. Even a connoisseur of Art could have easily been in two minds whether to regard it as sculpture at all. The traditional methods of carving wood or

stone and modelling for casting in bronze were forsaken in favour of the more impersonal industrial techniques of welding steel and aluminium or, later, for the still more anonymous man-made materials such as perspex, vinyl, plexiglas, Fig.16 and so on. David Smith in America and Antony Caro in England Fig.17 were the leaders of the new sculpture. The school of Primary Structures or Minimal Art succeeded them in America, and in England they were followed by a group of artists, several of whom were former pupils of Antony Caro, who were brought to public attention by "The New Generation" exhibition at the Whitechapel Gallery in 1965.

The roots of the new sculpture drew sustenance from Geometric Abstraction and many of its attitudes were shared with the Constructivists. But in other respects its concepts were so novel that it belongs rather to the category of art that is under the heading of "Concrete Art".

It was Charles Biederman's publications of "Art as the Evolution of Visual Knowledge" in 1948, "Letters on the New Art" in 1951, and "The New Cézanne" in 1952 that gave a new impetus and a new direction to Constructivism in the post-War years. Their influence was not only felt in America but stimulated a new Constructivist movement in England led by Kenneth Martin and Antony Hill. Biederman's ideas were further disseminated through the magazine "Structure" founded in 1958 by the Dutch artist Joost Baljeu with the object of formulating a centralized aesthetics of Constructivism.

Biederman maintained that the making of art since its earlier times was dominated by the two conflicting impulses of imitation and creativity. Imitation had led the artist into a

continuous search for fresh techniques of representation in order to achieve an ever more exact reproduction of natural appearances. His creative impulse, on the other hand, was manifested in the attempt to display the typical or generic and to represent an ideal instead of "literally" recording the "uniquely particular or individual characteristics of the objective world". He said that the creative urge had been restricted by the mimetic function imposed upon art. Since the recent invention of camera, however, some began to realize that to record natural appearances can now be left to the more efficient mechanical means and artists must devote themselves wholly to creativity and invention.

He drew the conclusion that now it is absolutely necessary for art to become non representational. If the artist's objective is to produce invented forms he should not make illusions. But, for Biederman "illusion" was not merely the representation of natural appearances. He further argued that "illusion" consisted basically in the creation of a three-dimensional image by the use of two dimensional means. If one was to avoid illusion he must, therefore, do away with the virtual three-dimensional picture space as well, whether the image was representational of the world appearances or not. But, the picture image in virtual space is inherent to the very nature of painting whether figurative or non-iconic and therefore, he held, painting as an art-form is obsolete and must be replaced by the three-dimensional construction. Thus, he introduced the new "construction" which was neither painting nor sculpture and avoided the "illusory" third dimension. As a result, the old distinction between painting and

sculpture was blurred.

Yet another argument was put forward by Biederman to explain why the modern artist must abandon painting in favour of three dimensional construction. He claimed that even when the artist does non-representational work, he does not cut himself off entirely from nature. He does not reproduce the external appearances of nature, but he does try to reproduce, or to work in harmony with, the "structure" of nature. Since the natural world exists in three-dimensional space, art can only achieve natural harmony with nature if the art object is itself really three-dimensional instead of creating an image which is virtually but not actually in three dimensions.

Biederman's assertions are no more easy to understand than the similar statements of Malevich and Mondrian. He tends to jump into conclusions, rather than giving a sound argument. Why the invention of camera makes representational art no longer necessary? Why is representation aesthetically restrictive and an impediment to creativity? His assertions can be easily counterargued by figurative artists. Furthermore, whether the artist wants to or not, he is of necessity bound to depict an "aspect" of nature, if he depicts it at all, nature as it appears to him. And how does it follow that to eschew representation of appearances and accept a non-iconic art it must be Constructivist rather than Expressive, or that the picture image must be abolished? A construction built up in real three-dimensional space is not necessarily more "creative" than a picture with its own virtual space in which non-iconic forms move in mutual tension and balance. And the tension that is set up between the virtual picture image and the actual

pigmented canvas has itself an aesthetic value. Patric Heron agreed with Biederman that the illusion of three-dimensional space is integral to painting as an art. But, while Biederman drew the conclusion that painting is therefore obsolete, Heron, speaking for hard-edge Tachism, maintained that one must exploit to the full possibilities of non-iconic "colour-space",

What makes the arguments that Biederman put forward flawed is that they give the impression that he wants to offer a valid objection to other styles than the advanced Constructivism which he advocated. But what Biederman was really after was to provide a "rationale" for Constructivist art, and, the reason his books made such an impact was that they coincided with a widespread movement among an active body of artists in this direction.

His influence together with that of his American followers' helped the formation of a new Constructivist movement in England during the 1950s. Its leaders were Kenneth and Mary Martin, Antony Hill, Victor Passmore, and Adrian Heath. The ideas of the group were little different from the ideas of the older Constructivists. In 1951 Kenneth Martin published a "Broadsheet No I" in conjunction with an exhibition at the A.I.A. Gallery, in which he made the point that "what is generally termed "abstract" - by which he meant non-iconic, Geometrical Abstraction- "is not to be confused with abstraction from nature".

In accord with pre-War International Constructivism he maintained that such limitations of form as have been constantly used in poetry and music, and that for art is the square,

Fig.18

Fig.19

Fig.20

Fig.21

the circle, the triangle etc, are primary elements in the vocabulary of form, not ends in themselves. A complete pictorial expression can be achieved in a rigorous form of art which uses as figures such formal elements.

"Proportion and analogy are at the base of such a pictorial architecture", he said. "The painting grows according to these laws and these have their counterpart in the laws of nature. Not painting which imitates the illusory and transient aspects of nature, but which copies nature in the laws of its activities. Through its aspirations towards music, abstract painting fulfils a spiritual necessity. The painter creates towards a spiritual harmony using the most fundamental means".

In 1955, in an article he wrote on "The Development of the Mobile" he summed up his beliefs in that the basic principle of the constructive idea was simplicity. The Constructivist work is the product of the simplest actions. Not a reduction to a simple form of the complex scene before us, but the building of simple events of an expressive whole.

Although the logical connection is not apparent here, what is apparent is that the preoccupation with simplicity was common to most Constructivists from Malevich and Mondrian onwards. In Kenneth Martin's case an artificial simplicity of means contrasts with the complexity of the result. A few simple forms are made by simple mathematical or logical but arbitrary rules to generate highly complex structures, kinetic or static. The simplicity of the structural principles is not, however, apparent in the result.

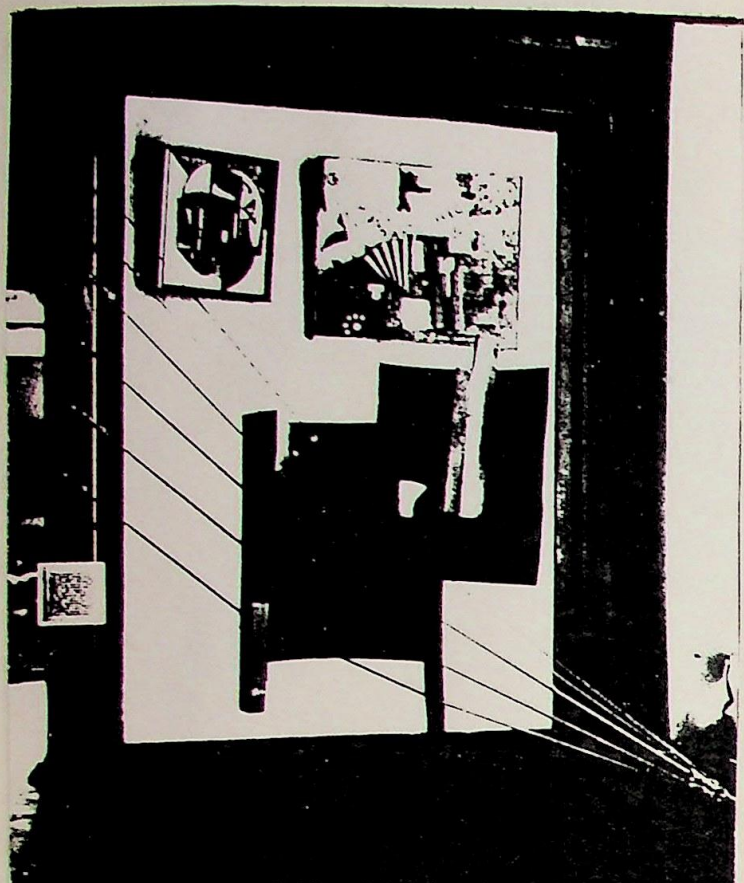


Fig. 1

Vladimir Tatlin;
Corner Counter-Relief,

1914-15

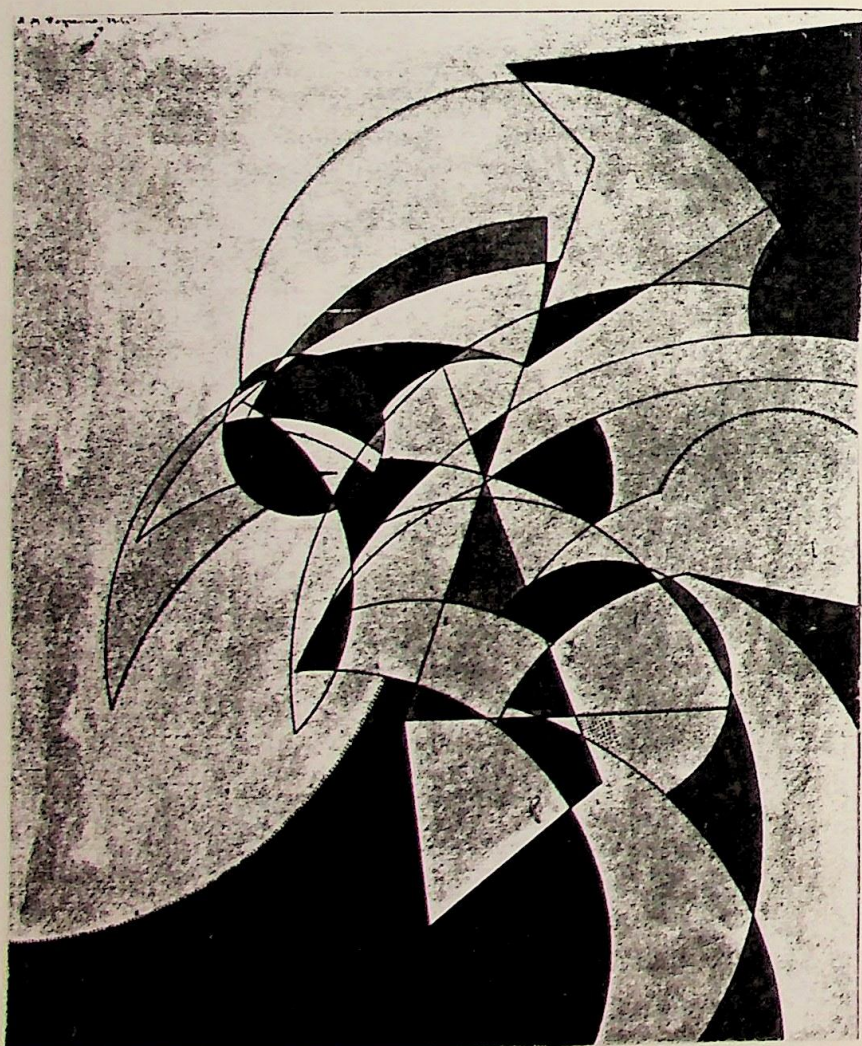


Fig. 2

Alexander Rodchenko;
Compass and Ruler

Drawing, 1915

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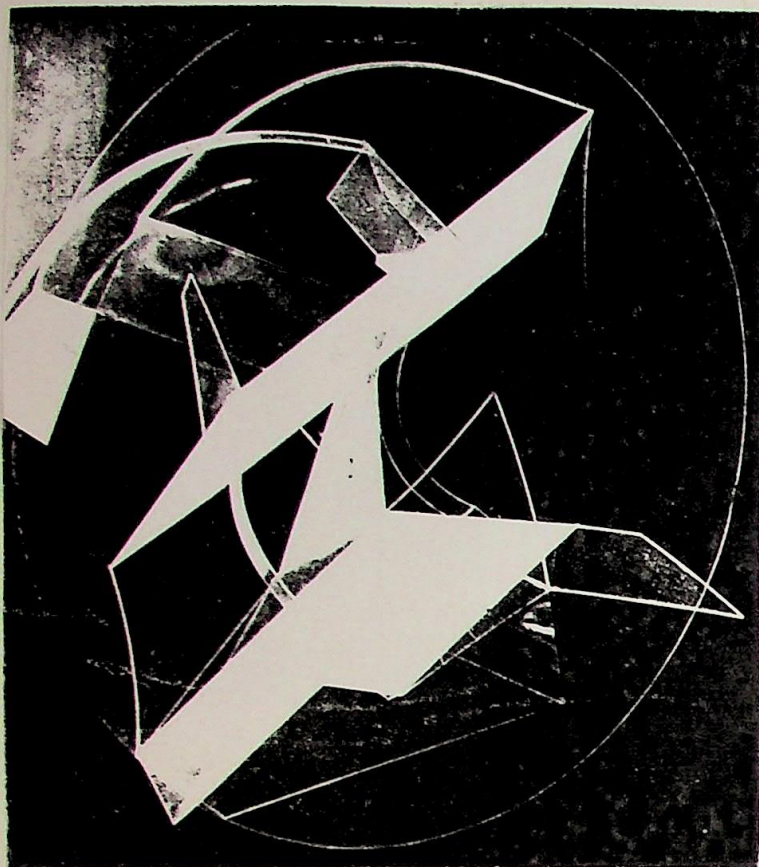


Fig. 3

Naum Gabo:

Construction in Relief,

1920

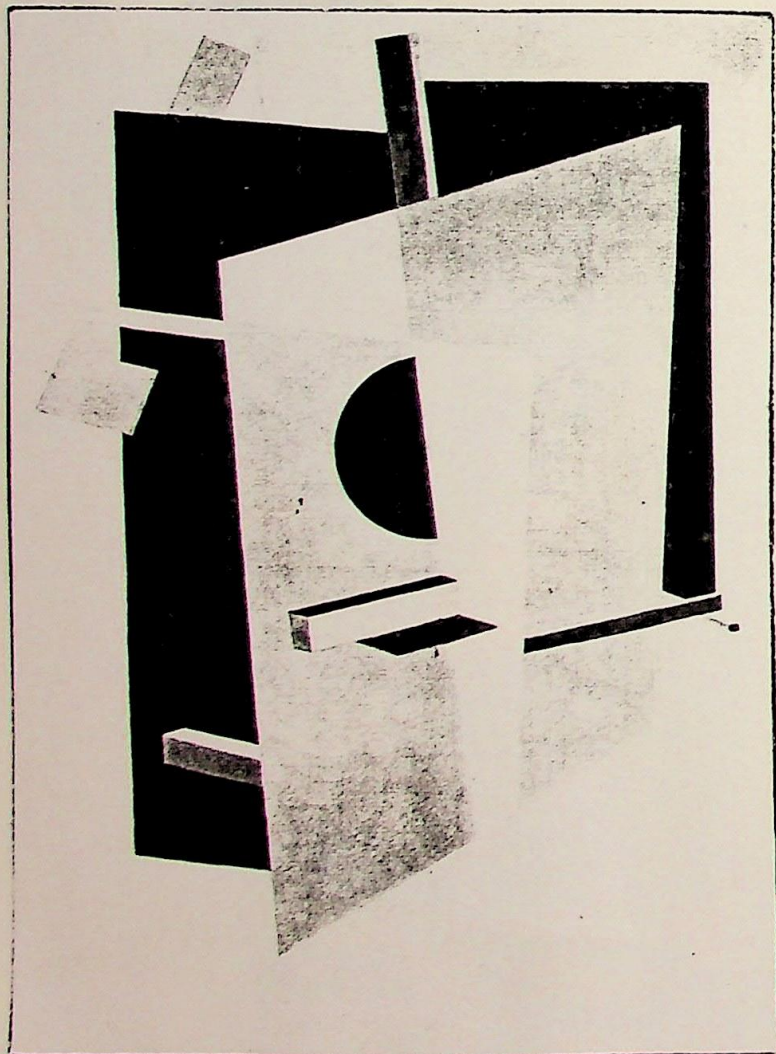


Fig. 4

El Lissitzky:

Proun Interpenetrating

Planes, 1919-20

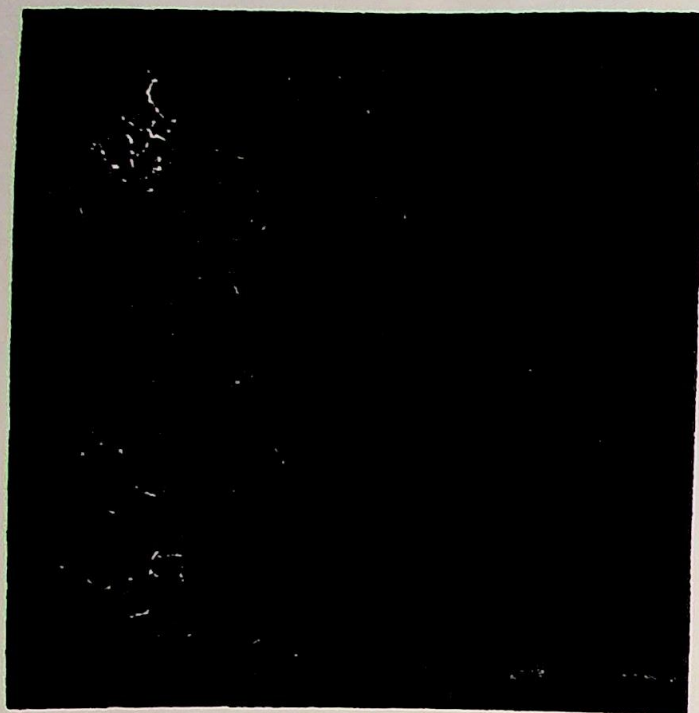


Fig. 5

Kazimir Malevich:

Black Square, 1915(?)

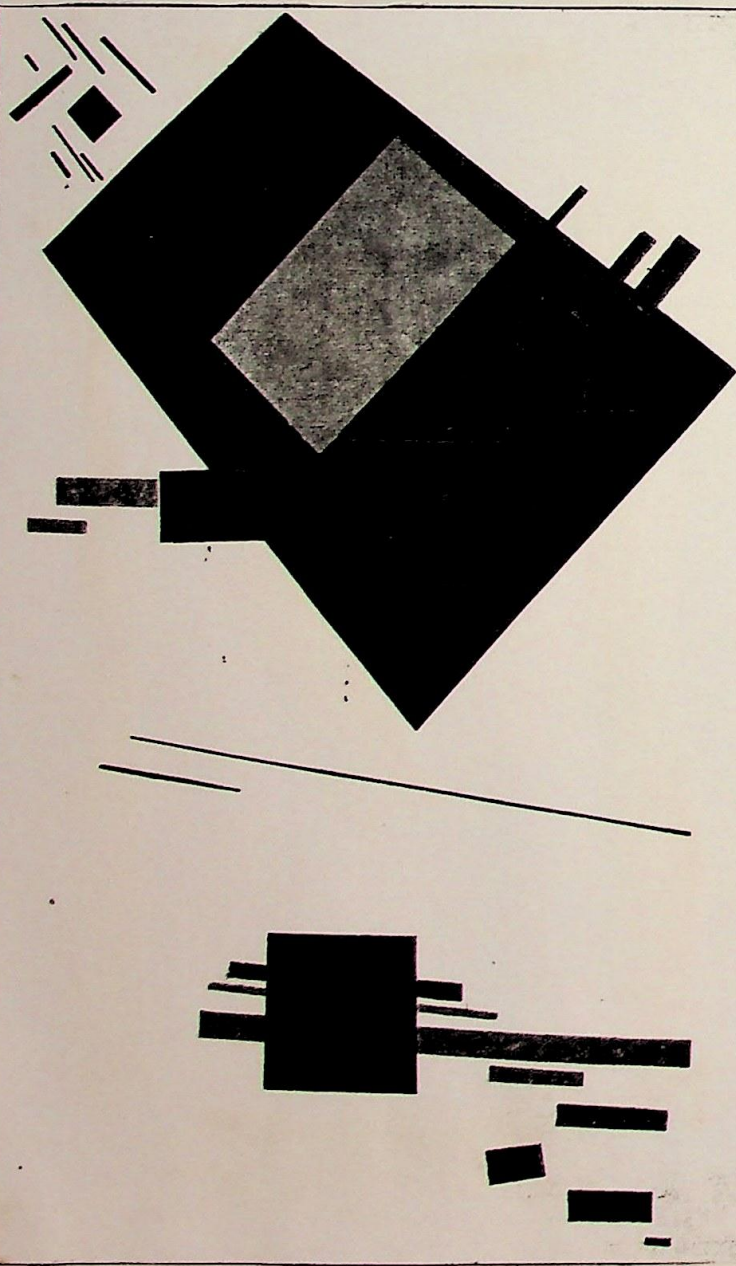


Fig. 6

Kazimir Malevich:

Suprematist Painting, 1915

Fig. 7

Kazimir Malevich:

White Square on White,

1917-18

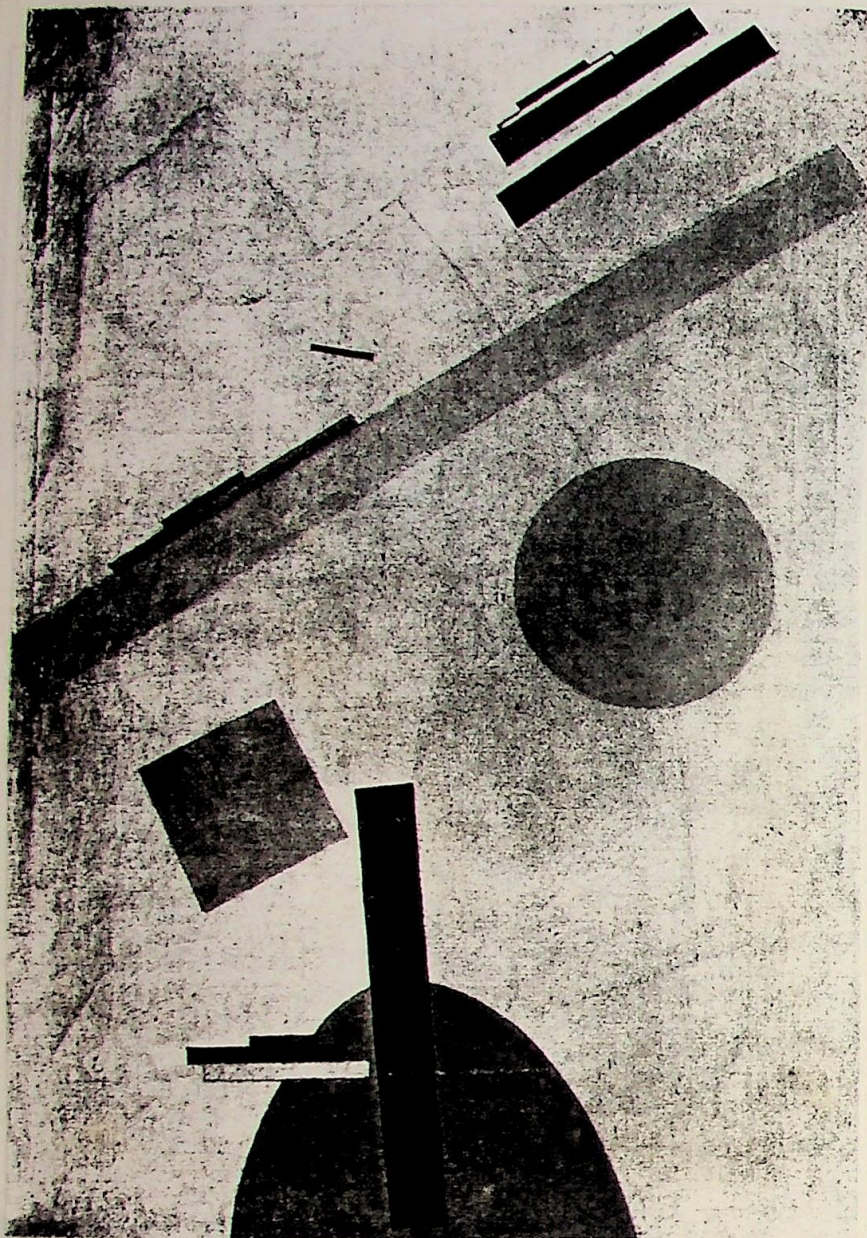


Fig. 7

Kazimir Malevich:
Suprematist Painting,

1917

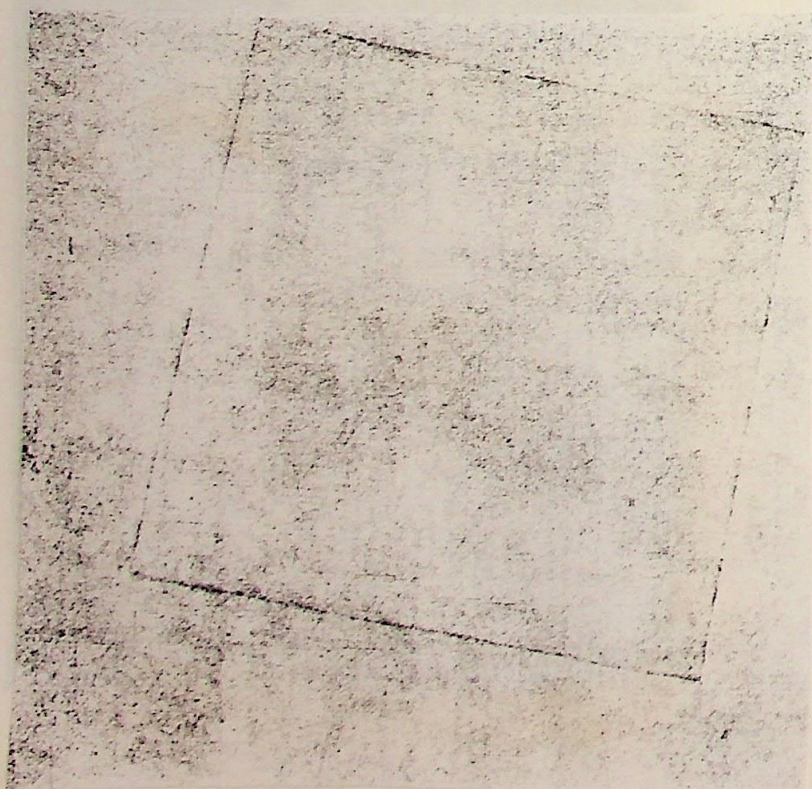


Fig. 8

Kazimir Malevich:
White Square on White,

1917-18

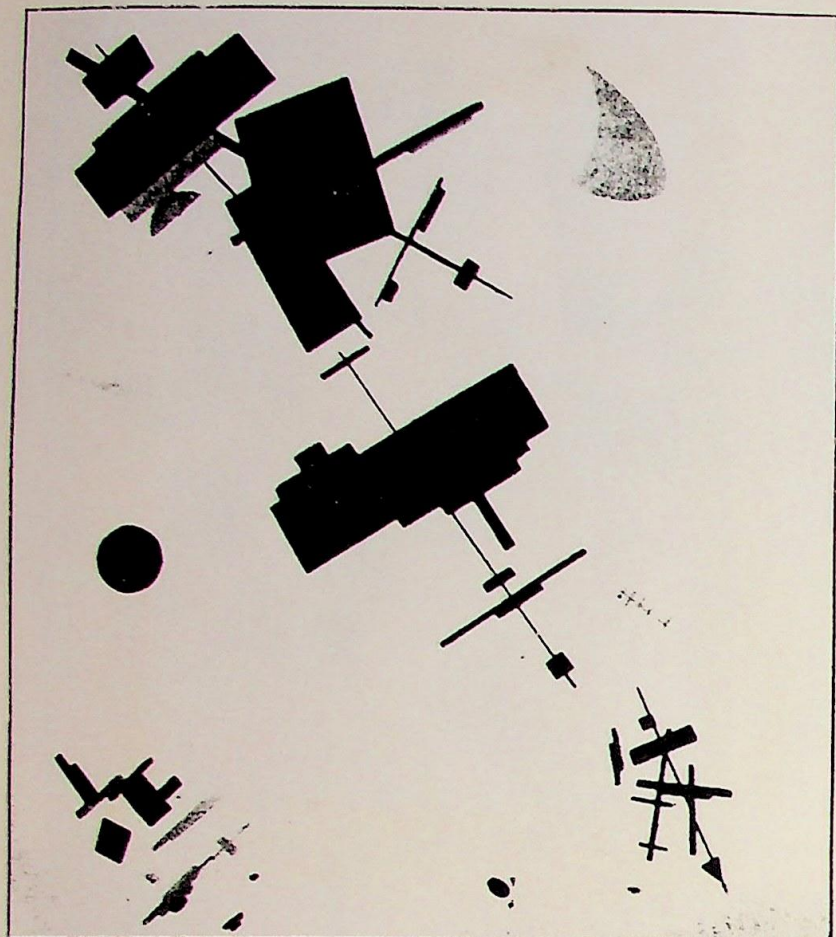


Fig. 9

Kazimir Malevich:

Dynamic Colour Composition,

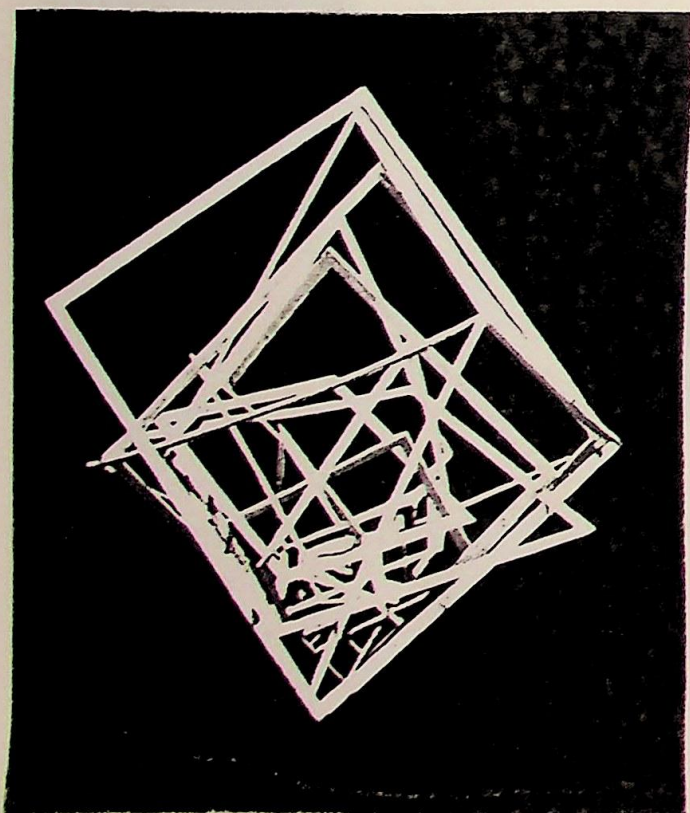
 1917(?)


Fig. 10

Alexander Rodchenko:

 Hanging Construction, 1920

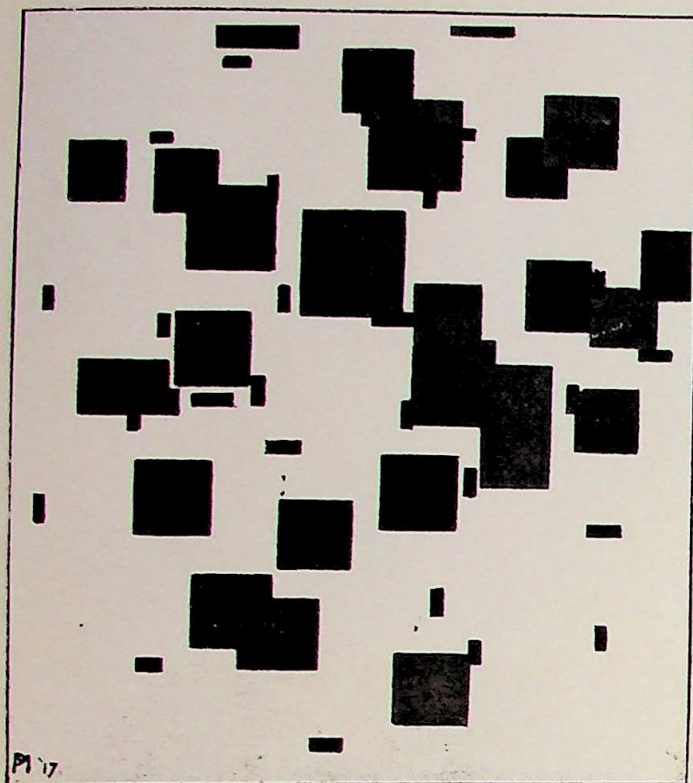


Fig. II

Piet Mondrian:

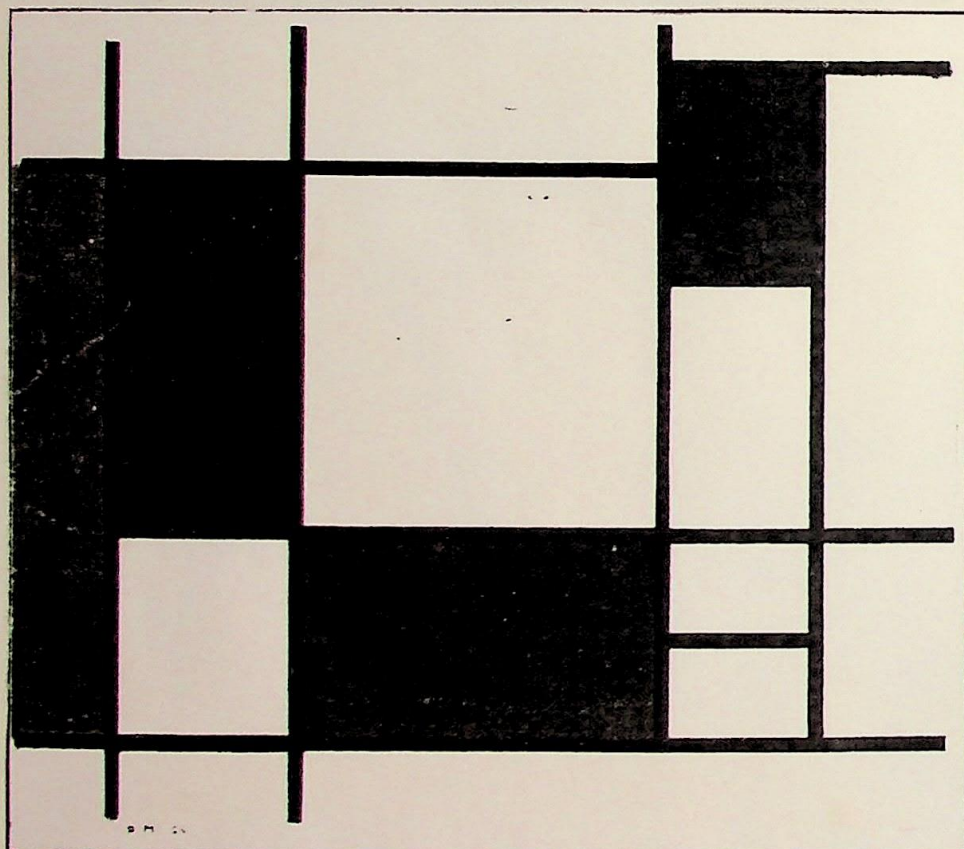
Composition in Blue B, 1917

Fig. I2

Piet Mondrian: Composition with Red, Yellow and Blue, 1920

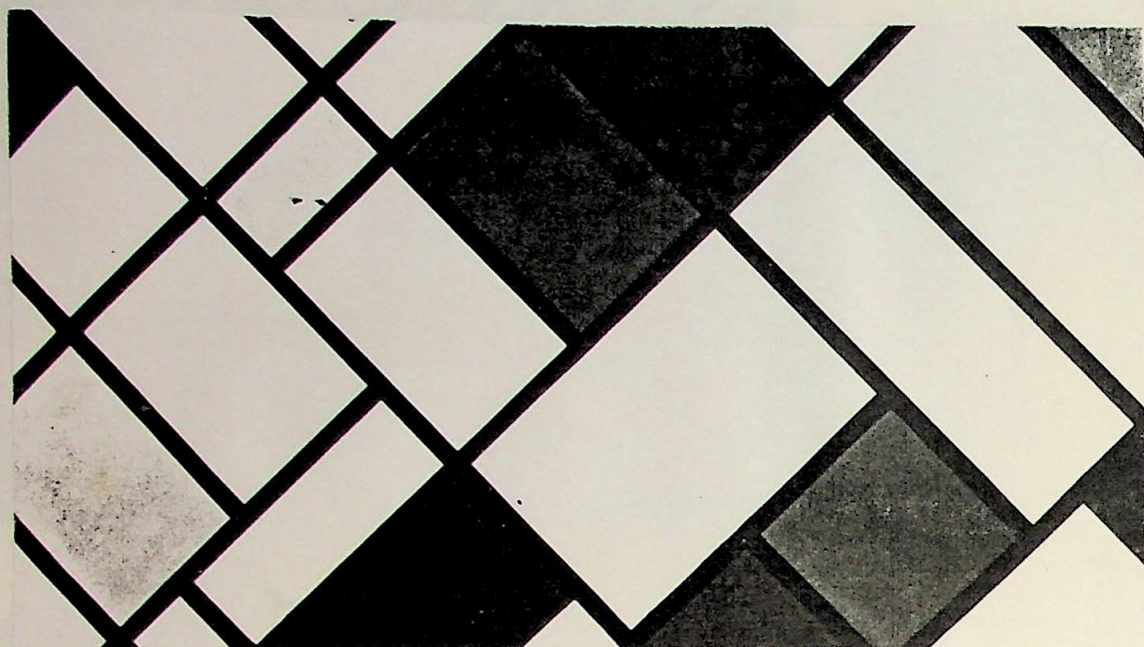


Fig. I3

Theo van Doesburg: Countercomposition of Dissonances XVI, 1925

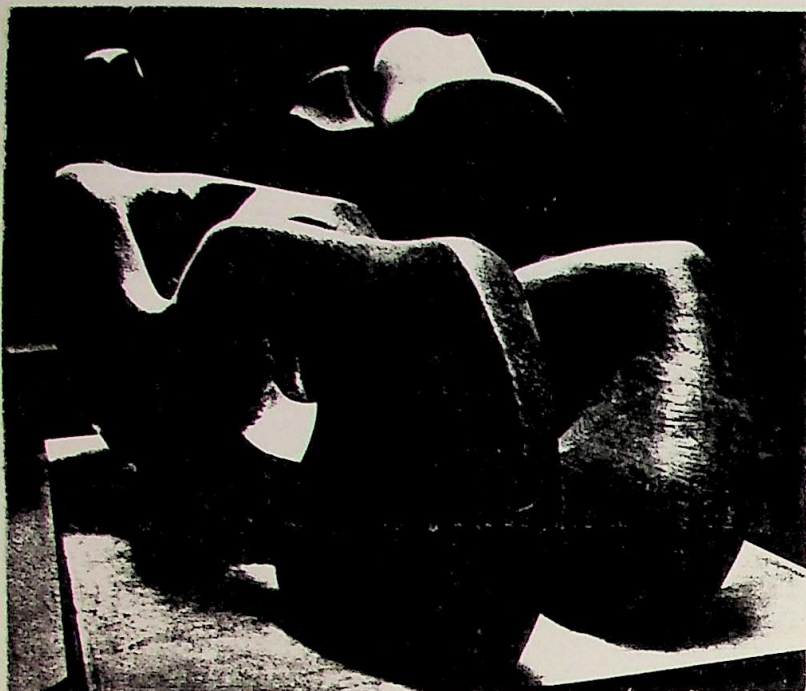


Fig. I4

Henri Moore:
Reclining Figure,

1939

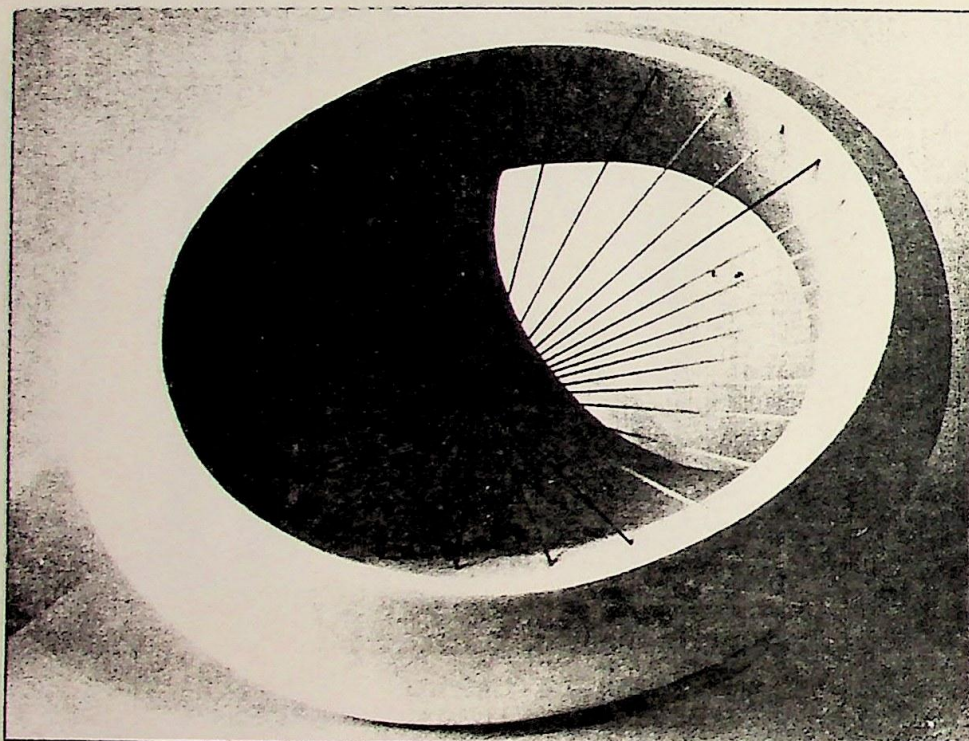


Fig. I5

Barbara Hepworth: Sculpture with Colour (Oval Form) Pale Blue
and Red, 1943

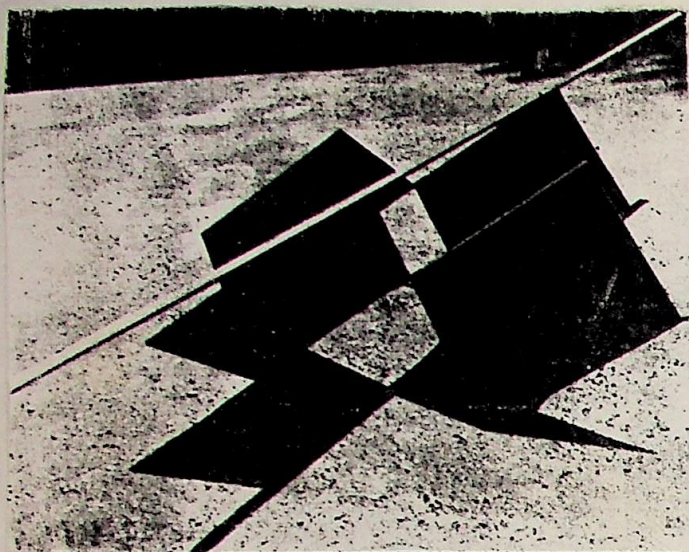


Fig. I6

Antony Caro: Pulse, 1964 (Steel painted pink and green)

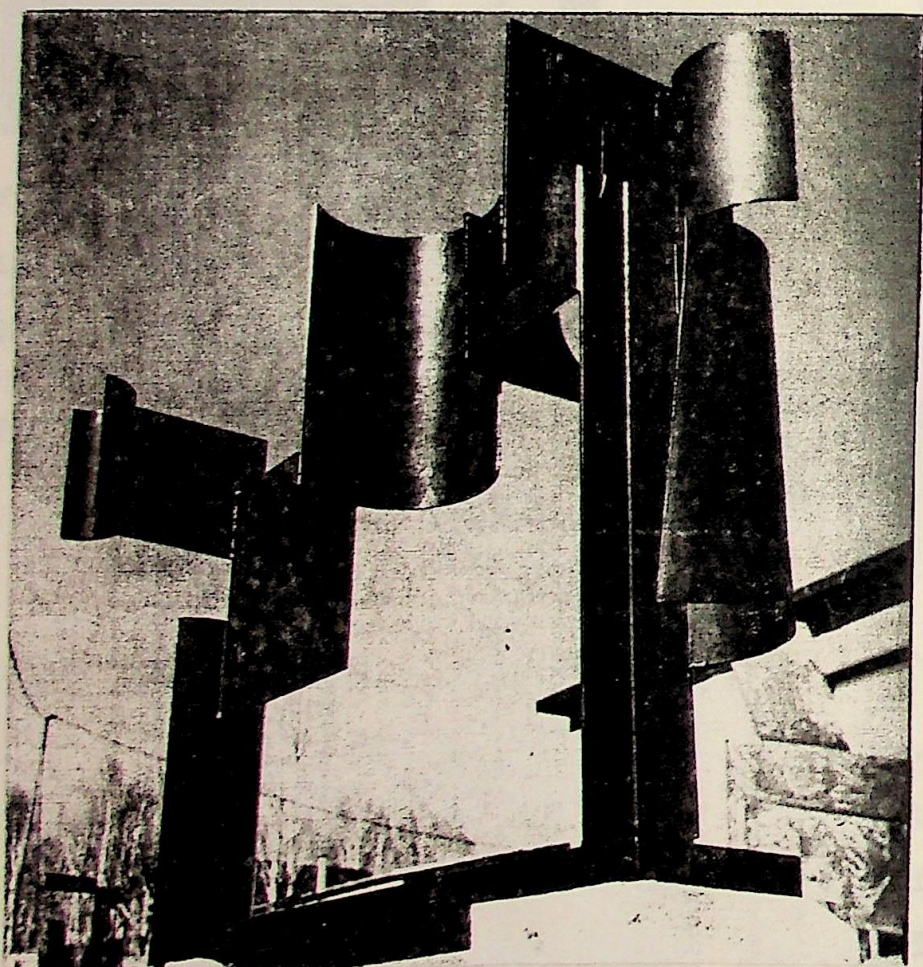


Fig. I7

David Smith: Zig III, 1961 (Steel painted black)

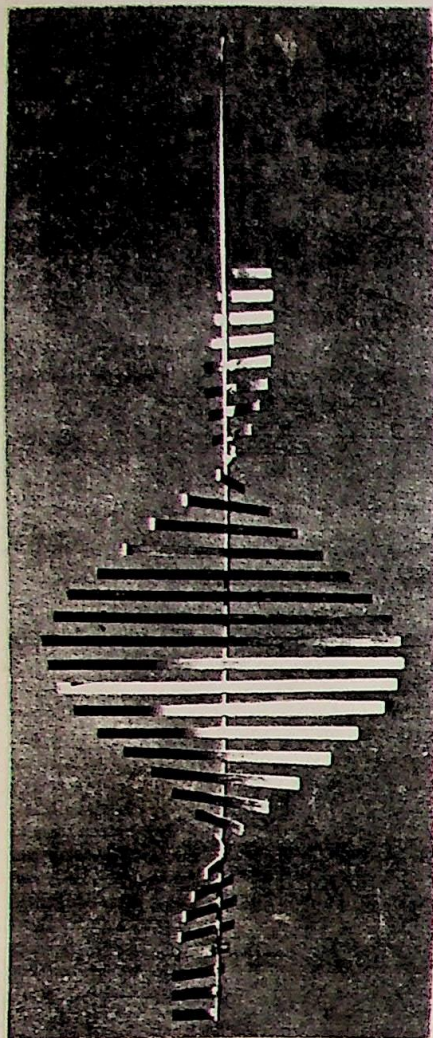


Fig. I8

Kenneth Martin:

Small Screw Mobile,

1953 (brass and steel)

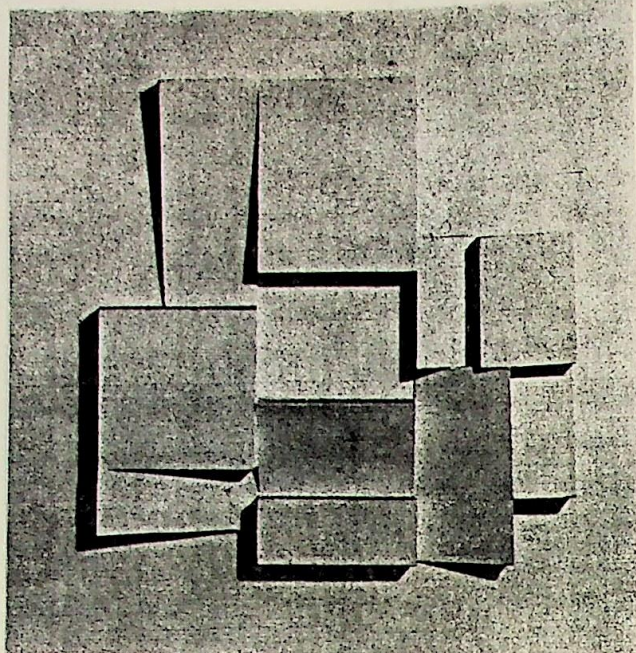


Fig. I9

(painted plywood)

Mary Martin: Spiral Movement, 1954

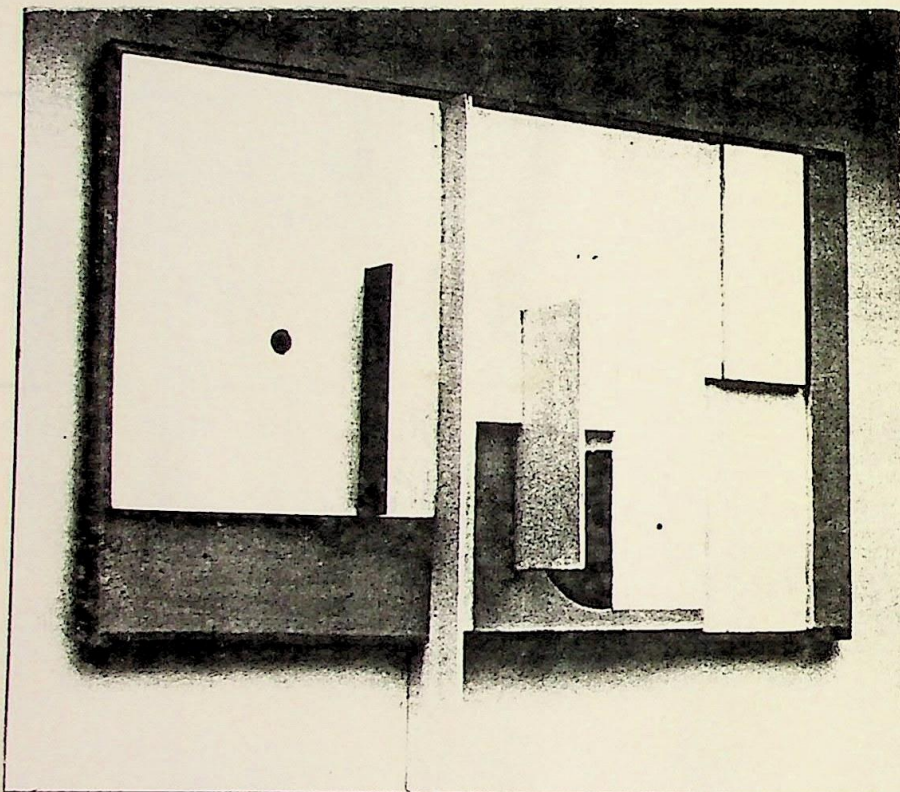


Fig. 20

Victor Pasmore:

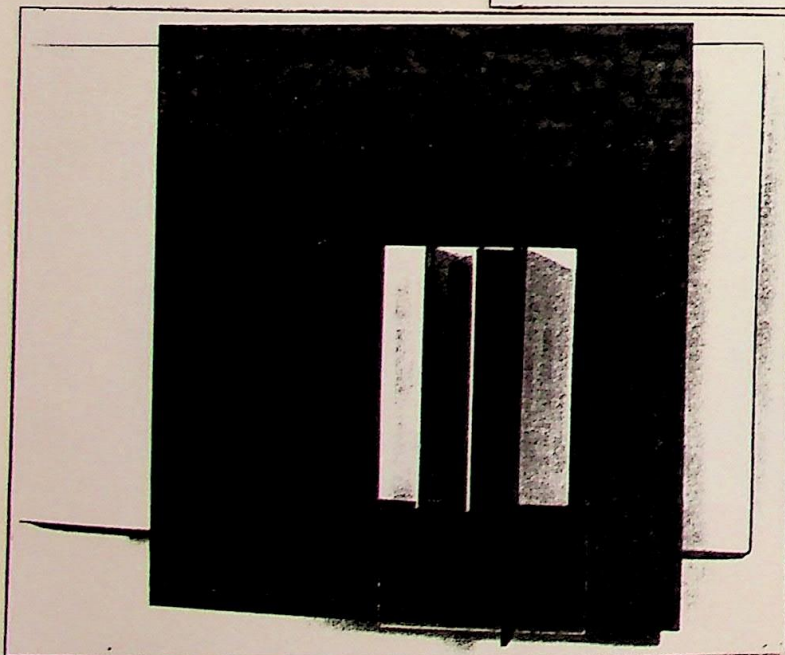
Relief, 1951-53

(painted wood)

Fig. 21

Antony Hill:

Relief, 1959 (perspex, aluminium, stove enamelled metal)



THE HEIRS

By 1940 some artists had developed a deep respect for the work of Mondrian, Malevich, De Stijl and other masters; others were looking for the language of abstract expressionism and found it in the bold, precise, geometrical geometry of the Constructivist ideas and the rejection of impersonality. This vigorous and imaginative group of artists was not only to extend the language of abstraction but also to have otherwise become forgotten. The idea of space changed

THE HEIRS

- Hard Edge Painting
- Primary Structures

These reactions and developments were found in Europe, the United States, Great Britain, and Japan. European artists had seen more of a common trend which collected in 1947 into a federation of groups, called the "New Tendency". The artists speak in terms of a definite new style in art. The term "New Tendency" was a cry of mutual recognition rather than a definition of style. One can only speak in terms of the different groups that emerged with it in the new abstraction, and for the sake of this essay I have chosen to discuss later on in this chapter "Hard Edge Painting" and "Primary Structures".

The emergence and anticipation of the new abstraction have been found in pre-war geometrical abstraction and the Constructivist ideas of the new artists differentiated their work from the abstract painting in their professional style.

THE HEIRS

By 1960 some artists had developed a deep respect for the work of Mondrian, Malevich, Gabo and lesser masters; others were looking for the antithesis of Abstract Expressionism and found it in the hard, precise, preconceived geometry of the Constructivist idiom and its implication of impersonality. This vigorous and imaginative younger generation of artists set out to extend the techniques of Constructivism that would have otherwise become conventional. New ideas of space emerged both in painting and sculpture; new images or no images at all, borrowing structures from mathematics and science; rejecting colour as a sentimental indulgence, or adopting it as a force; and trying out every technical means no matter how unpromising.

These reactions and developments were found in Europe, the United States, South America, and Japan. European artists became aware of a common trend which coalesced in 1963 into a federation of groups, called the "New Tendency". One cannot speak in terms of a definite new style in Art. The term "new-tendency" was a cry of mutual recognition rather than a definition of style. One can only speak in terms of the different aspects that artists dealt with in the new abstraction, and for the sake of this essay I have chosen to discuss later on in this chapter "Hard-Edge Painting" and "Primary Structures".

Though antecedents and anticipations of the new abstraction have been found in pre-War Geometrical Abstraction and Constructivism many of the new artists differentiated their own work from apparent similarities in their predecessors. I see

this reaction as part of the process by which art always seems to reject past achievements before exploring new territories. The new abstraction has to be seen as part of the legacy of Constructivism as it broadened and deepened after the War.

The new art of the 1960s discounted any difference between the excellence of an object of art and a thing of natural beauty or a factory product, thus eliminating the distinction between art object and objects in general. It made little or no attempt to seduce or charm an audience. It was intellectual rather than sensuous in its impact, conceptual rather than perceptual. It not only went along with Constructivism in banishing the expressive aspects of the world but rejected too the perceptual richness and excitement which the earlier Constructivists had sought from the unification of a complex structure into a single perceptual Gestalt. It was an art of reduction, an art of deliberate impoverishment but without the romantic titillation that the Italian "arte povera" drew from its use of the refuse and outworn materials of urban civilization.

Hard Edge Painting

The term "Hard Edge" was coined by the critic Jules Langster in America as an alternative to the older Geometrical Abstraction. It was taken up by Lawrence Alloway, who defined its application in the catalogue of his exhibition "Systematic Painting" at the Solomon R. Guggenheim Museum in 1966. It was used to refer to the new development in painting that combined economy of form and neatness of surface with fullness

of colour, without raising memories of earlier geometric art.

"Hard Edge" became popular to describe the school of painting initiated by Ellsworth Kelly and Jack Youngerman, both of whom had known European Constructivism, Al Held, Leon Polk Smith, Charles Hinman, Raymond Parker and others. They painted large areas of flat unmodulated colours with sharp boundaries, thus their work was characterized by clarity of definition and precision of forms. Their immaculate surface and impersonal machine like facture achieved by the use of commercial and metallic paints would have been envied by the pre-War Constructivists.

But they went even further than this. The Hard-Edge painters made as their goal the abolition, or at any rate the suppression, of the image from painting, and that of course meant not just the iconic or representational image, but that which differentiates a painting from coloured objects of perception in general. One of the more interesting devices they developed was the use of forms, geometrical or not, which were incomplete Gestalten so that they seemed to lead out of the canvas and were inevitably completed by the spectator's eye outside the area of the picture. Thus, the psychological separation of the picture from its surroundings was diminished and it was caused to merge, as it were, into the surrounding space. The size of many of these paintings was very large, so they had the effect that they seemed, as it were, to envelop the spectator, instead of standing before him as something to be inspected. The completed forms, part of which were actually present on the canvas, would therefore carry not only outside the picture but outside and beyond the spectator's immediate

field of vision. Optical effects were also cultivated in the field of colour perception, such as the juxtaposition and contrasts of close-value colours, or hues at unusual and nearly identical levels of saturation and intensity, or the use of after-images and induced colours to contradict the sharp divisions defining the forms. Although these optical tricks were not as extreme as those exploited by Op art, they had the effect of making the picture an objective phenomenon playing upon the senses rather than a mirror leading the eyes into an image world.

A further development were the flag paintings of Jasper Johns which transformed the art work into an actual object.

He did not paint a picture of a flag, an image, but a replica of a flag. This was possible because a flag simply "is" a specific pattern, that is its nature and its whole being and by painting that pattern to occupy the complete canvas Johns was "making" a flag. His superb craftsmanship in the manipulation of paint (as well as his technical, artistic point of view) made his works into fine paintings. The work was ambiguous: technically it was a painting; it was actually a flag; yet functionally it was intended to operate as a picture, not as a flag to be waved. Other objects whose nature was pattern, and which therefore invited such ambiguity, were

the Targets also by Johns and the Traffic Signs exploited by Wilfred Gaul. But, while John's flags and targets were chosen because of their banality that no longer generates any energy, Gaul's selection of traffic signs was in opposition with John's intentions because for him they were contemporary and completely powerful, like ikons in the streets; more than

that, they were subversive, subliminal, tabu-pictures, visible forms of an invisible norm.

Frank Stella took the Flag paintings of Johns as the point Fig. 29 of departure for his "Coney Island" and "Grape Island" of 1958. In both these paintings the horizontal bands echo the stripes of the flag and emphasize the flatness of the picture. But whereas in John's the flag motif is coextensive with the picture, Stella's horizontals have no longical or psychological ending but run indefinitely beyond the perimeter of the picture. The motif instead of being closed is open in all directions like a diaper pattern, and this is a feature of most of his paintings in the early 1960s, even the shaped Fig. 30 canvases such as "Gerica" (1960), "Ophir" (1960-61), "Ouray" (1960), "Ouray" (1960-61), "IfafaII" (1964). Another characteristic of Stella's painting is that he does not, like many Hard Edge painters, use forms which because they are incomplete Gestalten "demand" to be completed outside the area of the picture. The size of his pictures is enormous, their visual complexity is reduced to a minimum, their simple pattern ends empathetically where the picture happens to end.

The nature of the patterns reinforces the flatness and supression of the image. The patterns echo the horizontal, vertical, or diagonal axes of the picture, thus tying together the motif and the conformation of the picture as a physical object. The effect is heightened by Stella's use of notched and shaped canvases, where the shaping of the contour is dictated by the demand of a simple pattern. He maintained Fig. 31 this effect even in pictures where he combined disparate geometrical shapes such as "ConwayI" (1966) and "Moultonboro III" Fig. 32

(1966). And something of the same effect was achieved, though necessarily rather more complex, in pictures such as "Flin Flon: III" (1969) and "Kurasan Gate Variation I" in which he used circles and arcs in a rectilinear format.

Stella's patterns were "non-relational". His motifs were not constructed from related parts in the traditional manner of composition. They were a complete refutation of Mondrian's conception that composition consists in the establishment of a complex set of relations among geometrically simple elements. In Stella's pictures there are, ideally, no elements to be related. Even the figure ground relation is eliminated or in some cases transformed and concealed by a kind of conjuring trick. He carried yet further into the geometrical sphere the "all-over" system initiated by Jackson Pollock and exploited by Cy Twombly and Jack Tworkov. From 1959 on there were no centres of interest in his pictures to be balanced or symmetrically related; interest was evenly distributed over the whole, though nowhere invited.

Stella was finally classified with the Minimalists because he was endeavouring to create "Primary Structures", that is, objects which are not composed or constructed by relating isolatable parts into a system.

Primary Structures

"Primary Structures" is the doctrine of "Minimal art", but "Minimal art" introduced as a term by Richard Wolheim in an article contributed to "Arts Magazine" for January 1965 carried from the beginning two shades of meaning related conceptually but pointing to two very different kinds of art. On the one

hand the term refers to works which display a less-than-usual degree of internal differentiation and therefore a "minimal" amount of "art work" on the part of the artist. The ancestors of this kind of Minimal art were Suprematist works by Malevich and his followers, monochrome canvases by Yves Klein, and monochrome or near-monochrome works by so-called Abstract Expressionists such as Barnett Newman, Clifford Still, and Ad Reinhardt. Though their aesthetic outlook is different, many artists of this school have affinities with pre-War Constructivism. The other type of Minimal art consists of art works whose internal differentiation may in some cases be very considerable, but which comes out not from the artist but from a non-artistic source, like nature or the factory. The type includes works by Claes Oldenburg, Roy Lichtenstein, Andy Warhol, Richard Hamilton. The "ready mades" of Marcel Duchamp were among their ancestors, as well as the incorporation of real materials and real objects in art works as practised by Synthetic Cubists and by Kurt Schwitters. It is the former school of Minimal art that carries the doctrine of Primary Structures and it is with this that we are concerned here.

"Primary Structures" is the term used of a kind of sculpture based on highly simplified geometrical forms. It was forshadowed by the late works of David Smith and immediately after his death it blossomed. The style obtained public recognition at an exhibition entitled "Primary Structures" arranged by Kynaston Mc Shine at the Jewish Museum, New York 1966, but it recognized that some artists had been doing this

Fig. 33 sort of work since 1961. Its chief exponents were Tony Smith,
Fig. 34
Fig. 35 Carl Andre, Donald Judd, Dan Flavin, Robert Morris, Ronald

Fig. 36

Bladen, Walter de Maria. The term was also quite loosely applied and was extended to painting and to Serial or Systematic art based on the repetition of a single modular form.

The idea behind Primary Structures appears contrary to Mondrian's in that a work of art was not constructed as a unitary system of interrelated elementary parts, but was itself a single elementary, immediately apprehensible, visual whole, which cannot be visually analysed into a plurality of contained parts. The word used was "wholistic". The formal motif and work were identical and inseparable. Barnett Newman's works were the prototypes of such conception. His paintings could not be seen or analyzed in terms of small parts. There were no subdivisions; the total field was the unit of meaning. It was this idea which motivated the defence of "non-relational" art by Stella and Judd and their rejection of traditional composition and construction.

However, it is important to note here that the difference between art of the 1960s and traditional art has been immensely exaggerated and the cause is a misapprehension about the nature of Gestalt perception, or the perception of an artistic configuration. A Gestalt is a presentation which is directly apprehended perceptually as a single unity, not intellectually put together from separate parts. But, it is not necessarily, or usually, without parts. It may be directly perceived as a unity of parts.

When internal differentiation is reduced as is done in Minimal art and when very simple forms are presented, forms which can be apprehended immediately without effort there is a like likelihood that they will be boring to the spectator and to

the artist, because perception has a very small or none at all challenge to face. In order to rescue interest from becoming swamped by perceptual boredom a reflex concern supervened for establishing relations between the art work and its environment and between the art work and the spectator. Morris Louis, for example, whose "primary forms" expunged internal relations within the art work felt the necessity of using such a device. For Louis the work located within it was of no use to anyone. It was when the work took relationships out of the work and made them a function of space, light and the viewer's field of vision that it offered any artistic experience.

In accordance with this trend much attention was given to "space modifying" and "space distorting" work, sculpture was often constructed deliberately to fit a specific environment and a new interest was taken in "scale". Ronald Bladen constructed "The X" an enormous cross 22ft 8in. high reaching out from the floor to the walls and roof and dwarfing the hall where it was exhibited (and constructed). The British sculptor David Hall made a sculpture which he called "Nine", consisting of metal plates hovering at different angles a few inches above the floor of the gallery. In Britain the sculpture of Antony Caro, most of it, and the younger group of

Fig. 38 sculptors which includes Philip King, Tim Scott, William Tucker, Isaac Witkin, was not set upon pedestals to confront the spectator like an actor mouthing on the stage, but stood on the ground, where it created its own space and an environment into which the spectator was invited to enter as a participant. Richard Smith habitually made his works specifically

Fig. 39 pture of Antony Caro, most of it, and the younger group of

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Fig. 41 Tucker, Isaac Witkin, was not set upon pedestals to confront

Fig. 42 the spectator like an actor mouthing on the stage, but stood on the ground, where it created its own space and an environment into which the spectator was invited to enter as a participant. Richard Smith habitually made his works specifically

for each exhibition, adapting them to the space in which they were to be exhibited.



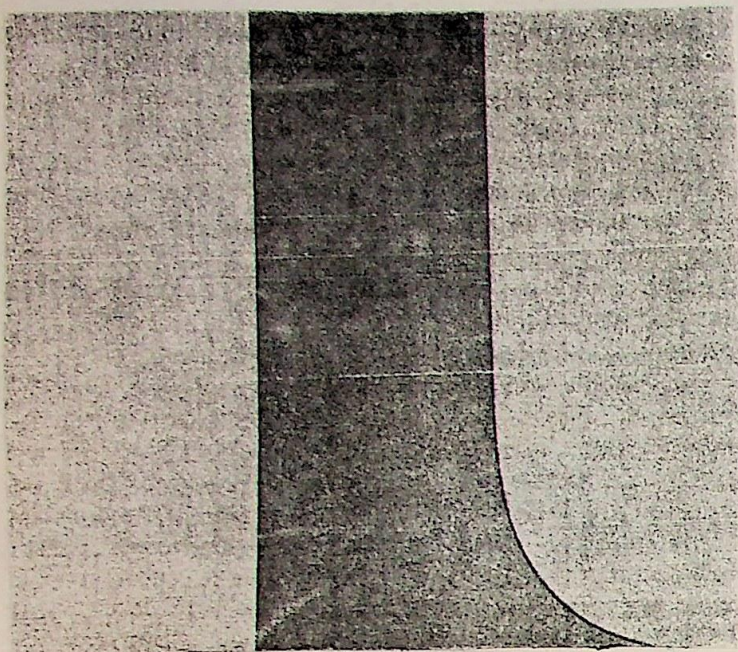


Fig. 22

Ellsworth Kelly: Red-Blue-Green, 1965

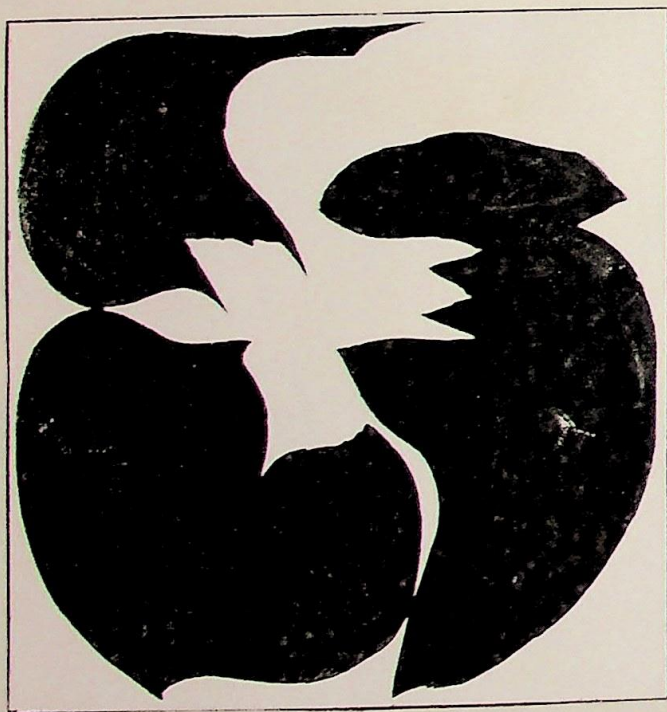


Fig. 23

Jack Youngerman:

Anajo, 1962

Fig. 24

Ellsworth Kelly:

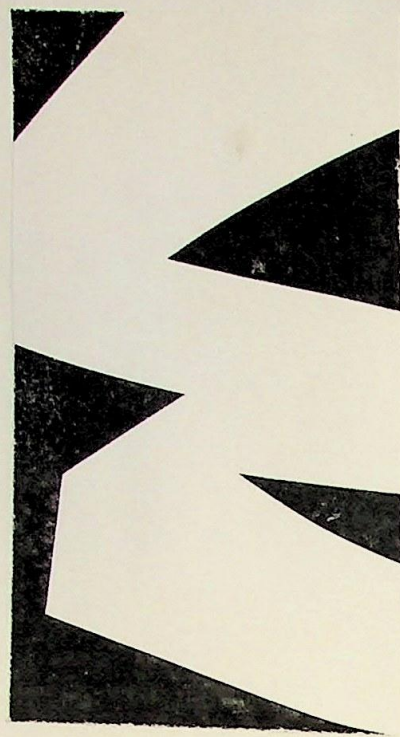
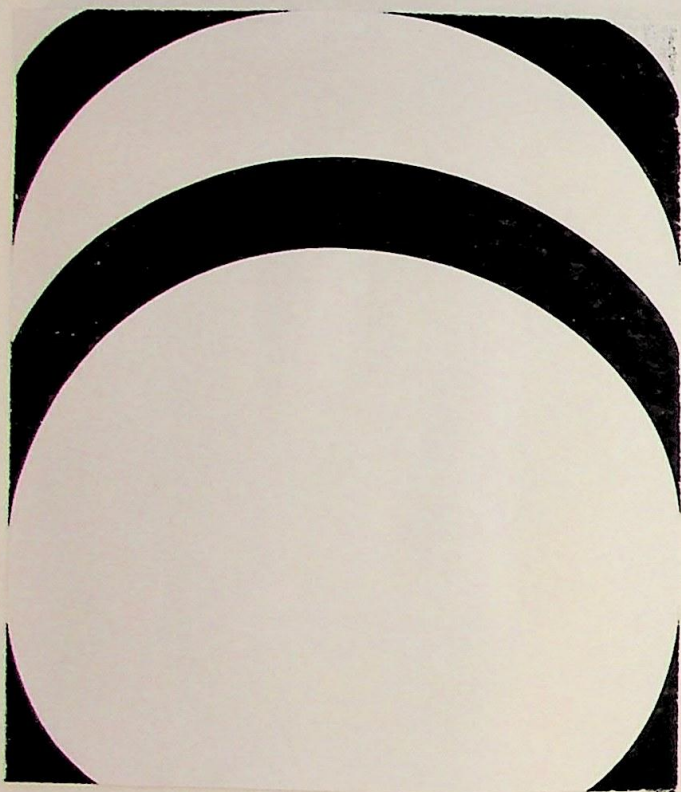
White-Dark Blue, 1962

Fig. 25

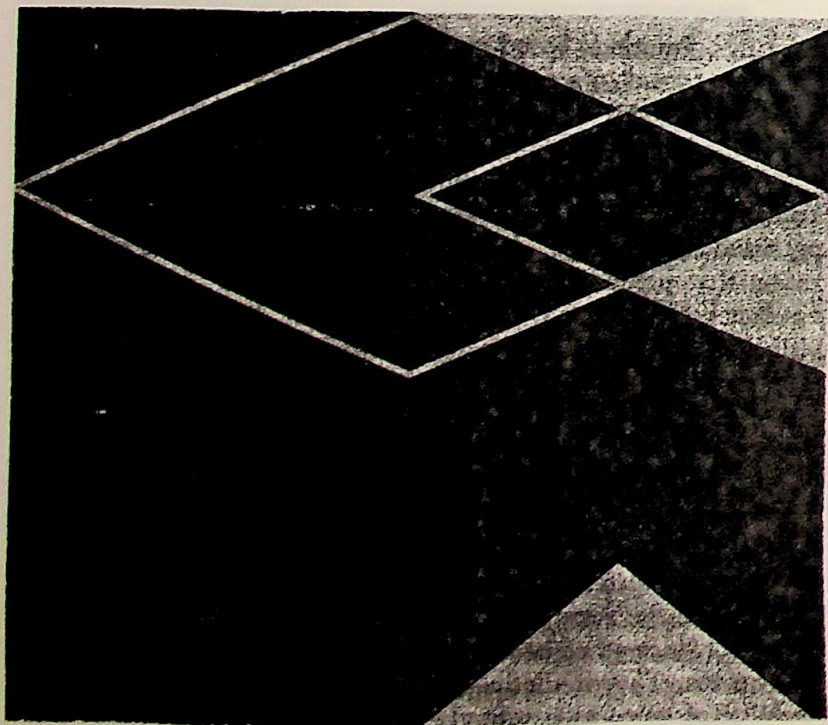
Al Held: Echo, 1966

Fig. 26

Larry Zox: Tyeen, 1966



Fig.27

Jasper Johns:

Flag, 1954



Fig. 28

Jasper Johns:

Target with Four Faces, 1955

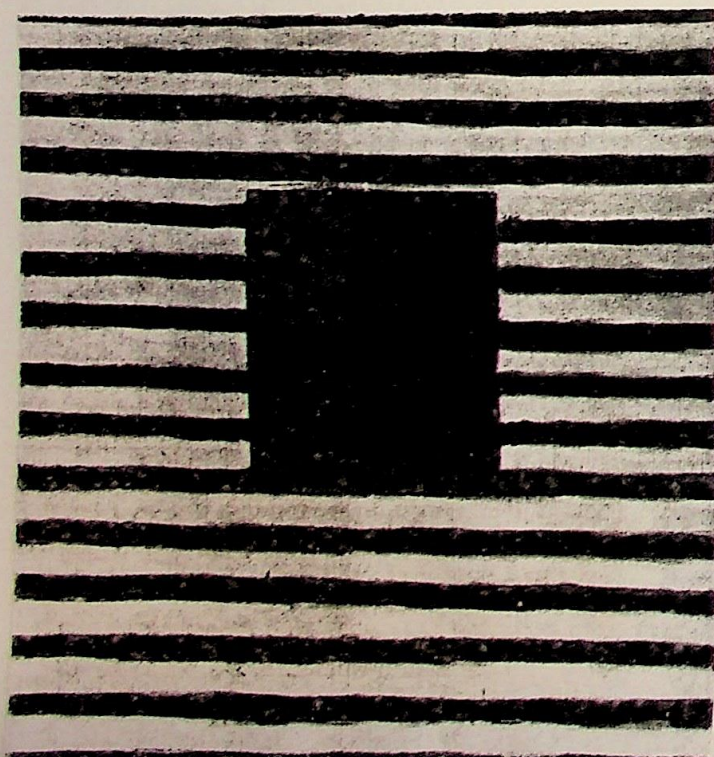


Fig. 29

Frank Stella:

Coney Island, 1958

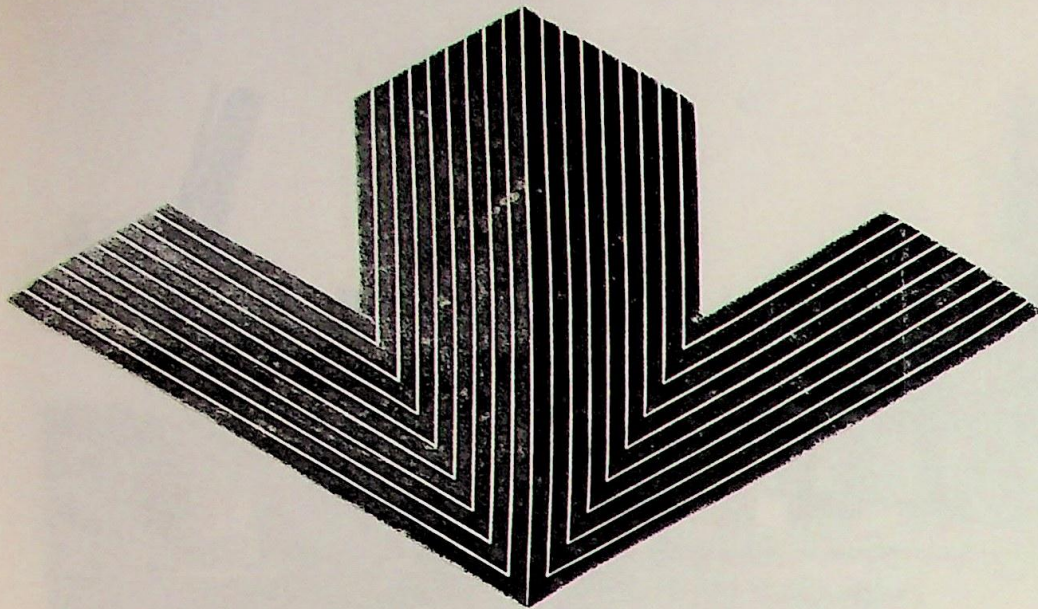


Fig. 30

Frank Stella: Ifafa II, 1964

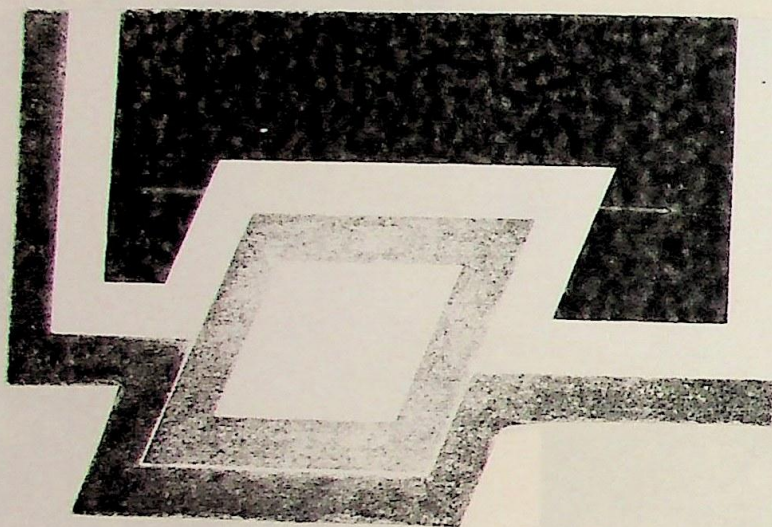
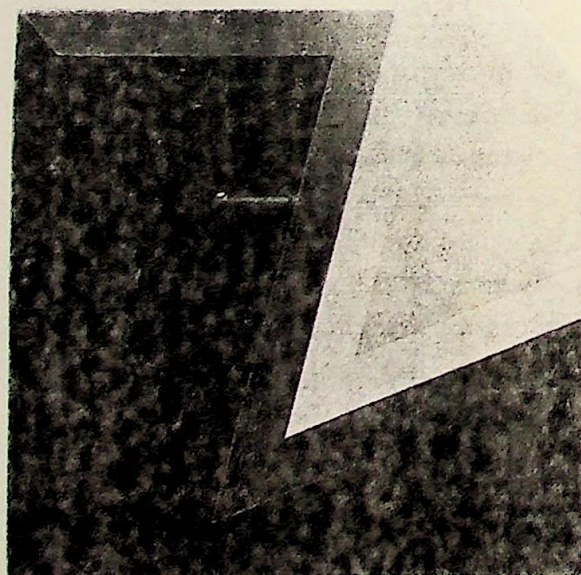


Fig. 31

Frank Stella:
Conway I, 1966

Fig. 32

Frank Stella:
Moultonboro III, 1966



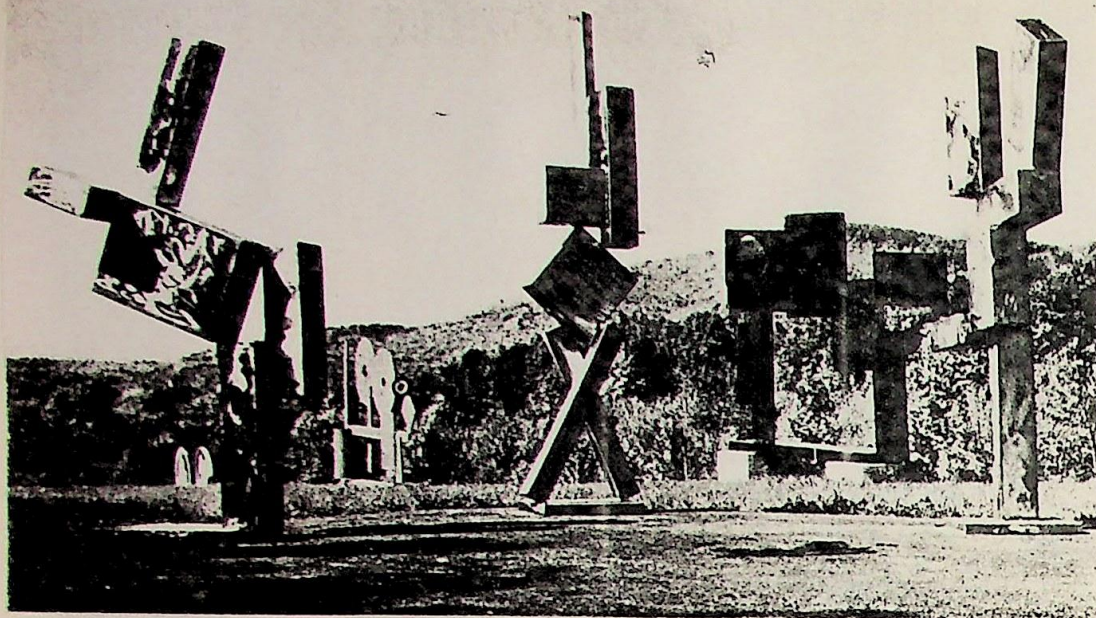


Fig. 33

David Smith: Cubi V, January 18, 1963; Cubi VIII, March 21, 1963;
Cubi IV, January 17, 1963

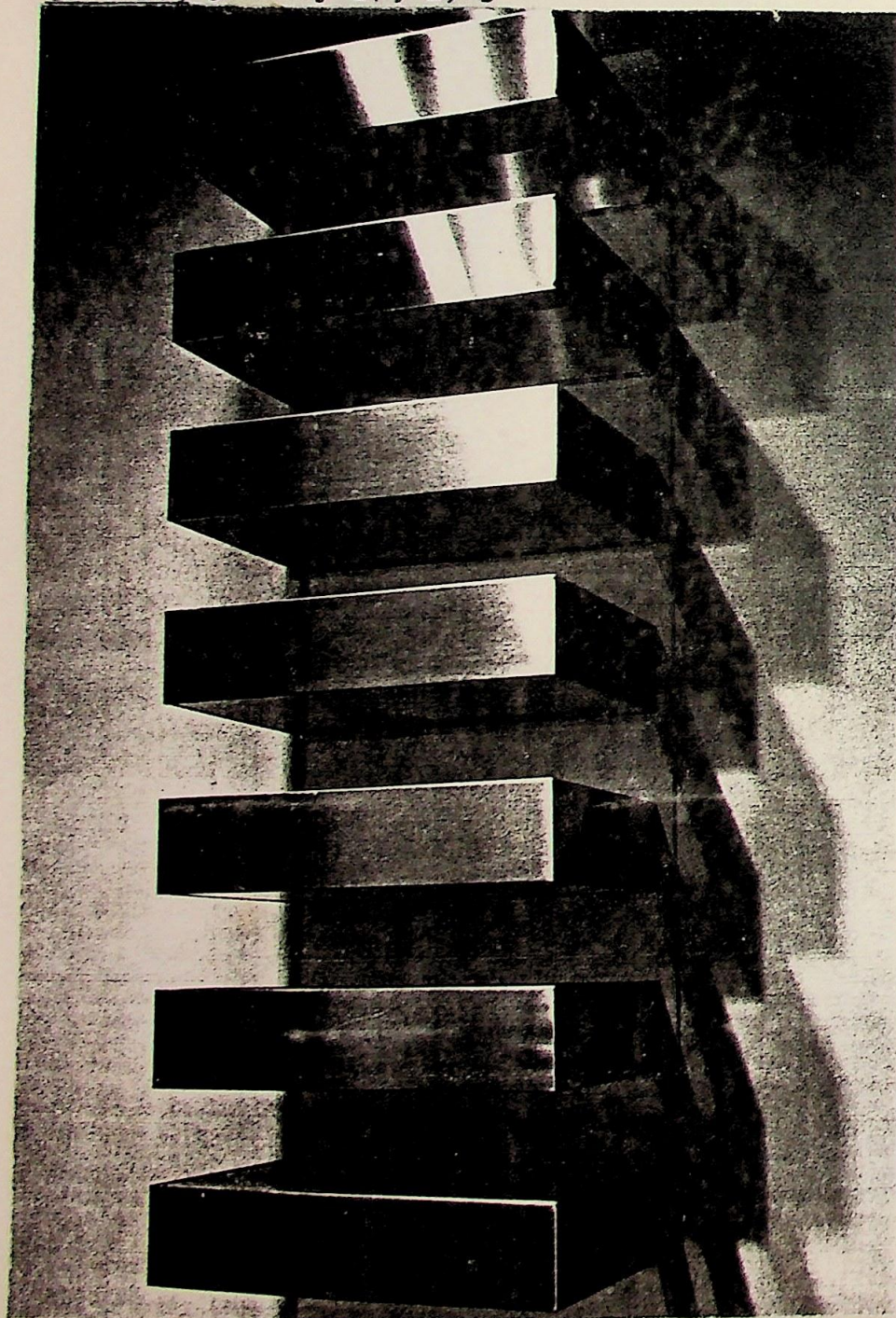


Fig. 34

Donald Judd;
Untitled, (detail)

 1968

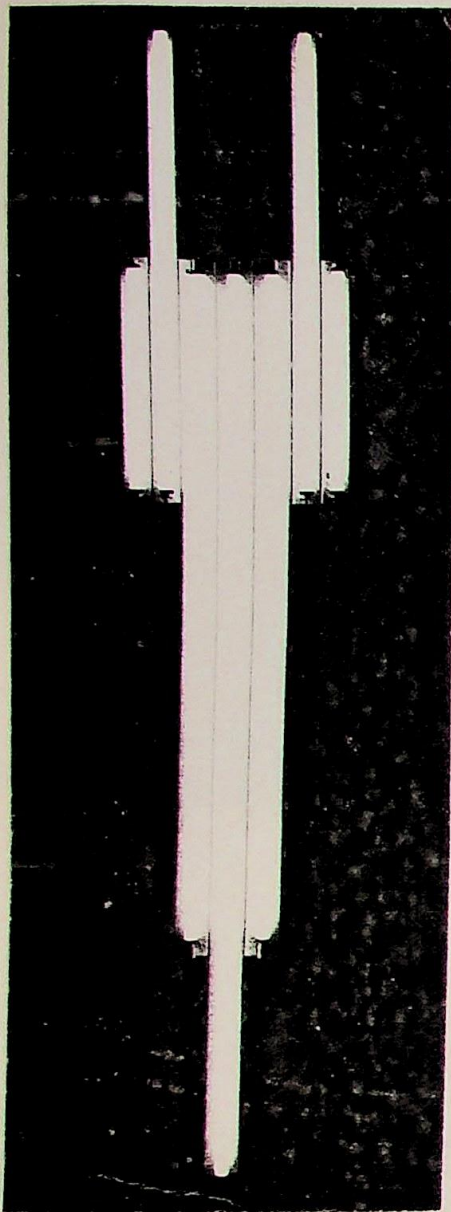


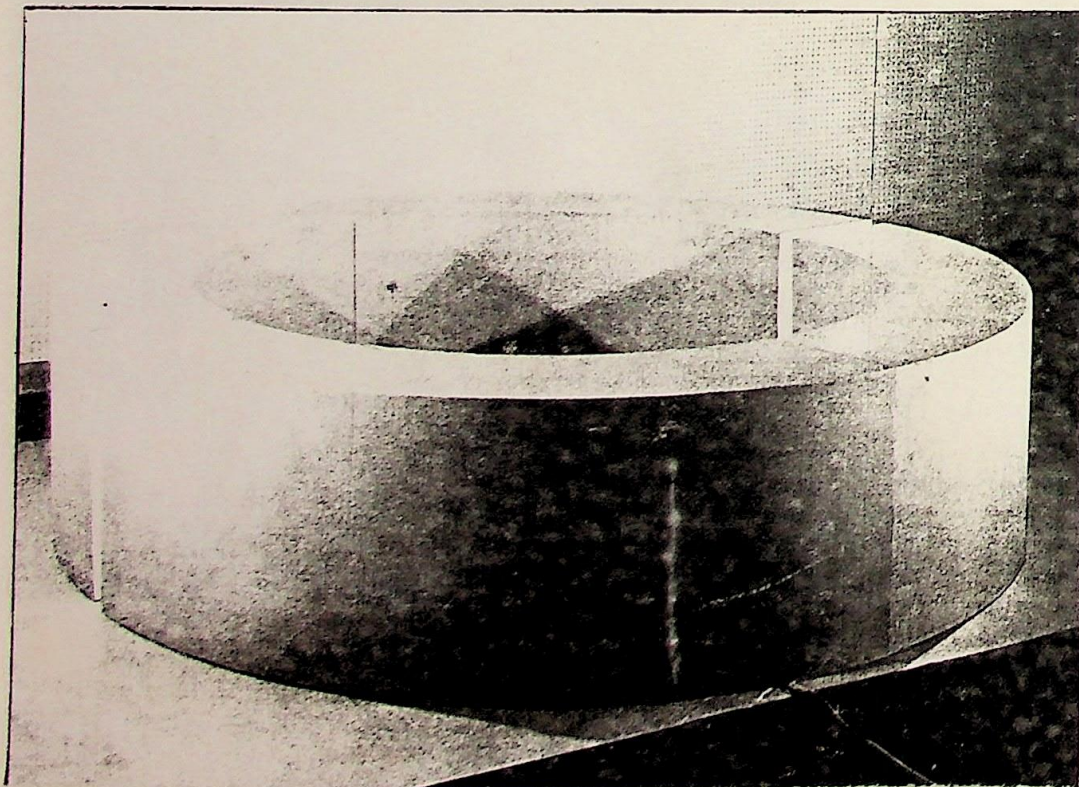
Fig. 35

Dan Flavin: Monument for V. Tatlin,

1964-69

Fig. 36

Robert Morris: Untitled, 1966



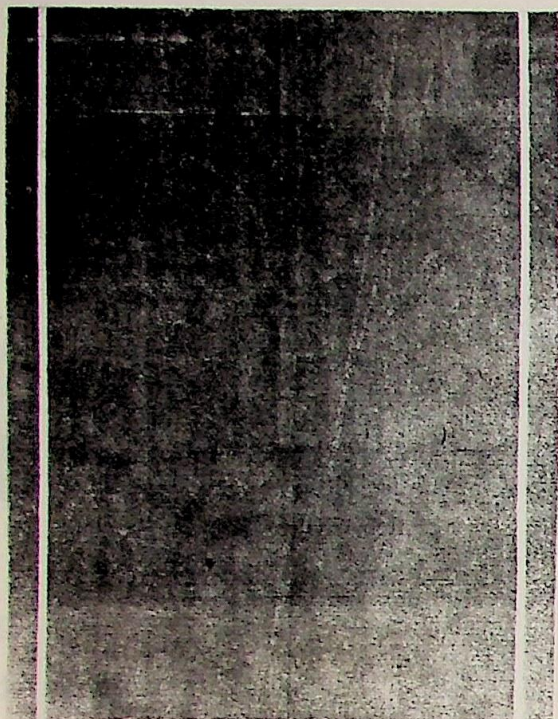


Fig. 37

Barnett Newman,
Yellow Painting, 1949

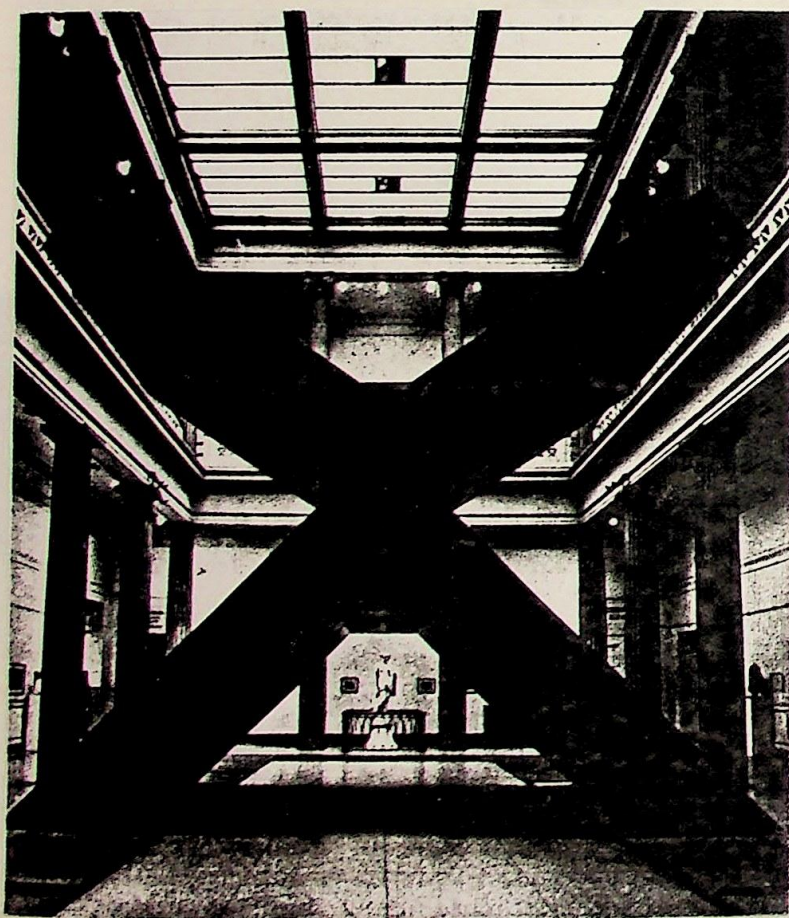


Fig. 38

Ronald Bladen,
The X, 1967

Fig. 39

Antony Caro:
Early One Morning,
 1964

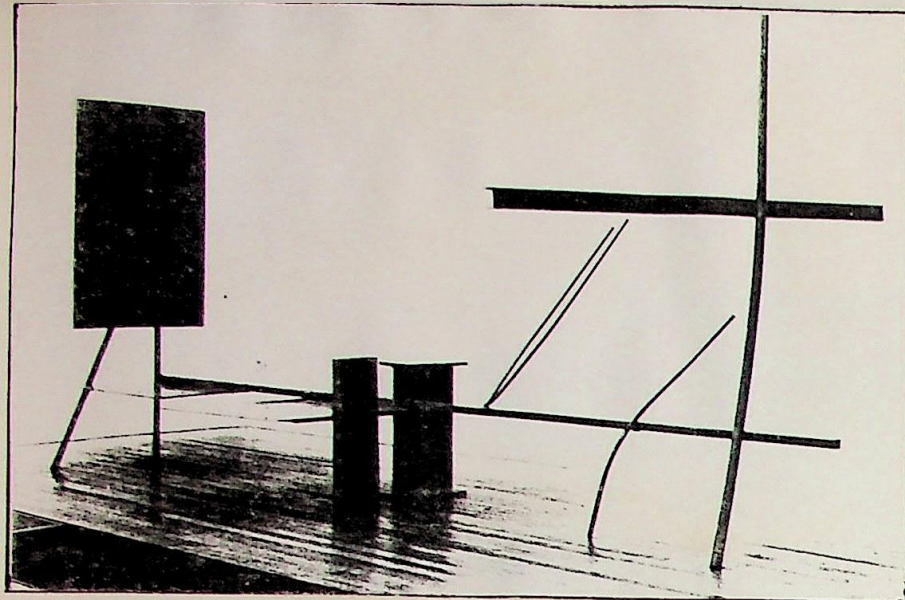


Fig. 40

Philip King:
Rosebud, 1962

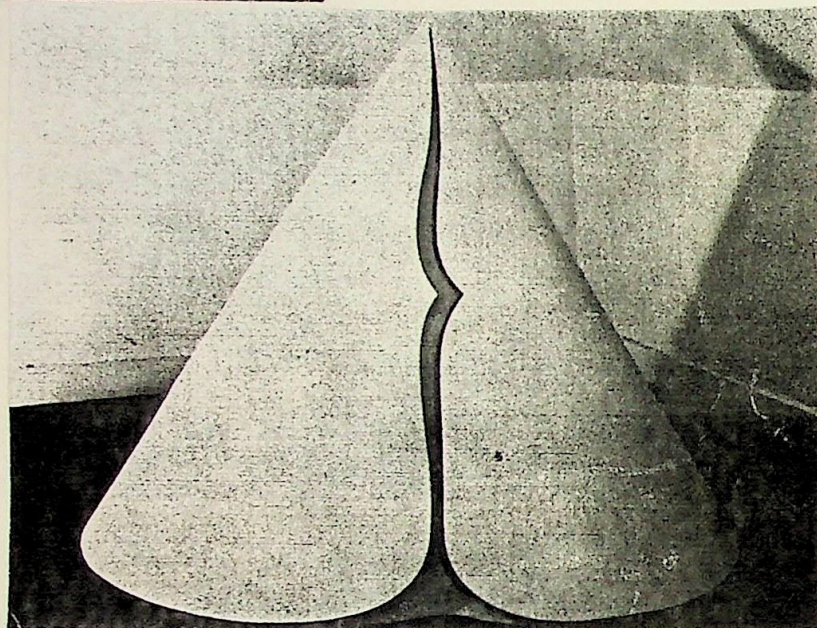


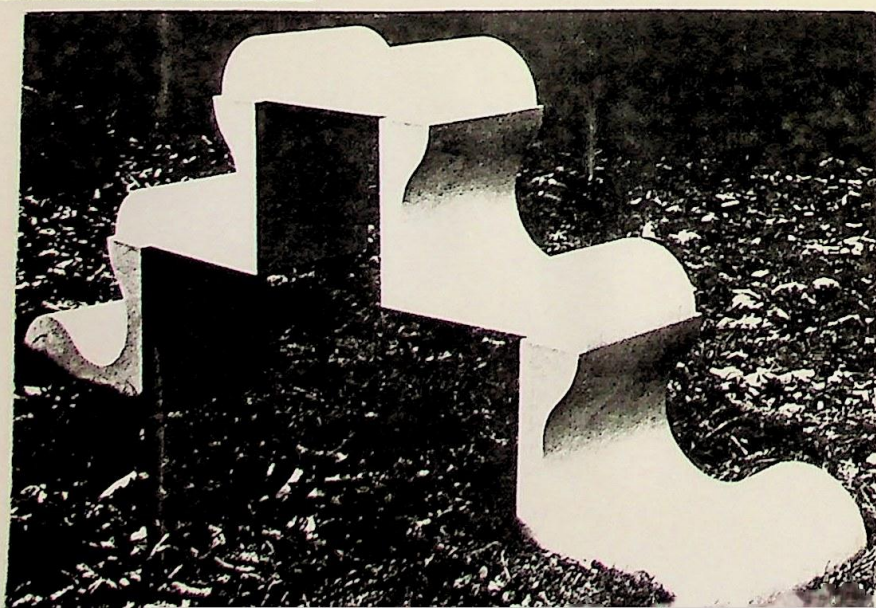
Fig. 41

Tim Scott:
Umber, 1961



Fig. 42

William Tucker:
Meru 2, 1964



CONCRETE ART

A tendency has shown itself, with increasing assertiveness and insistently as the century advanced, in attempts to eliminate the plastic design and virtual picture space along with all "artificial" qualities that are attached to them so that the physical materials from which a work of art is made shall retain just those visual properties they elsewhere have, thick and so forth, and shall be seen clearly for what they are. This is quite a different thing from a preference for non-re-

CONCRETE ART

- Op Art
- Kinetic Constructions

should be seen as such, thick and so forth. When a work of art is thought of in this way there is no more point in talking about abstracting or the lack of it than there would be in the case of a bridge or motor-car or a piece of domestic architecture. Nevertheless, this tendency has been manifested chiefly in the context of geometrical Abstraction, as when post-War Constructivists have sought to do away with the sort of picture images that Mondrian and other earlier Constructivists admitted.

The word "concrete" appeared with a specific meaning in 20th century art. Using "concrete" as the antonym of "abstract", van Doesburg claimed that Constructivist art, and specifically Neo-Plasticism, was not abstract in the sense of removing abstraction but was constructed from fully concrete ele-

CONCRETE ART

A tendency has shown itself, with increasing assertiveness and impetuosity as the century advanced, in attempts to eliminate the picture image and virtual picture space along with all "artificial" qualities that are attached to them so that the physical materials from which a work of art is made shall retain just those visual properties they elsewhere have, those and no others, and shall be seen starkly for what they are. This is quite a different thing from a preference for non-ionic instead of representational imagery and is a far more radical step than the abolition of representation. It is not a mode of abstraction but rather a revulsion from "artifice", and it involves an assumption that a work of art should be an artefact put into the world on a par with any other artefact, should be seen as such, that and no more. When a work of art is thought of in this way there is no more point in talking about abstraction or the lack of it than there would be in the case of a bridge or motor-car or a piece of domestic architecture. Nevertheless, this tendency has been manifested chiefly in the context of Geometrical Abstraction, as when post-War Constructivism have sought to do away with the sort of picture images that Mondrian and other earlier Constructivists admitted.

The word "concrete" appeared with a specific meaning in 20th century art. Using "concrete" as the antonym of "abstract", van Doesburg claimed that Constructivist art, and specifically Neo-Plasticism, was not abstract in the sense of semantic abstraction but was constructed from fully concrete ele-

ments: a line and a square, he declared, are as concrete as anything there is. However, the usage of the word "abstract" continued in a rather confused context, that is, not making a difference between abstraction from nature and non-iconic abstraction. Kandinsky spoke of a "concrete" art of expressive abstraction. But in general the word "concrete" has been restricted to Geometrical Abstraction and Constructivism.

"Concrete" was first used as a technical term to refer to a certain category of twentieth century art when van Doesburg adopted it as the title of his Manifesto of 1930, and this laid down principles indistinguishable from those of Constructivism. The term "Konkrete Kunst" was taken up by Max Bill in Switzerland and was introduced by him to Brazil and Argentina. From there it came back in 1948 the "Movimento per l'arte concreta" (M. A. C.) was formed in Italy under the auspices of

Fig. 43

Fig. 44 Antonio Soldati, Bruno Munari, and the critic Gillo Dorfles.

Fig. 45 Max Bill gave to ^{the} term "Konkrete Kunst" a particular slant in the direction of art which was generated from mathematical formulae or from mathematically defined systems of proportion. But the exhibitions which he organised under this title comprised much more than this and were in fact identical with what was meant by Constructivist art. The first important exhibition of non-iconic abstraction after the war, staged at the Gallerie René Dronin, Paris, with the collaboration of Mme van Doesburg, was entitled "Art Concret", although it included works by such diverse artists as the Delaunays, Mondrian, Kandinsky, Mognelli, Herbin, Täuber-Arp, and Pevsner.

Max Bill was the intellectual leader in the movement in design to substitute mathematical reasoning for human imagina-

tion. He saw mimetic art, including Cubism, as van Doesburg did, to be anarchical and chaotic; and he would apply this to Constructivism also. Instead of intuition in art, he would have mathematical order, and he looked to mathematics to provide the content of the work. The extension from early Constructivism lies in measuring and controlling the elements of the design in a mathematical order which "objectifies the components". Preconception is complete; there is no invention, selection or adjustment once the painting is launched. But such mathematical schemes are as much a part of the Constructivist heritage as the geometrical images. They are hinted in

Fig. 46 Pevsner's developable surfaces and appeared very early in the
Fig. 47 work of Vantogerloo; and while Mondrian was seeking an equilibrium in precisely adjusted relations, Vantogerloo sought mathematical relations which could be translated whole into visual equivalents.

Op Art

The special branch of Geometrical Abstraction commonly known as Op art also falls beneath the umbrella of Concrete art. This may seem a strange classification since Op art relies specifically on the exploitation of optical illusions and ambiguities for calculated effects. It makes systematic use of such illusions as the moire effect; distortion of regular geometrical shapes against a background with strong directional cues; transformations in a periodic pattern effected by varying the size, shape, or placement of basic geometrical units; manipulations of planned variations in a regular pattern to cause the surface to warp, swell, advance, or recede; induced after-

images which cause ambiguities; and many more. In a fairly straight-forward manner Joseph Albers in his "Interiors" of the 1940s and his "Structural Constellations" of the 1950s and 1960s explored what we called the "discrepancy" between physical fact and "psychic effect". The sort of ambiguity

often courted by Victor Vasarely, Bridget Riley, and Francois

Morellet arises when two incompatible "psychic effects" are

produced by the same geometrical construction.

But these optical illusions and ambiguities are not specifically "artistic" effects. They fall within the ambit of illusions and ambiguities which occur in ordinary, everyday perception though they are deliberate exaggerations and enhancements of marginal instances of these.

By the use of planned ambiguity to induce a calculated and uncomfortable sensation of instability in the spectator Op art may create an illusion of movement. The term "cinetism" was applied to this kind of painting by Vasarely, one of its originators, and critics have thereafter classified it as a form of Kinetic art. It lies in fact midway between the kind of art which tries to create "virtual" movement but ends up with internal dynamism and the modern kinetic art which utilizes actual moving parts.

Kinetic Constructions

Kinetic constructions are as a regular thing non-representational, fully three-dimensional and make no use of a picture image or of virtual space. They must therefore be classified as a mode of Concrete art.

"Kinetic" was first used in connection with the arts by

Gabo in his Realist Manifesto, but "dynamic" continued to be term in most general use for the impression of "virtual" movement in painting and sculpture as well as for the impression of internal tension or stress among the planes and masses of an art work. It was not until the 1950s that the phrase "Kinetic art" became established as a recognized addition to critical classification.

Among the objects ordinarily classified as kinetic art are two categories which involve virtual movement. Into one category fall objects which are so constructed that their appearance changes drastically and perhaps unexpectedly as the spectator changes his position in relation to them. The first to use this device was El Lissitzky in the wall of the "Abstract Gallery" which he designed at Hanover in 1928. Since the mid-century the method of creating apparent movement in the art object by taking advantage of the observer's movement

Fig 52 has been explored particularly by the Venezuelan Jesús
Fig 53 Raphael Soto and by the Israeli artist Yaacov Agam. The other category comprises works which create apparent movement by the serial lighting of parts of the work on the analogy of those neon advertisements which light up the letters of a legend or the parts of a design in a serial order so that the lights appear to move. Of constructs which involve actual movement the simplest type is the unpowered mobile such as was inaugurated by Alexander Calder in the early 1930s.

Fig 54 Three dimensional constructions with mechanically moving parts as a feature of major importance constitute the bulk of what is usually meant by Kinetic art. By the end of the 1960s the variety of objects produced and the diversity of

materials and techniques were so great that classification became impossible. Kinetic sculpture was being combined with auditory and light effects, computers were being pressed into service and the "Leonardo" anthology even had articles on the application of polarized light and on the production of illusions by "Photic-stimulation of Alpha Brain Waves with Flashing Lights".

The production of art objects incorporating real movement instead of simulated motion did not make headway until after the Second World War. In the early 1920s experiments were made with the use of movement to create illusion of "volume".

Fig. 55 These included the "Rotareliefs" and "Rotative Demi-Spheres" of Duchamp, which, when made to revolve, created the illusion of rising and falling spirals, Delaunay's revolving colour

Fig. 56 discs and Gabo's "Kinetic Construction No I", a thin strip of steel which when caused to vibrate produced the appearance of volume as it was forced out of the vertical. In the early 1930s Alexander Calder began to make his unpowered Mobiles, which with the hanging constructions of Tatlin and Rodchenko are the first real forerunners of Kinetic art. But experiment with movement for movement's sake as an aesthetic and expressive element did not seriously begin until after the mid-century.

Fig. 57 In 1959 the French artist Pol Burry began to make more complicated three-dimensional structures in which movement was designed to serve expressive purposes. In the 1950s also

Fig. 58 Swiss Jean Tinguely made reliefs composed of layers of movable rods and during the 1960s more complicated kinetic constructs, some of which were intended to be ironic satires on the ma-

Fig. 59 chine. The Greek sculptor Takis made mobiles which he called

"Signals" during the 1950s and from 1959 experimented with magnetic force in kinetic objects.

Pol Bury's interest to explore and embody the expressive qualities of movement itself appears rather strange to me since for understandable reasons most of these qualities are such that the language contains no words to name them. But a few Kinetic artists have followed this lead. For by far the greater part of Kinetic art is closer to Constructivism than to Expressive Abstraction. Of course it is not abstraction at all but belongs to the new category of Concrete art.

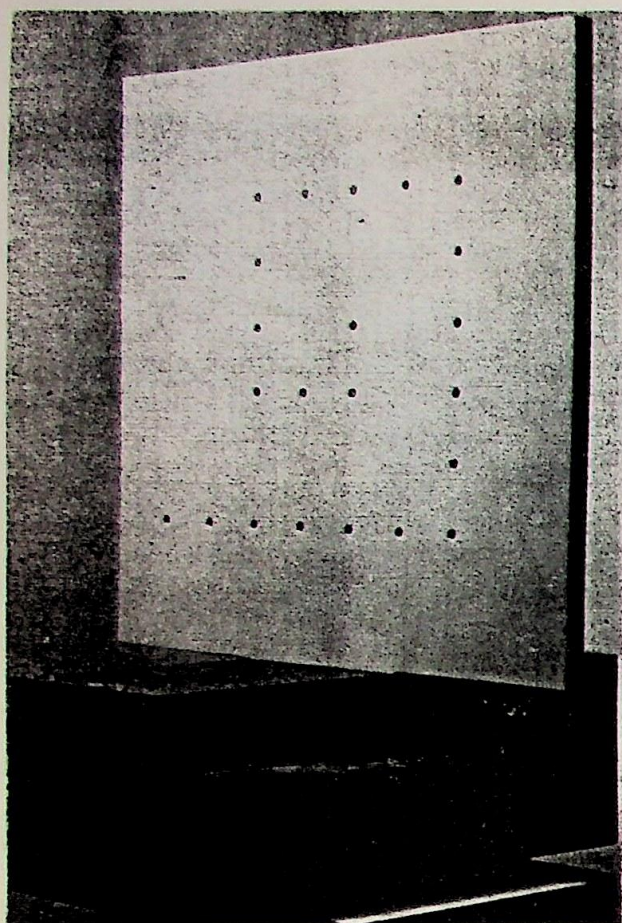


Fig. 43

Max Bill:

Twenty-two, 1953

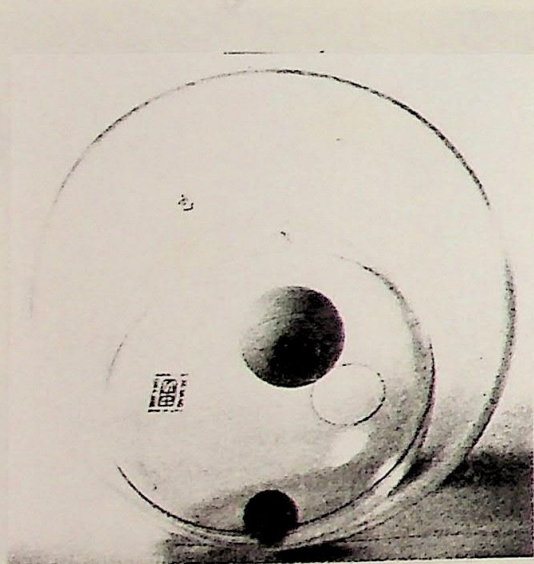


Fig. 44

Bruno Munari:

Double Spheres, 1963



Fig. 45

Bruno Munari:

Acona Biconbi A, 1961-65

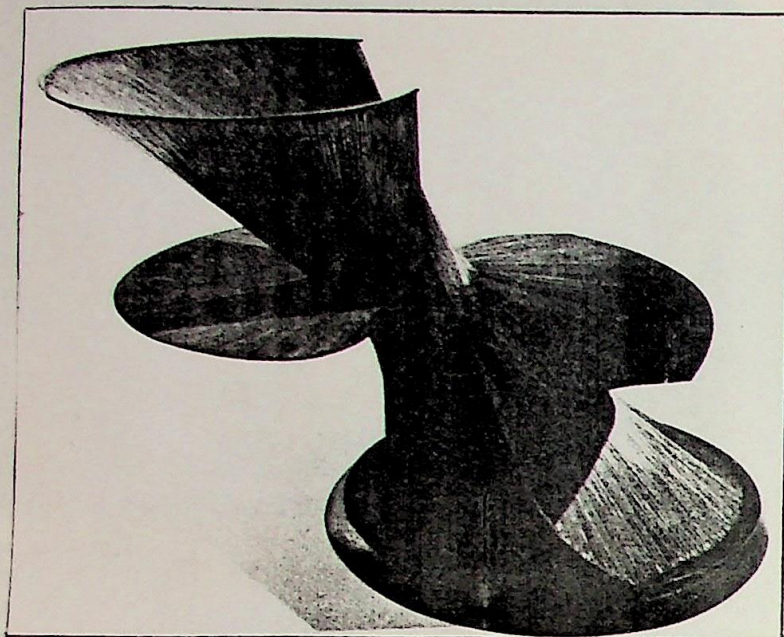


Fig. 46

Antoine Pevsner: Developable Column, 1942

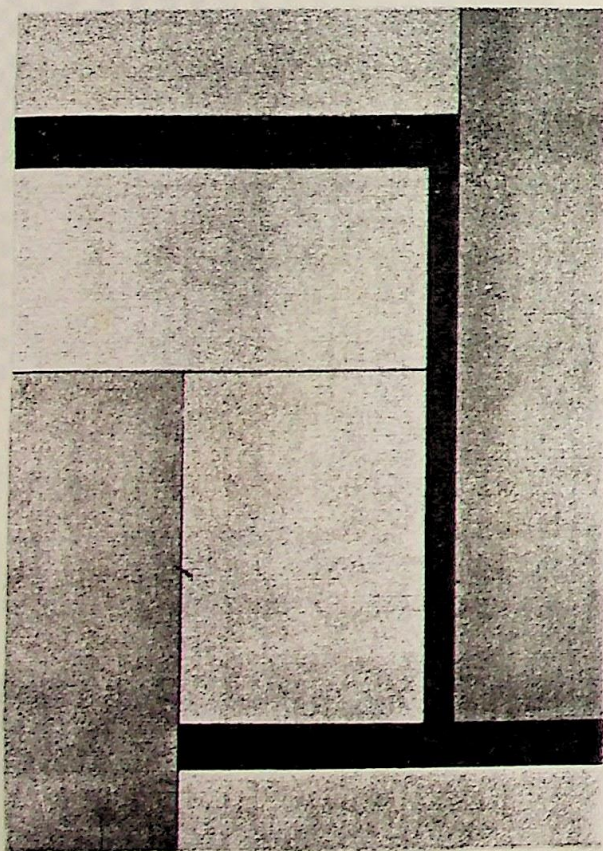


Fig. 47

Georges Vantongerloo;
 $X^2 + 3X + 10 = Y$, 1934

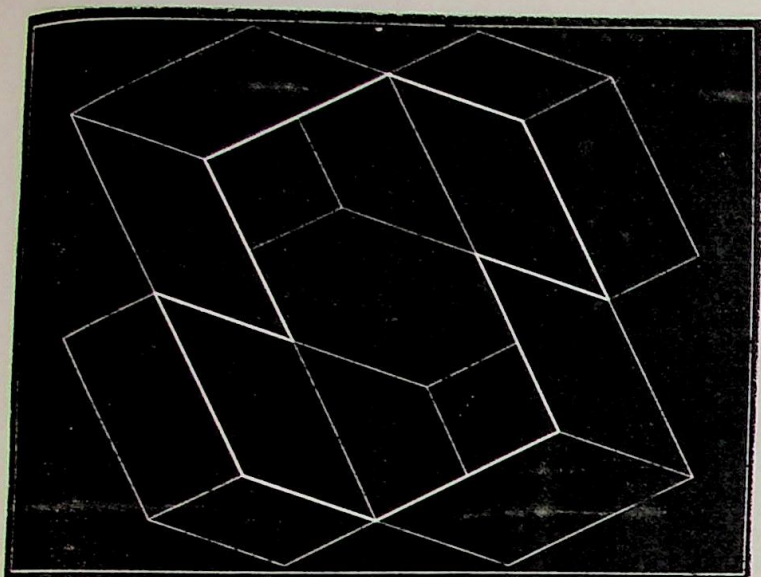


Fig. 48

Joseph Albers;
Structural Constellation,
 1958

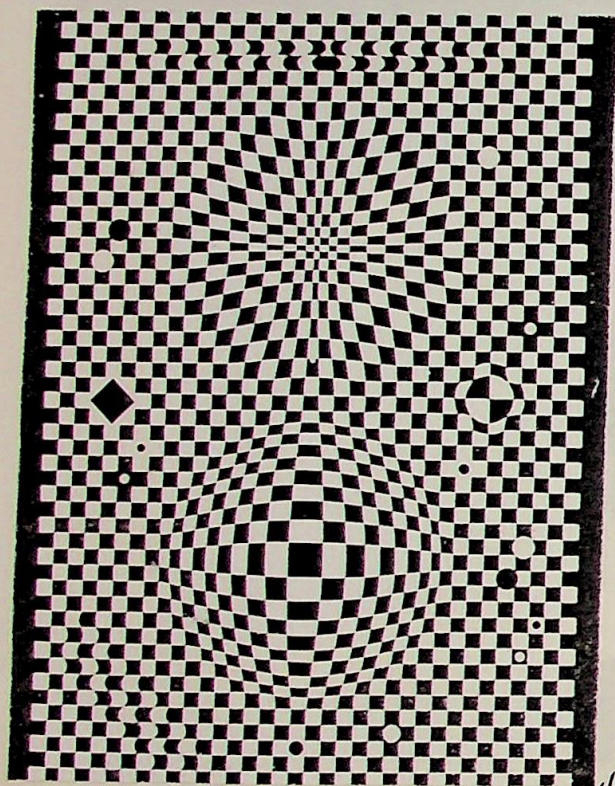


Fig. 49

Victor Vasarely;
Serigraph, 1956-59

Fig. 50

Bridget Riley: Crest, 1964

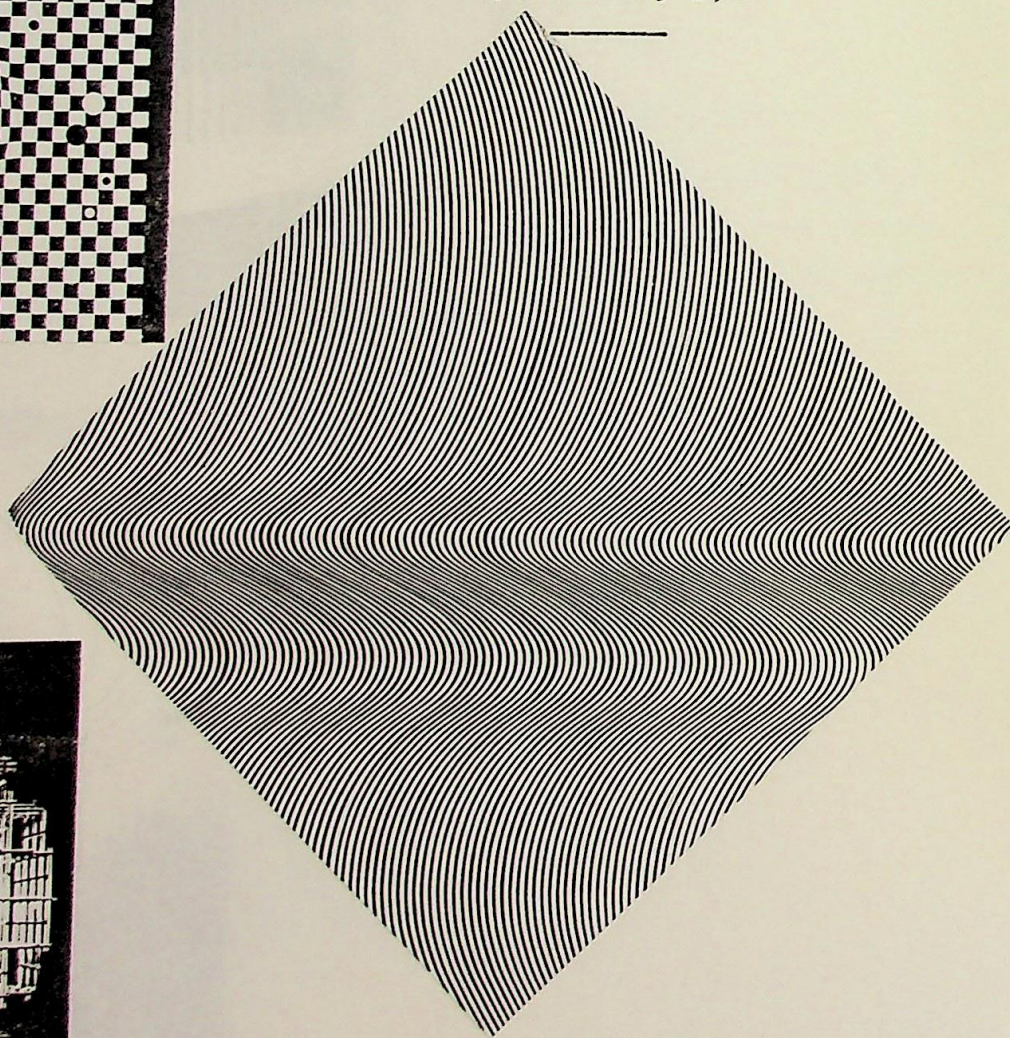
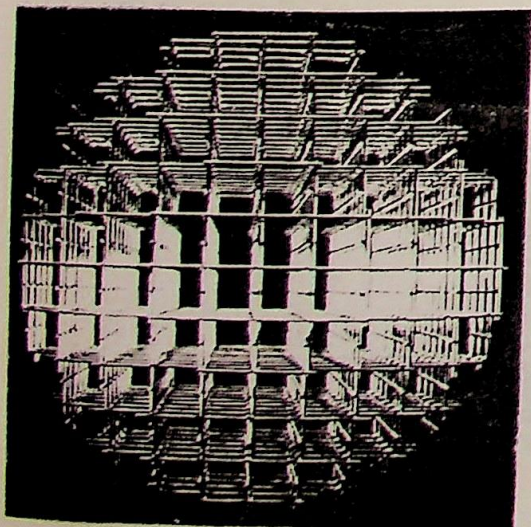


Fig. 51

Francois Morellet;
Untitled, 1965



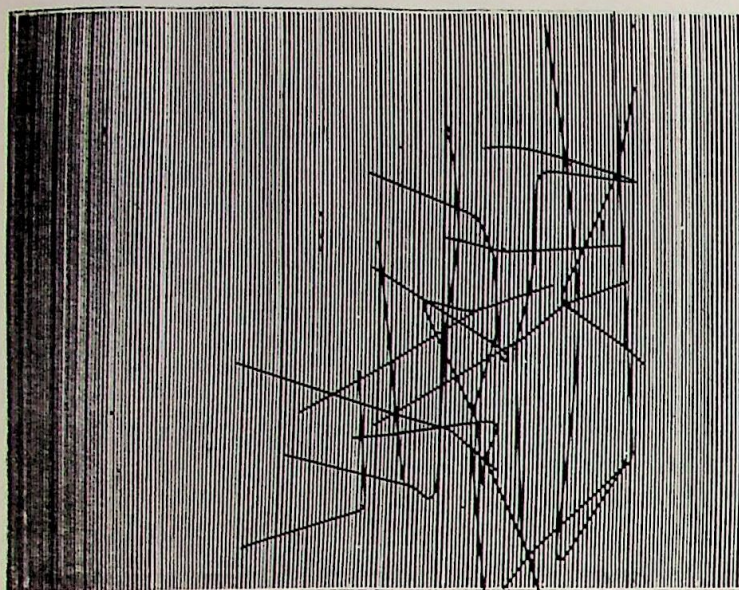


Fig. 52

J  sus-Rapha  l Soto:

Vibration Structure, 1964

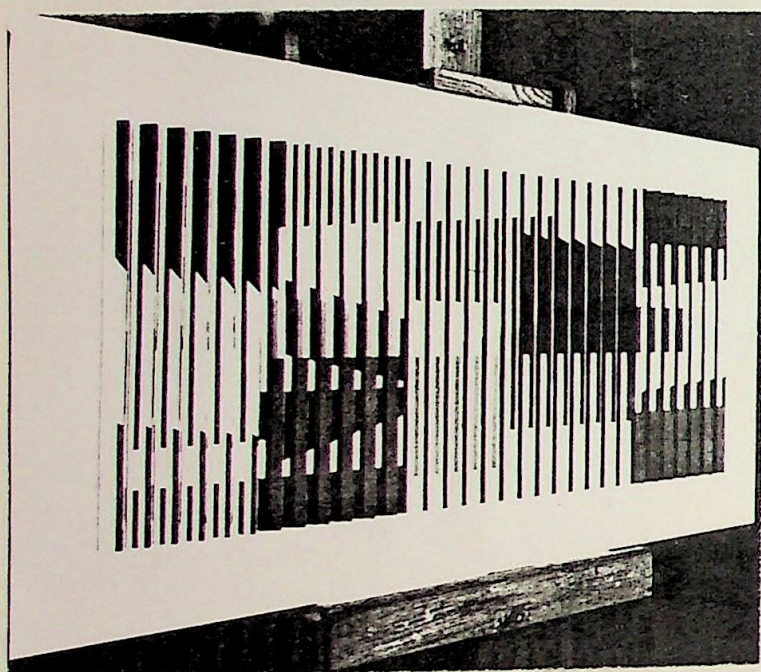


Fig. 53

Yaacov Agam:

Homage to J. S. Bach,

1965



Fig. 54

Alexander Calder:

Little Spider, 1940

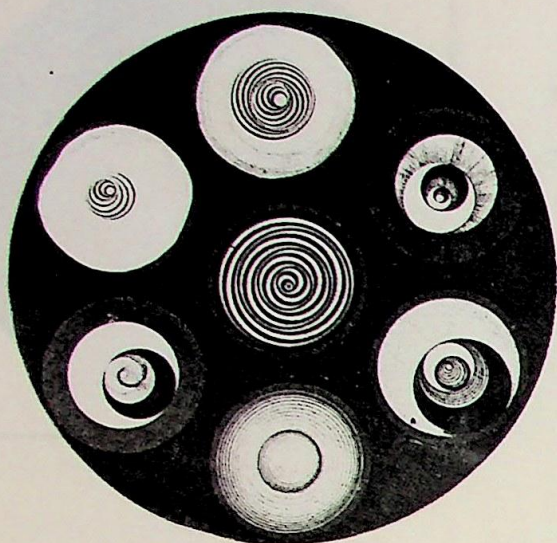


Fig. 55

Marcel Duchamp:
Rotoreliefs (original
drawings for seven),
 1923

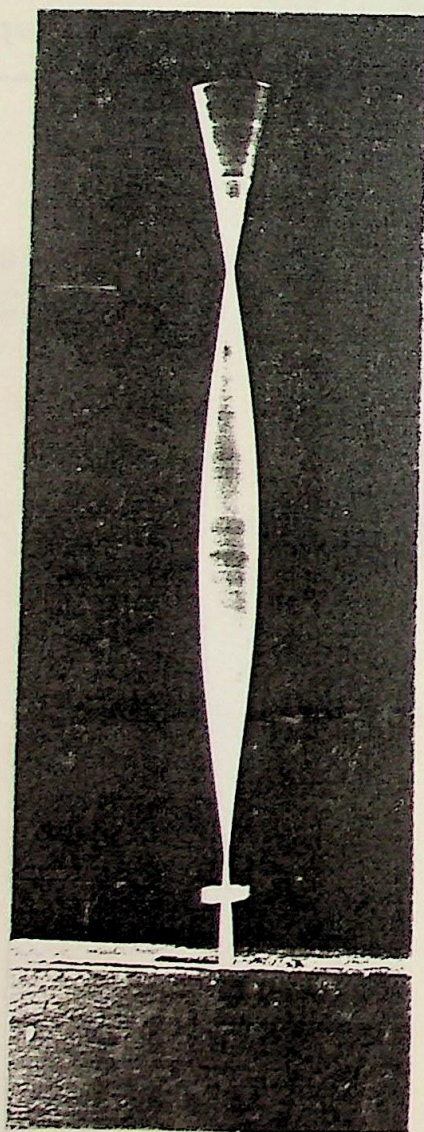
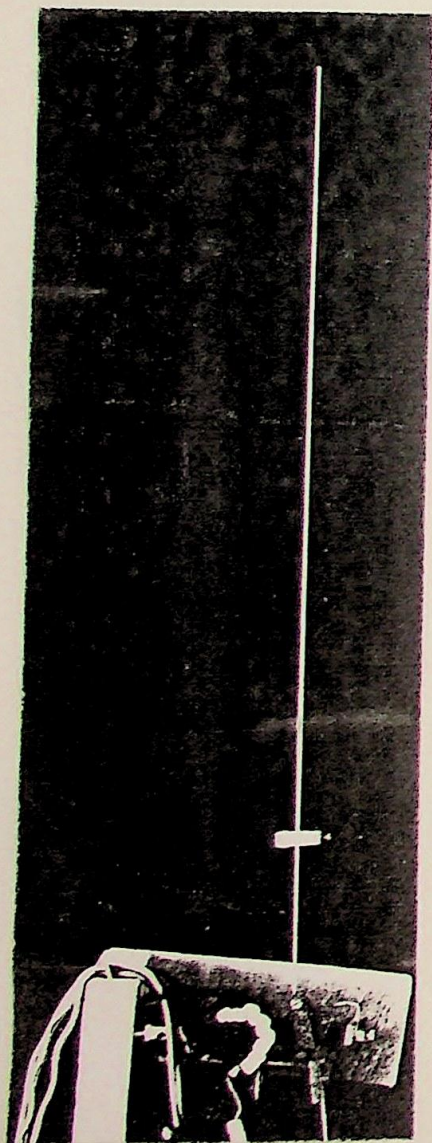


Fig. 56

Naum Gabo:
Construction No I
 (still and in move-
 ment), 1920

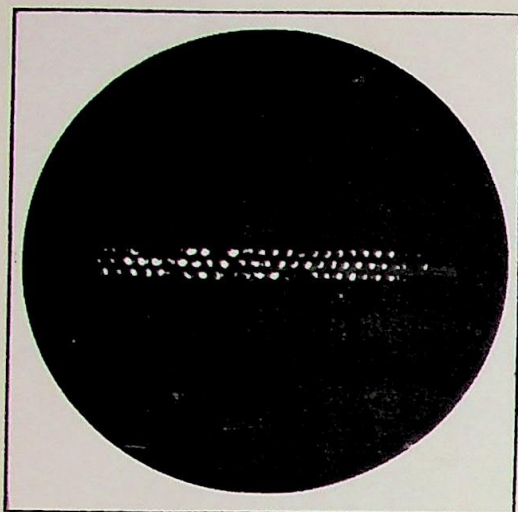


Fig. 57

Pol Bury: Untitled, 1965

(metal with motor)

Fig. 58

Jean Tinguely:

Polychrome-Métamécanique, 1954

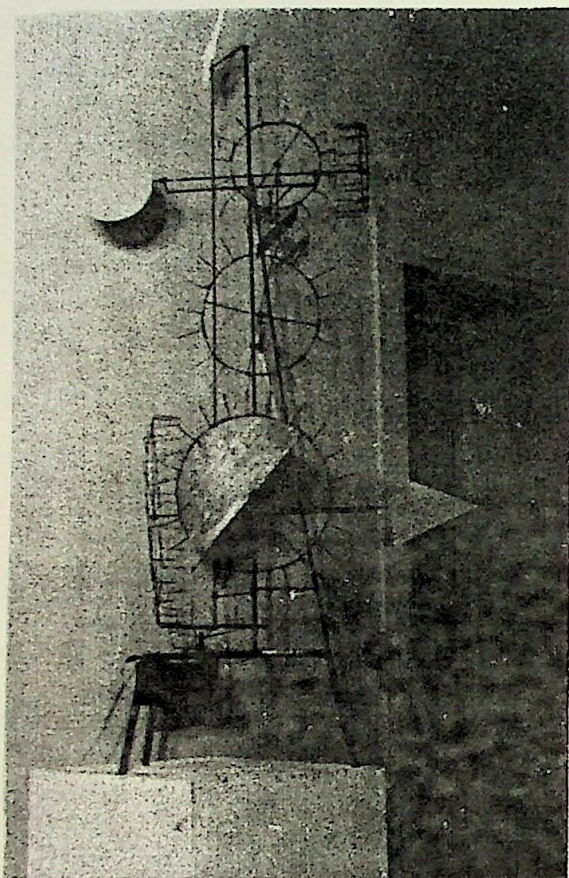
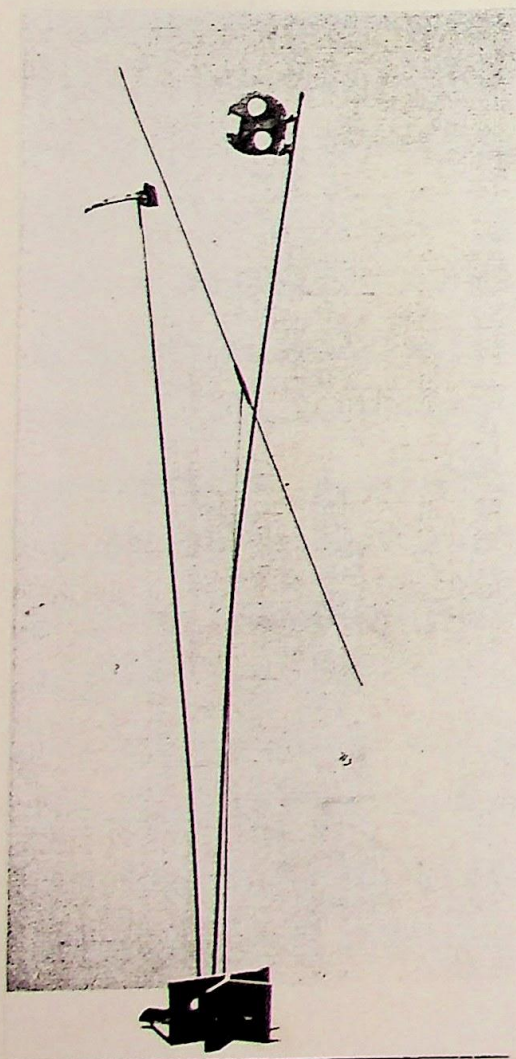


Fig. 59

Takis: Signal Rocket, 1955



SUMMARY

After this inquiry into the different attitudes manifested within the Constructive tradition two main points come forward. The first is that Constructivism is not a style in art, and the second is that reality is the main preoccupation of the Constructive approach.

Constructivism does not aspire toward the creation of style as an immutable stereotype relying on previously invented and established forms. Instead, it accepts the problems of "Construction" in art, which can and must give way to continual changes and improvements under the impact of the newer and even more complex demands that the general development of life presents us with.

It is the Constructive preoccupation with life that brings in the Constructivist artist to look into reality, not the way it appears but in the way it functions. Reality is seen as a dynamic process. That is, the Constructive approach is interested in the way reality generates rather than the outer appearances of the phenomena. It has replaced the "what" of reality; the observation of object images; by the "how" of reality: the methods or laws according to which the phenomena can be seen to come into existence. These laws, representing the building method of reality, are interpreted by the Constructive artist through an intellectual process which is one of elimination and addition, and it is thus that the Constructive plastic work tries to achieve the synthesis of the inner working of man with the essence in the functioning of reality.

The Constructive attitude to reality is the idea that nothing is inert, everything is continually in movement. However, in this concern with change it is realized that it possesses constants as well. The Constructive approach in plastic expression is one that describes how plastic elements interrelate.

Philosophy and Science are disciplines that in our century are no longer concerned with phenomena as static entities but with phenomena that are dynamic and interrelated, revealing certain structural principles or laws in their functioning. It is, therefore, of no astonishment that the Constructive artist chooses to associate himself with these two disciplines, rather than leave plastic experience to individual intuition that by its very nature is arbitrary, often chaotic and blinding us from seeing reality. This, however, does not imply that the individual creative impulse of the artist must be canceled. The Constructive artist, like the scientist relies on his own creative drive but he submits himself to discipline so that he can express the laws by which the real world operates.

The degree of discipline varies from artist to artist. Lissitzky and Van Doesburg are concerned with "binding laws" and "systematic making of rules", while Rodchenko started "from the conditions set by the individual". Others like Malevich and Mondrian sought to make their work closely related to Philosophical convictions, although the work itself does not offer immediate evidence of the "Universal Truths" they proclaimed. Here lies one of the controversies in Constructive thinking that very often the practice which ex-

presses the theory is not a clear equivalent. Gabo and Pevsner remained unique for stressing the unity of the artistic thought and practise.

The artists I have concerned myself with in this essay may appear in their approach to differ a lot from each other. However, the various artists and movements that emerged are in all cases related to specific strains within the overall tradition of International Constructivism.

The New Tendency artists are the true heirs to the Constructive tradition, but it is probably more consistent to regard their development as an aesthetic alternative to Constructivism, because their experimental mood is contrary to the Constructivist search for the "Universal Truths" that they believe are "unchangeable".

"Universal Truth" and "New Classical Order" are terms frequently used by Constructivists, which prove their aim to reach higher levels of understanding reality and human life in the world in which it exists. This brings us to the final question that arises, though it is a question which by its very nature can recieve no definitive answer: to what extent have the artists within the Constructive tradition succeeded in establishing "Universal Truths" and "Classical Order" anticipated before the modern movement had seen its course?

Compared to the new generation of American Minimal artists, they do indeed appear classicist in their adherence to absolute formal values, based on mathematical or geometrical constants. Yet it would be a mistake to identify the Constructive tradition with an overriding dedication to the formal

and the static. As Van Doesburg anticipated in his treatise "Classique-Baroque-Moderne", and as the approach of such modern artists as Vasarely amply confirms, the instructive conflict between order and chaos, between the static and the dynamic, is by no means confined to the early pioneers of Constructivism. It is because of this perceptual and fruitful conflict that one is led to concur with Just Baljeu's conclusion: that "The Constructive approach, the oldest in modern plastic expression, is still the youngest today".

NOTES:

I

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4

Most of the theoretical research in the subchapter on Supre-
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