

MOHOLY-NAGY

KRISZTINA
PASSUTH

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PART ONE

IN THE CURRENT OF HUNGARIAN ACTIVISM

Hungarian Activism emerged during the First World War, when Moholy-Nagy started his career as a painter. The whole of the young artist's later style is rooted in Hungarian Activism.

The Activist movement first centred on the periodical *A Tett* (The Deed), started in 1915, and later, after it was banned in 1916, on *MA* (Today). *A Tett* was launched by Lajos Kassák, who also remained the movement's chief organizer up to the very end, as well as being its most important artistic representative. In Hungary, Activism was the first artistic movement to form international connections and achieve world-wide significance, but it was also one of the most important and influential trends of the time in East Central Europe.

The move to break with the principle of copying nature in art emerged relatively late in Hungary. It was two years after the foundation of the Prague group of the Eight that a Hungarian group of kindred spirit and bearing the same name held their first exhibition in 1909. At the same time, in Russia, more and more radical groups, like the Knave of Diamonds and the Donkey's Tail, were following in each other's footsteps, representing in rapid succession, and sometimes even simultaneously, Cézannism, Futurism and abstract art.

In Hungary, the transformation took place more slowly and with more difficulty. From 1910 the Nagybánya artists' colony, which had been the citadel of progressive tendencies since 1896, became more and more of a hindrance. However, the maturing of the Hungarian group of the Eight, in 1911–12, suddenly accelerated the process, not only in comparison with the speed of development hitherto but also in relation to that of other countries. When the Activist movement, which carried on the activities of the Eight but much more dynamically, emerged in Budapest in the mid-1910s, the Prague group of Eight had already lost its earlier importance, and the Polish Formisti society, whose programme was similar, was only in embryo.

The main feature of Hungarian Activism was that it regarded artistic revolution as inseparably linked with the idea of political change, i. e. social revolution. It was not just the aesthetic means of expression, the style of painting and sculpture, that it wanted to transform completely, but the whole universe to which these works of art owed their existence. *MA* set its sights on 'mankind', and considered Hungarian artistic renewal as only a small portion of the greater whole. Among contemporary trends it was nearest to the circle around the Berlin periodical *Die Aktion*, which fulfilled its political and social vocation almost exclusively through literature. It was also related to some extent to the dynamism of the Italian Futurists who wanted to sweep everything away. The latter relationship, however, lay more in dynamic form than content, since the programme of the Activists – despite its utopian, world-redeeming ambitions – was based on more or less realistic ideas, although their writings expressed this only indirectly.

The ultimate aim of their social and artistic activity was the external and internal liberation of Man, his self-realization. The Activist movement, although the common programme of a mere handful of urban intellectuals, was deeply rooted in knowledge of the country's particular conditions, historical circumstances and needs. The movement was almost as important a factor in social and political life as it was – especially in later years – in art and literature. Its social commitment was in part due to the personality of the leader of the movement, Lajos Kassák. Kassák had been a locksmith, and the first decisive stages of his awakening consciousness had been linked to the socialist movement. It was then that his world view had developed; his obstinate adherence to the idea of the proletarian revolution led him to visualize a society without mass misery, where all would take their share of the work as workers. 'I shape material, I make knives from steel and words from thoughts, I am a simple craftsman who goes to bed late, wakes up tired and works hard', he professed.

Although most international artistic movements aspired in that direction, the avant-garde only occasionally made contact with the working-class, in exceptional circumstances and even then not without misunderstandings. Cubism had no contact with the revolution. The Futurists were the forerunners and later the supporters of Mussolini's 'rightist' revolution. In 1912 Kandinsky (in his essay entitled *Über das Geistige in der Kunst*) compared intellectual life to an acute-angled triangle, with the artist of the future at the apex and those farthest from him along its base, the latter being the 'socialists', brandishing the sword of Justice in order to give the capitalist hydra the death-blow. The Russian avant-garde movement fought against the art academies even after the February revolution, and showed little interest in social problems.

The proletarian Kassák did not desert his milieu (a one-room flat with kitchen in a workers' district of Pest) and its atmosphere of financial precariousness, yet there developed around him a circle whose culture and way of life were characterized mostly by the urban radical attitude of the turn of the century. In the same way he adopted the latest views and ideas of other like-minded European cultural movements. He was always ready to accept anything new. He never made a workers' paper of his periodical; politics and the changing relationship of social democrats and proletariat were never treated journalistically, but were analysed and evaluated in a wider, overall context.

From the very birth of the movement in 1915, Hungarian Activists pressed for the solution of social problems, kept themselves constantly informed about events at home and abroad, and stood out for real political struggle, not for struggle only in the area of artistic policy.

The fundamental differences in social commitment and judgment between the various European avant-garde movements emerged most clearly in the stands they took vis-à-vis the war.

The Italian Futurists' attitude was naive yet undoubtedly aggressive; by comparison, surprisingly, the Russian artists were relatively indifferent. Lajos Kassák, however, was an active anti-militarist: in the 16th, international, issue of *A Tett* he published work by writers living in countries that were at war with Hungary (Russia, France, Belgium, Italy, Great Britain, Serbia). In consequence, an official decree banned the 'further appearance and distribution of the literary periodical *A Tett* whose contents jeopardize the conduct of the war'.

This suppression, or more precisely the new impetus given by this suppression, contributed to an even fuller development of Hungarian Activism. The periodical *MA*, which succeeded *A Tett*, took a firmer stand against the war and had an even more international character.

Activism had come into being amid growing social tension; its attitudes were shaped by existing conflicts and antagonisms, which were significantly heightened by the outbreak of the world war. The development and expansion of the movement were inseparable from the particular problems and atmosphere of the war years.

The Hungarian Activists were fully aware of the very grave problems the country was facing. Several of their pronouncements show how well they understood the significance of the question of national minorities. It was a declaration of faith on Kassák's part when he presumed to put a drawing by a Czech artist on the front page of the first issue of his journal, and devoted the first *MA* exhibition to the work of an artist who had been living formerly in Brassó (Braşov), in Transylvania, and had until then taken part only in Rumanian movements. Later exhibitors included Croatian and Slovak artists.

The same attitude was expressed in the articles published in *MA*. Kassák took a stand favouring equal status for national minorities, thus coming into conflict not only with the right but, occasionally, even with bourgeois liberals. He stood firm on the national issue and his views differed markedly from those of many representatives of the contemporary Hungarian press.

The war brought nationalist and internationalist attitudes into conflict. Some intellectuals at first advocated war. Only a very few obstinately undaunted thinkers were unaffected by nationalist propaganda. This was not merely a Hungarian phenomenon; already the Italian Futurists had become enthusiastic about the war and the possibilities it offered for aggressiveness. Most Frenchmen, with a few exceptions like Romain Rolland and Henri Barbusse, also accepted the idea of war. With fervent enthusiasm Jean Cocteau enlisted; he suffered little inconvenience though, for in the meantime he wrote his *Parade* in Paris. As for Apollinaire (who was of Polish extraction), when the Rumanian-born Dadaist Tristan Tzara sent poems written in French to avant-garde periodicals in Paris, Apollinaire declined further co-operation with *Dada* saying, 'I don't find that review's attitude towards Germany clear-cut enough'¹ by which he meant that it was not sufficiently pro-French.

The Italian Futurists expressed their enthusiasm in painting and writing; in 1915, when Italy entered the war, Giacomo Balla even set up a bicycle detachment whose best-known members were Filippo Tommaso Marinetti, Umberto Boccioni, Luigi Russolo and Antonio Sant'Elia. In 1917 the Futurists held a 'manifestation' with a dance in honour of the machine-gun.

It was in opposition to all this that two major anti-war centres came into being: the journal *Die Aktion* published by Franz Pfemfert in Berlin, and the Dada cabaret in Zürich. The anti-militarist character of *Die Aktion* exerted a profound artistic and spiritual influence on *MA*. The ideological relationship even led Kassák to adopt the style of *Die Aktion* to a certain extent. The anarchistic playfulness of the Zürich Dadaists, however, had little influence in Hungary. The connection with Germany had been almost automatic, but no significant relationship yet existed between the international Dada centre and the Budapest periodical *MA*.

Conscious social commitment was not characteristic of the Russian artists before 1917. Thus, apart from the Berlin and Zürich centres, it was the Budapest *MA* which most clearly defined the anti-militarist and internationalist position. In 1918 Kassák published an excerpt from Lenin's *State and Revolution*. The exhibitions held during the war, as well as the articles he published, had an unambiguously pacifist character. In 1917, in the very midst of war, Kassák published on the front page of *MA* a poem entitled *Russians, 1917*, expressing his sympathy with the Russian people.

On the very first day of the Hungarian bourgeois revolution led by Count Károlyi in 1918, Kassák published a special issue with a manifesto demanding the establishment of a communist Soviet republic.

In a lecture entitled 'Activism', delivered on 20 February 1919 and published in the April 10 issue of *MA*,² Kassák took a stand in favour of the dictatorship of the proletariat – though he warned against distortions of the proletarian dictatorship.

During this period, for Kassák and his circle political struggle amounted mainly to opposing war and favouring internationalism. But what did avant-garde art mean to them? Principally the artistic equivalent of internationalism, namely Synthetism.

The term 'Synthetism' implies that the artists around *MA* had assimilated the teachings of several schools with the purpose of creating a new style. Only by distorting the general picture can specific Futurist, Cubist and Expressionist features be discerned in the work of Hungarian Activists. When interpreting their activity, we must keep in mind that it was not form but a world view of ethics and behaviour that stood at the centre of their conception of art, which represented a summary of the various 'isms'. This is expressed very clearly in the 1 July 1919 issue of the journal, by one of the principal contributors, Mózes Kahána:

The objectives of the periodical *MA* combine both moral and artistic components which constitute an inseparable whole . . . *MA* considers that the purest morality and art belong together . . . In order to attain its moral ideal, . . . i. e. individuals of a higher stage of morality, it creates and propagates art . . . If occasionally we have had

the reputation of propagating Futurism, Cubism, Expressionism or any other 'ism', this may have been because it was precisely the 'Futurist', 'Cubist' or 'Simultaneist' mode of expression that we found to be most concise, most expressive, most suggestive and, what is essential, *most aggressive* for expressing our given message . . . All of our art has a purpose: the quantitative heightening and qualitative clarifying of morality which must always constitute a revolutionary and revolutionizing aim. It is in order to achieve this that we become now Futurists, now Simultaneists, now Expressionists, etc. . . . Shortsighted and superficial observers made socialists, anarchists and all kinds of 'ists' out of us, although we were *socialists* only inasmuch as we considered the working-class revolution to be the first great step . . . and *anarchists* only inasmuch as we regard any material or intellectual oppression of *man as an individual* as inhuman. . . . It is thus that we are both socialists and anarchists and, at the same time, neither the one nor the other—but we declare ourselves *Activists* in the sense that we consider revolutionary activity to be the most complete sort of life.³

This was the atmosphere which surrounded László Moholy-Nagy at the time when his personality and mind were being shaped, that cast of personality and mind which he would preserve through his entire lifetime and his wanderings through various countries. Compared with his contemporaries, his career was at the outset handicapped in several respects. His first memories were linked not with Budapest, not even with a large town, but with three large, traditional villages, Bácsborsod, Ada and Mohol. He was born on 20 July 1895. His family background is rather uncertain, for his father, Lipót Weiss, who was of middle-class origin, emigrated to America very early, in 1897, and was never heard of again. As a fictional character who returns suddenly from America, he figures in one of Moholy-Nagy's early short stories,⁴ which shows clearly how much the artist felt the lack of a father. Nor did his mother, Karolina Stein, take care of him: he and his two brothers were brought up by an uncle without ever knowing a real home.

His life took a turn for the better when he was sent to secondary school in Szeged. Three great Hungarian figures then living in Szeged played an important part in his intellectual development: the poets Gyula Juhász and Mihály Babits, and the aesthete Iván Hevesy. He developed close relations with all three, which probably explains why his first interest was in literature. His poems, however, were never more than those of a dilettante. As for art, he had not yet learned to paint.

How hard it was for him to find his place in life is shown by the fact that, following matriculation in 1913, he registered first as a law student in Budapest. Hardly had his real intellectual growth begun when he was called up into the army and sent to the front. We do not know what specific influences, shocks and experiences he underwent; but certainly it was there that his later personality was formed. This was the first occasion when he excelled in something, for his precise field sketches were greatly appreciated by his superior officers. In this absurd situation he suddenly became aware of his gift for drawing. His juvenile efforts, executed as circumstances permitted, reveal his lack of education in drawing; he represented the characteristic figures of military life on field postcards, using black and coloured pencils. His style was naturalistic. His drawings were characteristically amateurish, with their studied humour and their occasionally contrived attempts at caricature. They did not differ essentially from the works of anyone else living in similar circumstances, and making sketches for his own pleasure. Yet something of the talent he revealed later was even then evident in the dexterity and ease with which he drew. He depicted what he saw, day after day, without any previous training, knowledge or practice, quite naturally and without any apparent effort.

Moholy-Nagy sent the postcards he drew to the writer Iván Hevesy who, quite rightly, did not think too much of them. Yet his comments constituted for the future artist some kind of relationship with one of the most progressive Hungarian critics, and through him with the avant-garde movement which was in the making.

In a letter written to Antal Németh in 1924 (see p. 395)⁵ Moholy-Nagy wrote that it was the journal *MA* which had set a standard for his work and which shaped his

intellectual development. We do not know when he started reading *MA*, nor how regularly he read it. But it is certain that through this periodical he must have obtained a wide overall picture not only of left-wing literary and artistic trends in Hungary but also of French Cubism, German Expressionism and Italian Futurism. It was not yet certain which Hungarian artistic school or intellectual group he would join. The circle around the literary periodical *Nyugat* (Occident), representing the highly cultured bourgeois liberal views of Mihály Babits, Gyula Juhász and Ignóty, fascinated him – all the more so because of his interest in literature – just as did Kassák's militant Activism rooted in a proletarian milieu, or the activity of the Galileo Circle which was a social-science oriented society advocating social change. He frequented all three circles but did not feel really at home in any of them.

Service at the front, being wounded, and the Odessa military hospital (where he spent some considerable time in 1917) all made a deep impression on him. Reflection, meditation and suffering had their effect on him not only as a man but as an artist too. The young man who, until then, drew postcards as a mere pastime, was now depicting the tired, haggard faces of his fellow soldiers in sombre watercolours. He was producing not postcards but works of art – even if they were not of the first rank. The outlines are still uncertain, his brush visibly falters in places, the colours lack clarity, often he does not know how to handle the background, the wounded soldier is too tall, the proportions far from perfect. And yet the eyes and gestures of the figures are full of emotion, the highlights breathe life into darker, brownish tones. It was there in the military hospital, in the worst of conditions, that Moholy-Nagy matured into a real artist. Only a few of his works painted in this period have been preserved: *Wounded Soldier (Prisoner of War)*, *Landscape with Barbed Wire*, and the postcards sent to Hevesy.

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The war was still in progress when he came home from the front released from further service. In 1918 he was represented with some watercolours in the 'Ex-service Artists' Exhibition' in the National Salon in Budapest. He was revolted by the war but, unlike the Swiss and German Dadaists or Fernand Léger, who returned from the front at about the same time, he did not protest against the continuation of the destruction either through his writing or drawing. He had lived through it, managed to get out of it, and was trying to forget it. Just as he could never have been accused of enthusiasm for the war, active pacifism could not be imputed to him either. He was more and more attracted to the Hungarian Activists, and in March 1919 he signed their joint revolutionary statement. (This was the only occasion his name figured in connection with the periodical *MA* while it was published in Hungary.)

2, 3, 4, 5, 10

Activism affected him in two ways: first through its view of the world and human and social behaviour, and second through its art. Both were important – at the same time and to the same extent – because, while in 1918–20 artistic influences were more marked, the social ideas of the Hungarian Activists were to leave their impress on his entire life's work, affecting his later teaching as well as the ideological background of his writings, and could still be discerned many decades later.

Moholy-Nagy took over several of Kassák's fundamental ideas. He was most deeply influenced by the latter's view that the most modern art was – in a higher terminology – 'a way of life'. Later, he too would always make of his art a way of life, both for himself and his disciples. And no other way of life existed for him apart from art; all his personal contacts and social activity – in both work and relaxation – derived from this source.

It was also from Kassák that he learnt the ideal of 'synthetic' art, i.e. art in the service of society and conducive to man's external and internal liberation. This became one of Moholy-Nagy's basic principles, which he would later expound in almost all his writings. In 1919–22 synthetic art was still closely linked with the idea of revolution. However, from the beginning of his Bauhaus period in 1923, his theories were almost exclusively concerned with cultural and ethical revolution, especially with the problems of creation and the development of collective individual-

ity. Political revolution, either as a realistic aim or even as a more distant possibility, did not enter his field of interest.

The influence of Activism on his painting style could already be clearly discerned as early as 1918. His first work, which because of its autonomous force of expression and style can be regarded as an art painting, dates from 1918 and bears the title *Hills of Buda*. It somewhat resembles – not so much in its motifs as in its style – Lajos Tihanyi's *Landscape* painted at approximately the same time.

Lajos Tihanyi was one of the most talented Hungarian painters of the period. The clarity of his colours was combined with an exceptional gift for construction. His portraits always reveal something of himself, while presenting their subject with a slightly ironical undertone. At the same time nervous tension vibrates in his figures, almost bursting out from the picture frame. His was an autonomous talent, capable of assimilating and regenerating any tendency. The Fauvist colours of his early pictures, and the dynamism of his drawings and paintings dating from the 1910s, constitute a distinct chapter in the history of Hungarian art. In that period, Tihanyi assimilated everything achieved both by the Hungarian Eight and by the so-called 'Neo-ists' who had revolted against post-Impressionism represented by the Nagybánya school, adding to it some specifically Activist dynamism.

Tihanyi was one of the greatest painters among the Eight and the Activists as well; he was to become a close friend of Moholy-Nagy's after 1920. Their spiritual contact, however, goes back further. As early as 1918, Tihanyi's entire outlook had a great influence on the young Moholy-Nagy's artistic conceptions. Moholy-Nagy's *Hills of Buda* shows a cutting process similar to that found in Tihanyi's pictures, inasmuch as the frame cuts off, as it were, the edge of the hill in both. There is also some similarity in the proportion of the area occupied by the landscape as against the sky and in the superimposed system of lines of the sloping hills, which are the source of the inner tension and movement in Moholy-Nagy's painting. Compared with contemporary Activist pictures, Moholy-Nagy's painting is on the whole uncertain and uneven. But it already contains and even reveals, for all its awkwardness, talent and originality.

A relatively large number of drawings, sketches and watercolours have survived from Moholy-Nagy's Activist period. His main achievement, however, was a series of portraits, some drawn in Hungary, others abroad after 1920. Thus, this series ranges over the two years which were so decisive for the artist: 1919, the year of the Hungarian Republic of Councils, and 1920, the year he left his homeland to wander from country to country.

The Hungarian bourgeois revolution in the autumn of 1918 and the proletarian takeover in the spring of 1919 occurred without bloodshed and almost without fighting. Hungarian liberal intellectuals and particularly the avant-garde not only looked forward to but virtually planned for the revolution. Various Hungarian writers, psychologists, art historians, painters, librarians, politicians and thinkers assumed their proper roles in the new dispensation as a matter of course, without the use of force. Not even among themselves were there any significant conflicts or disputes, at least not at first. They had Russia and Bavaria as models. The revolutionary wave seemed to sweep through the whole of Europe. Both the Russian and German artists simultaneously joined the revolutionary governments.

In Moscow, Anatoli Lunacharsky was put in charge of artistic policy. Although he himself did not have distinctively avant-garde tastes, he had come to know and accept modern trends during his long stay in Paris before 1917. A period of exceptionally violent internal struggle began, with press attacks, exhibitions organized by representatives of various trends against one another, life-and-death polemics, etc. Only in 1920 was it decided that control would be exercised – through the reorganized art college, the VKHUTEMAS – by the Constructivists.

The situation was quite different in Germany where efficient leftist centres already existed. The circle around the journal *Die Aktion*, led by Franz Pfemfert, fought principally a literary-political battle, while the so-called Novembergruppe linked together the most outstanding artists and architects of the age (such as Rudolf Belling, Willi Baumeister, Erich Mendelsohn, Otto Dix). The most active group was the so-called Arbeitsrat für Kunst (Work Council for Art) which also had ideological foundations and was led by the architects Bruno Taut and Walter Gropius.

In a letter to Béla Kun, in the June 1919 issue of *MA*, Kassák speaks of Franz Pfemfert, Ludwig Rubiner and Iwan Goll (i.e. principally the *Aktion* circle) as representatives of an analogous trend. The revolutionary outlook of German art was much closer to the ideology and especially the attitudes of *MA* at that time than were the Russian artists.

In Hungary, the periodical *MA*, and even the earlier group of Eight, always had a definite political and ethical programme. The members of these two groups occupied leading positions in the management of artistic policy in 1918–19.

We do not often encounter Moholy-Nagy's name in that period. Just as he did not take part in the anti-war campaign, so he did not play a part in the revolution either. He exercised no function and was assigned no role. And yet the Republic of Councils acknowledged, even discovered, his talent. His drawings were purchased for the collection of the Museum of Fine Arts, a fact which – considering that he was almost unknown as an artist – was of considerable importance. The reason he received no official post was probably that he had not produced enough work or held exhibitions, nothing in fact to call attention to himself. It was not so much in the Hungary of 1919 that his left-wing and even revolutionary attitudes became manifest, but rather later on in the years of emigration.

After the fall of the Republic of Councils he left the country, together with the majority of left-wing intellectuals unable to associate themselves with the regime which followed. Before emigrating, in December 1919 he held a small-scale exhibition in Szeged together with the Activist sculptor Sándor Gergely. Only a few articles, mainly written by Gyula Juhász (see p. 387), recorded this show, his only one in Hungary.

He left the country with Gergely. He went first to Vienna, where he spent about six weeks, before going on to settle in Berlin. This was the real beginning of his artistic career, when – during this painfully hard period of wandering – his finest representational works were born.

A REALISTIC PORTRAIT SERIES: ACTIVISM AT ITS HEIGHT

At the time he was drawing his portrait series, Moholy-Nagy had not yet found his own individual outlook and style. However, the clear outlines of the portraits, these countenances reflecting some inner nervous strain and intensity amid their sinuous concentric lines, are not the result of copying this or that master. These are already his own particular mode of expression, testifying to his own creative power, purity, and desire for lucidity.

Moholy-Nagy's representational period was very short. As soon as he found his own style in his landscapes and portraits, going on to become a past master of line and colour harmony, he started to search for a more abstract mode of expression. Yet the small number of his works that we know from this period (many have been lost) may be considered mature works of art. His ability to express what was essential and characteristic in his models in a mere few lines shows that Moholy-Nagy excelled in representational art, an aspect rather neglected in evaluations of his work. According to him, he amalgamated the methods of Van Gogh, Rembrandt, and some of his

Hungarian contemporaries like the Activists Lajos Tihanyi, Uitz and Nemes-Lampérth. The first real discovery which he regarded as his own was that of line.

Through my 'problem' of expressing everything only with lines I underwent an exciting experience, especially as I overemphasized the lines. In trying to express three-dimensionality, I used auxiliary lines in places where ordinarily no lines are used. The result was a complicated network of a peculiar spatial quality, applicable to new problems. For example, I could express with such a network the spherical roundness of the sky, like the inside of a ball. . . . The drawings became a rhythmically articulated network of lines, *showing not so much objects as my excitement about them.*⁶

His discovery of line resulted in a series of portrait drawings which show the outstanding draughtsmanship of a mature and emancipated artist. In just a year or two he had learned to draw with considerable forcefulness. His meticulously drawn networks, his free and energetic lines, are suggestive of the artist's sovereignty and of the assurance and independence of somebody who has mastered technical difficulties. In addition, they also suggest a particular talent for empathy and penetration: the lines are not drawn wantonly to create only a decorative effect, they 'scan' the model's surface, the facial wrinkles. With the younger models it is mainly the curls of the hair, in the older ones the characteristic wrinkles of chin or double chin, which dominate. The faces are dynamic, the eyes lively, and the lips – which are nearly always thick – almost mobile. And yet the compositions are calm and balanced overall.

Lajos Tihanyi's drawings had this dynamism and tension in the 1910s and 20s. The 'cutting' of the composition, the pose assumed, the liveliness of the face and the sketchiness of the clothing are also similar. In Tihanyi's portraits, however, there is always some peculiar inner glow or unappeasable restlessness; his expressive, psychologizing style differs from Moholy-Nagy's more impassive and rational approach. Considering the affinity between the two artists, we may well suppose that in these portraits as well as in his early landscapes Moholy-Nagy was influenced by Tihanyi. Moholy-Nagy assimilated influences almost at once and converted them into a distinctive mode of expression of his own. From Tihanyi's portrait 'gallery', which dates from before 1919, no item stands out on its own, for all the portraits are in a close relationship with one another: together they illustrate the overstrung and tense atmosphere of the age. The connection between Moholy-Nagy's portraits is more complex and concerns rather their style; the models themselves belong to different worlds and lack any common background or atmosphere.

- 12 The earliest portrait, that of *Lajos Hatvany*, which bears the inscription 'For Laci
18 Tölgy', was executed in Hungary in 1919; the last, the *Portrait of Dr Reinhold Schairer*,⁷ was completed two years later in Berlin.

- During the period separating the two, an important change took place in the artist's development, for he switched to an abstract mode of expression. Thus, by the time he drew Schairer's realistic portrait, he had already completed some non-representational works. In spite of this, the portraits are fairly close to one another in style and do not vary much during the period. They all have a certain airiness, as opposed to the crowding of the earlier works. Each item of the series is a self-contained whole, not a sketch or study but a work equal to an oil painting. The contrast of black and white is not particularly sharp; the network of lines – sometimes thicker, sometimes thinner – usually forms a continuous surface, except in the portrait of *Mr Hamilton*. The only portrait we know of the series which was drawn in
21 colour is the *Self-portrait* from 1919. The graphic technique used in the latter,
23 however, is exactly the same as that of the other portraits: the crisscross, curving, vibrating lines zigzag over the entire surface.

- During the short time the artist spent in Vienna before going on to Berlin – about
15 six weeks – he drew the portrait of *Jolán Simon*. Outlined with large, bold, energetic strokes, the improbably calm countenance of Kassák's wife, and the dynamic un-

dulating tension of her clothes and hair, produce a strange duality. With the exception of the clumsily drawn hand, this portrait, undertaken in the first few months of exile, already testifies to the artist's fully mature attitude to painting. The finest and also most moving portrait, known – mistakenly – as *Ferenc* (it represents Friedrich Vorwerk), also dates from 1920, but was drawn in Berlin.⁸ Vorwerk helped Moholy-Nagy a great deal during his first days in Berlin, and Moholy-Nagy was thus greatly attached to him. The delicate-featured young man appears immobile, the undulation of his hair and the folds of his clothes produce the effect of a dark grey surface made up of tiny lines, and this is counterbalanced by the frank, open expression on his face. His chin, nose, high forehead and unusually long head are delineated only in fine outline. One of his arms gives the impression of having outgrown the paper, and consequently his clasped hands are a little awkward and disproportionately small. The folds of the undulating clothes make the face even more radiant. 11

A slightly less vigorous counterpart of this beautiful drawing is the portrait of Moholy-Nagy's brother *Ákos*.⁹ The posture is roughly the same as in the other picture, only here the whole figure is dark, from the jacket to the face with the big black eyes and shock of hair. It is so much less lively than the other similar portraits that we might rightly suppose that it was made from memory or a photograph. The portrait of *Mr Hamilton* affords a contrast with the meticulously drawn and excessively dark *Ákos*. Here the wrinkles of the face, the waves of the hair and the clothing are outlined with thin lines drawn with natural assurance. *Schairer* is represented in a similar pose. The sombre, black half-length portrait is constructed from a network – now thicker, now thinner – of winding lines constantly rejoining themselves. We get the impression that the dishevelled locks of hair have slid over onto the figure itself, where only the white collar and cuffs shine brightly. The dignity and composure of the posture are in contrast to the animation and restlessness of the face. Because of its heavy black mass, the figure becomes monumental in spite of the detailed tracery within it. 16 21 18

THE CHANGE

It was in representational painting that Moholy-Nagy hit upon his own style, and his first outstanding works were portraits. Through these he found himself and became a real artist without any previous study. His relationship with his future wife, Lucia Schultz, an able photographer and editor who became known as Lucia Moholy, was of vital importance for his further development. They became acquainted in Berlin in 1920. In the first few years of their marriage, from 1921 to 1925, they were inseparable from each other in their work, both in writing and photography.

Moholy-Nagy's portrait drawings also throw some light on his intellectual attitude at this period. The interest he showed in people was a direct one; but this would not be so in the later Bauhaus years. Written documents are scarce, but fragments of his diary show the influence the war had on him, developing his sympathy towards all kinds of human suffering and thus drawing his attention to the people around him. The representational illustrations he made on arriving in Berlin for the Expressionist playwright Walter Hasenclever's rather pathetic play entitled *Die Menschen*¹⁰ also testify to this kind of sensitivity. He must have felt Hasenclever's attitude exalting 'Man', 'human suffering' and 'human sacrifice' was close to his own at that time. The pathetic figure in the only extant drawing in this series, *Woman Sitting*, radiates an Expressionist spirit, while its network of fine black lines already points to the road the artist will follow later. Moholy-Nagy did not become an Expressionist painter; this style was fundamentally alien to him. In the *Hills of Buda*, which we have already mentioned, the superimposed curves repeated several times within the outline of the dark green hill already foreshadow, as early as 1918, Moholy-Nagy's characteristic 22 26

later 'net' constructions, while the rays emanating from the hill carry the germs of his future obsession with light. The painting is characterized by sombre olive green colours, clear construction and an attempt at simplification.

27 *Landscape with Houses*, which dates from 1919, forms a link between the achievements of Hungarian Activism and the coming period of abstraction. While the lines of the hills remind us of the intersecting outlines of hills in the *Hills of Buda* (1918), the cluster of houses forms a closed, strictly geometrical structure, summing up as it were with dynamic strength the possible forms of reality. This picture is important not only for Hungarian Activism but for avant-garde art in general. It is a turning-point in the artist's oeuvre, a unique synthesis of representational and emergent abstract features.

Unfortunately, very few of Moholy-Nagy's colour paintings of fields are known. 46 In *Hungarian Fields*,¹¹ the parallel or partially intersecting strips form an essentially 41 abstract design, and only the title refers to tangible reality. In *in Field* (1920–21) there are even Dadaist elements discernible among the strictly two-dimensional fields. Moholy-Nagy did not follow this road, however. He was probably agonizing over finding a style he could really feel was his own.

The works conceived in the 1918–20 period of transition differ greatly from one another. The few pictures we know from this period point in several directions and even give the impression of not being necessarily drawn by the same hand. The 17 expressive, thick, overlapping lines in *Round the Table*, the solemnity of the figures painted in dark shades, and the entire composition of the picture, are characteristic of the late phase of Hungarian Activism. The lines are not yet separate from the bodies, they do not yet have a life of their own, their tension suggests some inner flame. Some pictures give the impression that it was only later that the concentric 9 circles intersecting at several places were added to the original drawing.¹² This peculiar net technique – which Moholy-Nagy describes in a later essay (*Abstract of an Artist*; see p. 360) – in fact draws attention to one of his later fields of research, that of transparency.

Moholy-Nagy's portraits are rooted in the social and artistic background of Hungarian Activism (in spite of the fact that most of them were completed abroad), while the works already pointing towards abstract art reflect the complex and varied artistic atmosphere of Berlin. Already in 1920–21, although still painting representational pictures, the artist was greatly concerned with achieving a more abstract mode of expression. Hungarian Activism had lost its impetus and could no longer stimulate him. All the more then did he turn to the international trends which he saw around him, of which the art of Hungarian émigrés had now also become part. To pacifism and world-redeeming ideals were added in Berlin the freer, anti-nationalistic attitudes of Dada, the spiritualism of Suprematism, and the leftist programme of Constructivism. Different though these trends were, influencing the artist simultaneously they merged in a synthesis, even if one valid only for him. It was then that his future career was decided and his world outlook formed. In these eighteen months he made more progress than during the decades to come. His spiritual outlook was developing in accordance with his milieu, the Berlin avant-garde, which was the reservoir of all the avant-garde trends of the time. In January 1920 Moholy-Nagy had been a late and unknown representative of Hungarian Activism in Vienna; in 1921–22 he already represented – and what is more, was shaping – the various international cross-currents in Berlin.

The two basic influences were those of Berlin Dada and Soviet Constructivism. Berlin Dada was massively displayed in the 1920 *Dada Almanach* edited by Richard Huelsenbeck. Its provocative vitality and self-consciousness, its revolutionary typography which defied the poor presentation, its free verse, essays, debates and manifestos represented, with all their disarray, the new spirit born in the context of the post-war years. The international atmosphere of Dadaism had a wholly liberating and stimulating effect. At first, in April 1920, Moholy-Nagy reacted to Dada with the

aversion he had brought with him from Hungary: 'A man called Kurt Schwitters makes pictures from newspaper articles, luggage labels, hairs and hoops. What's the point . . .?' (see p. 388)¹³ He had by then spent some five months abroad; but the next five months would be enough for him to understand the meaning of Schwitters' collages and to realize that the new order created from waste had its own laws and its own strength. Compared to the earlier trends, Berlin Dada as represented by Richard Huelsenbeck, Raoul Hausmann, Hugo Ball and Georg Grosz exercised a good deal of social criticism and was thus close to Moholy-Nagy's Activist outlook. Of course, the form in which they expressed this social criticism – caricature, jokes and performances deliberately designed to shock middle-class attitudes – differed markedly from the somewhat low-key tone used in both *Die Aktion* and *MA*. The standard norms and values had become for the Dadaists simply ridiculous. From the Berlin Dadaist movement Moholy-Nagy mostly adopted the idea of freedom: that everything was possible as well as its opposite. Although he never really assimilated the Dadaists' casual ease and their *épater-le-bourgeois* attitude, they opened for him a window through which a multitude of possibilities rushed in. The Berlin Dadaists' creativity was more specifically realized in literature than in the fine arts in the traditional sense – although some of them did attempt to abolish the limits of the various genres by printing texts so that the layout made them resemble pictures. Their characteristic, forceful and sharply satirical photomontages, the letters detached from their meaning, whirling freely or built into other objects, opened up possibilities that Hungarian artists had not even thought of. Dada had the greatest influence on Moholy-Nagy through its freedom of inspiration, freedom of new genres – collage, photomontage, and picture verses, as well as its informal theatre and publications.

But beyond freedom and appreciation of the role of chance, Dada also led him to something even more important. Hungary was far away now, and Moholy-Nagy suddenly started looking with new eyes at machines, the machine-based big-city environment, and first of all the complicated structure of railway stations. The Hungarian artist was now changing under the influence of new experiences, but not so much in spirit as in style. A new horizon opened before him.

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In his first years in the West, machines impressed him less as interrelationships than as vital and tangible vehicles of motion and communication. Later, when he learned of the (mostly Soviet) theories concerning construction, he became interested in machines as such. Machine art exerted its influence on him in two waves: first through international Dada, and second through Russian Constructivism. He assimilated both very quickly, which is particularly surprising in the case of Dada, since in 1920 he knew little of avant-garde trends and thus had to absorb the Dadaist outlook almost without any antecedents. He never became a Dadaist, though. He took from Dada only a few, rather superficial ideas, and nothing of its essential playfulness, blasphemy, contempt of values and constant doubt in everything.

The Dadaist with whose works he became acquainted upon his arrival in Berlin was Francis Picabia. Picabia represented mechanisms which were similar to machinery yet which were in reality autotelic, in a wider philosophical or linguistic context. In essence Marcel Duchamp's acerbic machine-symbolism is just as anthropomorphic as Picabia's strange and ambiguous creations made from designs of machine parts and half-explicated sentences. Moholy-Nagy was fully aware of the autotelic beauty of these mechanisms, of the dynamism of their structure, but he was not susceptible to their hidden irony and humour. All double meanings and expressions of doubt are alien to him. He accepts or refuses things, but does not query or paraphrase anything; his own peculiar humour shows itself in his works only rarely, in a few of his collages. He respects machines, mechanisms, construction in general, and he absorbs into his art some of the Dadaist motifs. It was perhaps Picabia who had the greatest influence on him. He may have known Picabia's album, *La fille née sans mère* (Girl Born without Mother), then published in Berlin; at any rate, his drawings make this seem very probable. He too constructed compositions from machine parts, cogwheels,

transmission belts and shafts drawn with fine outlines. He must also have been influenced by the machine compositions of Johannes Mohlzahn. Although the supercilious ease of Dada was alien to Moholy-Nagy's personality, it was with almost-Dadaist works that he first introduced himself to the world.

Works which may perhaps be regarded as Dadaist in the strict sense of the word appeared, without any antecedents and with unexpected impact, in the journal *MA* and later, in September 1921, in the *Horizon Album* published by *MA* (which had by then moved to Vienna).¹⁴ Moholy-Nagy had moved to Berlin, early in 1920, in order to preserve his independence and participate in Berlin's livelier artistic life, and in April 1921 he became the representative of *MA* in Germany. He never published his own articles and essays in *MA*, but in Western avant-garde journals like *De Stijl* or *Der Sturm*, or in *Akaszott Ember* (The Hanged Man) published by an émigré group which had opposed and subsequently left *MA*. We do not know whether this was Moholy-Nagy's own decision or that of Kassák who saw in him a rival. In any event, the photographs he sent to *MA* provided news of the various activities and trends of the Berlin avant-garde in the most lively and direct way. In March 1921 – a month before he became the journal's representative in Germany – one of his art works had already appeared in *MA*, in the same issue, moreover, which published writings by the Dadaists Hans Arp and Richard Huelsenbeck. It is probable that Kassák deliberately published these Dadaist works together. Moholy-Nagy's woodcut was inspired by Dada, and was very different from his earlier works. The Dadaist elements, employed randomly and with some uncertainty, lacked any logical structure. However, his painting *Bridges* (1920–21), which incorporated the same motifs, may be regarded as one of Moholy-Nagy's early masterpieces.

Some new works by Moholy-Nagy, both oils and drawings, appeared in the September 1921 issue of *MA*. Their world is completely different from that of his portraits or landscapes. The new industrial civilization, the particular atmosphere of the big city, Berlin's industrial scene and the established presence of machines, had undoubtedly captivated him in his first few months there. Railway stations, bridges, switching systems, cranes and the multitude of visibly functioning machines of the industrial city were the embodiment of a new way of life and a new ideal very far from that which had traditionally been regarded as aesthetic. Existing avant-garde trends probably first introduced Moholy-Nagy to this scene; but later on it was the spectacle itself that captivated him, and this was why he wanted to make a film about everyday life in Berlin.

The components of his works are wheels, transmission belts and shafts, i.e. motifs as typical of Dadaism as the (sometimes upside-down) letters and numerals built into Dadaist compositions. These characters have no abstract or symbolic meaning. Picabia's works affect us through their visual and linguistic play, Moholy-Nagy's exclusively through their form. It was here that Moholy-Nagy first discovered certain structural solutions which he would later perfect in his non-figurative works. For example, a recurrent feature is the axis or line cutting across the middle plane, establishing – emphatically or barely perceptibly – the skeleton of the composition. Even more typical is the drawing entitled *Perpe*, where we see a segmented circle in the middle of the composition, intersected by a vertical axis. (In a somewhat similar arrangement, the segment is a typically recurring motif in Moholy-Nagy's early pictures.) The picture of the *Cyclist* stands out in the series; of this Moholy-Nagy later said¹⁵ that it was in fact a mutilated still-life. In any case, it is more concise and more dynamic than other works of that time. Particularly outstanding in this period are *Bridges*, *Large Railway Painting*, and *The Great Wheel* (or *Large Emotion Meter*). *Bridges* is a peculiar apotheosis of the industrial scene, the universe of bridges and railway stations, with a hardly perceptible upside-down figure whose hands point towards himself. The scattered iron rails and carriages convey a colourful, throbbing vitality, while in the centre various elements again form the characteristic segment of circle.

The Great Wheel is also characterized by components that appear to be thrown outwards. Here the letters and wheels flying out into the empty picture space suggest the dynamism of a working mechanism. The simplified silhouettes of wheels and conveyor belts and their clear, accurately drawn outlines at first glance give this mechanism a strikingly realistic aspect. The wheels might start turning at any moment, intimating movement that is about to begin. Most of the drawings, on the other hand, have a closed geometrical structure, though one that is hidden; their strict horizontal-vertical surfaces are in contradiction to the possibility of motion. These works radiate stability, and yet at the same time the need for construction. It was from this, mostly latent, quality that Moholy-Nagy's real style was to develop.

The 1921 *Horizon Album*, with Ernő Kállai's enthusiastic introduction (signed Péter Mátyás), was a turning-point in the artist's life.¹⁶ With this work Moholy-Nagy became an active participant in the Hungarian avant-garde movement, finally abandoning his earlier representational style.

Although he adopted Dadaist techniques – such as collage, montage, playful typography – Moholy-Nagy did not really accept the Dadaist concept of the fortuitousness of phenomena. It was the influence of the Kassák circle that compelled his belief in some kind of order, made him unable to accept the absence of an organizing principle and of causal relationships. He was a materialist, and irrationality had no place in his universe; yet he very much wanted to believe that the phenomena of the universe can be known and, what is more, changed for the sake of a single purpose. That purpose was to achieve the liberation of man, the development of his creative abilities. Of course, nothing could be more remote from Dadaism than this utopian view of the world.

Simultaneously with his discovery of beauty in the spectacle of Berlin railway junctions, the dynamism in machines at work and the new magic of technology, he also discovered new laws of picture construction.

In 1921 Moholy-Nagy's works were concentric and expansive, with levers and radii tending outwards. At the same time they were for the most part symmetrical, with their centre of gravity in the middle plane irrespective of whether or not there was a disc in the centre of the composition (*The Great Wheel*), or squares, rectangles or axes (*Large Railway Painting, Composition 19, The Tower*). The importance of the central area is in most cases further enhanced by the bare, unprimed canvas. The brightly coloured, sharply outlined motif stands out against the impersonal light ochre texture of the canvas with great suggestiveness; it has almost nothing in common with the background, so different are its surface and treatment. The composition is always centred, a typical feature being a strong horizontal axis appearing in the lower or upper third of the picture below or above which are various more playful and lively motifs such as numbers or letters. Upward-inclining diagonals are emphasized to the same extent as the horizontal strip; they float freely in the picture space, not extending as far as the frame, thus giving an impression of inconclusiveness or incompleteness, and so creating the need for continuation and completion. This is one of the sources of the inner tension and dynamism of the pictures.

The balance becomes upset in 1921–22 when the whole structure moves out of the horizontal, turns in relation to the lower frame of the picture, and aligns with the diagonals. The earlier balance, which the sweep of the diagonals had left intact, is now disturbed; the motifs, freed from their horizontal-earthly attraction – of gravity – suddenly start soaring into the space at their disposal on the surface of the bare, and later painted, canvas. In hitting upon this possibility, Moholy-Nagy also found his own form of expression; the motifs, freed from gravity, suddenly became much lighter and airier. The various geometrical forms were no longer impenetrable units but transparent elements through which other elements appeared, and showing through these planes the depth of space could be increased almost to infinity. Thus, almost imperceptibly, step by step, there emerged the artist's own innermost pictorial world which was to become known as 'glass architecture'.

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Through the disturbed state of balance, the structure of the pictures had changed completely: the earlier plain canvas background, which contrasted so sharply with the motifs, now became a vital component in the whole composition. The background and the motifs intermingle, one appearing through the other, no longer separate. Instead of silhouettes of letters and numbers standing out in sharp outline, delicately delineated strips and axes differing from each other only in their shades of colour create an effect uniform in colour and tone. The diagonals intersect to form a kind of cross that is floating, and slightly irregular (*Yellow Cross Q VII*, 1922; *Z III*, 1922), which is at first only one possible geometrical variation, but from 1922–23 on becomes almost an emblem (*Q XXI*, 1923; telephone pictures, 1922). Now it is precisely in this type of composition with its ‘upset-balance’ structure that expansive force and tension give place to imperturbable calm, almost intimacy. The components have become simplified, all associations, letters, numbers, wheels and chimneys have disappeared, and only the circle and intersecting axes remain. ‘Construction lines’ connecting the various elements – sometimes emphatically, sometimes hardly perceptibly – appear in his compositions from 1922 on (e.g. *Z III*). These thin lines, drawn with a ruler, create the skeleton of the composition and, by connecting the freely floating elements, establish a system that co-ordinates the motifs with an engineer’s precision. They cross the light grey or shaded white background with absolute assurance without dispelling the floating impression created by the pale transparent shades of colour. These thin lines later also became indispensable elements in Moholy-Nagy’s characteristic photoplastics; there, instead of the circles and crosses, they connect and frame photographic elements within a composition. With the base no longer mere background but, owing to delicate differences in tonality, part of the composition, the tracery-like character of the earlier works based on silhouette effects disappears.

Moholy-Nagy really became a painter when he started expressing himself not with silhouettes and outlines, i.e. drawing effects, but by employing pictorial means with rich tonal resources. From 1921 on, the ground is for him no longer simply canvas or some indistinct plane, but a space whose depth he is able to render perfectly with differences of tonality and construction lines. The floating shapes, tilted axes and transparent planes radiate joy at the discovery of possibility, of liberty found at last.

However, in spite of their inner freedom, the floating, weightless elements arrange themselves from the very beginning into a compositional, an architectural structure. Even when superimposed upon one another, the elements remain transparent; what is more, real transparency develops precisely when they are superimposed. This is how the principle of ‘glass architecture’ was born in Moholy-Nagy’s art in 1922.

- 36 With its unreal, abstract character, glass architecture was a perfect model of the disembodied utopia to which the artist felt so attracted at that time. It was connected with the theories of the ‘abstract’ writer Paul Scheerbart and the critic Adolf Behne. Glass architecture as a model of the future had already been a dream of the Expressionists as well. As Adolf Behne wrote: ‘Glass architecture entails European spiritual revolution and transforms the brutish, vain animal, fixed in his habits, into alert, clear-headed, refined man.’¹⁷ Glass appears as the polar opposite of comfort and petty intimacy. This idea was probably as attractive for Moholy-Nagy as Mies van der Rohe’s design for a glass tower¹⁸ – which he must have known about – whose soaring dynamism and easy elegance really have a suggestive effect. Although we find few traces of German Expressionism in Moholy-Nagy’s style, the abstract outlook of this movement can be discerned in his way of thinking. German Expressionist architecture probably also influenced him; he must have known Bruno Taut’s fantastic projects, as he was personally acquainted with the architect. The utopian vision of the future, which became crystallized in glass architecture, was an idea shared by several writers and artists of the period. Their circle, the so-called Gläserne Kätte, had connections with Moholy-Nagy. But even the Soviet critic Nico-

lai Punin spoke of Vladimir Tatlin's glass tower¹⁹ as the synthesis of architecture, sculpture and painting.

For Moholy-Nagy, glass architecture was an abstract symbol. With the technology of the period glass buildings were still utopian; but for Moholy-Nagy, who could realize architecture and glass architecture only on canvas or paper, they were utopian in several respects. Or, more precisely, they constituted a totally abstract idea which had little to do with the actual pictures and drawings which he called 'glass architecture'. And yet glass architecture, which incorporated his desire to redeem the world in a single transparent object, was to be the key to Moholy-Nagy's entire later activity in the Bauhaus as well as to his other works. Glass architecture and the emblem of the Bauhaus at its outset, Lyonel Feininger's woodcut entitled *The Cathedral of Socialism*, were fairly close to each other ideologically.

Moholy-Nagy's compositions were, however, even more closely and more directly related to the so-called 'pictorial architecture' (in German, *Bildarchitektur*) of the Hungarian avant-garde, a concept which first emerged in Vienna in 1921, in Sándor Bortnyik's and Lajos Kassák's albums and pictures. Kassák first presented pictorial architecture in a dynamic, pulsating literary text reminiscent of a Dadaist manifesto,²⁰ which makes it clear that the movement was trying to express a revolutionary initiative which was unable to appear in any other form. In fact, at its very birth, pictorial architecture renounced the expression of specifically Hungarian problems and styles, linking up instead with international trends, its constructions having no concrete revolutionary aspect.

Moholy-Nagy referred to his own works not as pictorial but as glass architecture, showing his desire to distinguish himself from the other Hungarian Activists who were creating pictorial architecture at the same time. But in addition, those early compositions which he called glass architecture already carried the seeds of his later art, indeed of almost all his aspirations. From glass architecture, the 'architecture' component later became secondary for Moholy-Nagy; but in glass, or more precisely in the transparency of glass, he located his most individual and most consistently applied principle. At that time, in 1920–21, he was searching feverishly in many directions for something that would be his alone, that would distinguish his works from the abstract geometrical creations of others.

ON THE BORDER OF SUPREMATISM AND CONSTRUCTIVISM

Moholy-Nagy's gracefully elegant *Glass Architecture* first appeared as a colour print on the front page of the celebratory issue of *MA* published on 1 May 1922. The strict inner order of the intersecting elements and the naked purity of the forms, lacking any representational aspect, point to a new source of inspiration. The crucial influence on Moholy-Nagy's development as a painter and on the crystallization of his views was Kasimir Malevich's Suprematism, with which he became acquainted early. In Malevich's pictures the coloured geometric figures, completely reduced to the essentials, driven by some internal strength and impetus, detach themselves from the horizontal picture plane to cut freely across the bright space at their disposal. Their soaring liberation from the constraint of matter proclaims the freedom, creative strength and sovereignty of the mind. The dynamism and inner assurance of the rectangles, squares and trapezoids constitute the final pure form of a train of thought many times lived through, the artist's innermost philosophy. Malevich's art is a synthesis of Russian Cubo-Futurism and the closed mystic world of the icons discovered by contemporary Russian painters. And beyond all this, it embodies Malevich's obstinate creative power, religious feeling and irrationalism.

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The resulting unambiguousness of the almost unbroken white canvas and its infinite inner freedom was there ready for Moholy-Nagy to use. It was there ready without his knowing about the preparatory agonies and the philosophical content. In 1920–22 he could not yet have known Malevich's writings, except perhaps for one published in the Hungarian periodical *Egység* (Unity) in 1922; but even later, the Russian master's almost fanatic attachment to his nation and religion and the prophetic drive of his thoughts remained alien to him.

However alien the thought content of Malevich's paintings may have been, Moholy-Nagy soon understood and adopted the visual arrangement of his works, the rhythm of constraint and freedom, and the inner laws of apparent freedom. Moholy-Nagy never really painted in Malevich's style, as many of the master's Russian followers did. With his own principle of transparency, the Hungarian artist assimilated and at the same time further developed Suprematism.

At the turn of the years 1921–22 Moholy-Nagy's simultaneous discovery of the crystalline beauty of Malevich's works and Adolf Behne's theory of glass architecture gave birth to his paintings of glass architecture. Inspired by Malevich's soaring squares and rectangles, he started putting the figures in front of and behind each other, so that they might appear through each other and their system of construction be clearly outlined. He conserved the inner, almost unreal purity of Suprematist pictures, but arranged their free floating nature into rational form, stressing new elements of undisturbed beauty, harmony and decorativeness. Of course, there are exceptions; in his black pictures the coarser shapes do not correspond to this harmony, and reveal an inner tension. But on the whole Moholy-Nagy palliated the drama, the catharsis, always present in Malevich's pictures. Malevich was a deeply religious artist; but for Moholy-Nagy religion simply did not exist. And yet in spite of this they shared a certain thirst for freedom, a need for autonomous creation, and a mode of expressing thoughts and ideas through the simplest, emblem-like forms such as the cross and the circle. The development of Moholy-Nagy's painting is inconceivable without Malevich's Suprematism, and the works attesting to this relationship are perhaps his best.

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137–139, 144

The pictures in the glass architecture series surprise us with their perfect balance. They date from around 1922–23, when the second great period of Dadaism was still flourishing in Berlin, and when – in Europe and especially in Berlin – Constructivism was gaining new impetus.

Both the Dadaists and the Constructivists positively refused to make their works aesthetic, decorative or harmonious. Even for the Suprematist Malevich, pictures were primarily a visually perceptible, crystallized form of more distant, mystical relations. In Moholy-Nagy's art, however, the painting constitutes an autonomous world, and it must be harmonious within the limits imposed by its frame. Malevich's paintings are 'open', and the diagonal elements in Moholy-Nagy's compositions dating from 1920–21 also seem to want to reach another space outside the frame. In his glass architecture, however, even in its application in a new medium twice removed (building – glass – painting), the composition gives the impression of a larger architectonic complex constructed from glass plates. The works belonging to this series are self-contained and perfectly balanced. Turning away from the trends prevailing in Berlin, the artist creates his own aesthetic and mature mode of expression in which we find no trace either of the turbulence of Dada or the puritanism of Constructivism.

In this period he was experimenting with the complicated play of planes showing through one another, and with the almost incalculable multiplicity of transparent effects in his photograms, too. In his photography, light is present in its own, direct nature: light and shadow together make up the composition which sometimes gets reversed and is repeated in the negative.

Moholy-Nagy could not make use of these particular photographic effects in his paintings. It would be futile to look for direct analogies between the two genres. His photograms were composed directly with the help of light. In the glass architecture

constructions, the light which tints the layers placed one upon the other filters through hardly perceptibly. Instead of positive and negative forms, light and dark, identical or similar motifs figure in the same composition. The result is a strange play in, and of, space: the degree of depth of the superimposed planes is not without ambiguity, and this slight ambivalence introduces a certain tension into the otherwise excessively clear ordering of the picture. The predominance of the horizontal and the vertical in the glass architecture regains its former importance, but the horizontal no longer signifies the earth-bound character of the elements. They are no longer constrained by gravity. In most cases the structure, which has strict proportions, is placed above the lower plane of the picture (*Q VIII*, 1922; *C XII*, 1924). The various planes appear through one another easily and as a matter of course, always forming a crystal-clear composition. In spite of their fragile and abstract character, the paintings are reminiscent of architectural compositions although the artist does not particularly stress this. During the same period, some of Georges Vantongerloo's sculptures, Malevich's architectonics, Lajos Kassák's *Column*, and certain other works expressed this same need for architecture in plastic form. If Moholy-Nagy's compositions seem more abstract, it is only because the two-dimensional character of the canvas necessarily implies it.

48, 52

Each of his ideas at that time generated several variants, the difference between them being sometimes only slight, as, for example *K XVIII* and *Abstract Composition*, 1923. The composition of these two works is almost the same, both consisting of several transparent planes shifted in relation to each other, both planes seemingly being very slightly turned as well. Perhaps nowhere else is it so obvious that the artist was concerned with glass, with the possibilities of transparency; at the various points of the gradually lightening or darkening transparent surface the bright plane shows through with a quite different effect. At the same time he was also interested in celluloid compositions. This kind of composition, in spite of its balance, implies the possibility and even need of displacement. The two deltoids, one the inverse of the other, are further intersected horizontally at the bottom by the elongated outline of an irregular rhomboid, creating horizontal tension. The lower horizontal figure delineates as it were the direction of the movement or axis of the vertical motifs. Both compositions show that Moholy-Nagy was simultaneously interested in light effects and motion, as in his *Light-Space Modulator (Lichtrequisit)*, the first sketches for which date from 1922.

66, 123

The composition *Q VIII* (1922) is one of the finest examples of the relationship between transparency and Suprematism. Broken tonal shades emerge from the delicate grey background, and their multiple superimposition virtually creates a spatial effect. The faint tonalities remind us of the shaded whites of Malevich's pictures; and the black cross, of which Suprematism has made a symbol, is also reminiscent of Malevich. This cross is the only outlined form; and only the black tip of the bluish plane can compare with it in severity. These two cold, sombre patches give strength and weight to the composition. The transparency of the planes which partly hide, and at the same time show through, each other has a strange lyric effect; the painted surfaces imitate perfectly the spatial effect of transparent glass plates or plastic materials (e.g. celluloid) glued over one another. The elements are not so graceful as Malevich's; they hold fast to each other as well as to the ground. Both the horizontal and vertical motifs swing somewhat diagonally out of their original arrangement and thus seem weightless.

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As a painting, the picture has a perfect clarity of composition in itself. It betrays, however, the artist's yearning for authentic materials – glass in the first place – and especially for real space.

One of the main works of this period is *Z VIII* (1924), a large-scale example of Moholy-Nagy's autonomous universe. Its proportions are unusually large in comparison with the artist's other works, and its structure is much more complicated. It is a harmonious complex of several of Moholy-Nagy's compositions: the synthesis,

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as it were, of his period of glass architecture. The light or dark segmented circles, the parallel or intersecting diagonals, and the two vertical strips rising closely together have all appeared independently in his earlier pictures. But their being together here does not make the surface overcrowded, because the artist returns to his earlier neutral-coloured background which is not built into the composition but allows the various elements to stand out separately. The black and white simplicity of the circles is counterbalanced by the warm brightness of the red and yellow strips. Within the huge white semicircle, the black double axis indicates, like a warning exclamation mark, the crystallization point of the composition, which has shifted a little to the right of the real geometric centre of the picture space. This dispensing with symmetry gives the impression of elements floating freely, of joy at the painter's sovereignty and of assurance pervading the whole composition. Moholy-Nagy's great artistic self-assurance was such that he even tried to obtain the same effects in black-and-white linocuts and woodcuts made for the journal *Der Sturm*. By freely reconstituting elements already discovered, he attains a graceful decorative effect by upsetting the balance of the strips and semicircles. He usually places the elements of his composition against a uniform black or white background. Although these *Sturm* pieces cannot compare with the delicate tracery of the items in the portfolio made for the Kestner Gesellschaft in 1923 – nor, in general, with the richness of the tonal effects made possible by lithography – they are among the greatest artistic achievements of the artist's glass architecture period.

128–133

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Certain pieces in the *Kestnermappe*²¹ published in 1923 date from 1922. The delicate tracery and mature structure of the intersecting diagonals convey the harmonious synthesis achieved by Moholy-Nagy's new style. Here the artist has found his own form of expression in lithography, a genre which was new for him. Moholy-Nagy makes maximum use of the possibilities offered by lithography: thus, as compared with the rougher forms of the earlier *Horizon Album* published by Kassák, this series is already more refined, the compositions showing fine differences of tonality. The disturbed balance of the dark or light strips which intersect the larger grey surfaces is highly suggestive and creates a monumental effect in spite of the graphic solution. The single coloured sheet with its basic red tone set among the black-and-white compositions endows the whole series with a fresh, unusual and striking effect.

The *Kestnermappe* has a rival in the Soviet artist El Lissitzky's series entitled *The Tale of Two Squares* and *Victory over the Sun*. The latter is a perfect masterpiece of its genre, on the border between Suprematism and Constructivism. Moholy-Nagy's portfolio sought to be similarly suggestive, and through its own particular means fully attained its goal.

38 In this period broken white and pastel shades of immaculate colours dominate Moholy-Nagy's paintings. The composition *E IV*, which also dates from 1922, affords a contrast to these ethereal, pale-toned pictures. Here sharp, clear lines cut across the massive black background, with a slightly oblique grey crescent-like shape floating among or rather behind them. At the points of intersection and near the red and grey lines, a barely perceptible semicircular shape is repeated in inverse and in black, extending to infinity, as it were, the possibilities of intensifying the colour black. The warmth of the reds and yellows hardly breaks the predominance of greys and blacks. Although the painting is composed of the characteristic elements repeatedly used by Moholy-Nagy, its overall effect is rather different from that of the glass architecture compositions. In this picture Moholy-Nagy comes nearer to Constructivism, more precisely to Alexander Rodchenko who painted a black picture in 1920, and later, in 1921, challenged Malevich by exhibiting a monochrome series in red, yellow and blue.²² The elements seem to be real, almost tangible objects, in contrast with the floating aspect of the pictures inspired by Malevich.

During the first half of 1922, Moholy-Nagy was on the borderline between Suprematism and Constructivism, or more exactly his art was a synthesis of the two. By the end of 1922, however, his fellow artists already regarded him as a representative

of Constructivism on a European scale. In addition to his pictorial works, his writings also played an important part in this view of him.

From 1920 to 1922, various Constructivist trends exerted a very great influence on him, from several different directions. Among Hungarian artists, it was probably mainly the sculptor László Péri and the theoreticians Alfréd Kemény and Ernő Kállai, all living in Berlin at the time, who relayed this influence to him.

The theory of Russian Constructivism set itself sharply against the art and society of the past; it energetically demanded a new and more dynamic way of life, and it denied the existence of any irrational force. These ideas had an immense effect in the West.

In the early twenties, the most conscious representatives of Constructivism – Tatlin, Rodchenko, Lyubov Popova and Varvara Stepanova among others – broke with easel painting in order to devote all their energies and imagination to design. Rodchenko stopped painting in 1921, and to be an artist-engineer and artist-designer became his new ideals. The first of these ideals – the artist-engineer – had a great influence on Moholy-Nagy: his so-called ‘telephone pictures’ were born out of the inspiration of the *Dada Almanach*, Rodchenko’s ideology, and even Adolf Behne’s theories. He himself, however, did not yet abandon painting at that time.

The development of his ideology was also influenced by Naum Gabo and Antoine Pevsner’s *Realist Manifesto* (1920). In 1923, together with Kállai, Péri and Kemény, he defined his ideas in the journal *Egység*, published by Hungarian émigrés in Vienna and Berlin (see p. 288):

This kind of reappraised (from a bourgeois point of view, destructive) Constructivism (to which only a tiny portion of those contemporary movements in art that are known by the name of Constructivism belong) leads, on the one hand, in practical life to a new constructive architecture that can be realized only in a communist society, and, on the other hand, to a non-functional but *dynamic (kinetic) constructive system of forces* which organizes space by moving in it, the further potential of which is again in practice *dynamic architecture*. The road to both goals leads through interim solutions. (My italics – K. P.)

The *Realist Manifesto* – which Moholy-Nagy came to know through Alfréd Kemény, a critic who had been to Moscow and was now also living in Berlin – announced the death of painting, without, however, pronouncing it dead. It denied what it called ‘static rhythms’ – colour, line, volume as a spatial form of expression, and physical mass as a plastic element – as elements of art and wanted to replace them by ‘kinetic rhythms’. Its ideal was the artist-engineer: ‘The plumb-line in our hand, eyes as precise as a ruler, in a spirit as taut as a compass . . . we construct our work as the universe constructs its own, as the engineer constructs his bridges, as the mathematician his formula of the orbits.’²³

The Gabo-Pevsner manifesto of 1920 was born in the afterglow of revolution. But Moholy-Nagy had to live with the knowledge of a defeated revolution, one in which, moreover, he had played no role at all. He adopted the ideas of Constructivism without the necessary basis of a social-political background. Although he was regarded as a representative of Constructivism, he himself did not look for any contact with the Soviet Union and, unlike other Hungarian émigrés (Kemény, Mácza, Béla Uitz), he never visited there. The new ideas he professed are indeed lacking in roots. The manifesto he published with Kemény in *Der Sturm* in 1922, *Dynamic-Constructive System of Forces* (see p. 290), is couched only in general terms. While Gabo and Pevsner advocate a communist society, Kemény and Moholy-Nagy speak of ‘human efforts’ and the dynamism of ‘universal life’. They develop the idea contained in the *Realist Manifesto*, completing ‘kinetic rhythms’ with the new expression of the ‘dynamic-constructive system of forces’. As against receptive energy they stress man’s creative power, and as possibilities of its realization, they advocate ‘freely floating sculpture’, and also the film. In 1920 the authors of the *Realist Manifesto* could still

believe that their activity was useful, justified and recognized by society; but Kemény and Moholy-Nagy, in their manifesto, doubtless unintentionally betray if not resignation then at least the uncertainty of those who belong nowhere.

- The *Realist Manifesto* became a practical vehicle of new ideas when Gabo completed his kinetic statue in 1920. The sculpture, entitled *Kinetic Statue: Standing Wave*, is a crater-like shape described by a metal bar set in motion by an electric bell and as such exists only in motion. This creation is the first representative of mobile, dynamic sculpture. Owing to its structure, proportions and abstract character it is an expression of the new mechanical ideal, one possessing an ease and elegance such as were to be shown by only very few later Constructivist works. Not long after Gabo's
- 64 kinetic sculpture, at the end of 1921, came Moholy-Nagy's *Nickel Sculpture*, one of the most outstanding pieces of his specific type of Constructivism. In 1921 he was still drawing realistic portraits, but the two styles and two attitudes were valid simultaneously for him. He made several other similar sculptures, all in the Constructivist spirit. The earliest of these works, which we know only in reproduction, is *Wood*
- 65 *Sculpture*, dating from around 1921. It is a perfectly balanced and consciously simple creation. Its roughness reminds us of early Russian Constructivist works; the wood of which it is made, not particularly pleasing in itself, is also reminiscent of the spirit of the Russian avant-garde. The effect this sculpture produces is due at least as much to its composition as to its roughness or the directness of its materiality. It has a very consciously thought-out composition from two points of view. On the one hand, as the photograph shows, its composition is two-dimensional: the simple vertical lines of its silhouette and the contrasting segment recall the clear arrangement of the pictures painted by Moholy-Nagy in the same period. On the other hand, the clarity of its construction also relates it to contemporary plastic designs for buildings as well as to slightly later sculptures by Georges Vantongerloo, Paul Joostens and Kassák. In spite of its small size it aspires to monumentality. Another work related to *Nickel*
- 66 *Sculpture*, but less of purely Constructivist than of Dadaist inspiration, is *Construction with 'h'*, an assemblage mounted on a base of painted wood. Its elements are similar to machine parts which, taken out of their original context and arranged apparently at random, together with a bobbin fastened to the wooden board, are reminiscent of the playful, free spirit of Dada, without however being directly related to any single Dadaist work.
- 67 *Metal Sculpture* (1921–22), which is known from a photograph only, is the nearest to *Nickel Sculpture* both as regards its material and its outlook. It is a horizontal arrangement designed to be viewed from two sides. Its upright rods, disc, segmented circle, and horizontal glass rectangle, as well as the metal square serving as base, are all characteristic motifs in Moholy-Nagy's pictures of this period. It is as if the components of a picture had taken on tangible plastic form, realizing in space what the artist had depicted in two dimensions. The well-balanced, harmonious spatial composition embodies the clear structure of the ascetical wood statues and the technological ideal of Constructivism, as well as the aesthetic decorative beauty of the artist's pictures painted in the same period. An identical spirit is manifest in *Nickel Sculpture* which, embodying as it does the theory of a dynamic energy system in plastic form, is Moholy-Nagy's most original, and most personal, interpretation of Constructivism.
- 64 *Nickel Sculpture* sums up Moholy-Nagy's ideas in this period, the same ideas he had already tried to express in wood which proved to be too clumsy a medium. The structure of *Nickel Sculpture* gives an impression of much greater ease, although it shows the technical and artistic limitations which Moholy-Nagy was as yet unable to overcome. He only half succeeded in rendering floating effects, because the spiral, though rising freely into the air, is supported by a massive base. Motion is but imaginary at most, since the construction, far from being mobile, is fixed at all points. It consists of two rather different parts. The base, with definite stress upon the horizontal and the vertical, is reminiscent of Rodchenko's and Tatlin's works in its

materiality. Moholy-Nagy softens and loosens the rigidity of the lines with the arched shape, but pointlessly cuts off the vertical axis. The metal construction supports the other part of the work, the metal spiral whose sweep, fragility and rising shape contrast with the compactness of the support. The spiral is reminiscent of the concentric nature of Boccioni's sculpture entitled *Development of a Bottle in Space*.²⁴ But it is even more like the wooden model of Tatlin's *Monument of the Third International*²⁵ which, composed in the form of an oblique spiral, is one of the most beautiful and most expressive symbols of the revolutionary utopia. It is equally reminiscent of the Soviet artist Konstantin Medunetsky's metal *Composition*.²⁶ For all the massiveness of the base, *Nickel Sculpture* symbolizes the dynamism of Tatlin's work as upward movement. The artist was to return on several occasions to this, one of the visual symbols of the period, the idea of spiral construction.

Moholy-Nagy's first exhibition outside Hungary was held (together with Walter Dexel, Nemes-Lampérth and Ralf Voltmer) in the Fritz Gurlitt Gallery in Berlin in 1920. But the exhibition, held with László Péri, which really brought him attention took place in February 1922 at the premises of *Der Sturm* in Berlin, just prior to the great Soviet exhibition in the Galerie van Diemen in October, 1922. According to the catalogue Moholy-Nagy exhibited several paintings, principally those of fields plus the major achievements of his Dadaist period; however, it was his wood and metal sculptures which aroused the greatest international interest in him as a Constructivist, provoking both positive and negative criticism. László Péri also exhibited Constructivist works, expressly ascetical reliefs of an architectural character, thus increasing the emphasis on Constructivism. Hans Richter, El Lissitzky and several representatives of Dadaism set high store by this exhibition, although they stressed that the exhibits showed the influence of Russian art. However, this undeniable kinship did no harm; it even benefited the two Hungarian artists, for this was precisely the period when Russian Constructivism was conquering Berlin, fascinating most avant-garde artists of all nationalities. Moholy-Nagy and Péri were among the first to adopt the theory and practice of Constructivism, creating their own autonomous style within that trend. It was as a result of the *Sturm* exhibition that Gropius invited Moholy-Nagy to the Bauhaus and offered him the headship of the Metal Workshop, on the basis of the artist's metal sculptures which he had seen there.

Moholy-Nagy and Alfréd Kemény (also known as Durus), with László Péri, constituted in 1922 the left wing of Hungarian émigré artists. Their ideas concerning Constructivism and their radical political attitudes found expression in both their writings and works.

True, Péri and Kemény were to play a part in modern artistic movements for only a short time. Yet it was precisely then, in 1922, that their activity reached its height and obviously exerted a decisive influence on Moholy-Nagy's development.

László Péri²⁷ had a distinctly interesting, reserved, yet determined personality. He began his career as an actor; he played an active role in the Galileo Circle; he was one of the poetry readers attached to the periodical *MA* while in Hungary, then later he became an Expressionist sculptor. In 1920–21 he was already a mature Constructivist artist, his linocuts appearing in *Der Sturm*, which later published them in a separate portfolio dated 1922–23 with an introduction by Alfréd Kemény. It was also in *Der Sturm*, in 1922, that his large, forceful paintings together with his reliefs attracted attention at the exhibition he held with Moholy-Nagy.

Péri approached architecture, the ideal he shared with Moholy-Nagy, by a completely different route. He was directly inspired by El Lissitzky's Prouns. The styles of Péri and of Moholy-Nagy have nothing in common; in contrast to the former's consistent puritanism, the latter's works, even those less successful, always radiate a superior elegance. And yet it was obviously Péri who transmitted to Moholy-Nagy the conception of Constructivism in its artistic, accomplished form, while it was from Alfréd Kemény that he learned its theory. In 1923, Moholy-Nagy and Péri parted company, while the two authors of the 'dynamic-constructive' manifesto, Moholy-

Nagy and Kemény, even became deadly enemies. It is probable that as early as 1922 Kemény was the most leftist of the three. And later, too, he continued to uphold the idea of the conscious, central control of art.

In 1922, in his introduction to Péri's portfolio of linocuts published by *Der Sturm*,²⁸ Kemény stressed the spatial quality of the works, the architectural element in them, and their purity, organization and dynamism of form. In 1924 he attacked Moholy-Nagy, then already a professor at the Bauhaus, in a sharply critical article published in *Das Kunstblatt* (see p. 394). Kemény, who had first-hand knowledge of the achievements of Soviet art and was fully aware both of the sources and the outstanding achievements of Moholy-Nagy's art, did not, however, approve of the Hungarian émigré artist figuring as a representative of Soviet Constructivism or Suprematism. He did not consider Moholy-Nagy a sufficiently committed left-wing artist; and indeed at that time Moholy-Nagy showed less interest in political and social problems than he had two years before.

Ernö Kállai, who wrote the first really enthusiastic article in *MA* about Moholy-Nagy's at that time mainly Dadaist works (see p. 412), was less strongly attached to the Constructivist movement.²⁹ Kállai had a high opinion of both Péri and Moholy-Nagy and recognized their originality.

In his essays published in *MA*, Kállai stresses the importance of Cubism as against the pathos of Expressionism.³⁰ In his view, Cubist form ought to be filled with suitable content, with the standardized structures of bridges, factory buildings and skyscrapers. He announces a new era of technology and constructive art, and he questions the collectivism professed by the representatives of the *De Stijl* movement. He considers constructive art, in the wider sense of the manipulation of material, to be the only possible artistic trend and wishes to make it as unambiguous, definite and ethical as possible.

*Constructive art does not need any emergency exit. In it the unity of material and spirit is inherent, spontaneously and completely, as in a simple factory-made steel disc. For example, constructive art is not concerned with either the avoidance or the conquest of nature, in order to enable the immanent spirit of form to assert itself. As its name also explains, it produces constructions, in the strict technico-formal sense of handling raw materials.*³¹

Moholy-Nagy's works and ideas, his taste and whole outlook were undoubtedly influenced by the theories of Alfréd Kemény and Ernő Kállai, according to which 'the products of constructive art can only be the result of work in industrial and construction workshops, just as much as with machines'.³² But he was probably nearer to the 'laboratory' trend of Soviet Constructivism represented by Naum Gabo, Antoine Pevsner and others, than to Rodchenko's and Tatlin's so-called Productivism.

The 1922 exhibition at Der Sturm Gallery in Berlin marked a concluding stage and also a synthesis of Moholy-Nagy's most strained and contradictory period. Following this, his interest turned elsewhere.

'THE WORK OF ART IN THE AGE OF TECHNICAL REPRODUCTION': THE TELEPHONE PICTURES

Moholy-Nagy's first wife, Lucia, does not recall for certain whether the artist was acquainted with the *Dada Almanach* which appeared in 1920.³³ But even if he did not read it himself, he may have heard from others of the notion that a really good painter ought to be able to order a picture by telephone and have it carried out by a cabinet-maker.

The idea of the artist not participating directly in the creation of his own work was originally put forward by the Dadaists, its absurdity recalling the spirit of Marcel

Duchamp's ready-mades. In 1920–22 Moholy-Nagy was feverishly searching for a new style, for his own mode of expression and place among the many avant-garde trends. Various attitudes and ideas presented themselves to him simultaneously in his search for a synthesis. The intellectual background of the telephone pictures was not confined to Dadaism; on the contrary, it was principally related to the theory of Soviet Constructivism. The ideal of the engineer-artist was most clearly formulated by Rodchenko. According to him, the role of the artist is different from what it was in the Middle Ages; the artist designs the objects, but he also designs the forms of human life; he gives significance to objects, while his mind directs what is going to come to birth. This idea of laboratory art was later superseded in Soviet Constructivism by the Productivist attitude; according to this art had come to an end, easel painting was dead, and the artist must use material components and industrial technology to express himself, as this was the only way for him to be useful to society. The goal of Soviet Constructivists in 1922 was to design artistic-industrial objects themselves, and to make prototypes which could later be mass-produced. Moholy-Nagy knew of these ideas, if not exactly, then at least in outline. In an article published in *Akaszott Ember* (The Hanged Man) (see p. 286), he advocated the absolute rule of mechanical art; and in the manifesto concerning the dynamic-constructive system of forces (see p. 290), written under the influence of the *Realist Manifesto*, he spoke of dynamic art as the only possible alternative to painting. In his recollections entitled *Abstract of an Artist* (see p. 360), written in 1944, he writes that in the industrial age there is no essential difference between art and non-art, and this applies both to objects which are man-made and those produced by machines. At that time industrial materials and manufacturing were his ideals.

At the same time, according to what Lucia Moholy remembers, he was greatly concerned with the fact that colour effects depend on picture size. This strictly pictorial problem might even have figured in the curriculum of the Bauhaus course, and was indeed not far removed from Johannes Itten's field of research. Moholy-Nagy, however, had a completely different make-up from Itten, who was inclined to a psychological and expressive attitude, and also from the puritanical Soviet Constructivists who often held to the exclusive validity of their principles to the point of dogmatism. Moholy-Nagy was at the time still primarily a painter who thought in terms of pictures and not of industrial practicability. That is why he chose an elusive, ambivalent solution; for as artist-engineer he designed compositions on graph-paper and had them manufactured in an enamel factory from industrial enamel. Thus, he followed the ideal of laboratory art, while choosing at the same time what was for him the most practicable way. The result was not an industrial product, not even a model, but a perfectly composed and artistically constructed work of art: a Suprematist composition appearing not on canvas but on a slightly curved metal plate.

Try as he might, then, the artist was unable to shake off his personality; for all that he had announced the death of easel painting, he was in fact never to paint pictures of such striking beauty as in that period. In accordance with his Constructivist theories, Rodchenko gave up painting in 1921 by ostentatiously exhibiting three monochrome works. Moholy-Nagy adopted the idea of the death of easel painting, but modified and enriched it, as can also be seen from his text *From Pigment to Light* (see p. 323). He tried to abandon easel painting, and with his enamel compositions may have believed that he had engineered a decisive turn in the course of avant-garde art. His interest in the telephone pictures was principally academic; in fact, the carefully designed beauty of the compositions gains nothing, perhaps even loses something, in the execution. Moholy-Nagy's conception that an original structure varies according to the dimensions naturally proved correct; however, neither he nor anyone else made use of this discovery at this time. The three telephone pictures entitled *Em 1*, *Em 2* and *Em 3* have the same structure but vary greatly in size. The design is a simple one, since industrial porcelain enamel can produce only clear bright colours. The shining white of the background is unlike the broken white tones of

Moholy-Nagy's other works; but the unambiguous, luminous strength of the colours and the sharp outlines of the intersecting bands are here also different. The cross, a feature of the telephone pictures which recurs in various forms, is reminiscent of Malevich's Suprematist symbolism. Beautifully arranged abstract forms float on the enamel background; they do not take on the form of any object and have no practical function. Thus, the final result is rather different from the Productivist starting-point, different also from the specific mode of expression of Moholy-Nagy's pictures of this period. In the telephone pictures Moholy-Nagy abandons what had been his strongest point, namely transparency. Even motifs within the clearest design become clumsy on the enamel base whose whiteness recalls all too well the most prosaic objects of everyday life.

Theoretically, the telephone pictures are able to be reproduced and manufactured in a series. Moholy-Nagy was probably thinking of this when he first ordered them, one of each, from the factory. Had several copies been manufactured, we would have had to regard them not as individual compositions but as reproductions. Thus they would have had no individual value, no aura of the individual work of art. Mass production, at least in the first moments of inspiration, was a mere fancy for Moholy-Nagy, which he himself never returned to. The idea survived, however, and obviously provided inspiration for Walter Benjamin's essay dating from a slightly later period, entitled *Das Kunstwerk im Zeitalter seiner technischen Reproduzierarbeit*.³⁴ What Moholy-Nagy, under the influence of Dadaist and Productivist trends, regarded, at least temporarily, as his objective, was sharply attacked by Walter Benjamin as a harmful consequence of industrialization.

The telephone pictures constituted a very exciting episode in the artist's life; but although his lifework would be the poorer without them, they did not fit organically into his further development. We may also note that it was only later that the 'Em compositions' were given the name 'telephone pictures', and – according to Lucia Moholy – the artist did not order them by telephone but in person. Yet he was so enraptured when they were completed that he exclaimed: 'I might even have done it over the telephone!'³⁵ The telephone as one of the most recent creations of the new industrial society thus once more took its place in the history of avant-garde art after the *Dada Almanach* as the symbol of a new civilization. The pictures themselves were not exhibited until 1924, at Moholy-Nagy's one-man show in the Sturm Gallery. By that time, however, the first, and most exciting, period of the avant-garde had passed, and the Sturm was no longer the centre of interest. Consequently the works failed to have the effect they might have had on an earlier occasion. They were entirely omitted from the exhibits at Moholy-Nagy's next show, held, together with Hugo Scheiber, in March 1925 at the Sturm Gallery.

NEW OUTLOOK: 'BUCH NEUER KÜNSTLER'

Before becoming a professor at the Bauhaus, Moholy-Nagy had achieved a synthesis of ideas almost unparalleled in that period. His relations with Kassák were not always good (he had some of his works published in émigré periodicals opposed to Kassák and his journal *MA*), yet in 1922 they published together the *Buch neuer Künstler* (Book of New Artists) in Vienna, in separate Hungarian and German editions.

In a sense this volume was a résumé of the works published in *MA*, much of the contents having earlier appeared in that journal. But beyond this, the selection indicated a definite conception which was not simply a summary but reflected the change that had taken place in *MA* and also in their own outlook, the change from a representational style to Constructivism. Kassák's dynamic and almost hymn-like introduction reflects all the beauty and naivety of the Hungarian avant-garde movement: 'What would our life be worth if our presence here did not add something to

the world . . .? And the new art is simple, like the goodness of a child, easily definable and victorious over the whole of matter.' And, naturally, Kassák also exalts the skyscrapers of New York, the viaducts, engines, bridges and X-ray machines as things 'which mean victory over God's creations'.³⁶ The book's illustrations were selected mainly by Moholy-Nagy (although Kassák had the right of final decision), and, since it was in fact a picture book in which the reproductions were vehicles of the message, his role was highly important. This was the first synthesis he had created from the works of others, and it was also a starting-point for his subsequent books in which the illustrations also speak for themselves.

Although the anthology edited by Kassák and Moholy-Nagy reflects certain ideas of the Expressionist '*Der Blaue Reiter*' *Almanach* edited ten years earlier by Wassily Kandinsky and Franz Marc (e. g. the Peasant Christ from the thirteenth century), and although artists like Chagall, Klee and Delaunay are also dealt with, the whole work exalts the triumph of Constructivism. It is not so much the works of Soviet, Hungarian and other Constructivist artists as the illustrations of machine parts and the photographs of bridges, railway stations, skyscrapers and power lines which give the book its completely novel and distinct character. All these illustrations, the pictures of modern industrial civilization, specific city culture, the universe of suburbs and factories, were collected by Moholy-Nagy. The photographs selected from the possible variants show separately, and even more when taken together, the new artistic culture based on industrial forms. Moholy-Nagy as picture editor puts the stress upon the ideal of the artist-engineer. Next to Feininger's picture we see a photograph of the Stuttgart railway station, next to Boccioni's a racing-car, and below a painting by Léger a punching-machine. The first pictures constitute a motto, as it were, with a cine-projector and an aerial photograph of New York. With their clear outlines against the white pages the machines are more accentuated, thus reflecting the editors' individual tastes more directly than the reproductions of paintings. In introducing the representatives of Expressionism, Cubism, Futurism and Dadaism, the *Buch neuer Künstler* is a synthesis of avant-garde trends. The main stress, however, is on geometric abstraction, the works of Soviet artists, and of Kassák, Moholy-Nagy, the Swedish Viking Eggeling and others. The layout cannot compare in beauty with that of *Kunstismen*, edited by Hans Arp and El Lissitzky in 1924. However, it did, two years earlier, sum up, in avant-garde terms, the challenge presented by the new industrial environment and an art responsive to it.

'PHOTO EYE': THE PHOTOGRAPHS

Although Moholy-Nagy's real 'photographic period' coincided with his association with the Bauhaus, as early as that dynamic year, 1922, he recognized the potentialities of photography. His wife Lucia Moholy was an excellent photographer, and it was she who opened his eyes to a series of new technical and artistic possibilities. Creating works through the 'eye' of a machine differs fundamentally – in technique certainly, but mainly in conception – from all earlier genres. Photography was undergoing renewal in so many different aspects and directions, and through the activity of so many differing personalities, that one gets the impression that between 1921 and 1923 almost all avant-garde trends were manifested in photographs, photograms, photomontages and typophotos.

Except for photoplastics, a kind of photomontage combining photographic elements with drawing, Moholy-Nagy invented no new technique. But in line with what he achieved in other genres, here too – indeed to an even greater extent – he achieved outstanding results from the start, albeit with the most elementary knowledge, through his instinctive ingenuity, acumen and almost unlimited imagination and decorative flair.

Photography for him signified infinite possibilities and infinite variations of techniques hitherto unexploited. In his view it had previously been used only for the purpose of reproduction; but now the time had come for creative photography. He had arrived at this conclusion in a roundabout way. He had already interested himself in, among other things, the artistic possibilities of the phonograph; presumably it was this latter which turned his thoughts towards photography.³⁷

His idea was that the composer should engrave symbols directly onto the record, without using any musical instrument, thus creating a new type of musical composition. In this way, he thought, a new musical alphabet might be created, and in addition graphic relationships might be transposed into the language of acoustics. This would result in improvisations, which could in turn create unexpected effects (see p. 291).³⁸ None of this was ever realized in this utopian form. The artist probably published his ideas first, before working them out experimentally. Also Moholy-Nagy must have been influenced by Raoul Hausmann's 'optophonetics',³⁹ in which there was an attempt to create a universal visual language for the cinema. We have no evidence that Moholy-Nagy actually experimented with the phonograph and arrived at any sort of results. The problem was to return in utopian form in 1932, in his film *Sound ABC (Tönendes ABC)*.

The study of sound was a side-issue in Moholy-Nagy's highly varied lifework; but it did lead him to his real field of interest, and alerted him to the possibility of using photography not as a means of reproduction but as a visual creative technique.

It cannot be established for certain whether Moholy-Nagy knew of Man Ray's earlier photographs or 'rayograms', or Christian Schad's even earlier works, or whether he conducted his own experiments independently. The photogram, which was worked out at that time by Man Ray, Moholy-Nagy, El Lissitzky and others, was a typical genre of the avant-garde period (for Moholy-Nagy's exposition of it, see *Photography is Creation with Light*, p. 302). It embodied the tension inherent in the period as a whole, its thirst for freedom, its desire to shape reality and its adoration of technology, but also the differing characters and styles of the artists concerned. It is very probable (and both El Lissitzky and Man Ray affirm it)⁴⁰ that Moholy-Nagy had seen Man Ray's photograms in Tristan Tzara's *Les champs délicieux* before embarking on making his cameraless photographs. But it is also possible that it simply sufficed for him merely to hear of the idea to be able to use it at once in accordance with his own plans and purposes. For Man Ray the rayogram embodied a certain irony and allusiveness, with captions organically completing the compositions. But Moholy-Nagy's photograms are completely non-material, their only subject being light, the atmosphere created around objects, and the structure which thus comes into being.

105-120

Moholy-Nagy created a photographic universe where negative elements, shadows, freely floating motifs, quite small and relatively large forms, and the shades of brown paper all have their inner autonomous scale of values independent of reality. The central features of his art, light and transparency, could assert themselves freely here; improvisation and conscious construction together created this strange world of visions partly made up of realistic elements. While often only one or two objects figure in Man Ray's works, Moholy-Nagy's compositions are made up of many elements: the individual item can assert itself only within the whole. The elements seem to be floating under water or dissolving in the space around them, which in turn becomes tangible, almost three-dimensional. The wine-glass and its shadow are at the same time real and unreal, since the objects are transposed into another dimension where reflected light, shadow and reflection are more real than the object itself. The motifs are sometimes clearly separated from one another and sharply outlined, contrasting for instance with El Lissitzky's photograms⁴¹ where the elements penetrate each other. But whatever solution he chooses,⁴² it is always the total effect and the atmosphere of the whole which are Moholy-Nagy's main concern. While letting chance play its part as a matter of course, he simultaneously composes what is seen

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into a picture. He tries to be impersonal, which can also be seen from the fact that he calls his cameraless photographs 'photograms', as opposed to Schad's schadograms and Man Ray's rayograms. One of his most beautiful photograms is the title-page of the journal *Broom* (1923): the blurred outlines of the light-coloured letters and numbers, which loom out of the dark background, almost make them dissolve in their surroundings.⁴³ **161**

Moholy-Nagy resorts both to soft focusing and the juxtaposing of positive and negative prints.⁴⁴ The mysteriousness of his photograms is one of the sources of their beauty: even the most commonplace elements are transformed to the point of becoming unidentifiable and their transparent shapes seem to refer to another, hardly perceptible reality. There is no clearly arranged picture composition here. The elements are so ambivalent that they always seem to refer to something else: their duality and indecipherable nature create a poetic atmosphere. Few of these works are as structured as the *Triptych* of 1922,⁴⁵ where three photographs together form a unit; the shining forms which hardly glimmer through the dark are reminiscent both of stars in a dark sky and of tubes or propellers. A more usual type of composition is one in which the forms show through and interpenetrate each other. **108, 116–117**

In the photomontages, a strange insinuating effect is combined with a much more unambiguous – sometimes even Surrealist – mode of expression. Nothing was farther from Moholy-Nagy's rationalism and ideal of the artist-creator than free association. Yet in his Bauhaus years, when he had already mastered the technique completely, strange, paradoxical relationships of allusions, half-pronounced or ambiguous sentences or words, together with pictures, predominate in his photomontages. This mysteriousness could be discerned in Moholy-Nagy's art from 1923, too early to have been influenced by Surrealism, which was born in 1925. His innermost aspirations took a more literary form here, as opposed to geometrical abstraction. *Between Heaven and Earth (Look before you leap)* (c. 1926) illustrates a jump into indescribable depths, a fall bringing to mind a nightmare, the realm of the unconscious. **120**

It is the thinly pencilled lines which give meaning to this work. Moholy-Nagy found his most characteristic genre in this so-called 'photoplastic', in which photographic motifs are connected to each other by consciously constructed lines forming a geometrical pattern and thus creating a system out of the mosaic of reality. This solution unites Moholy-Nagy's realistic outlook with his talent for construction. **89, 90**

A similar attitude characterizes another of his photoplastics dating from a year later, entitled *New Museum: The Shooting Gallery*. A black silhouette with a gun, several times repeated, faces a human-faced monster, lion, etc., its shadow extending weirdly over the ground. The almost bare walls, disembodied figures and a strange aggressiveness remind us of Dalí's and Buñuel's Surrealist films, above all *Un Chien andalou*. The photocollage *How to Stay Young and Beautiful* and the poster *Murder on the Rails* (both from 1925) radiate an atmosphere of oppressive solitude due to the sense of falling and existing in space. *Broken Marriage* (1925) has the most definitely Surrealist atmosphere; tension created by the contrast between tubes protruding from the head and the beautiful hand reaching in from the left evince the spirit of 'standard' Surrealism. **91**

Photography offered Moholy-Nagy one more chance to achieve what he had given up in 1921 when he became an abstract painter: a realistic mode of expression. The representational power of his early portrait drawings came not only from his skill as a draughtsman but also from his spontaneous interest in human character. With photography, this world opened up for him once more; he was to become as much concerned with the wrinkled skin of old people as with the delicate curves of a female nude. The range of his subjects is extremely wide: cities viewed from above, stairs rising into monumentality and timelessness, furrows, and networks of shadows. The bold foreshortenings in his photographs, the negative-positive variants, and the complexities of outlined and blurred motifs can compare with the best Soviet photography of the age. On the other hand, they imply an unspoken desire that the various **92**
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77–80

individual pictures – acute observations, glimpses or moments – if prolonged into timelessness might unite into a single whole, a *film*. In 1922, the film he planned about everyday life in Berlin remained an unrealizable dream.⁴⁶ Later on, in 1924, he published stills for the film in the journal *MA*, in the form of a curious film-without-film called *typophoto*, with a text entitled *Dynamic of the Metropolis*.⁴⁷ It is regrettable that he was not able to make a film in his most exciting and most fertile avant-garde period; the ones he did manage to complete date from a later period, after 1926.

Photography became for Moholy-Nagy the kernel and starting-point of an entire new outlook and aesthetics. It is perhaps for this reason that his art was so influential, and that his photographs represented the intersection of avant-garde trends – especially Soviet ones – which were otherwise often in opposition. Because photography, or more precisely the photogram, was one of the most original avant-garde genres, it was here that contrasting views clashed. Thus, Malevich differed from Rodchenko, Moholy-Nagy and El Lissitzky. In Malevich's view, photography and film were no more than new technical means which painters must translate for their own purposes; such means having no expressive values of their own. For Rodchenko, on the other hand, the only 'article of faith' was that 'photography must employ its own means.'⁴⁸ (It is to be noted that he did not make photograms.) He began to concern himself with photography in 1924, a few years after Moholy-Nagy's experiments in this field, and he was obviously aware of the latter's work. The similarity of their approach consists rather in their bold bird's-eye and worm's-eye views rather than in abstract photography. Moholy-Nagy became a focus of the Soviet photographers' debate when he was living in Weimar and Dessau, after having left the lively atmosphere of Constructivist art which he had known in Berlin. The debate continued at a distance, in letters and articles. It was Moholy-Nagy who then as well as in later years developed the most complete theory concerning photography. Most important from this point of view is *Painting, Photography, Film*, published during his Bauhaus period.⁴⁹ As opposed to Malevich, he believes that photography can express more than painting: 'When photography gains full recognition of its *own* true laws, representational composition will reach a peak and a perfection which could never be achieved by craft (manual) means.'⁵⁰

During the following years, Moholy-Nagy dedicated more thought and time to photography than to anything else: to its achievements, its technique described in minutest detail, and its infinite perspective. Photography occupies a central place in all his writings. In them photographs play a much more significant role than the usual illustrations, for they are equivalent to or even more important than the text. An example is the *Buch neuer Künstler*, where Moholy-Nagy collected and selected the most impressive photographs of machines and machine-parts with the Constructivist photographer's eye. Photography, especially the photogram, was for him one of the first consistent and many-sided realizations of the theory of production-reproduction on the one hand, and of research into light and transparency on the other.

FILM NOSTALGIA: 'DYNAMIC OF THE METROPOLIS'

Film could have meant an explosive extension of artistic practice, and at the same time real self-attainment for the artist. Through the film he could have made the photogram really move and render its dynamism visually perceptible and suggestive. In addition, he was attracted by the content, the subject of the film: the big city with all the tensions, unbearableness and beauty of its everyday life.

It is clear that as early as 1920 Moholy-Nagy was already captivated by the industrial civilization of Berlin. Paintings and photographs conveyed this only indirectly, but film could express all the tense animation. Since he was unable to make

a film in 1921–22 in Berlin, he chose a roundabout route by creating a new genre with his *Dynamic of the Metropolis, Sketch of a Manuscript for a Film*.⁴⁷ This genre, which he called ‘typophoto’ and which we might call a scenario, was the unique result of Moholy-Nagy’s dual bent for literature and painting (although he himself was only concerned with the visual effect of the work). The first version published in *MA* consisted only of drawings; the second was published in German (later followed by an English version, in *Painting, Photography, Film*). The German version was a great deal richer. There, instead of drawn signs almost reminiscent of ideograms, real photographs alternated with parts of the text, and the page make-up with its columns showed the influence of El Lissitzky and Hans Arp’s *Kunstismen*. The idea of the film – in written form only – most resembles the earlier film experiments of Viking Eggeling and Hans Richter.⁵¹ Their rectangular frames of film arranged vertically show a series of almost unvarying abstract forms. Their works primarily belong to the field of the fine arts. On the other hand, by lengthening and condensing individual moments, and by introducing unexpected cuts and changes, Moholy-Nagy created a film on paper – if this is possible at all – in pictures and text. Both his motifs and his highly suggestive dynamic method of creation remind us of Russian Constructivism. His work resembles most of all Dziga Vertov’s films – although at that time Moholy-Nagy probably did not yet know them. The film’s concept was his and his alone; but the scenes in the second version, the shots of factories and the bird’s-eye views, already show the influence of the contemporary Soviet films that he had seen, heard about or knew from descriptions.⁵² The restructuring and new typography of the first ‘film’ resulted in clear, Constructivist forms whose effectiveness could compare well with that of Soviet films. The genre of the ‘film sketch’ recalls primarily the double genre of picture poems. In the version which appeared in *MA*, the text and certain symbols together produce the effect of a motion picture: for example, next to the caption ‘Tiger walking in its cage’ there are arrows pointing towards each other from two different directions. In *Painting, Photography, Film* we see a tiger behind bars with the caption: ‘A tiger paces furiously round and round its cage.’ With its delicate ideogram-like etchings placed below one another, ‘Construction of a crane’ in *MA* was reminiscent of Viking Eggeling’s works, while ‘A metal construction in the making’ in *Painting, Photography, Film* shows a typical Constructivist ideal, part of a huge metal construction arranged diagonally.

81–82

83–84

The combination of text and pictures has the same vibrating and contrasting effect as *Man with the Movie Camera*, Dziga Vertov’s film composed of brief shots. It has no single story line and no inner order connecting the events; thus, it is a self-contained whole, just like the Soviet masterpiece. Its meaning and power consist not in its logic but in the combined force of pictures and text. In the first version the text necessarily played a much more important part (it had to make up partly for the lack of photographs), and certain sections would even pass for the sort of free verse or rhythmical prose published frequently in *MA*:

View out. **TUMULT.**

The dogs tethered at the entrance.

Next to the glass lift a glass telephone box with a man telephoning.

View through. Shot of the groundfloor through the glass panes.

The face of the man telephoning (close up) – smeared with phosphorescent material (to avoid producing a silhouette)

– turns **VERY CLOSE** to the camera;

above his head to the right (translucent)

the aeroplane is seen approaching in a spiral from far off . . .

The last line is reminiscent of a famous verse by Lajos Kassák (‘and over our heads comes flying the nickel samovar . . .’), just as the inner rhythm of Lajos Kassák’s free verse certainly was partly responsible for the abrupt cutting of the text and the cumulation of unexpected, contrasting pictures.

The *Dynamic of the Metropolis* was first published in 1924 in the journal *MA*, but under the copyright of the Weimar Bauhaus. Moholy-Nagy then published it a second time in his own book in the series of Bauhaus books edited by him. At that time almost everything he did was within the framework of the Bauhaus.

THE YOUNGEST PROFESSOR AT THE BAUHAUS

It was amid cross-currents of contrasting ideas and emotions, personal and artistic sympathies and antipathies that Moholy-Nagy was invited to the Weimar Bauhaus, where he joined the faculty in April 1923. He was only twenty-seven years old when he became a professor. It is even more significant, however, that only four years earlier, in 1919, he still lacked any professional knowledge or experience of the international scene. The period of incredibly fast development he went through in 1920-22 was followed by another such phase in 1923-28. As compared with his earlier and later creative periods, these intervening few years saw the fulfilment and at the same time the synthesis of all his earlier endeavours, as well as the development of his personality as man and creator.

He was invited to the Bauhaus by the director Walter Gropius who had seen his works in 1922 at the *Sturm* exhibition. We cannot be certain of the exact reasons which led Gropius to this decision; but it seems obvious that he recognized the potentialities of the young artist, and also realized that Moholy-Nagy would represent his own line within the Bauhaus. The Hungarian artist joined the staff of the Bauhaus at the moment when it had just undergone its first crisis. His appointment was a sign of change within the institution. His photographs and his entire outlook proclaimed Moholy-Nagy a representative of the radical wing within the avant-garde movement, and from the moment he joined the Bauhaus, he helped opposing tendencies to crystallize. It would be little exaggeration to say that Moholy-Nagy's appointment in 1923 inaugurated a new period in the history of the Bauhaus.

His nomination occurred at a highly propitious moment: the previous acrimonious antagonisms broke not around him but around Theo van Doesburg. Nevertheless, he and van Doesburg together gave impetus to changes which were necessary in the Bauhaus.⁵³

In contrast to earlier, uniformly idyllic pictures of the Bauhaus, it is becoming more and more clear that the school was characterized by inner tensions, and that these created energies which gave ever renewed impetus to its development. When it was founded in 1919, the Bauhaus represented principally the Expressionist attitudes of *Der Sturm* from which its teachers had come. After 1919, together with the whole international avant-garde movement, *Der Sturm* itself underwent a gradual change. After the great exhibition of Soviet art in 1922 very few artists could shake off the influence of Constructivism. It was the idealistic attitude of the Bauhaus that Van Doesburg defied; when he was not invited to teach there, he organized a private course in Weimar where he propagated the ideas of De Stijl. Compared to the poetic dream-world of Klee, Kandinsky and Feininger, Van Doesburg's outlook must have seemed cold and unimaginative to the students. Nevertheless, his De Stijl theory, which was more comprehensive and embracing of the whole of life, was a latent influence felt by everybody. When Johannes Itten, a representative of the earlier Expressionist trend who had been in charge of the Preliminary Course, left the school, Moholy-Nagy's theory and practice of *Gesamtwerk* were already understood by all before Van Doesburg started his own private course in Weimar, unattached to the Bauhaus. Moholy-Nagy took Itten's place, and in this way the Hungarian émigré who was until then hardly known, whose German was rather poor and his artistic career scarcely under way, succeeded where the well-known Dutch artist had failed.

Moholy-Nagy found himself among artists who were not only considerably older than himself, but were also the greatest painters living in Germany at that time. It is hard to imagine anything more different from Klee's enigmatic painting suggestive of unfathomable depths than Moholy-Nagy's geometric abstractionism and his ideal of reshaping society.

Before his appointment, both professors and students saw the Hungarian master as a representative of Russian Constructivism, and consequently they received him with suspicion. Thanks to Moholy-Nagy's exceptional adaptability and talent antagonisms more or less abated and he threw himself heart and soul into representing and even promoting the Bauhaus ideas. With his youth, many-sidedness, undiminished energy and educational bent, it was in him that the Bauhaus ideals achieved their most concentrated form during this period between 1923 and 1928.

Moholy-Nagy's activities were as profound as they were varied. His several fields of activity within the Bauhaus included the direction of the Metal Workshop and, after Itten's departure, the Preliminary Course, editing and writing the *Bauhausbücher* and, from 1926 on, co-editing with Gropius the Bauhaus journal.

The basis and essence of his theory and practice was the concept of *Gesamtwerk*, which he identified with life as a whole and which he emphatically distinguished from the concept of *Gesamtkunstwerk*, embracing all branches of art, as professed by Art Nouveau. 'What we need is not the *Gesamtkunstwerk*, alongside and separated from which life flows by, but a synthesis of all the vital impulses spontaneously forming itself into the all-embracing *Gesamtwerk* (life) which abolishes all isolation, in which *all individual* accomplishments proceed from a biological necessity and culminate in a *universal* necessity.'⁵⁴

The desire for synthesis and the idea of biological determination recur in his later writings; biology, indeed, played an increasingly important role in his theories. The basic idea of his Bauhaus period, however, is the *Gesamtwerk*, the sum of the arts; indeed it is more than art, in that it embraces the whole of human life, and its objective is the salvation of Man and the world; this gave a prophetic meaning to all he did.

Nowhere perhaps was Moholy-Nagy's Constructivist, non-painterly attitude as apparent as in the curriculum of the Preliminary Course. The essence of the method of his predecessor Johannes Itten⁵⁵ was that students must master the rules of composition through the structural study of the works of the old masters. Line, chiaroscuro, and the rendering of textural reality were also part of his field of investigation. The idea of textural reality, of touch, reappears later in Moholy-Nagy's theory. Probably it had been most completely described by Marinetti in the *Futuristic Manifesto of Tactilism* in January 1921.⁵⁶

I have created the first stage of touch, which constitutes at the same time the scale of tactile values of Tactilism or the Art of Touch.

STEP ONE, LANDING, WITH 4 CATEGORIES
OF VARIOUS KINDS OF TOUCH

- First Category: safe, abstract, cold touch
Glass-paper
Silver emery paper
- Second Category: persuasive, argumentative touch, lacking warmth
Smooth silk
Silk ruffle . . .

For both Marinetti and Itten, touch had an intuitive, psychological value and role. Itten had always been interested in the psychological types his students belonged to: through colour, touch and form he sought the expression of their personalities. According to the Constructivist attitude, represented by Rodchenko in the VKHUTEMAS⁵⁷ in Moscow and by Moholy-Nagy in the Bauhaus, neither touch nor the classification of materials nor the construction of new objects served any psychological purpose. Neither colour values nor the peculiarities of surface treatment were linked to any particular personal psychic feature. In the VKHUTEMAS

the main objective was that, when solving a problem, the student should concentrate only on the object itself, that his personality should be completely absorbed in a certain function or range of activity.

The VKHUTEMAS (an abbreviation of the Russian name Advanced Art-Technical Workshops), which was founded in Moscow in 1920, almost at the same time as the Bauhaus, somewhat resembled the latter, although only Kandinsky signified some kind of personal connection between the two institutions.⁵⁸ The VKHUTEMAS underwent a change in 1921, as did the Bauhaus in 1922–23 when a new era began with the appearance in Weimar of Van Doesburg and Moholy-Nagy. In the Soviet Union, Rodchenko was a representative of Constructivism (he was simultaneously head of both the Preliminary Course and the Metal Workshop, just as Moholy-Nagy was in the Bauhaus). In 1920 spatial constructions were already being made in Moscow, and the Metal Workshop was becoming more and more popular: ‘. . . students in the faculty of painting began to change studios, going over one after the other to groups pursuing Productivist art. At the end of 1922 our whole group went over to the metalwork studio, where Rodchenko had been invited to teach’, wrote a student of the VKHUTEMAS.⁵⁹

What Moholy-Nagy taught in the Preliminary Course and in the Metal Workshop was akin to Rodchenko’s programme on the design of metal objects. In the VKHUTEMAS, problems of space, mass and spatial effects were studied by constructing models and prototypes designed for the metal manufacturing industry. In contrast, in Moholy-Nagy’s Preliminary Course students tackled the conditions of equilibrium, the motion of a body suspended at a single point, and the stability and mobility of various constructions. The characteristics of materials were treated by Joseph Albers following his own methods of instruction, but Moholy-Nagy was in charge of the whole department.⁶⁰ Moholy-Nagy acquainted his students with the problems of Constructivism along different lines from Itten’s earlier analyses of works of art, but he did not follow Rodchenko’s practice of designing only functional objects either. In accordance with his own theory of creation, Moholy-Nagy urged his students to create objects from wood, aluminium, glass, wire and other materials, objects that were not merely functional. Just as he himself gave expression to his own idea of a kinetic-constructive energy-system in his *Nickel Sculpture*, so he expected his students to realize their ideas without imposing his own will upon them.

It was also from Itten that Moholy-Nagy took over direction of the Metal Workshop in early 1923. Here his distinctive character could best manifest itself; thanks to him the Metal Workshop became one of the most active and successful in the whole Bauhaus. This success was typical, despite the fact that – apart from *Nickel Sculpture* and *Metal Sculpture* – Moholy-Nagy had rarely tried his hand at metals, and never at making metal objects for use. As director of the Metal Workshop he did not exercise his own creativity and gifts. On the contrary, his influence flowed – apparently – from his impersonality, his allowing his students’ imagination to develop freely. He himself never designed prototypes;⁶¹ these were made by the students, either collectively or individually. By subsidizing with his energy and ideas the work of others – and ultimately also industrial design – he improved upon the idea of the telephone pictures. In sum the objects made by his students represent his conceptions. Most of the metal objects are lighting fixtures, various types of table, articulated or wall lamps still in use. Thus, his special cult of light found realization in functional industrial products. The flat disc of the base and the hemisphere of the screen, the horizontal-vertical fitting of joints with adjoining discs, result in clear rational forms which give a sense of function to the geometrical figures of abstract pictures.

Although in fact he was at this time painting very fine pictures, in theory he abandoned painting and the fine arts in general. His interests as well as the range of tasks he undertook were constantly widening. Painting meant only a transitional stage for him. Thus he wrote in his article *From Pigment to Light* (see p. 323), that light, with its thousand possibilities, was the true realization of the age. Having abandoned

painting, at least in theory, he also gradually moved away from Soviet Constructivism; nevertheless the balanced constructions he designed with his Preliminary Course students showed a great similarity to the gracefully arched floating constructions made by the Soviet Sternberg brothers, Georgi and Vladimir, in 1921.

Even in this period Suprematism continued to influence the composition and motifs of his paintings. Moholy-Nagy moved very far from Dada, which had been but a transitional phase for him; a stepping-stone towards further stages, it survived only in a few of his ideas for photomontages. By 1924, from being a representative of Soviet-Russian Constructivism, Moholy-Nagy had become a representative and even initiator of Bauhaus ideas. All the influences he absorbed, which shaped his personality, he now passed on to his students. The first synthesis and re-creation born from all of this – the *Bauhausbücher* – although for the moment only a project, signifies a new beginning.

AN ATTEMPT AT DEFINING AVANT-GARDE VIEWS: THE BAUHAUS BOOKS

The idea of the *Bauhausbücher*, a series presenting the outlook of the age in several volumes, originated with Gropius and Moholy-Nagy.

It was Moholy-Nagy who sent the plan of Bauhaus brochures – which preceded the *Bauhausbücher* – to Rodchenko in 1923 (see p. 392).⁶² In all probability he had compiled the list himself. The provisional project comprised thirty items concerning mainly political and social problems. Although Moholy-Nagy wrote in the plural, in the name of the Bauhaus community, one has the impression that he was expounding his own ideas to some extent independently of those of Gropius. It is perhaps in this project that Constructivism predominates for the last time, as if Moholy-Nagy were closing the period with this – presumably final – initiative. He asked Rodchenko to write a summary of Russian Constructivism for a brochure which would have been the first of the series. As for the last, the thirtieth, it was intended to call it simply 'utopia'. The draft included questions of politics, propaganda, technology, science, medicine, economics, 'constructive geography', special scientific issues, organization, the chemical and physical analysis of glass and other materials.

The subjects he selected from the field of the humanities are even more interesting. Two titles deal with religion, and other subjects include philology, metaphysics, Russian, Hungarian, American and other literatures, criticism and journalism. Like the subsequent Bauhaus books, the brochure series would also have dealt with questions of photography, film, film scripts, advertising, specific issues in art, architecture, painting and art workshops. The brochure dealing with the theatre and the circus, and also with the synthesis of sound, light, form, motion and smell, would in all probability have been the forerunner of the corresponding chapter written by Moholy-Nagy himself in the later volume entitled *Die Bühne im Bauhaus*. No author's name appears in the draft sent to Rodchenko; either the idea was too vague, or Moholy-Nagy wished to avoid the possibility of conflict. Inasmuch as it was also concerned with issues rather remote from fine arts, the plan as a whole was somewhat lacking in balance. It had no philosophical foundation or mature concept of social policy. On the contrary, as Moholy-Nagy wrote in his letter, the series would include only the most topical issues which he, mainly for personal reasons, felt to be of prime importance.

The letter to Rodchenko was written in December 1923, and the project probably dates from the same time, i.e. only a few months before the synopsis of the Bauhaus books was completed. We do not know whether Rodchenko ever replied to Moholy-Nagy. We also do not know why the brochure series planned by him was never

realized – or rather, why the concept of the Bauhaus books differed so greatly from it. The Bauhaus books project was worked out by Moholy-Nagy and Gropius together in 1924. According to their original plan the series would have comprised at least fifty volumes,⁶³ giving as far as possible a complete and comprehensive world outlook, ‘totality’ in the Bauhaus sense of the word. The comprehensive world view included biology as well as music, advertising, standardized houses constructed from metal units, optophonics, and the latest synthetic materials. The variety, freshness and many-sidedness of the series are striking, although the titles of only some forty volumes are known,⁶⁴ to which approximately ten more would have been added to complete the entire series. Some fourteen volumes were destined to be completed.

The publication of such a series was a typical Bauhaus idea, aiming at synthesizing the most important trends in art. This was also the object, on a smaller scale, of those almanachs published earlier, Kassák’s and Moholy-Nagy’s *Buch neuer Künstler* and Lissitzky’s and Arp’s *Kunstismen*; but the scale and method of treatment were, of course, completely different. In contrast to the purely visual presentations of the *Buch neuer Künstler* or the brief texts in *Kunstismen*, in the Bauhaus books each trend or subject was to be treated in a separate volume, and together the volumes were intended to provide the kind of overall picture which earlier had been attempted by the almanachs. And what is more important, the Bauhaus books were to be written by the painters, architects, etc. themselves. Neither before nor since has there been such a large-scale undertaking to publish the theories and practical achievements of the most outstanding contemporary artists. Each author could write, with whatever partiality, about the issues or trends he considered most important. The various volumes reflect widely different attitudes: for instance, the ideas of Klee and Van Doesburg could hardly have found a common denominator. The greatest merit of the series lay precisely in the fact that it did not strive for uniformity: everyone was free to express his own individual point of view, and to attempt a summing-up of his own educational system or artistic achievement, whether he was a member of the Bauhaus staff or not.

The Bauhaus books tried to embrace all the trends, from Expressionism to the most topical issues of the 1920s. Expressionism was to be dealt with by Fritz Wichert, Cubism by Albert Gleizes, Futurism by Marinetti and Enrico Prampolini, and Dada by Tristan Tzara. The other volumes were to treat not specific trends but activities of certain groups and theoretical issues – as for example Kandinsky’s book *Punkt und Linie zu Fläche* (Point, Line, Plane), Gropius’s study of the new architecture, Friedrich Kiesler’s work on new forms of demonstration, Adolf Behne’s *Kunst, Handwerk und Industrie* (Arts, Crafts and Industry).⁶⁵

It is architecture which dominates in the Bauhaus books, painting being relegated to the background in comparison. Architecture had been Gropius’s great ideal from the very start, and obviously it was he who wished to lay so much stress on it in the draft. On the other hand, ‘constructive biology’, Kurt Schwitters’s *Merz* and Adolf Behne’s theory, rather reflect Moholy-Nagy’s direct interest. Only thirteen of the projected volumes were published (Malevich’s book had not figured in the original plan). The first eight volumes appeared in 1925, and five more by 1930. With the exception of Van Doesburg, Mondrian, Oud, Gleizes and Malevich, all the authors belonged to the Bauhaus staff, and the books for the most part reflected the educational or artistic achievements of the Bauhaus school. The writings of Gropius, Klee, Kandinsky and Moholy-Nagy have a leading role. Three of the authors – Van Doesburg, Oud and Mondrian – are representatives of the Dutch De Stijl movement. It was probably Gropius who attached such importance to that movement that they were allocated three volumes, to the prejudice of other groups. This is particularly striking if we compare the volumes actually published with the much wider horizon of the original plan. Among the titles figuring in the plan were Tzara, *Dadaismus*; K. Teige, *Tschechische Kunst*; T. van Doesburg, *Die Stijlgruppe*; Louis Lozowick, *Amerikanische Architektur*; L. Kassák and E. Kállai, *Die MA-Gruppe*. These stu-

dies – none of which appeared, unfortunately – would have summed up the specific avant-garde movements of several countries. Apart from Kandinsky, who was a member of the Bauhaus staff, there was only one volume written by a Russian author, *Die gegenstandslose Welt* (The Non-objective World) by Kasimir Malevich, an abstract and metaphysical work published in 1927 as the eleventh volume of the series.

The decision to publish this was made when Malevich went to Germany and met Moholy-Nagy. However, they could communicate only through an interpreter; and since Malevich's works had thus far not been translated, except for one – an essay on Suprematism which appeared in the leftist review *Egység* (No. 3, Vienna, 1922) – the editor could not know exactly what they stood for. They agreed to undertake joint publication of two of Malevich's works. It was Moholy-Nagy as editor who omitted fifteen pages from the already greatly abbreviated manuscript of *Suprematismus; Die gegenstandslose Welt*, on the grounds that they concerned internal issues in Russia and were uninteresting for the German public.⁶⁶ The editors wrote in the foreword that they were very happy that this important work was being published, in spite of the fact that Malevich's views differed considerably from theirs.⁶⁷ This volume was to be the only one in the Bauhaus series written by a Soviet artist living in the Soviet Union. Unfortunately, none of the writings concerning Constructivist aesthetics was published; nor, contrary to the original plan, was there any book about Dada. However, shortened or not, Malevich's book is one of the most exciting volumes of the series. This was his first book published in a foreign language, and certainly the most important. It was easy for the masters of De Stijl to address the public of several countries; but for a painter living in the Soviet Union and writing only in Russian to be published in the Bauhaus series was of exceptional importance. That the editors opted for the writings of Malevich, and not for those of the Constructivists, may have been due as much to personal differences as to divergences of principle or even occasional problems of organization. Moholy-Nagy commissioned El Lissitzky to write a book on typography, but it was never done.

Compared with the comprehensive and utopian conception of the brochure series whose plan was sent to Rodchenko, the fourteen-volume book series was more restricted in subject, more limited to art itself and primarily indicative of Bauhaus views. Still, its importance was much greater than even the Bauhaus staff themselves dreamed in the midst of their feverish activity.

The presentation and typography of the series, with the exception of three volumes, were designed by Moholy-Nagy. The slim volumes all had a yellow linen binding; the decoration was functionally simple, consisting of vertical and horizontal red lines, letters forming the word 'Bauhaus' with the number and title of the volume. The powerful Bauhaus bold type of the inner title pages, and the horizontal bands separating the different parts of the text, give an impression of clarity and balance, and produce an agreeable visual effect. However, in a departure from both Bauhaus principles and Moholy-Nagy's own ideas, the conventional typography of lower and upper-case letters was employed, rather than lower-case only.

The Bauhaus series was one of the most lasting – albeit more or less impersonal – of Moholy-Nagy's creative achievements. His particular literary ability had scope for really asserting itself here.

The books were published in the second and highly efficient, though perhaps already less utopian, period of activity of the Bauhaus school, following the success of its earlier initiatives and educational efforts. It was a period when Moholy-Nagy combined the activities of editor, teacher, painter, photographer, film-maker, designer and *writer*: in addition to those of his works which *did* appear, another Moholy-Nagy title figured in the original list of Bauhaus books: *Aufbau der Gestaltungen*.

'THE THEATRE OF THE BAUHAUS'

The first work by Moholy-Nagy to appear in the Bauhaus series, *Die Bühne im Bauhaus* (The Theatre of the Bauhaus), was not written by him alone but in collaboration with Oskar Schlemmer and Farkas Molnár.⁶⁸ It was here that he first announced his ideas concerning the theatre, in the chapter entitled 'Theatre, Circus, Variety' (which he was later to develop in the article *Total Theatre is the Theatre of the Future*; see p. 299).⁶⁹

176 He naturally set himself against the historical stage. He saw the work of August Stramm as the turning-point in the art of the theatre. His strange double nature was again manifest here, for although he was fairly literary-minded – to the extent of needing constantly to express himself verbally – he regarded here any autotelic expression of thought in drama as the 'burden of literature'. His statement would have been acceptable if he had been able to propose anything fundamentally different from the traditional stage play. His proposals, however, were either limited to solely visual works (including his own so-called 'mechanized eccentric', together with the mechanical ballets etc. of Kurt Schmidt and others) or to revue or circus shows. For Moholy-Nagy, theatre and drama meant exclusively visual experience (with, at most, music or rather sound); therefore it was at the visual level only that he proposed a revolution, ignoring completely the fundamental thought content of the work performed. He did not consider it essential that there be live actors on stage; he intended puppets to play an equal part, since the possibility of their mechanical motion was restricted. He called his idea 'total theatre', and published a description of the workings of this 'mechanized eccentric' play together with illustrations. Here, too, as in the film sketch *Dynamic of the Metropolis*, he constructed the scenes on the basis of movement vertically downwards and upwards. The role of light is almost as great as in the *Light-Space Modulator*: the beams of coloured light emanating from reflectors are filtered and modified by screens made of linen cloth. Both the stage area, which is broken up by parallel columns, and the fragmentation and rapid alternation of textual references, are reminiscent of a film. Moholy-Nagy's stage design, as it appears on paper, is an entirely new concept in avant-garde theatre.

In the Bauhaus, joint creative work and the need to devise a new way of life contributed to the development of avant-garde theatre. Kurt Schwertfeger's and Ludwig Hirschfeld-Mack's light plays, and even Oskar Schlemmer's *Triadic Ballet*, presented in 1923 during the Bauhaus Weeks, continued on somewhat mechanical lines. At the same time, Schlemmer worked out a fundamentally different conception of theatre. For him, the actor – a new kind of actor – is the centre of the entire performance, and a theatrical performance is as solemn an event as divine service. The well-matured, carefully planned gestures and movements of the actor create a kind of architecture around him, a man-defined space on a human scale. The actor becomes an impersonal, faceless, pantomime-like figure; but the system of movements he controls determines the outer form of the performance, which builds a kind of architecture around him.

Oskar Schlemmer's essay expounding these views was published, together with others by Farkas Molnár and Moholy-Nagy, in *Die Bühne im Bauhaus*, although the independent theatrical workshop directed by Schlemmer was founded in Dessau in 1925 only after the publication of the book.

In theory, *Die Bühne im Bauhaus* was based on the results achieved by the Bauhaus; in reality, however, it presented a cross-section of contemporary theatrical trends. While Farkas Molnár's essay treated solely of theatre architecture, Moholy-Nagy's – unlike the others – aimed at a certain completeness. He wished to deal with the theatre in the widest possible sense, from the points of view of theory, history, technology and aesthetics. Theatre too, like all the other genres, was for him part of the great whole, the *Gesamtwerk*. Thus, although his ideas were less original than

Schlemmer's, it was he who saw farther into the future; his conception was the more comprehensive, for it was he who could synthesize the greatest number of tendencies, including those which were perhaps alien to him.

This particular theatrical synthesis was preceded by an exhibition organized by Friedrich Kiesler in Vienna, in 1924,⁷⁰ which presented the most exciting avant-garde trends of the period through stage designs, photographs and theatrical inventions. The script of Moholy-Nagy's 'mechanized eccentric' play was also exhibited. Since Moholy-Nagy and Kiesler were very good friends, the former very probably not only saw the exhibition but also in part based on it the chapter he contributed to the Bauhaus book. The special theatre and music issue of the journal *MA*, published in September 1924, was also based on this exhibition. Moholy-Nagy obviously played an important part in compiling this issue of *MA*. Marinetti's *Theatre of Surprises*, Schwitters's *Merz-utopia*, Léger's mechanical scenery, and Hirschfeld-Mack's light play figure in all three. Moholy-Nagy's *Dynamic of the Metropolis* – a sketch of a manuscript for a film – was also published in the same issue of *MA*, showing that the editors did not make a clear distinction between theatrical and film experimentation. The special issue of *MA* naturally offered only a selection from Kiesler's exhibition, while Moholy-Nagy's essay dealt with the exhibition more indirectly. 'Theatre, Circus, Variety' shows the author's superior knowledge of the subject – knowledge, however, that was more theoretical than practical. As he did in the book *Painting, Photography, Film* (which appeared later in the same year), Moholy-Nagy presents a clear and logical classification of succeeding and even opposing trends. In fact this chapter might be the last, or even the last but one, of *Painting, Photography, Film*, since the new theatre was just as much based on broadening the traditional view of art as photography and the film. The two subjects seem separate by reason of the separate volumes they are treated in, but do not in fact belong to different creative periods of the author's life.

The chapter on the theatre seems primarily to be a summary. Direct experience is represented only when the author describes his own conception of the 'mechanized eccentric'. Yet the mechanized eccentric is not unique: a catalogue edited by Kiesler includes a stage design by Gert Caden entitled *Eccentric Operiod*,⁷¹ showing a system of spirals around an axis. Moholy-Nagy does not exclude man from total theatre, but in considering him as the equal of other artistic means thereby greatly reduces his earlier role. His man-centred attitude did not allow him to exclude man as a visible and shaping factor from a theatre modelled on life. That is why he chose a solution which retained the actors on the stage, but which enlarged and amplified their faces, gestures and voices to giant proportions by means of mirrors. (Kiesler's emphasis on masks originated from a similar attitude.) Thus, the actor lives, yet is not quite a living person. While with Schlemmer he becomes an impersonal factor of architecture, with Moholy-Nagy he becomes to some extent an 'artificial man'. 'Similar effects can be obtained from the SIMULTANEOUS, SYNOPTICAL, and SYNACOUSTICAL reproduction of thought (with motion pictures, photographs, loud-speakers), or from the reproduction of thoughts suggested by a construction of variously MESHING GEARS', wrote Moholy-Nagy.⁷² It follows from this that he does not consider it permissible in future to represent either the subconscious or the conflicts of 'pacifist-utopian and other kinds of revolutionary movements'.⁷³

Several avant-garde artists (for example Günter Hirschel-Prottsch) wanted to do away with the curtain which separates the stage from the audience; Léger used mirrors on his stage; Kiesler criticized the 'picture-frame stage'; the Soviet theatre partly realized in the late 1910s the idea of suspension and drawbridges; and the idea of 'total theatre' is attached also to the name of the French Dadaist writer Pierre Albert Birot's 'théâtre nunique'. On the other hand, Schlemmer was always considered the theatrical expert at the Bauhaus, and Moholy-Nagy came in for severe criticism – by El Lissitzky, among others – for self-promotion at Schlemmer's expense.

THE FIRST BOOK: 'PAINTING, PHOTOGRAPHY, FILM'

Moholy-Nagy wrote his first book, *Malerei, Fotografie, Film* (Painting, Photography, Film) in the summer of 1924. It was published in 1925 as the eighth volume of the Bauhaus series.⁴⁹ Moholy-Nagy was its creator in several senses: as series editor, as author and as photographer. In accordance with the artist's particular talents, the book has a double aspect, verbal and visual. It is a synthesis of Moholy-Nagy's earlier ideas, creative activity and already partly published writings – a synthesis in the name of the Bauhaus ideal. In spite of its apparently logical construction, it does not aim at conclusiveness, rather presenting ideas still in ferment or but partly clarified. But it also includes the 'colour sonatina' of another great Bauhaus artist, Ludwig Hirschfeld-Mack, as well as Moholy-Nagy's own *Dynamic of the Metropolis*.

Painting, Photography, Film deals with the relationship and antagonism between the traditional and the new genres (pigment and light; easel painting and photography, film, advertising displays).

By this time Moholy-Nagy was already well acquainted with the attitude of Rodchenko and other Soviet artists concerning the death of painting. Furthermore, unlike Malevich, he accepted this notion, at least for the most part, in defence of the value of photography. However, it was just at this time, during his first Bauhaus years, when he started propagating this idea – if with certain modifications – that he painted his finest pictures. In order to dispel the contradiction, he adopted with the freedom of the creative artist the principle, which had not originated with him, of the coexistence of painting and photography. It is in *Painting, Photography, Film* that this duality finds most powerful expression. He states there that 'traditional painting has become a historical relic and is finished with'⁷⁴ and devotes the first few chapters expressly to the shaping role of light. Naturally one wonders what he regarded as 'traditional painting'. From 1924 on he himself often painted on plastic or glued celluloid sheets over his pictures, and it is possible that in referring to new materials he excluded his own work from 'traditional' painting. In accordance with the title, the first part of the book deals with painting, but even as early as the first sentence he stresses the role of light as against pigment, and of photography also. The sections dealing with photography, film and optophonetics etc. are as mature as the analysis of painting is uncertain – the genre he would perhaps have liked to deny altogether in the spirit of Constructivism though he was finally unable to do so. This is the origin of his conceptually incoherent theory separating the two genres from each other: 'Until photography was invented, painting combined within itself the missions of representation and expression in colour. Now since the division, one field embraces pure colour composition, the other representational composition.'⁷⁵ The methods of photography and film are more suitable for representation, he writes, hence 'from now on painting can concern itself with pure colour composition'.⁷⁶ Thus, the theme of painting is colour itself.

To regard colour as the exclusive principle of painting is of course one-sided, but it is especially strange coming from Moholy-Nagy whose career had started with the study of line and its network structure and who had become acquainted in a creative sense with the power of expression of colours. *Painting, Photography, Film* was written in 1924 at the Bauhaus; there Kandinsky, Klee and Feininger were the most eminent masters, and though Itten had departed, his specific colour theory obviously lived on. This was probably why Moholy-Nagy, in opposition to their theory and practice, reduced painting to this single factor and developed in the chapter following the equally obscure concept of absolute painting. For him, absolute painting, and later non-objective or non-representational painting, also serve as the starting-points from which he makes light, photography and film derive.

The first chapter, entitled 'Easel painting, architecture and *Gesamtkunstwerk*', contains the basis of Moholy-Nagy's theory and is thus one of the most important.

'No material, no field of activity, can be judged from the special character of other materials, other fields, and . . . painting or any optical creation has its special laws and missions independently of all others', he writes.⁷⁷ In his view the concept of *Gesamtkunstwerk*, which was born in reaction to the decadence of painting, brings together the various separate fields of art into a synthesis under the aegis of architecture, considered 'the sum of all the arts'.

But he was still not content with this interpretation of art, believing that the creative artist is one who recreates not art but life itself, that is himself, in the spirit of *Gesamtwerk*.

The chapter on 'Static and kinetic optical composition' conveys the most important message.

Moholy-Nagy's particular artist-engineer's ideas were but seldom to be realized; the sum of his efforts, the *Light-Space Modulator*, took eight years to achieve. Most of his ideas never took shape. Thus, it was all the more important for him to put them down at least in writing, as theory, and this is why the chapters of the book dealing with the new technology are the most exciting and suggestive. Rough sketches of often fantastic utopias alternate with expert technical descriptions. Some of his fantastic ideas were later realized following publication or after the author's death.

The book reveals an entirely coherent attitude; having abolished the boundary between music, fine arts and cinema, the author attempts to find a connecting link between sound and light in order for something entirely new to develop from their interrelationship. The section dealing with optophonetics is related not only to contemporary trends but also to Moholy-Nagy's own theory, already published, concerning a novel use of the photograph. Just as he proposes, instead of static individual painting, 'reflected light play', so in place of easel painting he regards colour slides and a radio picture service of the future (i. e. today's television) as new and adequate expressions of the new era. This 'domestic pinacotheca' can also become almost independent of original individual painting, because 'with the aid of machine production, with the aid of exact mechanical and technical instruments and processes we can today free ourselves from the domination of the individual hand-made piece and its market value'.⁷⁸ Thus, here Moholy-Nagy substantiated theoretically and on a wider scale his own theory of telephone pictures even though, apart from the single series of telephone pictures, he never again produced any work which could be manufactured 'to order' with the help of a given scale. It was in theory rather than in practice that he subscribed to the ideal of the artist-engineer. He regarded execution as secondary to the spiritual process of giving birth to the work. The fact that he separated the two processes of design and execution in this way shows how much he was thinking of machine production, since in manual production the two processes cannot be separated. It was no doubt important for Moholy-Nagy to stress this principle here in order to be able to substantiate the full, autonomous validity of photography to be analysed in the next chapter. Here, however, a strange contradiction arises once more between Moholy-Nagy's radical theory and his actual practice; thus, although it was possible to produce any number of positives as pictures, in that period he rarely made more than one. In other words, he made a series from easel paintings while his photographs became individual works of art.

Concerning photography, Moholy-Nagy speaks of the specific relationship between biology and the achievements of technology: '*The photographic camera can either complete or supplement our optical instrument, the eye.*'⁷⁹ Thus, technology reacts upon nature, not only directly, physiologically, but in a wider sense as well, since photographs and films make us see the whole world with different eyes. The chapter on photography is followed by one on 'Production - Reproduction' which Moholy-Nagy had written in his earlier Constructivist period and published in the review *De Stijl* (see p. 289), and which thus reflects his attitudes at that time. Although

Moholy-Nagy was not the inventor of the photogram, he was the first to define theoretically in several articles and in his book the revolutionary change that had taken place in photography. Parallel with the analysis of completely different kinds of photograph (objective but at the same time expressive photographs, photograms, advertisements, posters, etc.), he also describes technical procedures and tricks; the specific mixture of the two became embodied not only in his theoretical statements but also in the works themselves which figure in the book.

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It is its presentation of tasks yet to be solved and the limitless nature of the possibilities that makes *Painting, Photography, Film* a truly avant-garde work of art. The typography of the volume shows the spirit of the Bauhaus and received the same care as the text and pictures. The sobriety, the accentuation of important sections, the spaced-out pages and the black strips and dots which enliven the typography all contribute to the outstanding place this volume has achieved in the Bauhaus series.

'FROM MATERIAL TO ARCHITECTURE'

We now turn to Moholy-Nagy's most important book, *Von Material zu Architektur*, which appeared in 1929,⁸¹ one year after he left the Bauhaus. (It was published in English in 1930.) It was his second volume in the Bauhaus series and also the fourteenth and last in the series. (Its title was originally to be *Von Kunst zu Leben* [From Art to Life].)

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If we compare this work with *Painting, Photography, Film*, we are at once struck by its broad perspectives and exceptionally wide horizon. *Painting, Photography, Film* had revealed from the 'front line', as it were, the inner tensions of avant-garde art, the antagonisms between Constructivism and Suprematism, painting and photography, representational and non-representational art. *From Material to Architecture* is much more harmonious and balanced, its construction clearer and more logical. As in the earlier book, the reproductions have the same importance as the text; even considered separately they demonstrate the major elements of the artist's visual outlook. Like Moholy-Nagy's earlier works, the book conveys a sense of the hidden beauties of life in a metropolis, though here these beauties are expressed in a much more complex way. The various architectural solutions, mechanical constructions for stage and film sets, skeleton structures flooded with light and monumental townscapes seem to illustrate the everyday life of the present; yet, for all the realistic details, the general effect is rather utopian.

The major part of the book deals with education, the methodology of teaching. Moholy-Nagy often stressed the fact that everybody is talented and that this talent must be developed. 'In art education at present we are striving toward those timeless biological fundamentals of expression which are meaningful to everyone. This is the first step to creative production before the meaning of any culture (the values of an historical development) can be introduced. We are not, therefore, immediately interested in the personal quality of expression which is usually called "art", but in its primordial, basic elements, the ABC of expression itself.'⁸²

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The main difference between the concepts of Itten and Moholy-Nagy can be seen in the chapter dealing with 'Volume' (i.e. sculpture). This chapter introduces several of Moholy-Nagy's own works, various constructions floating freely and unhindered in space, detached from the base and making use of light effects produced by transparent and non-transparent surfaces. Incidentally, we can also see here the development of his personal conception of space between 1920 and 1923. The same photograph of the exhibition of Russian Constructivists appears here as appeared in the *Buch neuer Künstler*. The accompanying text, however, proves how Moholy-Nagy was trying to disengage himself from the movement which he had supported most enthusiastically six years before: 'The constructivists' works abounded in industrial forms, they became technical monomaniacs – this was undoubtedly a healthy process as a transitional phase, because in this way they opposed a new measure against the moss-grown, outdated views on "art".⁸⁵

The book also differed from the anthology published in 1922 in that here machine technology found only indirect expression through works of art. The chapter on kinetic sculpture is the most interesting part. According to the author's definition, '... the floating sculpture is in fact the mass which has been shaped yet which is independent of almost all relations, mass in itself'.⁸⁶ The works presented here are for the most part those of his disciples; through them, Moholy-Nagy doubtless shows affinity with the principles of Constructivism (he even quotes his own manifesto), but at the same time he takes a step further. The sketches of 'four-dimensional sculpture' and the 'mechanically operated shop-window', various types of illusionistic, floating constructions, were only to be realized several decades later; yet they were already present in Moholy-Nagy's mind.

The chapter dealing with light is concerned with virtual mass, presenting countless variations of light display, light diagrams and fireworks, effacing as it were the boundary between art as it exists and an art only dreamed of. In this book, photography is not treated in a separate chapter, yet it is as much present as in the author's earlier volume: on the one hand, through the photographic material which speaks for itself, and on the other, through the fact that the author makes photography his standard and ideal. (He explains both Malevich's and Picasso's art from the point of view of photography.)

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By 1926–27 Moholy-Nagy's pictorial universe was complete; the artist ceased to search for his identity. His abstract compositions radiate the assurance of inner freedom and sovereignty. Their elements float almost completely freely, and, in contrast to the earlier pieces of glass architecture, the celluloid sheets glued over one another result in real (not painted) transparency. In other works he uses another industrial material, aluminium, instead of canvas.

The Great Aluminium Picture (AL II) dates from 1926. With its changing tones, the surface of the aluminium sheet can almost be seen as blue sky. The narrow strips float, as it were, over the three discs, modifying the atmosphere of the coloured circles; at the same time they are themselves modified by the colours of the base which faintly show through. The three motifs are placed above one another like three notes of music. Even their direction is the same; they seem to be floating forward to the left with their long straight tails behind them. The metal-grey background shows brightly around the upper black disc, like a halo. The structure of the picture is determined by thin horizontal lines, while its dynamism comes from the two other lines cutting diagonally across. This diagonal construction is present in almost all Moholy-Nagy's compositions of this period, including his photoplastics. The inner hidden or merely intimated beauties of the picture only become clear if we compare it with Moholy-Nagy's *Construction* dating from 1932 which uses much the same motifs. This also is an outstanding work, yet it seems more arid and more consciously constructed, while the surface of the painting loses some of its fine, glimmering iridescence.

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All this was the joint result of external circumstances, of his leaving the Bauhaus and the contradictions within his own artistic development. In the Bauhaus community he had really found himself. However, circumstances which would gradually precipitate the crisis of European art as a whole, which forced Gropius to leave, had their effect on him. Also, he did not agree with the policy of the new director, Hannes Meyer. Together with Marcel Breuer and Herbert Bayer, he saw very clearly that the kind of work they had undertaken could not be continued without Gropius, nor in the new conditions. Moholy-Nagy understood that the period of the real Bauhaus had come to an end, and that he had to find his place somewhere else. He had already discovered the potentialities inherent in photography and film, and had even completed his finest photograms and montages; yet it was only now that he started paying more attention to photography and writing.

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outlines of the *Gesamtwerk*, although the individual essays rather give the impression of being written by a specialist. One sometimes glimpses ideas that go beyond the particular problems of photography and film; but these are rare, and appear rather in passing remarks or footnotes. The concepts of the 'total man' and of 'everyone is talented' are relegated to the background during the struggle for the social recognition of photography and film.

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His forced departure from Berlin was not the only factor which had an unfavourable effect on his creative activity: so did the whole atmosphere of artistic life. The mood of the 1930s, the return to order and regularity, was a logical reaction to the chain of explosions provoked by the avant-garde movements of the 1920s that had followed, interacted and swept one another away. This kind of 'calming down', the return to representational painting and to more traditional forms, did not suit Moholy-Nagy at all – and, on the other hand, it was obvious that he could not go on with his earlier style either. Therefore, perhaps without conscious intention, he changed genres, switching from painting to photography and film. It was now mainly in this field that his creative and innovative ideas found their outlet. Naturally, there was an additional, outside factor as well: how to earn his living. Neither the Bauhaus nor the Berlin theatre assured him a living any more: he had to look elsewhere. Beyond that, there was no group or movement to which he would have wanted to belong. There were only two persons who helped him find a way out of this critical situation: an old friend and a new one, Walter Gropius and Herbert Read, respectively.

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However, he was not the only one in whom this change was taking place; the times were changing too: the 1930s were a period of slower, more profound and less conspicuous discoveries all over Europe. And what applied to German towns applied to a greater extent to Britain, whose own avant-garde movement, Vorticism, had never become as much a part of international art as Dadaism, Constructivism, etc., and whose effect could hardly be felt in the thirties. Moholy-Nagy would no doubt have had to abandon the ideas of his Bauhaus years if he had stayed in Germany after the Bauhaus had been closed, but leaving Germany made the break with his earlier activities even sharper – though also, perhaps, less painful. England, on the other hand, offered him opportunities in the fields of photography, film and design that

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because of it, these effects were not used in the film, and we know them only from contemporary photographs.

The film he made in 1936, *The New Architecture at the London Zoo*, was commissioned by the director of the Museum of Modern Art, Alfred Barr.¹²⁷ The new buildings of the London Zoo, which had just been completed, were designed in a modern spirit rather unusual in Britain by a Russian architect, Berthold Lubetkin, and his Tecton partnership, largely under the influence of Le Corbusier. 'The dramatic ensemble of intertwining ramps and platforms of the Penguin Pool carried the name of Tecton across the world in 1934. It was taken by critics everywhere to symbolize a new level of British architecture. As a design it was complex yet irreducible which made it the compelling image, appreciated by the architects, painters and sculptors.'¹²⁸ After the years spent at the Bauhaus with Gropius, Moholy-Nagy must have been sensitive to the particular beauties of modern architecture. In this case, however, the film was not in harmony with the designer's ideas. In his recollections, Lubetkin accuses it of being too naturalistic: 'He [Moholy-Nagy] wanted simply to record, and maintained that the world was full of new shapes, textures and movements. Along with the rotating turbine blades and propellers, there were also my buildings; it was unnecessary to comment on them as they stood, and open the onlooker's eyes. I protested against such a naturalistic approach...'¹²⁹ However exaggerated Lubetkin's view may have been, it is a fact that in the film Moholy-Nagy did not succeed in adding anything really new to the buildings themselves.

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His work in the field of design is, by contrast, all the more interesting and lively, particularly the decoration of Simpson's store in Piccadilly and the design of the Imperial Airways' and other exhibitions. He also made designs for International Textiles, invitations for the London Gallery, etc. He was greatly helped in this field by György Kepes, who was much younger than himself and who had settled in Berlin in 1931, a decade after the dispersal of the great avant-garde generation, under the influence of Moholy-Nagy. Kepes had been ill in Berlin, but as soon as he arrived in London he helped Moholy-Nagy a great deal while at the same time creating his own artistic image. Failing anything better, the shop-windows of Simpson's took over the role of the earlier avant-garde exhibitions and theatres. The shop-windows dressed by the artist come alive, they are no longer mere shop-windows, but a late evocation of the Bauhaus spirit: 'Asymmetric advertising is like a mild electric shock to the eye,' Moholy-Nagy explained, adding the finishing touches to his work directly before the opening of the department store, 'the impact has to come from the familiar object presented in an unfamiliar way.'¹³⁰ For a short time, the shop-window became a Bauhaus platform and absorbed the artist's attention entirely and exclusively. However, as soon as the excitement of realization was over, there were other enterprises to engage his attention. After a short and depressing visit to Berlin, he went to Hungary to spend his only holidays there completely undisturbed at Lake Balaton. But the encounter with his native country failed to bring about any kind of co-operation or link with artists in Hungary. At the same time his international relations were becoming ever wider.

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He was a friend of František Kalivoda, the eminent architect and editor of the English-language review *Telehor*, published in Brno,¹³¹ and in 1935 had had an exhibition in the Brno Artists' house. In 1936 Kalivoda published a special issue of *Telehor* about Moholy-Nagy. With its many illustrations, Siegfried Giedion's foreword, Kalivoda's postscript, Moholy-Nagy's letter to Kalivoda, and several of his articles and film scripts (see Part Three), this amounted to a monograph. It is interesting that this first volume on Moholy-Nagy should have been published in Czechoslovakia at a time when non-representational art was being more and more eclipsed by Surrealism, and when the most outstanding Czech non-representational artists, František Foltyn and Jiří Jelinek, had joined the Abstraction-Création group.

In his postscript (see p. 429), Kalivoda himself pointed out that abstract art could have only propaganda value, being unsuitable for introducing a new era because it was no more than a transient episode. He regarded Moholy-Nagy's paintings and drawings only as initial sketches for abstract films, and the photograms as stills for abstract films. He set forth his aim of creating new social relationships – socialist ones – and considered that the artist's light displays would immediately gain practical significance in such a context. Moholy-Nagy's own articles – with the exception of the letter to Kalivoda – had all appeared earlier (for example in *Korunk*); most of them dealt with problems of cinematography.

Two of these articles, *Problems of the Modern Film* (see p. 311), first published in 1930, and *Supplementary Remarks on the Sound and Colour Film* (1935), show how much the artist's outlook had changed in the meantime – the more so after 1934 when he had moved to Amsterdam where he worked in a printing house and studied the industrial possibilities of the colour photograph and colour film.¹³²

The first article concerns the relationship between easel painting and the film; the second outlines the most up-to-date techniques of sound and colour film, with precise technical advice that extends from the travelling camera to the zoom lens. Moholy-Nagy suggests that in view of man's psycho-physical nature, primary colours will be increasingly used in colour films in the sense that modern painters use them, i. e. in the abstract sense. He believes that the most beautiful colour films in years to come will be the ones whose range of colours is based on white.

The most interesting piece in the volume edited by Kalivoda is Moholy-Nagy's film script entitled *Once a Chicken, Always a Chicken* (see p. 335), based on an idea derived from Kurt Schwitters's short story *Auguste Bolte*.¹³³ Partly showing the characteristic features of an earlier period, this script, according to the author, dates from between 1925 and 1930. It differs completely from both variants of the *Dynamic of the Metropolis*, which were conceived in a Constructivist spirit – insofar as this term may be applied to literature. Instead, *Once a Chicken, Always a Chicken* is written in a Surrealist style on the border between the real and the unreal. It is probable that the first version dates from 1926–27, because it was then, and only then, that Surrealist elements appeared in Moholy-Nagy's photomontages. The basic motif of the eggs is akin to the motifs of films that Dalí and Buñuel made together; it is almost impossible for these not to have influenced Moholy-Nagy's script. It is interesting that, in contrast to the Surrealist approach and his own earlier practice (i. e. the *Dynamic of the Metropolis*), the language of the script is not really poetic, although the images certainly are literary and symbolic. The egg as the symbol of sensuality and fertility appears in countless variants in many scenes: absurdly, ironically, inserted into the life of a big city among the changing scenes of a porter's lodge, a café, a street, etc. The personal-impersonal hero of the film is a young girl who breathlessly chases through the streets the man (or ten men?) she belongs to. 'The girl is standing in a gateway. It is of an immense size, the girl in front of it very small. In the background there are many other gateways, bearing down upon the girl as in a nightmare . . .' The shadowy figure of a masked man haunts the scene; and when we have already forgotten about the eggs, they return in the most unexpected situations. Scenes reminiscent of nightmare alternate with grotesque shots: the marriage registrar's flaming sword is transformed into a sash, and then the same registrar encloses the two betrothed in a flaming ring and afterwards walks through the wall. A rolling egg comes to rest under a china hen. 'The men stand round the china hen. The head of the hen. Its plaster eyelids twinkle.' And with this the story ends, highly impressive in this semi-finished form which is neither a literary work nor a film. The richness and structured nature of its images and associations are revealing of the inner doubts and anxieties of an artist who rarely spoke of his personal problems in his writings.

The 1934 letter to Kalivoda (see p. 332) is of the greatest interest, for it is one of Moholy-Nagy's very few subjective writings. Writing before the exhibition in Brno, Moholy-Nagy is almost apologetic about exhibiting his earlier and more recent

paintings now that art has attained the stage where he could safely discard brush and pigment and 'paint' with light. He enthuses over reflectors that could project light-plays upon the clouds. His great dream, to have a bare studio with twelve projectors, never came true. In his unappeasable desire for light he described a number of ideas, utopian at the time, which have since been realized probably on the basis of his ideas.

Despite all the manifestos and world-redeeming programmes, Moholy-Nagy concluded that their aims had not been achieved, their ideas remained unrealized. Never was he so outspoken against social abuses as in these years of travel, between 1934 and 1937, when he felt the increasing pressure of right-wing politics more directly than in the Bauhaus, in the 1920s or later in America. He voices his own vulnerability when he speaks of the financial dependence of artists upon capitalists and their unacceptable working conditions. This is the answer to why he still paints. In his studio the artist is sovereign master, but the creator of light-plays is a mere slave of those who by chance give him commissions. Being face to face with a manipulated public also hinders the artist's development. The highly critical, and also self-critical, tone of the letter to Kalivoda masks a deep bitterness and a sense of hopelessness most unusual in Moholy-Nagy. Perhaps the only note of optimism is that he will continue experimenting with aluminium and synthetic materials, e. g. trolit. For he was using more and more new materials in his work at that time.

Two other articles by Moholy-Nagy in the special issue of *Telehor – From Pigment to Light* (see p. 323) and *A New Instrument of Vision* (see p. 326) – analyse the relationship of the photograph to the painting, and arrive at practically the same conclusions as his earlier articles in *Korunk*.

In the same issue, Siegfried Giedion presented a survey of Moholy-Nagy's activities (see p. 427). His tone and analyses are objective; he identifies the main international trends in art and locates the Hungarian artist within these complex relations of action and reaction. Unlike Kalivoda and even the artist himself, he values Moholy-Nagy not only as an all-round designer but also as a painter; indeed, he even considers his painting to be the vital thread which links his various activities.

At that time painting played a far less important part in Moholy-Nagy's art than Giedion suggests. Between 1935 and 1937 Moholy-Nagy's activities became highly disparate, even to the point of fragmentation. From 1923 to 1928 he had concentrated all his activities upon the Bauhaus. During the years of his wanderings, however, lacking the school's co-ordinating role, his time and energy were devoted variously to the Dutch review *i 10*, a textile design company, window-displays in London, typography for the London Gallery, research in the Kodak laboratories, plus photographic books, films, and other tasks related to design. He was astonishingly industrious, but he produced no really important or pioneering works in this period. The world-redeeming spirit of avant-garde art gives place to applied art in the best sense of the word, and the artist endeavours to take pleasure in the tasks allotted to him and carry them out as best he can. The invitations designed for the London Gallery in 1936–37 are interesting and varied, but they display little of the typographic revolution of the Bauhaus period.¹³⁴

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Compared with his activities ten years before and also later, the mid-1930s were a somewhat barren period for Moholy-Nagy. He did not belong to any definite school, trend or group. Obviously, what he missed most was a community. He had friends everywhere – it was at Herbert Read's invitation that he went to London – but such relationships could not compare with those involving the earlier avant-garde groups in Berlin or the Bauhaus workshop. Moholy-Nagy needed a community, but there *were* no longer any artists' communities in the sense of those of the 1920s. There were two large groups in Paris at the time. One was composed of Surrealists, but with them Moholy-Nagy could have nothing in common. Although some of his photomontages and film scripts do have something of a Surrealist expression, this was never to develop further. With his rationalist, Constructivist, anti-transcendental attitude, Moholy-Nagy was out of place among the Surrealists.

Theoretically at least, he might have had more in common with the other group, the Abstraction-Création, within which in the early 1930s more moderate and more lyrical non-representational trends were brought together. Moholy-Nagy figured in two issues of the review *Abstraction-Création*, and in 1934 an exhibition of his work was organized by the group. His friendship with Max Bill was to continue later, as his letters show, and he was also a friend of the Delaunays. But Moholy-Nagy could not find work in Paris, and so the direct link ceased. In addition, Abstraction-Création was a loose grouping and thus scarcely an artistic, human, or social community, not even a workshop. Joining or not joining such a group would make no difference to his problems of solitude and creative crisis.

What was happening to Hungarian art at that time was a tragedy for the entire revolutionary generation. It was not a spectacular collapse like that of autumn 1919, but rather a slow decay. All those who met in Moholy-Nagy's studio in Berlin between 1921 and 1923 felt themselves to be the vanguard of an approaching world revolution, or at least of the new artistic and social community to come. When they parted company, some returned home to Rumania or Hungary, and some went to the Bauhaus where their illusions lived on. By the 1930s it became evident, especially in Berlin, that this period had come to an end. But it was also evident that, like any utopia, the closed system of the common workshop with its vital, efficient human contacts had also disintegrated. Moholy-Nagy's sense of community was perhaps stronger than that of the others; it was this that had attracted him to the Bauhaus, and this was why he became almost an incarnation of it and the most dedicated of teachers there. After the Bauhaus broke up, he could find no home ground in Europe, and his work also became fragmented. He devoted all his energy to the applied arts because they meant a livelihood, but more particularly because through them he could keep in close, much-needed contact with life, with the flow of days. But he found no community either in Berlin or Amsterdam or London. No one can be a community artist without a community, at least not without deluding himself. And because Moholy-Nagy was sincere, even to himself, he became if not entirely pessimistic then resigned. There being no possibility of realizing his grandiose dreams, he turned his attention once more to painting.

Between 1928 and 1930 he scarcely did any painting. Then came *La Sarraz*, the first picture he made after the crisis, in 1930, and this was followed, from 1932 on, by several more paintings. This picture, according to Sibyl Moholy-Nagy, was born during one of their regular summer vacations in Switzerland with Siegfried and Carola Giedion. It was probably this close friendship which helped him to overcome his years-long inability to paint, and prompted his return to painting.

He produced some masterpieces in the 1930s. These retain his earlier dynamism and complete it with carefully weighed aesthetic effects. In *Construction 1932* the hazy background is sand-coloured, which is rare in Moholy-Nagy's work at this time, for he usually preferred white, black or grey backgrounds. The planes direct our eyes upwards, showing through each other while being at the same time coherent; above, there floats a large, homogeneous black disc, the diagonals which cross it tend towards each other, are even almost foreshortened, to unite in the distance to the left in a tiny motif floating away. The elements moving about in the vast space, and floating over the neutral background, suggest that the picture was inspired not only by Suprematist attitudes but also by the experience of flying.

From the early 1930s (according to Sibyl Moholy-Nagy, from 1935) Moholy-Nagy painted on synthetic materials, such as rhodoid and galalith. He had always been interested in these materials, but had not regularly employed them before; he was attracted by any technical innovation, and had been trying to divest himself of traditional materials even when he still clung to the form of easel painting. Thus the telephone pictures were made in an enamel factory; later he composed paintings from celluloid sheets superimposed upon each other; and the pictures of 1926–27 were painted on aluminium.

However, the transparent rhodoid sheets meant for him much more than simply a new, industrial raw material that could be opposed to traditional ones. They enabled him to realize his old 1920s dreams of glass architecture. By painting on the transparent and partly translucent sheets and fixing them at a few centimetres' distance from a plate, he produced mobile, changing shadows. He could intensify the effect by engraving the sheet or by gluing several translucent sheets over one another. In this way, the work's plasticity, often hardly discernible in reality, resulted in a multiple and changing spatial effect. This novel play with synthetic materials brought back for the artist the fascination of the experimental avant-garde period, first of all Gabo's plastic sculptures. The by now yellowish and dirty synthetic sheets still convey the experimental character of these works. Later, in the 1940s, he created freely floating forms from Plexiglas, but these works had a function different from that of the rhodoid compositions of the thirties. Even if these compositions could not measure up to expectations as glass architecture, they meant a fundamentally new discovery and thus new pleasure in the field of the fine arts.

THE BAUHAUS IN AMERICA

In 1937, László Moholy-Nagy arrived in the United States on Gropius's invitation. After a break of almost ten years, the Bauhaus idea re-entered his life – and saved it. In Europe, he had been unable to find his place on suitable ground for development. But now he again had something to live for, and did not have to work merely to support his family. Teaching and later on organization and management developed his talents to the full. Weimar, Dessau or Chicago – in the last analysis it did not much matter for him where he worked. What did matter was that he should be able to impart his knowledge, will, ideas and utopian concepts to a closed and coherent group which would return the confidence he placed in them. He wrote no more bitter articles against the vultures of the film industry and industry in general, as he had done during the years of wandering. Along with his old colleague György Kepes and other new ones, he found his place in Chicago. His English was rather poor, so too probably was his knowledge of local conditions. But this did not matter, as he worked out a large-scale, ambitious and varied curriculum.

The Association of Arts and Industries had been founded in Chicago in 1922. In 1937, when Norma K. Stahle became head of the Association, it was decided to create a school of design. Gropius was contacted, and he recommended Moholy-Nagy rather than himself as the person most suitable to direct the institution.¹³⁵ After a brief exchange of letters and cables,¹³⁶ Moholy-Nagy accepted the invitation and set sail for America.

The reason for Moholy-Nagy's latest emigration – the third one, and this time from his fatherland in the wider sense, from Europe – was the hopelessness of his personal situation due to the absence of acceptable working conditions, and, ultimately, to the rise of fascism. The real question was to be not how he himself, with his incredible adaptability, would find his place in the United States. It was rather – and this did later in fact prove to be the greatest problem – how the Bauhaus spirit could be transplanted, even in a modified and more up-to-date form, to a country where it had almost absolutely no tradition or precedent. For in one of the most modern and most open cities in the world, outdated aesthetic views were still dominant, especially in the visual arts.

In America, as in Europe, the pioneering generation of artists had been that of the first decade of the century, who had created new symbols and forms in painting. Morgan Russel, Stanton Macdonald-Wright, Mordsen Hartley, Arthur G. Dove and the others had created American versions of the Cubist and Futurist styles. The Armory Show of 1913 meant the sudden eruption of contemporary European art, and the works of Alfred Stieglitz and Man Ray were variations of Dadaist art. But there

was no association that even faintly resembled the Sturm or the Bauhaus, no group even that fought united for the same goal. The development of modern art gained impetus only in the late thirties, when artists fleeing from Europe, most of them Jews, formed a separate little colony. These artists mostly arrived after Moholy-Nagy and their works showed a Surrealist or kindred spirit. No close contacts developed between Moholy-Nagy's school in Chicago and the European painters who settled in New York. His school had its own battle to fight, and that in difficult circumstances, although it had excellent teachers in György Kepes, Herbert Bayer, Xanti Schawinsky, Alexander Archipenko, Hin Bradendieck, David Dushkin, Jean Héliion, G. F. Keck, Andi Schiltz and Henry Holmes Smith. Carl Eckart, Ralph W. Gerard and Charles W. Morris were visiting lecturers, the consultant, Walter Gropius.

The division of the New Bauhaus into six workshops on the whole corresponded to the system of the Dessau Bauhaus. The Light Workshop opened up new horizons for the study of illuminated advertisements and for commercial design. The curriculum of the Basic Course recalled the broad spectrum of the 1923 sketch of the Bauhaus brochure that Moholy-Nagy had sent to Rodchenko. It included experiments with sound, construction of musical instruments, studies of the fourth dimension, various scientific subjects ranging from geometry through anatomy to intellectual integration. These were completed by biotechnology, music, visits to factories and exhibitions, etc. Moholy-Nagy himself taught the Basic Course in the first two semesters, as well as the practice lessons entitled 'Material, mass, space'. As in the Bauhaus he started from the principle that everyone is talented. Now, however, he wanted to bring this principle closer to real life, to the demands of actual reality, large-scale industry and technical civilization.¹³⁷

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In 1938, there were thirty-five students in the first semester and twenty-five more in the second. Moholy-Nagy decided to set up an Institute of Design Research next to the New Bauhaus, whose director would be Siegfried Giedion. He was taken by surprise when, without his knowledge, the Board of Directors of the Association of Arts and Industries, alleging bankruptcy as the reason, closed the school of design, and dismissed the teachers and students. In this critical situation, most of the teachers signed a declaration expressing their loyalty to Moholy-Nagy.¹³⁸ But this signified only moral, not financial, help. Moholy-Nagy, who had hitherto not become involved in money matters, now went to see the managers of a number of large South-Western and Eastern American firms, to ask them for financial support. This he received, but to no avail; for the students had been informed of the termination of the New Bauhaus without his knowledge, and thus the school's closure became irrevocable. This was perhaps the first time that Moholy-Nagy encountered the merciless nature of capitalism, or more particularly of the industrialists who embodied capitalism on the Executive Committee. The failure of the Bauhaus at Dessau and Berlin had been the direct consequence of the political situation; it was predictable, and Moholy-Nagy and Gropius had chosen not to stay to wait it out. Now, however, he came up against another kind of fate, which he found even more mysterious. Anybody else but he would have given up the struggle. In January 1939, however, he opened his own school, the School of Design, at his own expense, without any capital, in East Ontario Street. From 1944 it was called the Institute of Design. The name Bauhaus was avoided as it referred to Germany; the idea now was to dissociate the new group from it as much as possible. Moholy-Nagy and his colleagues donated their own small capital as well as their own work in order to bring the institution into being. All the teachers earned their living elsewhere, Moholy-Nagy too, as art advisor to a commercial firm. The success of the undertaking surpassed all expectation. At once eighteen day and twenty-eight night students enrolled, and their number was to keep growing. Like Moholy-Nagy, all the teachers worked out of devotion and zeal, putting into their work most of their energies with no material reward. The curriculum at first differed very little from the earlier one; but later, owing to the war, it underwent fundamental changes.

'VISION IN MOTION'

Just as between 1923 and 1928 Moholy-Nagy concentrated wholly upon the Bauhaus, so in the last ten years of his life (from 1937 to 1946) his work in the New Bauhaus and the School (later Institute) of Design was reflected in his various writings, articles and books. *From Material to Architecture* was born as the synthesis of the European Bauhaus. A similar, if possible even greater synthesis, *Vision in Motion*,¹³⁹ appeared posthumously in Chicago in 1947. It is a summary not only of his last few years but of his two Bauhaus periods. We learn from the foreword that the artist has realized a longtime desire: that the reader should see – and understand – text and pictures simultaneously, pictorial and literary content having a united effect.

Moholy-Nagy wrote this work during the Second World War, at a time when his Institute was more engaged in the study of camouflage techniques than in functional beauty, and when he himself was seriously ill. All this did not daunt his naive optimism, his belief that the world can be saved and that primarily by art, by the teaching of art and design. Neither in his articles written in the forties nor in his book can the atmosphere of catastrophe be discerned. The First World War, in which he had taken part, had lived on in him acknowledged or unacknowledged; the second, however, did not affect him directly. He lived in his own closed world in the Institute of Design; he adapted to the new wartime conditions. *Vision in Motion* deals with a peaceful welfare-state society – with education, design, etc. His main interest was education. After an initial and somewhat simplified historical survey, he proceeds to develop his old theory on the negative effects of specialization and isolation.

He considers intellectual and emotional education equally important, and even refers to psychoanalysis. This sensitivity to the traumas of the human soul is new in Moholy-Nagy; earlier, it was only rationalism and creativity free from the emotions that he appreciated. He had become more sensitive now to this new area through his own personal experiences, and perhaps through psychological literature which had such a great impact in America. Not only his intellectual but also his human character became richer. He says little that is new – compared with his earlier writings – in the chapter 'Analyzing the Situation'. He simply stresses the necessity for a synthesis of intuition and science, and considers the amateur's role essential in the society of the future. The book outlines his career and many-sided activities; but it dwells more on the particular educational system of his school, which was as firmly as ever opposed to specialization. The amateur theory did not and could not have as much importance in Europe as in the United States which was the country of specialists who specialized several times over. Moholy-Nagy chides as it were the normative system of American society, and insists on a much more European system of priorities. He considers it essential that man's innermost sensual-emotional being should expand; touch should grow more refined; yet at the same time the designer should be aware of the demands of industry. In the 1920s he had been full of enthusiastic admiration for the new industrial world he first saw in Berlin; twenty years later, in the incomparably more developed United States, he viewed the proliferating off-shoots of the industrial revolution with mature moderation and some resignation. Just as in typography he had opposed the use of wanton eye-catchers, so he now took a stand against equally wanton streamlined forms in design. When analysing the new he could criticize highly refined design, though without prejudice to his modern principles.

One of the great merits of the book is that the illustrations speak for themselves; together with the text, and on a par with it, they are expressions of the author's concepts.

Moholy-Nagy incorporated several of his articles into the various chapters, where they become integral parts of the whole intellectual construction. The illustrations show buildings and aerial views, as well as tools, photographs, contemporary works of art and dishes made by designers; the Parker pen designed by Moholy-Nagy also

figures in the book. The extent to which the visual and tangible reality had changed since the first Bauhaus period can be measured by the illustrations perhaps even better than by the text. While his first two books dealt primarily with photography, the new one focuses on design. Objects, old and new, partly designed by himself, take over the role of photograms and montages. Accompanying the illustrations, explanations printed in lower case in the margins surpass the text in objectivity. Strangely enough, each line, each analogy, each phrase in the book is, in spite of the influence of the European Bauhaus tradition, one hundred-per-cent American. Moholy-Nagy had perfectly mastered the new material culture of the new world, the streamlined cars, design kitchens and washing-machines, as well as the fate of the goods that people soon lose interest in. Yet he had his own views when it came to the hectic rate of production in the United States. His interest ranges over everything, but he views with a critical and informed eye what his American colleagues take for granted. The industrial element dominates in his new outlook, but the long European tradition of craftsmanship and the personal factor in production form the background. It was probably this duality in Moholy-Nagy's attitude – respect for the new world and familiarity with the old – which exerted the greatest influence on the younger generation of Americans.

Moholy-Nagy remained a utopian even in the most practical matters; he always had in mind the shaping of the whole man and the whole environment. He regarded his own Institute of Design, into which he put all his money, energy and enthusiasm, as a model. His starting-point was the former Bauhaus, yet that had been Gropius's institution rather than his own. This new one, though, he shaped entirely according to his own principles and the experience he had gained in the intervening years. He aimed not so much at producing specialists as many-sided amateurs with their own ideas and practical skills. The teaching of literature (group poetry) was a basically new departure from the practice of the Bauhaus. (A separate chapter in the book deals with group poetry.) The student's choice of a 'field' does not mean the choice of a vocation but of a workshop, he says. Another novelty is the emphasis laid on developing the students' emotional universe. He preserves unchanged certain procedures that had proved viable in the Bauhaus – e.g. tactile exercises – at the same time stressing that they have their origin in Cubism and Futurism. He considers works of art as a means of shaping the new outlook, as much as the acquisition of any practical knowledge. Now the aim is not to create a painting or a statue, but the most suitable industrial form. Moholy-Nagy could now realize the ideal of the Weimar Bauhaus: namely, designing for life. What had little scope earlier in Germany, now found a more favourable milieu, for in America design really had a function. This fact reacted in turn upon theory itself, upon the development of Moholy-Nagy's concepts. (For example, he explains the physical properties of materials through the construction of modern synthetic tools.)

Design now meant for him what painting and photography meant earlier, i.e. the ultimate sense of all artistic activity. That is why he emphasized design not as a profession but as behaviour, human activity of the highest order. Thus, Moholy-Nagy set the highest human and professional standards for the designer. Design, which he sees as the model of the society of the future, now becomes the agency of his human and social utopia. This change from painter to designer meant, in a certain sense, the final renunciation of painting. During his administrative period he regularly worked in his studio, and several paintings and drawings date from this time. But he evidently felt that his work and energy were not what they had been.

He had undertaken his first design productions in the middle thirties in England, when commercial design was a means of earning a living for him. Yet even in this genre he could create lasting value: thus, the fountain-pen he designed for the Parker Pen Company was so successful that it is still being produced.

And yet it must be acknowledged that design was secondary in his rich and active life; it only gained primary importance, thus determining his outlook, in the period

of the Institute of Design. The best parts of *Vision in Motion* are those which provide concrete analysis of a question from the point of view of design: e.g. where he analyses the history and function of the chair. Here he shows both his perfect mastery of the subject and his fanatical idealism: 'Tomorrow there may be just a seat on a compressed air jet.'¹⁴⁰ He knows the process of producing manufactured objects down to the smallest detail; but he knows and responds just as well to the problems of industrial assembly-line production. He sets forth the objective of one day eliminating assembly-lines so that objects may be cast or moulded in one piece. He locates the entire manufacturing process in a wider social context. Moholy-Nagy had in the early twenties occasionally declared himself a communist, and he had belonged to the left. But now he takes capitalism for granted, at most criticizing some details from the inside, as it were. He would like to improve existing production relations, but does not for a moment suggest that there could be relations of any other kind.

It is primarily in connection with architecture that he concerns himself with social conditions. His earlier writings had dealt but little with concrete architectural problems; now he dwells upon these more and more both in his articles and in his book. It is here that his utopia is most far-fetched: when he conceives of mobile, revolving, entirely transparent houses. He is greatly interested in town planning as the ultimate synthesis and outer frame of all possible human ways of living. 'The future city will be transparent, clean, hygienic,' he writes.¹⁴¹ The second part of the book, entitled 'Integration – the Arts', is more closely linked to Bauhaus ideas and to Moholy-Nagy's earlier writings on photography and film. However, the rather lengthy chapter on literature, dealing with the development of modern poetry, is entirely new. It is debatable whether it should be included at all in a book on visual culture and education. Moholy-Nagy justifies it by saying that the teaching of literature is highly important in the education of students, because it helps them to understand the new directions and new concepts of life. Nevertheless, the chapter stands somewhat apart. Moholy-Nagy's analyses of literature are not particularly interesting, and tend to simplify. But he retains his broad outlook, and Surrealism now occupies an important place in it. He analyses literature in connection with visual experience and visual effects like modern typography, the printed page of newspapers, advertisements, etc.

Earlier he celebrated his friends Hans Arp and Kurt Schwitters as fellow-artists, now he dwells on their literary works. His survey also includes poems by children, along with sound and number magic (also by Schwitters). The illustrations to the literary criticism are very convincing and become organic parts of the overall conception in the same way as those in previous chapters. There are some remarkable items in the book: for example, charts of the structure of *Ulysses* and *Finnegans Wake*, both of which figured in the curriculum of the Institute. Finally, he analyses group poetry, which he considered highly important.

The chapter on literature gives us an idea of Moholy-Nagy's intellectual horizons, taste and judgment. It sums up his reading over a quarter century. In addition, it voices as it were his longtime poetic aspirations dating from childhood, and thus his yearning for years long past. *Vision in Motion* only appeared after Moholy-Nagy's death, and the final concept expressed there – 'to translate Utopia into action' – may be regarded as the artist's testament.

However, before his illness got the upper hand, and even before the final version of *Vision in Motion* had been completed, Moholy-Nagy wrote a shorter work entitled *Abstract of an Artist* (see p. 360). It outlines his career as an artist, presented as the typical career of an abstract painter, and it appeared posthumously in 1947 as preface to *The New Vision* (i.e. the American edition of *From Material to Architecture*). This short work is perhaps the most intimate of Moholy-Nagy's writings, the only one which is not written in his usually reserved and impersonal tone. It supplements his diary, the answers to the 1924 questionnaire he sent to Antal Németh (see p. 395) and the interview which appeared in the *Little Review* (see p. 403); also, this work tells us most about the artist himself.

Abstract of an Artist is difficult to define: in formal terms it is a preface, in reality it is a confession. It was written in 1944, when Moholy-Nagy might have thought that he was little more than half way in his career. Yet he composed a synthesis, and this may also have meant that he wanted to make things clear for himself, too. In wanting it to preface a book written twenty years earlier, he obviously intended to assess his career over that entire intervening period.

We learn that in his youth Moholy-Nagy had been attracted by Renaissance art. This is neither surprising nor unique, for one of the outstanding representatives of the Hungarian Activists, Béla Uitz, who also influenced Moholy-Nagy's development, had tried to renew Hungarian art and create pictures of a new reality in the late 1910s by reaching back to the Renaissance.

For Moholy-Nagy, this attraction meant both something more and something different. In contrast to Béla Uitz, fascination with the old masters' mode of composition could be only temporary. What inspired him more was the incredible versatility and lively intelligence of the great Renaissance masters.

Behind his achievements in painting, graphics, design, photography, writing and teaching there lay a new interpretation of the role of art. The reason for Moholy-Nagy's desire to become, in his own words, a 'total' man, for his abandoning traditional easel painting and his attraction to every technical innovation, was that he insisted on an art which would be in close contact with life. The programme he adopted was essentially democratic, involving on the one hand a broad interpretation of aesthetics which extended it to the formation of every aspect of reality surrounding man – and on the other, the teaching of art to the whole community, through a process similar to the teaching of reading and writing.

Moholy-Nagy's artistic legacy – the crystal clear structure of his paintings, the seemingly inexhaustible variety of his ideas, the pure forms of his photographs, films and designs – lay hidden for some decades, awaiting discovery. It is due to the continuing interest in contemporary avant-garde trends that his lifework has gained increasingly in importance. Ideas of his that seemed fantastic in his time are now being realized. Almost his entire lifework has become absorbed within present-day art, in which the power of his creations and his thought lives on.

Krisztina Passuth

- 1 J. Willett, *The New Sobriety, 1917–1933. Art and Politics in the Weimar Period*. London, 1978, pp. 26, 27, 30, and 31
- 2 *MA* (Today), Budapest, 1919. Vol. IV, No. 4, pp. 46–51.
- 3 *MA*, 1919. Vol. IV, No. 6, p. 141. Author's italics.
- 4 'Találkozás' (Encounter). Published in *Jelenkor* (The Present Age). Szeged, 1918. No. 5, pp. 138–141.
- 5 Published in *Művészettörténeti Dokumentációs Központ Közleményei* (Publications of the Art History Documentation Centre), Budapest, 1963, Vol. III. pp. 43–55.
- 6 Moholy-Nagy, *The New Vision and Abstract of an Artist*. New York, 1967, p. 68.
- 7 According to Sibyl Moholy-Nagy this was the artist's last representational drawing (S. Moholy-Nagy, *Moholy-Nagy: Experiment in Totality*. Cambridge, 1969, p. 17). It is possible, however, that the portrait was signed later and that it dates not from 1921 but from 1920. The dates given by S. Moholy-Nagy are not always accurate.
- 8 Lucia Moholy, *Marginalien zu Moholy-Nagy. Moholy-Nagy: Marginal Notes*. Krefeld, 1972, p. 51. Actually, *Portrait of Friedrich Vorwerk* (1920).
- 9 The artist must have drawn the portrait either from memory or from a photograph, since Ákos was called up in 1914 and became a prisoner of war. The two brothers never saw each other again. (Information received from Jenő Nagy.)
- 10 The illustrations for Walter Hasenclever's play, *Die Menschen*, were exhibited in the Fritz Gurlitt gallery in Berlin in 1920. Most of them are lost or their whereabouts unknown.
- 11 *Hungarian Fields*, 1920, watercolour. In Hannah Weitemeier – Wulf Herzogenrath – Tilman Osterwold, *Laszlo Moholy-Nagy*. Stuttgart, 1974, Fig. 5. *f in Field*, 1920, collage and watercolour on paper. New York, private collection. In: *Op. cit.*, Fig. 9.
- 12 *Reclining Figure*, pastel. Collection of Hattula Moholy-Nagy. Erroneously dated 1917 and also titled *Dying Soldier* – erroneously since it probably represents a plump woman. The date was established later as *c.* 1919.
- 13 Moholy-Nagy's letter to Iván Hevesy, 1920. Published in: Krisztina Passuth, 'Debut of Moholy-Nagy'. *Acta Historiae Artium*, Budapest, 1973. Nos. 1–2, p. 130.
- 14 Moholy-Nagy, *Horizont képeskönyv* (Horizon Album). Introduction by Péter Mátyás (Ernö Kállai). Vienna, *MA*, 1921.
- 15 Moholy-Nagy, *Abstract of an Artist*, p. 71. (see p. 360). Lucia Moholy, *Op. cit.*, p. 74.
- 16 See note 14 and *MA*, Vienna, 1921. Vol. VI. No. 9, p. 119.
- 17 Adolf Behne, 'Művészet és forradalom' (Art and Revolution). *MA*, Vienna, 1921. Vol. VI. No. 4, p. 44.
- 18 Reyner Banham, *Theory and Design in the First Machine Age*. New York, 1970. The author considers that this high-rise building, which was to have been constructed in 1919 at the Friedrichstrasse-Station in Berlin, was the last large-scale manifestation of Sheerbart's ideas.
- 19 N. Punin, 'Tatlin üvegtornya' (Tatlin's Glass Tower). *MA*, Vienna, Vol. VII. 1922. Nos. 5–6, p. 31.
- 20 Lajos Kassák, 'Képarchitektúra' (Pictorial Architecture). *MA*, Vienna, 1922. Vol. VII, No. 4, pp. 52–54.
- 21 *Kestnermappe*, with six lithographs, of which one is in colour. 60.3 by 44 cm. Published by the Kestner Gesellschaft in 50 copies, Hanover, 1923.
- 22 German Karginov, *Rodchenko*. London, 1979, p. 59. Rodchenko's *Composition* of 1920 (*op. cit.*, Plate 41) is fairly close to Moholy-Nagy's painting of 1922 in both thought content and style.
- 23 Moscow, 1920. In English in: Herbert Read and Leslie Martin, *Gabo*. London, 1957.
- 24 Umberto Boccioni, *Development of a Bottle in Space*. 1912, bronze, 38.1 cm. Museum of Modern Art, New York.
- 25 Vladimir Tatlin, *Monument of the 3rd International*. 1919, wooden model, 3.3 m. Whereabouts unknown.
- 26 Konstantin Medunetzky, *Composition*. 1919, metal. Yale University Art Gallery, New Haven.
- 27 László Péri, *Werke 1920–1924*. Kölnischer Kunstverein, Cologne, 1973. Introduction by Wulf Herzogenrath. See also: László Péri, *Neue Gesellschaft für Bildende Kunst*, Berlin, Skulpturenmuseum Mare, 1982.
- 28 László Péri, *Werke*, p. 28.
- 29 Péter Mátyás (Ernö Kállai), 'Moholy-Nagy'. *MA*, Vienna, 1921, Vol. VI. No. 9, p. 119.
- 30 Ernő Kállai, 'A konstruktív művészet társadalmi és szellemi távlatai' (The Social and Intellectual Perspectives of Constructivist Art). *MA*, Vienna, August 1922, Vol. VII, No. 8. pp. 55–59.
- 31 *Ibid.*, p. 58.
- 32 *Ibid.*, p. 58.
- 33 Lucia Moholy, *Op. cit.*, pp. 74–75; and Huelsenbeck (ed), *Dada Almanach*, Berlin, 1920, p. 89.
- 34 Walter Benjamin, *Das Kunstwerk im Zeitalter seiner*

technischen Reproduzierarbeit. Frankfurt am Main, 1968. Also: Krisztina Passuth, 'Moholy-Nagy et Walter Benjamin'. *Cahiers du Musée National d'Art Moderne*, Paris, 1980. No. 5, pp. 398–410.

35 Lucia Moholy, *Op. cit.*, p. 76.

36 Lajos Kassák – László Moholy-Nagy, *Buch neuer Künstler* (Book of New Artists). Vienna, 1922.

37 In his book *Malerei, Fotografie, Film* (1925) Moholy-Nagy writes, in connection with production and reproduction, that he had experimented so far with the phonograph and photography. He also refers to his articles published earlier. See pp. 27–28. See also László Beke, *Moholy-Nagy munkássága* (The Work of László Moholy-Nagy). Budapest, 1980; and Irene Charlotte Lusk, *Montagen ins Blaue*. Berlin, 1980.

38 Moholy-Nagy, 'Neue Gestaltungen in der Musik, Möglichkeiten des Grammophons'. *Der Sturm*, 1923, Vol. 14, July, pp. 102–106.

39 El Lissitzky's letter from Moscow, 15 September 1925. See Sophie Lissitzky-Küppers, *El Lissitzky*. London, 1968, pp. 66–7 (see p. 391).

40 See El Lissitzky's letter of 1925, quoted above; also Man Ray's declaration of 1973, quoted in the catalogue of his exhibition held in the Metropolitan Museum of New York.

41 Schuldt, 'El Lissitzky's photographic works.' In: S. Lissitzky-Küppers, *Op. cit.*, p. 394.

42 Leland D. Rice, 'Photographs of Moholy-Nagy.' In: *Photographs of Moholy-Nagy from the Collection of William Larson*. Eds. Leland D. Rice and David W. Steadman. The Galleries of Claremont Colleges, Poina College, Scrips College (Claremont, Calif.), 1975, p. 6; in the same volume, see Lloyd C. Engelbrecht, 'László Moholy-Nagy: Perfecting the Eye by Means of Photography,' p. 11. See also Caroline Fawkes 'Photography and Moholy-Nagy's Do-it-yourself Aesthetic.' *Studio International*, July–August 1975, pp. 18–26. Also: Andreas Haus, *Moholy-Nagy: Photographs and Photograms*. London, 1980; Irene Charlotte Lusk, *Op. cit.*; Terence Senter, 'Moholy-Nagy's English Photography.' *The Burlington Magazine*, London, November 1981.

43 *Broom*. Photogram, 1922. 17.5 × 12.5 cm. William Larson Collection, Philadelphia. Reproduced in *Photographs of Moholy-Nagy . . .*, p. 15.

44 L. Beke, *Op. cit.*, p. 9.

45 Reproduced in *Studio International*, July–August 1975, p. 20.

46 He wanted to make a film about everyday life in Berlin, but in 1922 the authorities did not grant permission. Only in 1926 could he realize his plan and make the film entitled *Berliner Stilleben*.

47 Moholy-Nagy, 'A nagyváros dinamikája' (Dynamic of the Metropolis). *MA*, 1924, Nos. 8–9. Also in *Painting, Photography, Film*. London, 1969, pp. 122–137.

48 German Karginov, *Op. cit.* p. 225.

49 Moholy-Nagy, *Malerei, Fotografie, Film*. Munich, 1925. In English: *Painting, Photography, Film*. London, 1969.

50 *Ibid.*, p. 34.

51 Viking Eggeling, *Diagonal Symphonie*. 1921–23. Hans Richter, *Rhythmus*. 1921. Both in: Hans Richter, *Dada. Art and Anti-Art*. London, 1965. Figs. 98 and 99. Viking Eggeling's work was first published in *MA* under the title 'Elvi fejtegetések a mozgóművészetről' (Comments on Mobile Art), *MA*, 1921, Vol. VI. No. 8, pp. 105–108.

52 Maria Verdone, 'Laszlo Moholy-Nagy nella "Bauhaus".' *Bianco e Nero*, Rome, 1962. No. 11, pp. 1–26. Steneberg, *Russische Künstler in Berlin*. Berlin, 1970. pp. 42–44.

53 Krisztina Passuth, 'Kurt Schwitters, Theo van Doesburg és a Bauhaus' (Kurt Schwitters, Theo van Doesburg and the Bauhaus), *Bulletin du Musée Hongrois des Beaux-Arts*, Budapest, 1973. No. 40. pp. 133–140.

54 *Painting, Photography, Film*, p. 17.

55 H. M. Wingler, *The Bauhaus*. Cambridge (Mass.) and London, 1969. pp. 280–290. See also: Johannes Itten, *Design and Form: The Basic Course at the Bauhaus*. London, 1964; revised edition, 1975.

56 Mario Trudi Gambelli e Teresa Fiori: *Archivi del Futurismo*. Rome, 1958. Vol. I, p. 58.

57 German Karginov, *Op. cit.* p. 169. The author quotes Galina Chichagova, one of Rodchenko's pupils.

58 Kandinsky had worked out one of the first value research programmes of Inkhuk (the Institute for Artistic Culture), which had become the basis of education in the VKHUTEMAS. Kandinsky had sent the programme to Gropius who sent it back with marginal notes. In 1921 Kandinsky left the Institute, since his emphasis on the theory of expression was no longer acceptable to the majority of the members of Inkhuk. 'It was in 1922 that Kandinsky arrived in Weimar, where the programme he had worked out in the Soviet Union became the basis of his teaching activity' (K. Jungmann). Quoted by Katalin Bakos in: 'Az orosz-szovjet és magyar képzőművészet kapcsolata 1917–1925-ben' (Relations between the Fine Arts of Soviet-Russia and Hungary in 1917–1925). Thesis, manuscript. Also: H. M. Wingler, *Op. cit.*, pp. 146–147; Rainer Wick, *Bauhaus Pädagogik*. Cologne, 1982, pp. 174–216.

59 Recollection of Chichagova, a former student, cited by Karginov, *Op. cit.* p. 169.

60 H. M. Wingler, *Op. cit.*, p. 291; Wilhelm Wagenfeld, *Du Bauhaus à l'industrie*. Cologne, 1973. Introduction to the catalogue of the exhibition held in the Kunstgewerbemuseum; Claudine Humblet, *Le Bauhaus*. Lausanne, 1980.

61 Lucia Moholy, *Op. cit.*, pp. 67–68.

62 Katalin Bakos, 'Moholy-Nagy László 1923-as, Alekszandr Rodcsenkóhoz írt levele' (László Moholy-Nagy's letter to Rodchenko written in 1923). *Ars Hungarica*, Budapest, 1977. Vol. V, No. 2, pp. 338–339; and *Fotografia*, Warsaw, 1970. XVIII No. 11.

63 H. M. Wingler, *Op. cit.*, p. 130.

64 *Ibid.*, pp. 130–131.

65 *Ibid.*, p. 131.

- 66 Hans von Riesen, *Malewitsch in Berlin*. Avant-garde 1910–1930 Osteuropa. Ausstellung der Deutschen Gesellschaft für Bildende Kunst. Berlin, 1967. Catalogue of the exhibition, pp. 24–25.
- 67 ‘We are glad to be able to publish this work of Malevich, the noted Russian painter, in the Bauhaus-bücher series, even though, in fundamental questions, his views differ from ours. This makes it possible for us to introduce modern Russian painting, art, and its representatives, from a new, hitherto unknown aspect. Dessau, November 1927. The Editors.’
- 68 Oskar Schlemmer – László Moholy-Nagy – Farkas Molnár, *Die Bühne im Bauhaus*. Munich, 1925. In English: *The Theater of the Bauhaus*. Middletown, Conn., 1961. London, 1979.
- 69 Moholy-Nagy, ‘A jövő színháza: a teljes színház’ (Total Theatre is the Theatre of the Future). *Dokumentum*, Budapest, March 1927. Cf. Pierre Albert Birot, ‘Théâtres Noniques’. *Sic*, Paris, 1917. Nos. 21–22.
- 70 Internationale Ausstellung Neuer Theater Technik, Konzerthaus, Vienna, 1924. Two works by Moholy-Nagy figure in the catalogue under No. 20.
- 71 *Ibid.* Catalogue, p. 44.
- 72 Schlemmer – Moholy-Nagy – Molnár, *The Theater of the Bauhaus*, p. 62
- 73 *Ibid.*, p. 62.
- 74 *Painting, Photography, Film*, p. 45.
- 75 *Ibid.*, p. 8.
- 76 *Ibid.*, p. 9.
- 77 *Ibid.*, p. 16.
- 78 *Ibid.*, p. 25.
- 79 *Ibid.*, p. 28.
- 80 *Ibid.*, p. 44.
- 81 Moholy-Nagy, *Von Material zu Architektur*. Munich, 1929. In English: *The New Vision: From Material to Architecture*. New York, 1930. Third and subsequent editions include *Abstract of an Artist*. New York, 1947, 1949, 1964, 1967.
- 82 Moholy-Nagy, *The New Vision and Abstract of an Artist*, p. 13.
- 83 Johannes Itten, *Op. cit.*
- 84 Moholy-Nagy, *Op. cit.*, p. 18.
- 85 *Ibid.*, p. 132.
- 86 *Ibid.*, p. 152.
- 87 For literature on the *Light-Space Modulator*, see: Hannah Weitemeier, *Licht-Visionen. Ein Experiment von Moholy-Nagy*. Berlin, Bauhaus-Archiv, 1972.
- 88 Moholy-Nagy, *The New Vision and Abstract of an Artist*, p. 80.
- 89 Naum Gabo, *Plan of a Radio Station*, 1919–20. Pen and brush, whereabouts unknown.
- 90 Naum Gabo, *Kinetic Statue: Standing Wave*, 1920. 24,1 × 19 cm. Tate Gallery, London.
- 91 Hannah Weitemeier, *Licht-Visionen*. p. 5.
- 92 Hannah Weitemeier, ‘Laszlo Moholy-Nagy – Leben und Werk’, in H. Weitemeier – W. Herzogenrath – T. Osterwold, *Laszlo Moholy-Nagy*. Stuttgart, 1974, p. 73.
- 93 Douglas Davis, ‘Mighty Machine’, *Newsweek*, New York, 16 Nov. 1970, p. 44. Also: Rita Lohr, ‘Alexander Dorner und die Kabinette der Abstrakten’. Kunstmuseum Hanover, mit Sammlung Sprengel Braunschweig, 1980, pp. 70–71.
- 94 Hannah Steckel-Weitemeier, *Moholy-Nagy*. Unpublished thesis, 1974, p. 217.
- 95 Moholy-Nagy, *Painting, Photography, Film*, p. 21.
- 96 Sándor László first presented his ‘coloured light-musical’ composition in Kiel, and described it in the volume entitled *Farbenlichtmusik* published in Leipzig in 1925.
- 97 It was published under the title ‘Light-Display, Black and White and Gray’ in the May–June 1967 issue of *Art in America*, p. 29. Also in: Kostelanetz, *Moholy-Nagy*. New York, 1970, pp. 148–150. The article published in the journal *Korunk* (Kolozsvár, 1931, pp. 866–867) differs slightly from the latter.
- 98 Erwin Piscator, *Le théâtre politique*. Paris, 1962, p. 43. Moholy-Nagy probably became acquainted with Piscator through the Hungarian émigré journalist Lajos Barta who stayed with Moholy-Nagy in Berlin in 1920, and was a friend of Piscator. See: Ferenc Csaplár, *Lajos Barta*. Budapest, 1973, p. 197.
- 99 Sibyl Moholy-Nagy, *Op. cit.*, p. 49.
- 100 E. Piscator, *Op. cit.*, p. 261.
- 101 László Dienes, ‘A Politikai Színház. Az újra megnyílt Piscator-színpad’ (The Political Theatre. The recently opened Piscator stage). *Korunk*, Kolozsvár 1929, pp. 748–750.
- 102 Sibyl Moholy-Nagy, *Op. cit.*, p. 53.
- 103 Ilya Ehrenburg, *Men, Years – Life*. Vol. III: *Truce: 1921–33*. London, 1963, p. 122. József Ligeti, ‘Emlékek a 20-as évek Berlinjéből’ (Memories of Berlin of the 1920s). *Valóság*, Budapest, No. 4., 1969, p. 102; according to him the film was to be made after Anna Seghers’s book.
- 104 Sibyl Moholy-Nagy, *Op. cit.*, p. 129.
- 105 L. Moholy-Nagy, ‘Photographie ist Lichtgestaltung’ (Photography is Creation with Light). Bauhaus, Dessau II/1. 1928. (See p. 302)
- 106 In: *Sight and Sound*, Vol. 3, No. 10. Also in: *Vision in Motion*, pp. 272–275.
- 107 For an interview with Moholy-Nagy see *Az Est* (Evening), Budapest, October 21, 1930. A review of the lecture appeared in *Magyar Iparművészet* (Hungarian Applied Arts), Budapest, 1930, p. 209. About Moholy-Nagy’s studio see Imre Pán, ‘Moholyi-Nazsi, a modern művészetek és tudományok professzora’ (Moholy-Nagy, professor of modern arts and sciences). *Lantos Magazin*, Budapest, 1930, pp. 123–125.

- 108 See Sibyl Moholy-Nagy, *Op. cit.*, pp. 133–4, and *Tamás Galéria XCIII. kiállítása, Párizsi magyar művészek* (The 93rd exhibition of the Tamás Gallery. Hungarian artists living in Paris). Budapest, 1938, p. 8.
- 109 Terence Senter, *Moholy-Nagy in England: May 1935–July 1937*. Thesis, 1975. p. 2.
- 110 Sibyl Moholy-Nagy, *Op. cit.*, p. 133.
- 111 *Ibid.*, p. 133.
- 112 *Ibid.*, p. 108.
- 113 Terence Senter, *Op. cit.*, p. 52.
- 114 *Ibid.*, p. 28.
- 115 Invitation to the London Gallery, designed by Moholy-Nagy, 1936.
- 116 Robin M. Paisey, 'Laszlo Moholy-Nagy in Leicester.' *Ars Hungarica*, Budapest, 1980. No. 1.
- 117 Terence Senter, 'Moholy-Nagy's English Photography.' *The Burlington Magazine*, London, November 1981, p. 671.
- 118 Terence Senter, *Moholy-Nagy in England*. Thesis, p. 84.
- 119 Moholy-Nagy, 'Humber Street: Hull Central Dry Dock', 1937. Photos published in: Terence Senter, 'Moholy-Nagy's English Photography', figs. 57–63 and 70.
- 120 Terence Senter, Thesis, p. 91.
- 121 Oral communication by André Kertész.
- 122 Terence Senter, Thesis, p. 122.
- 123 Terence Senter, 'Moholy-Nagy's English Photography', p. 669.
- 124 Terence Senter, Thesis, p. 66.
- 125 Sibyl Moholy-Nagy, *Op. cit.*, p. 129.
- 126 *Ibid.*, p. 129.
- 127 Terence Senter, Thesis, p. 100.
- 128 Peter Coe – Malcolm Reading, *Lubetkin and Tecton*. Arts Council, London, 1981, p. 36.
- 129 Lubetkin quoted by Terence Senter in his thesis, p. 102.
- 130 Sibyl Moholy-Nagy, *Op. cit.*, p. 121.
- 131 In 1934, Kalivoda gave a lecture in Brno with the title 'Moholy-Nagy als Aussensleiter des Fotofilms'. See *Das Bauhaus*. Galerie am Sachsenplatz, Leipzig, 39. Verkaufsausstellung 25.9 – 27.10. 1976. (Catalogue), p. 62. No. 173. Invitation to the lecture.
- 132 See *Laszlo Moholy-Nagy*. Stuttgart, 1974, p. 89.
- 133 See Werner Schmalenbach, *Kurt Schwitters*. London, 1970. The motif Moholy-Nagy borrowed from Schwitters also points to the friendship and intellectual fellowship between the two artists. Apart from an early letter written to Iván Hevesy from Berlin (see p. 388), Moholy-Nagy always held the German artist in great esteem and was also admired by him. Around 1922 Schwitters's *Merz* art had a great influence on his collages. In September 1922 they both attended the Dada congress in Weimar. In 1922, Schwitters dedicated one of his collages to the Hungarian artist (Art Museum, Bloomington, Indiana), and he published his work in one of the first issues of the magazine *Merz* (see Schmalenbach, *Op. cit.*, p. 52), along with contributions from Arp, Gabo and Mondrian. In 1929 they had a joint exhibition. Their friendship grew stronger in the Germany of the pre-fascist period.
- 134 He designed invitations to exhibitions by Picasso, Herbert Hayter, Man Ray, Naum Gabo and De Chirico, as well as his own. Collection of Levente Nagy, Budapest.
- 135 Wingler, *The Bauhaus*, p. 192.
- 136 Sibyl Moholy-Nagy, *Op. cit.*, pp. 139–43.
- 137 L. Moholy-Nagy, 'New Approach to Fundamentals of Design.' *More Business*, Chicago, November 1938. No. III/11.
- 138 Signed by Archipenko, Bradendieck, Dushkin, Eckart, Gerard, Kepes, Morris, Schiltz, Smith. See Sibyl Moholy-Nagy, *Op. cit.*, pp. 160–161.
- 139 L. Moholy-Nagy, *Vision in Motion*. Chicago, 1947.
- 140 *Ibid.*, p. 46.
- 141 *Ibid.*, p. 109.

PART TWO: ILLUSTRATIONS



1 Woman's Head. 1919



- 2 Reclining Soldier. 1917
- 3 That's Me. 1917
- 4 Wounded Soldier Writing a Letter. 1917
- 5 Róna Washing. 1917







Meholy 1919



8 Landscape with Barbed Wire. *c.* 1918

9 Reclining Figure. *c.* 1919

10 Landscape. 1917–19

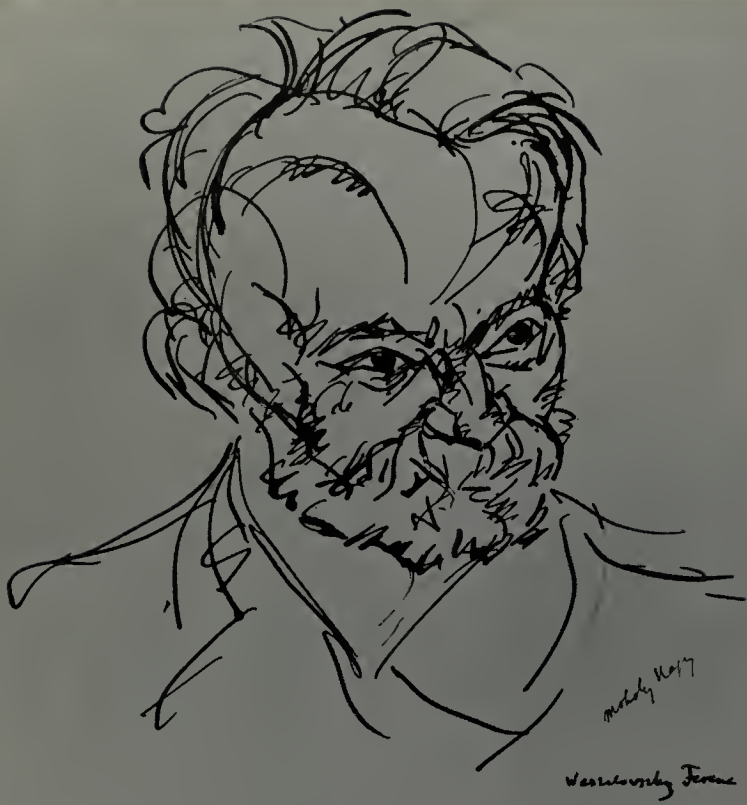






11 Portrait of Vorwerk (Ferenc). 1920

12 Portrait of Lajos Hatvany ('For Laci Tölgy'). 1919



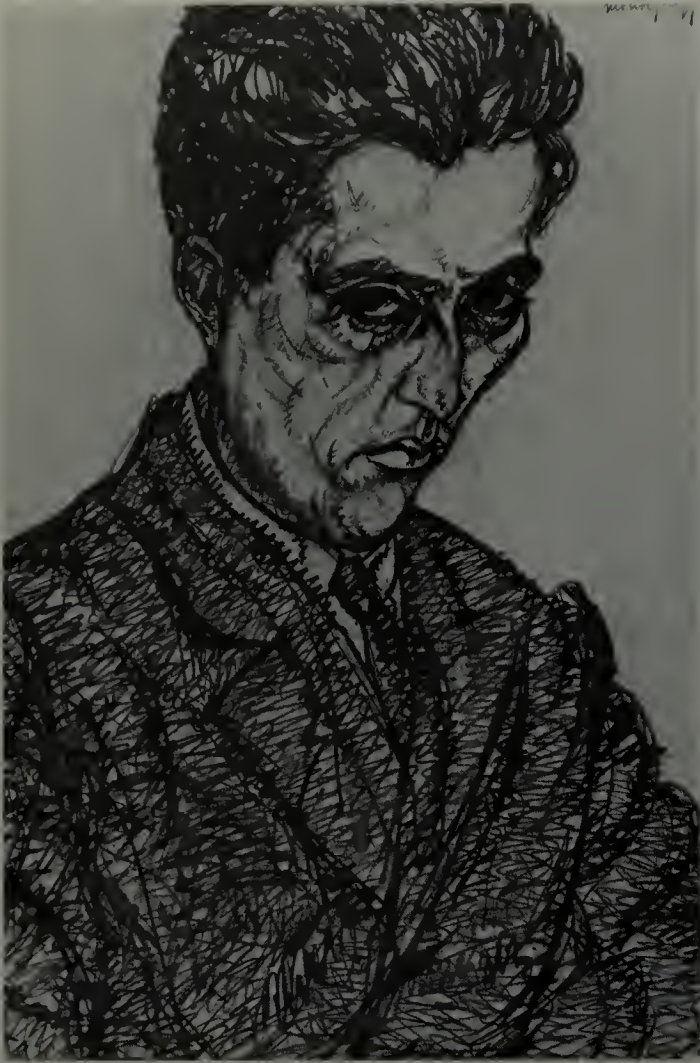
13 Portrait of Ferenc Wesselovsky. 1919

14 Self-portrait. 1920



16 My Brother Ákos. 1919–20

17 Round the Table. 1919







19 Composition with Figures. c. 1920

20 Man Sitting. 1919



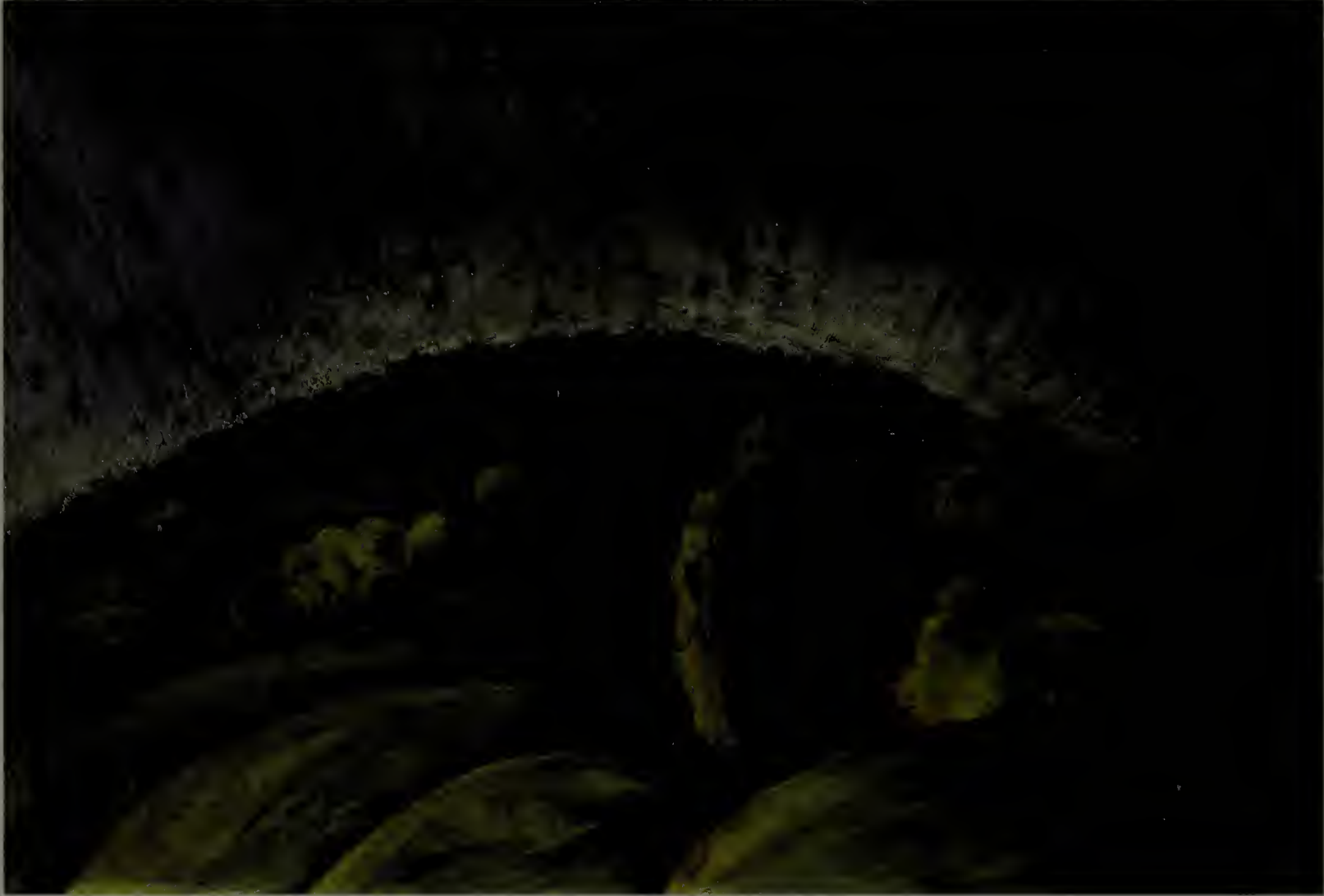






24 Wounded Soldier (Prisoner of War). 1917











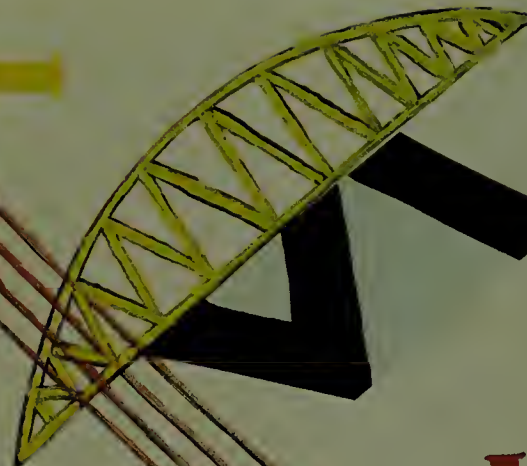


30 Bridges (sketch). 1920-21

31 Collage (I K 33). 1920-21

über **20** M. das Kilogr

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Kállai Ernőnek szentelttel

Moholy = Nagy







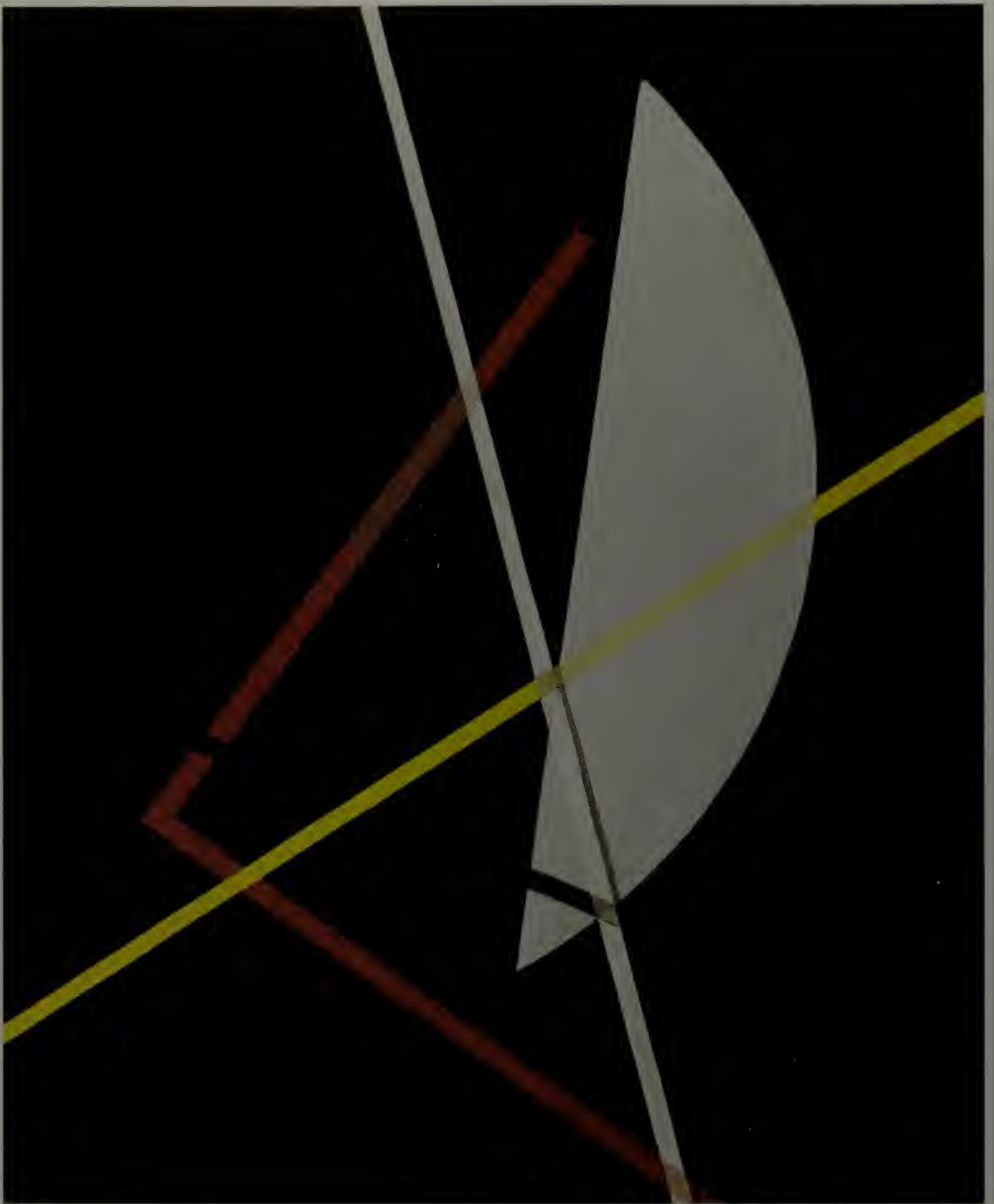
Moholy-Nagy







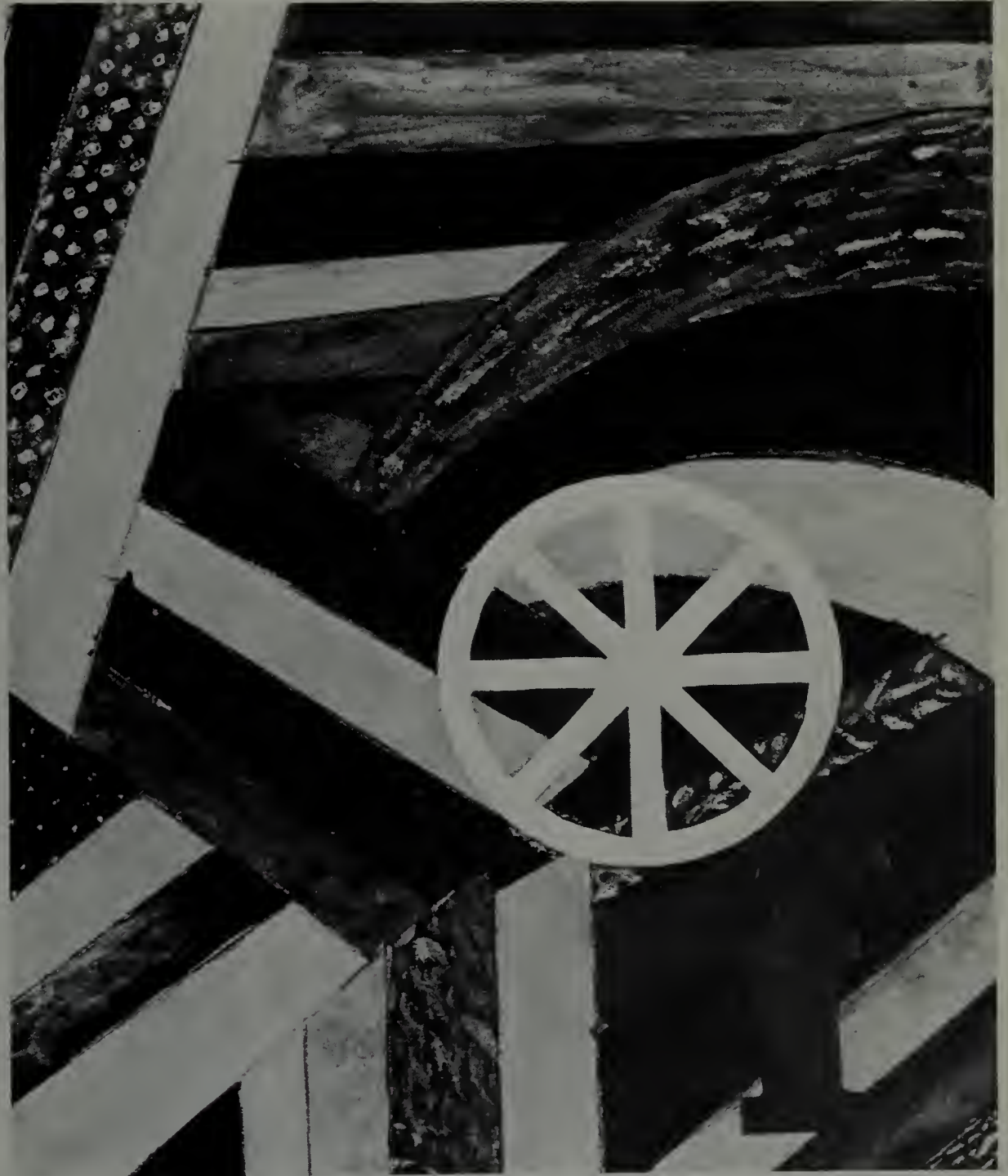
37 Kinetic Constructive System (Design for a Light Machine for Total Theatre). 1922





Nobody = Nuzzi







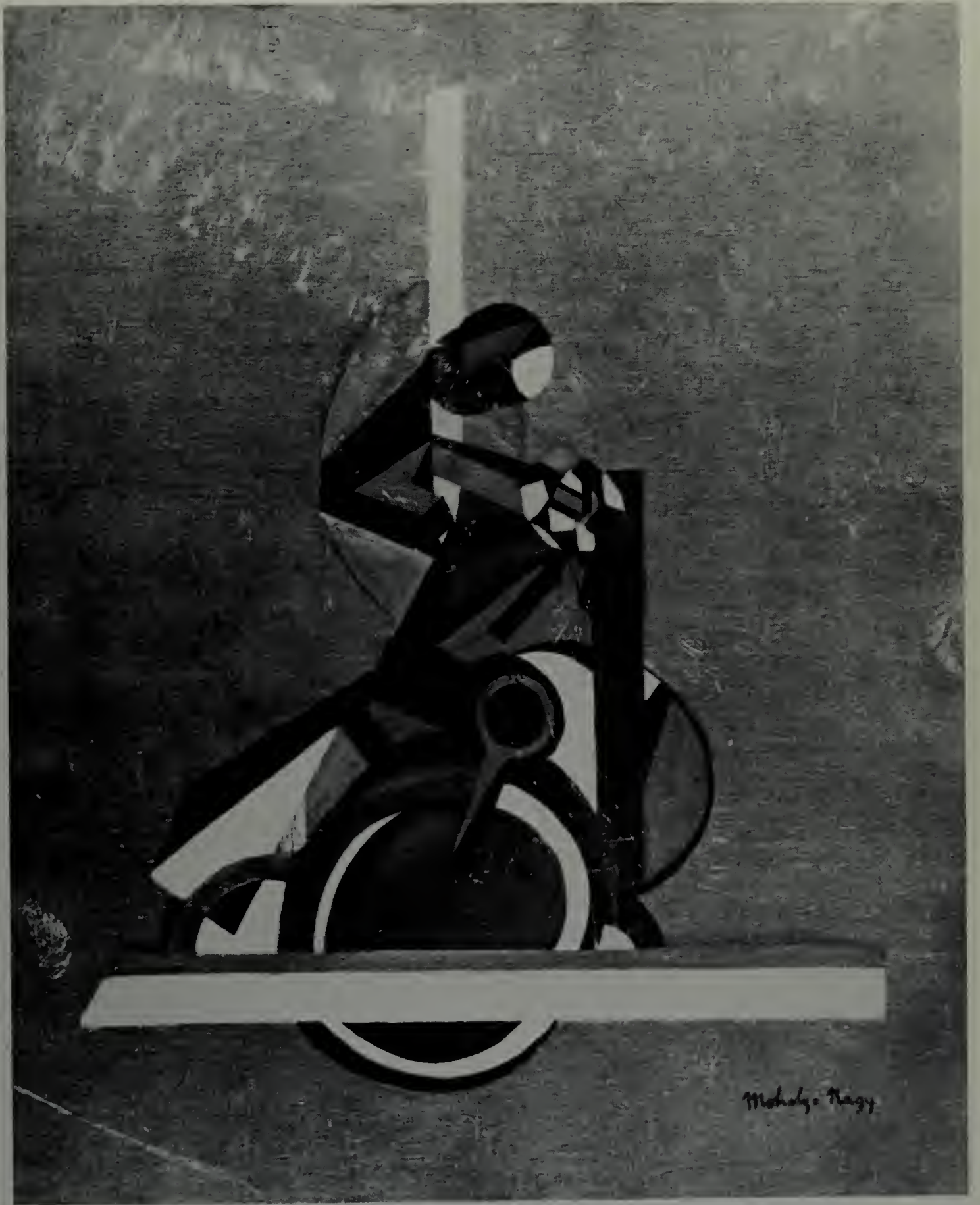
mat. 11.21

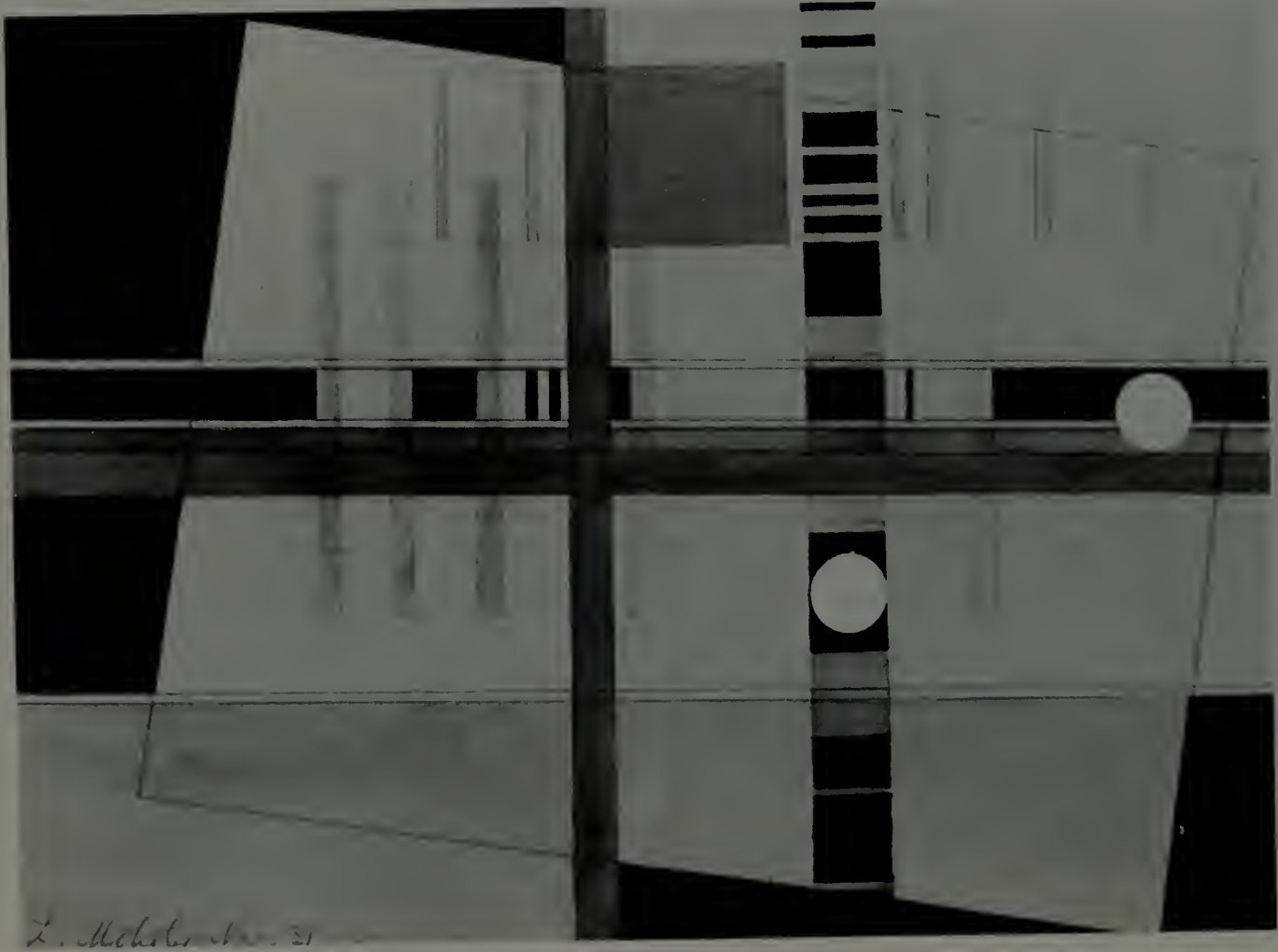
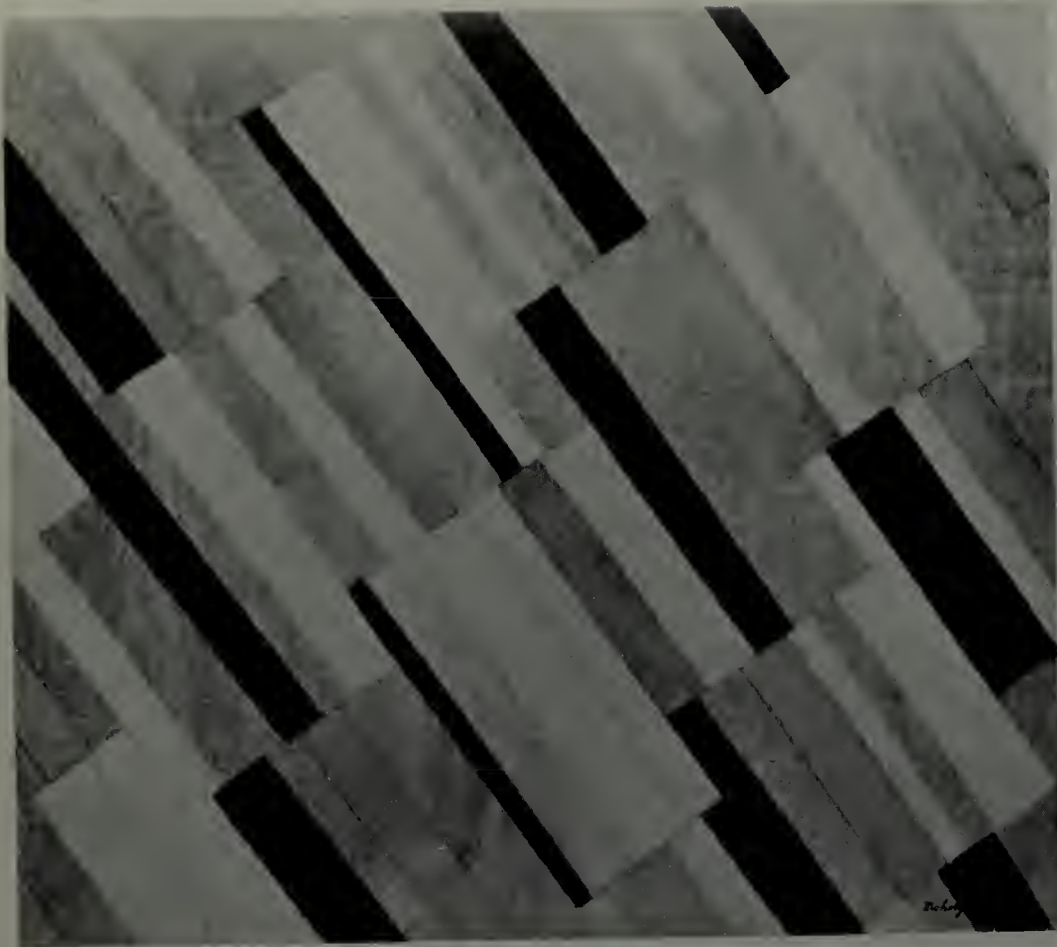


42 The Tower. c. 1921

43 Composition 19. c. 1921

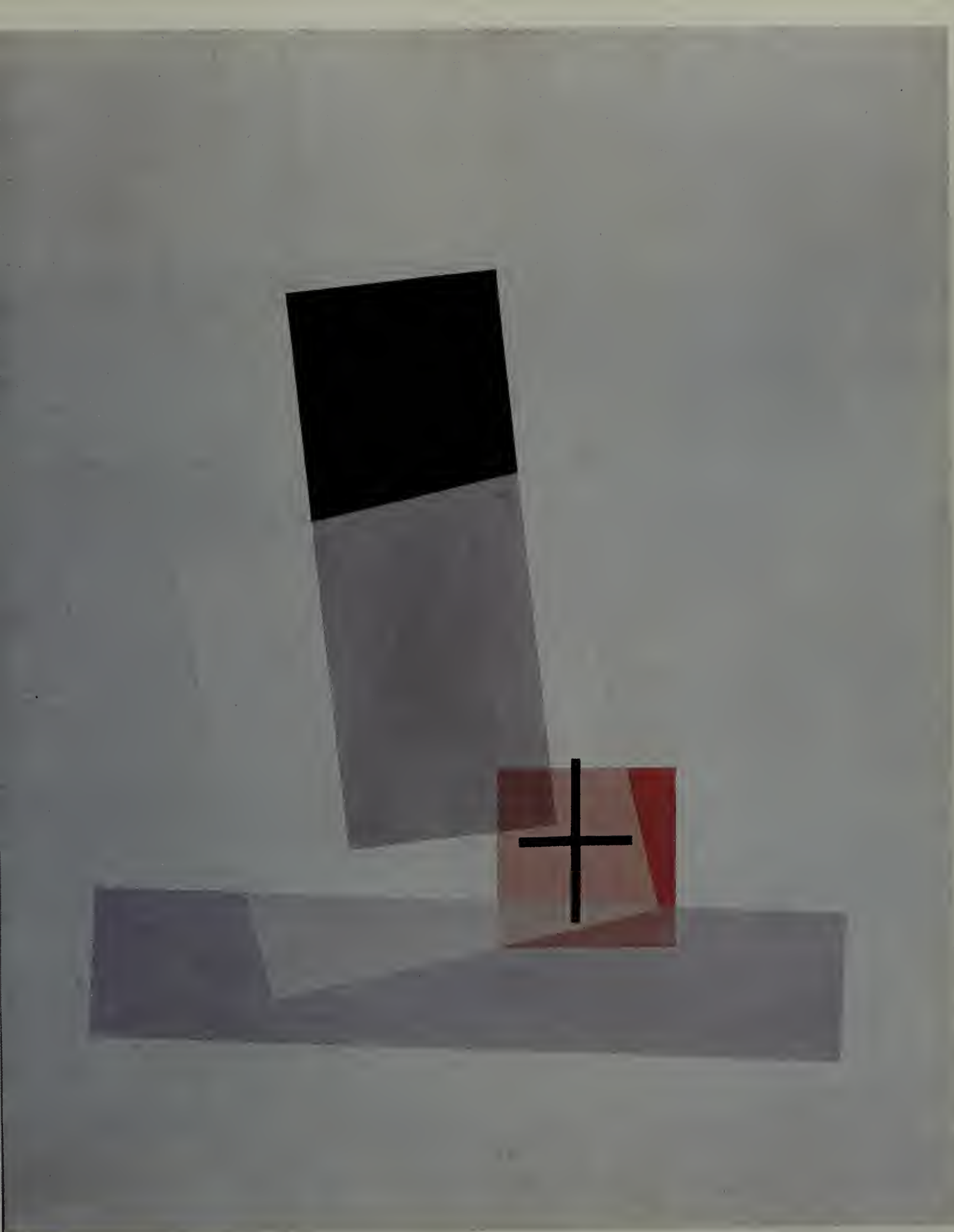


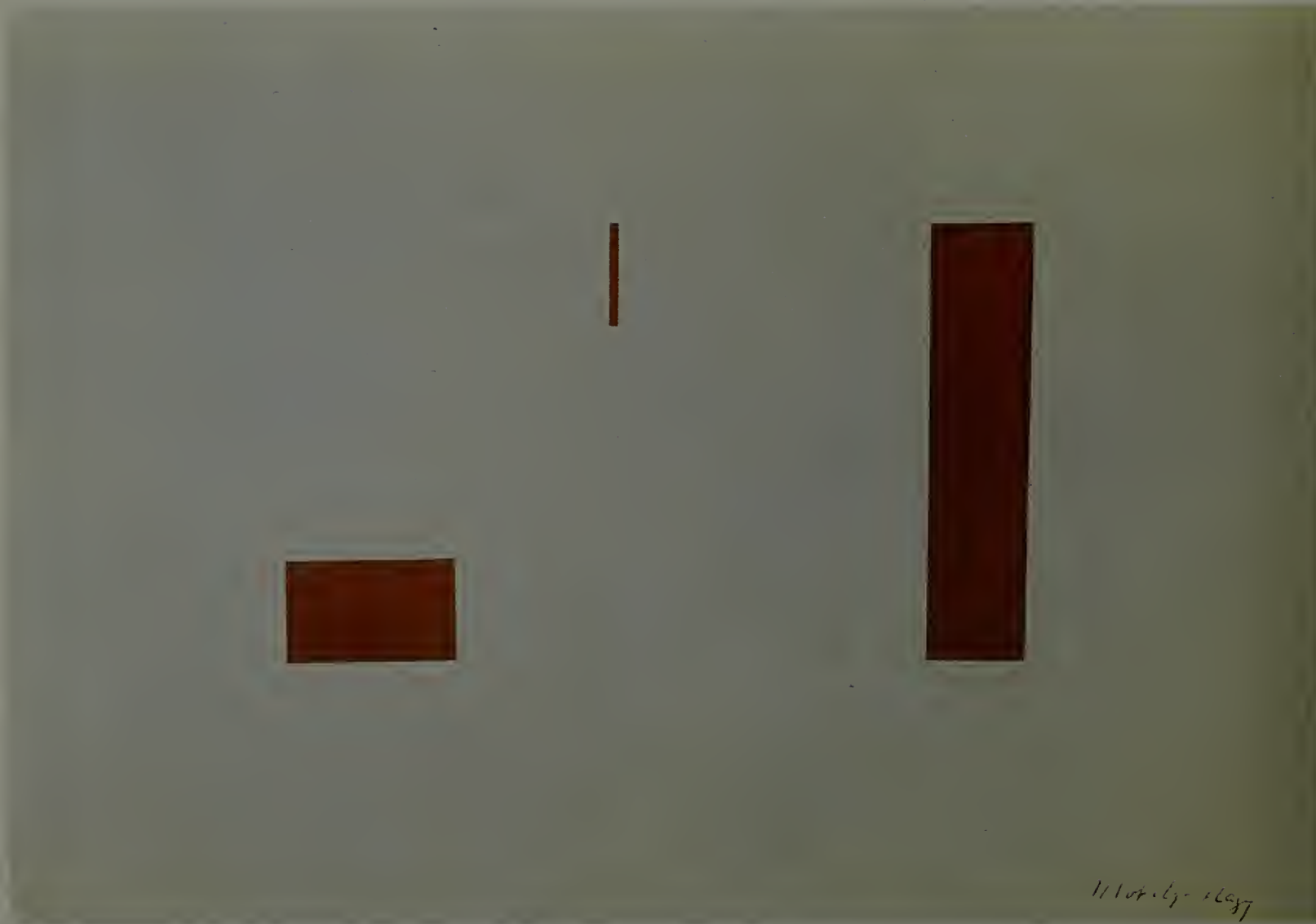




46 Hungarian Fields. 1920–21

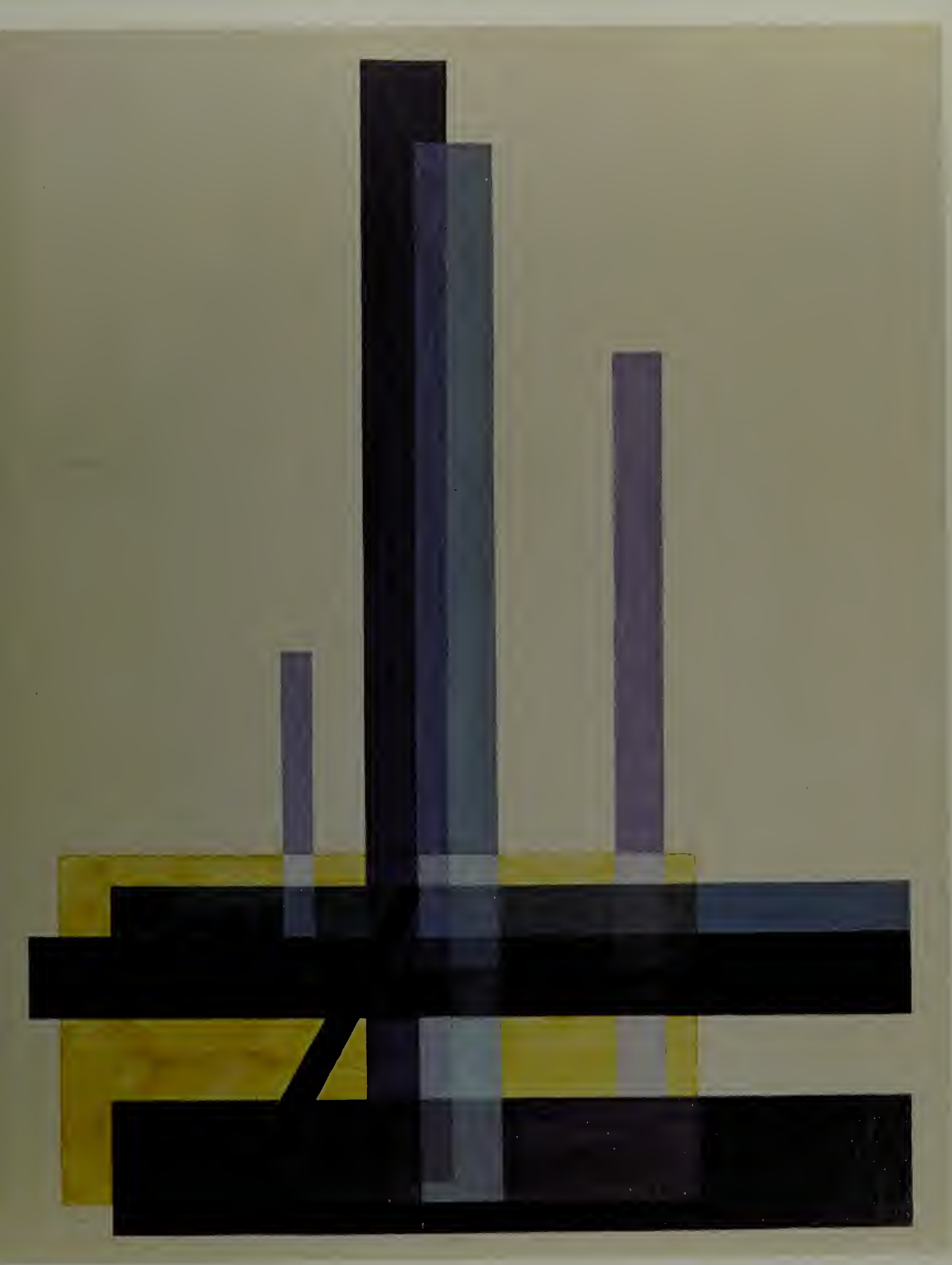
47 Red Cross with White Spheres. 1921



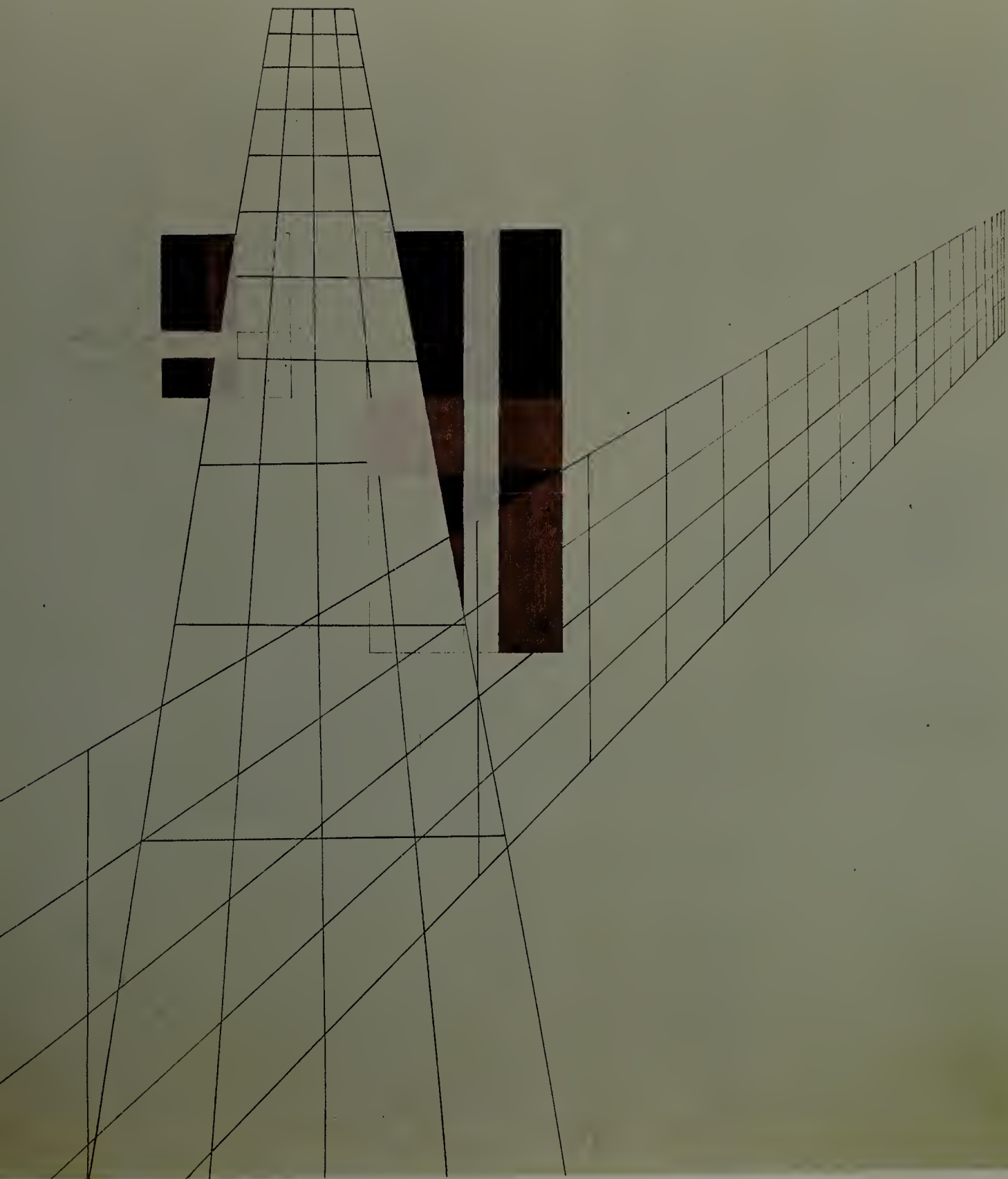


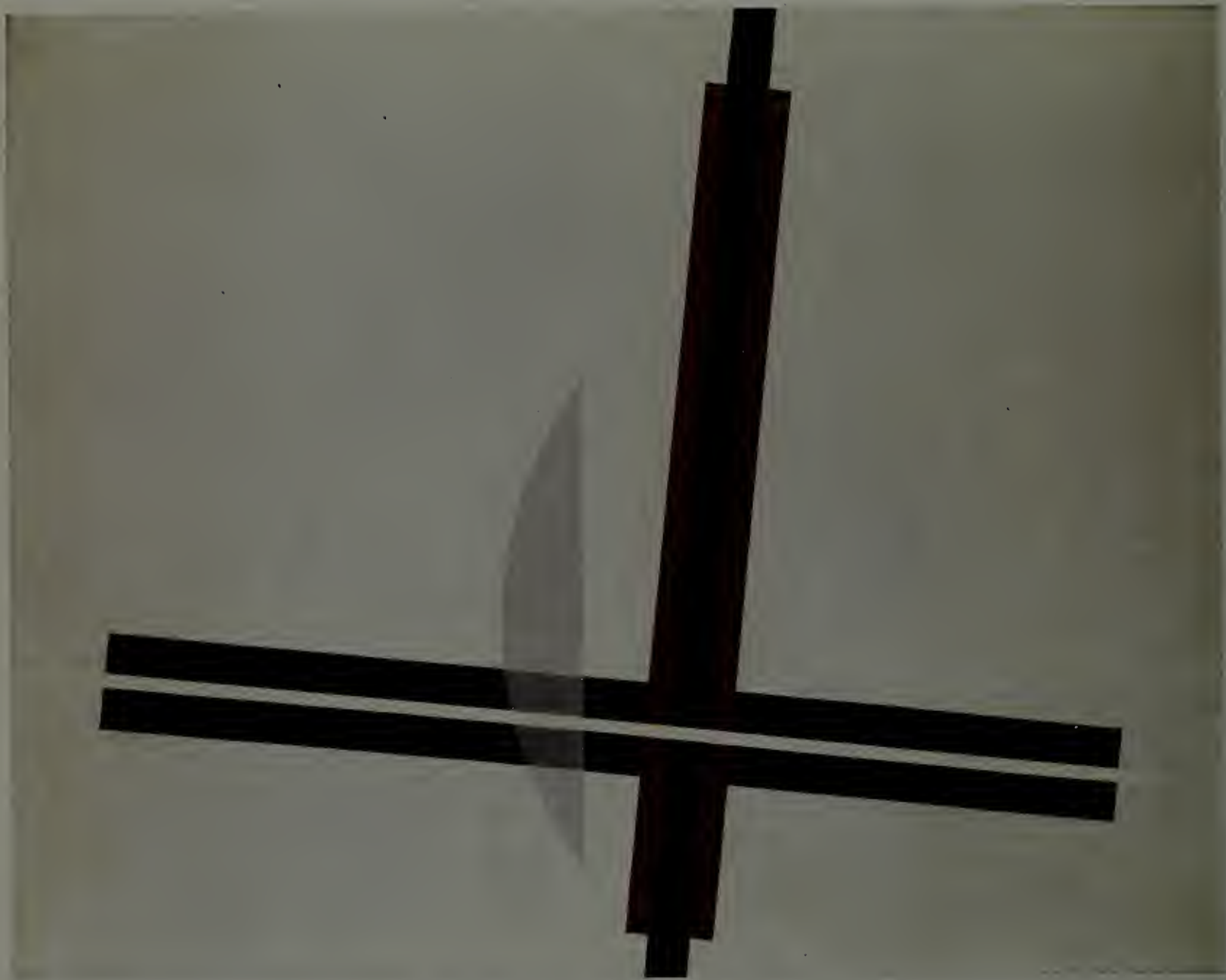












55 Composition Q IV. 1923

56 C XVI. 1923

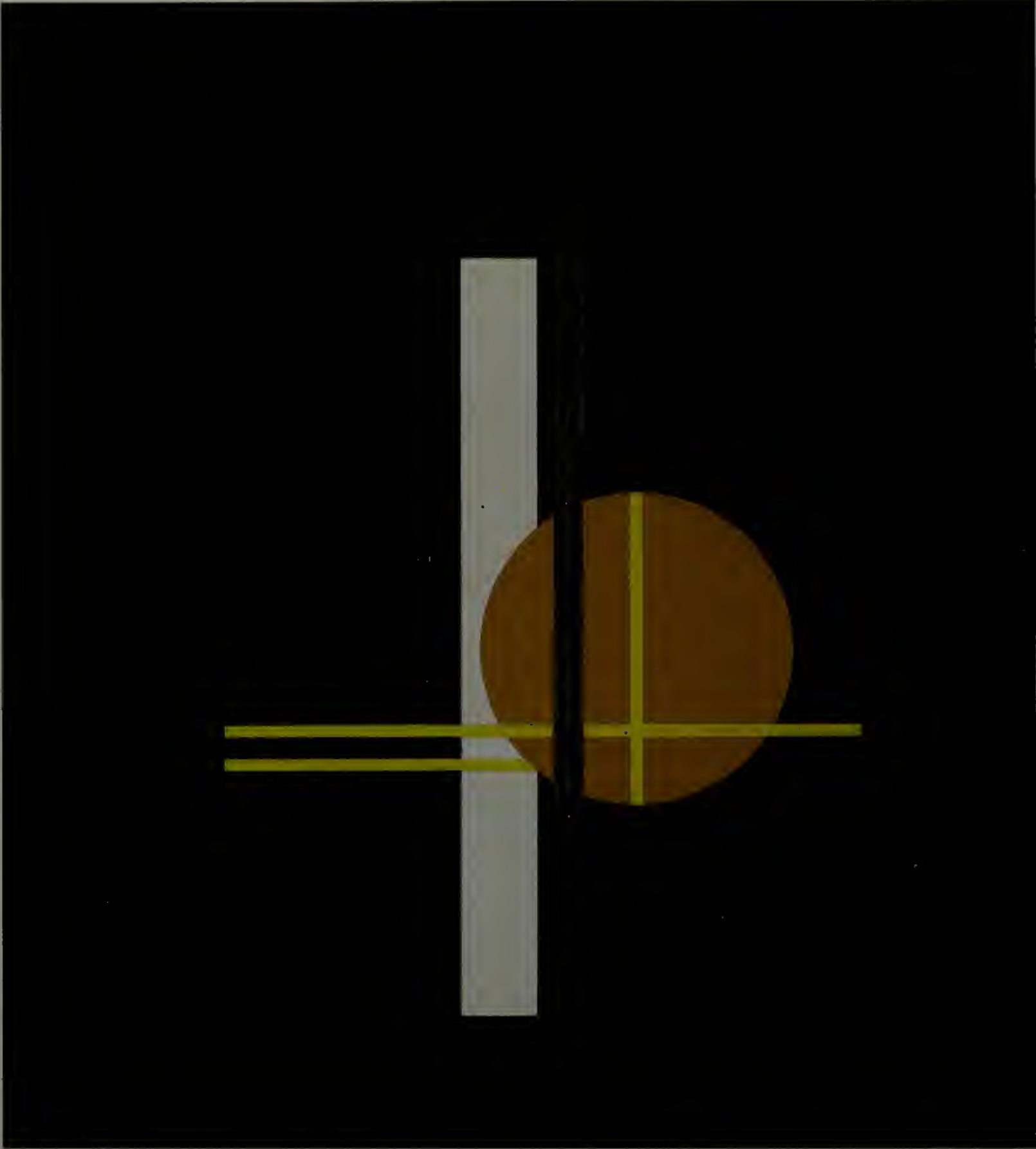


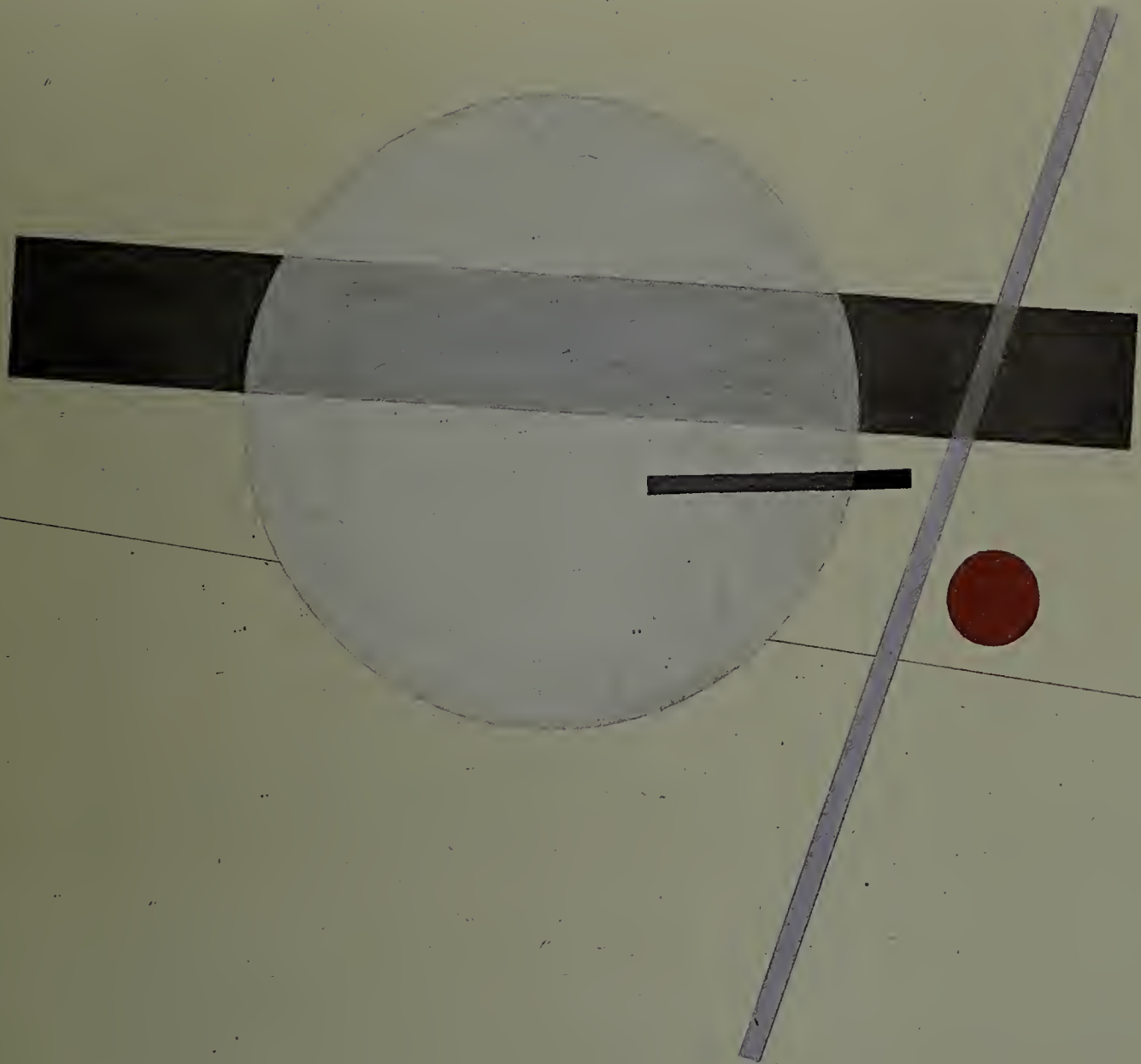




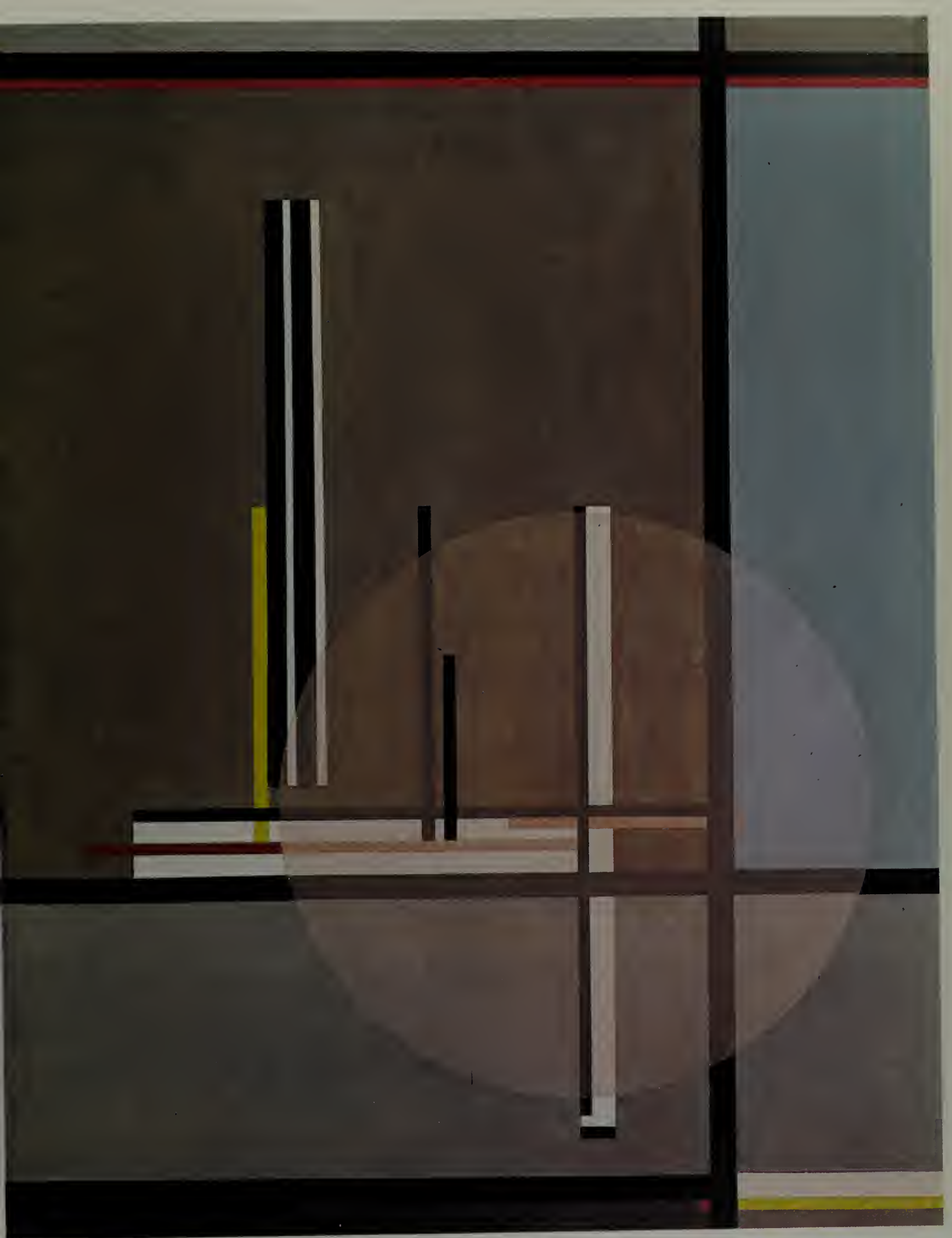
57 Yellow Cross (Q VII). 1922

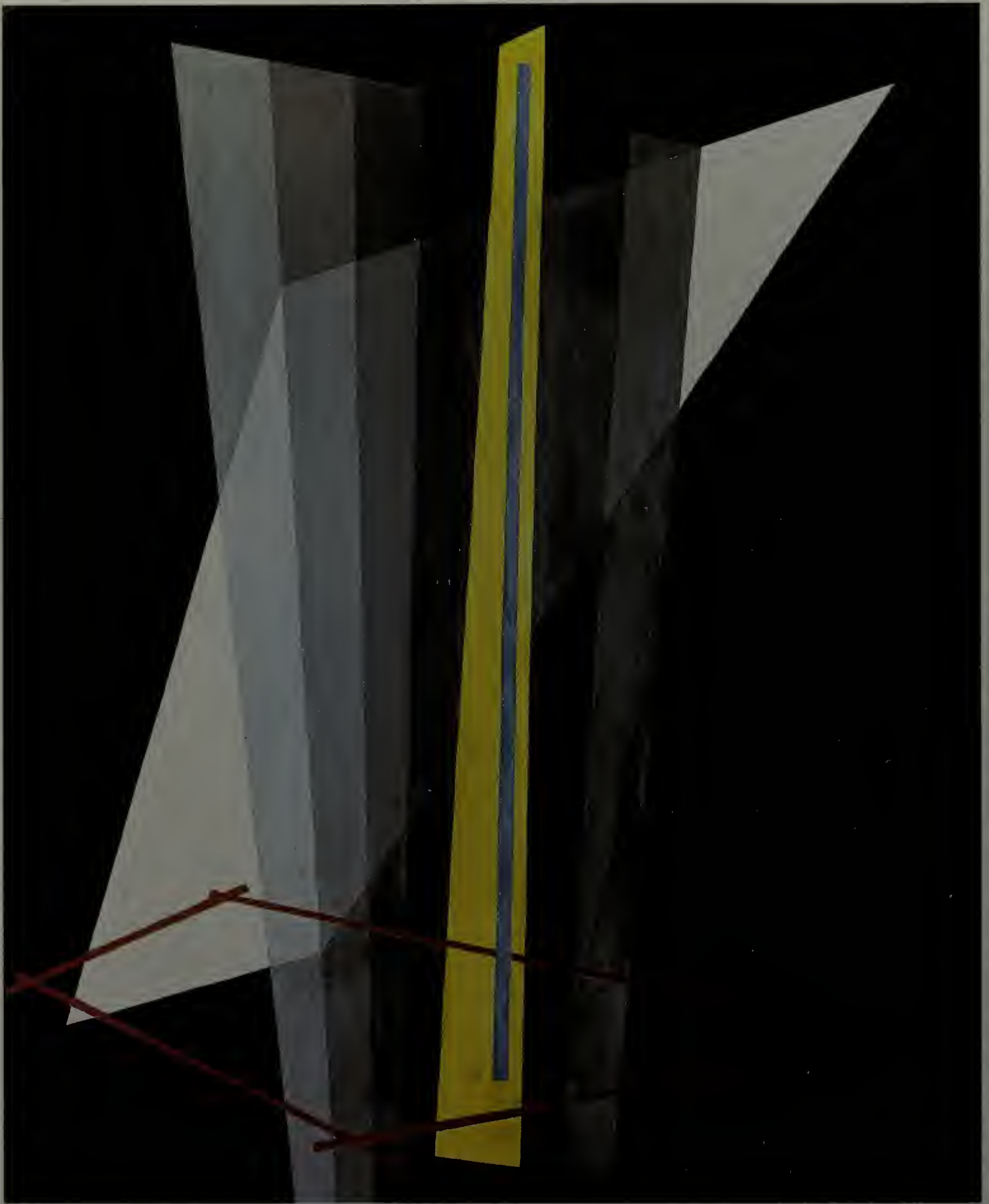
58 G 8. 1926

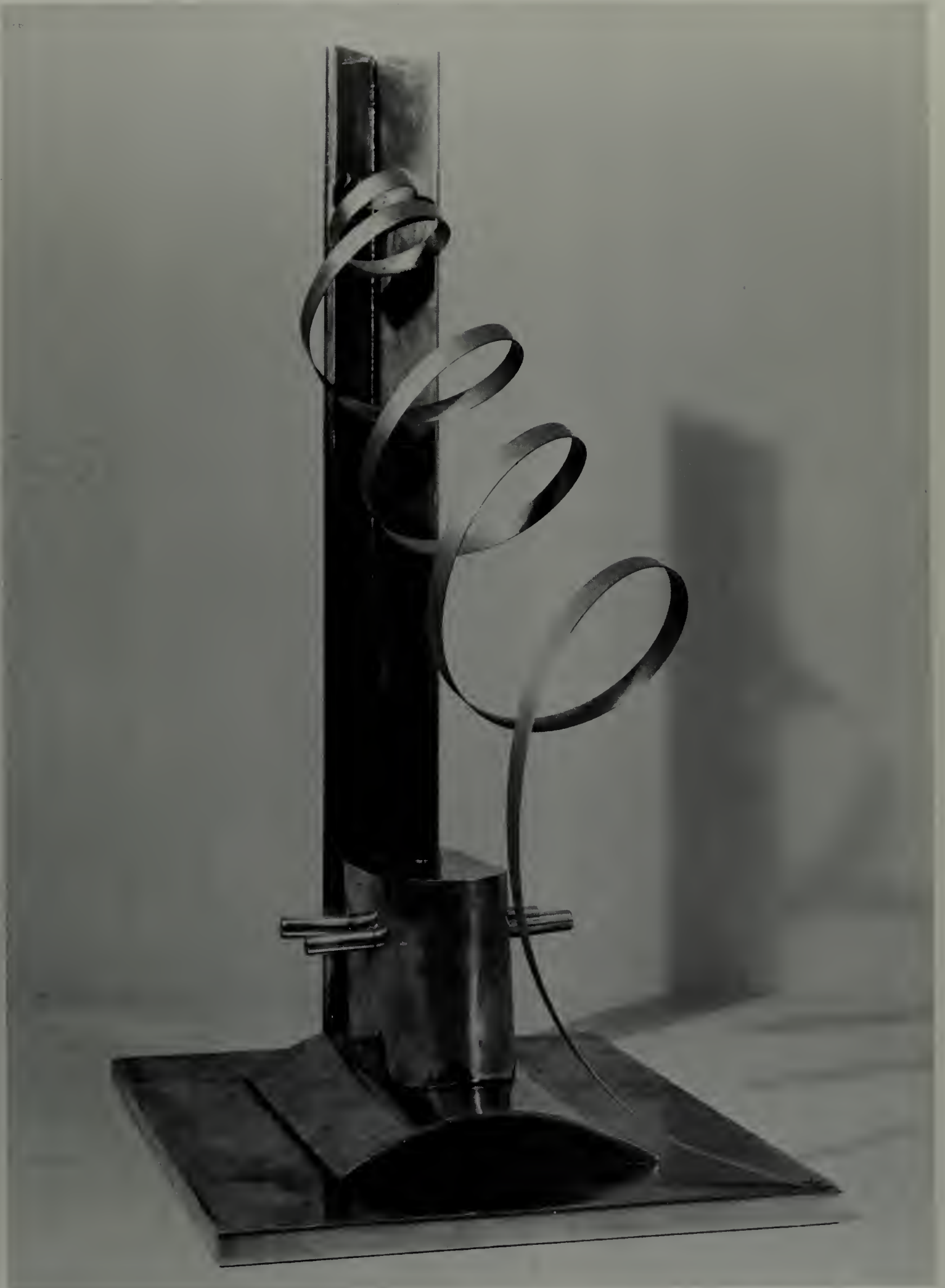










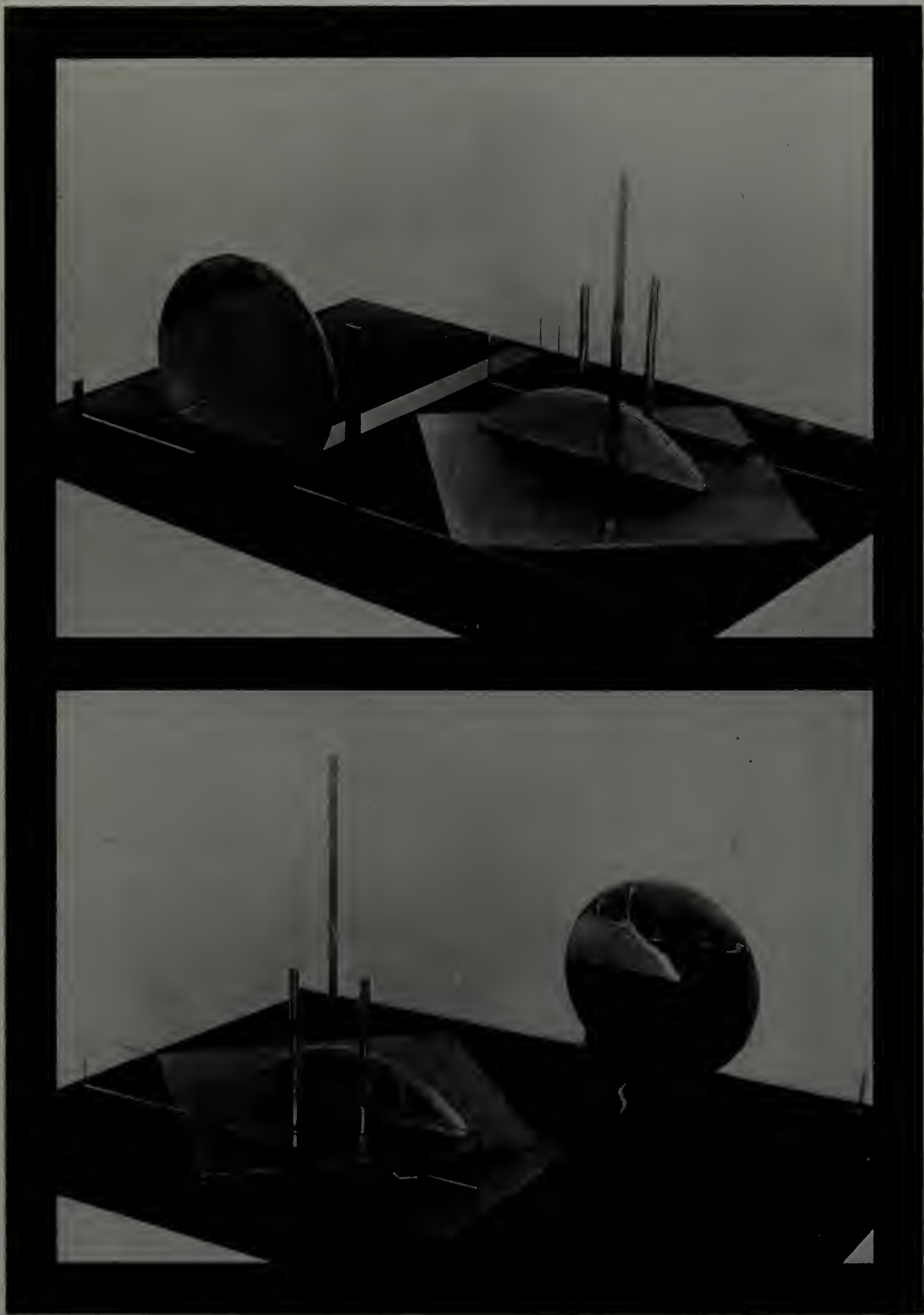


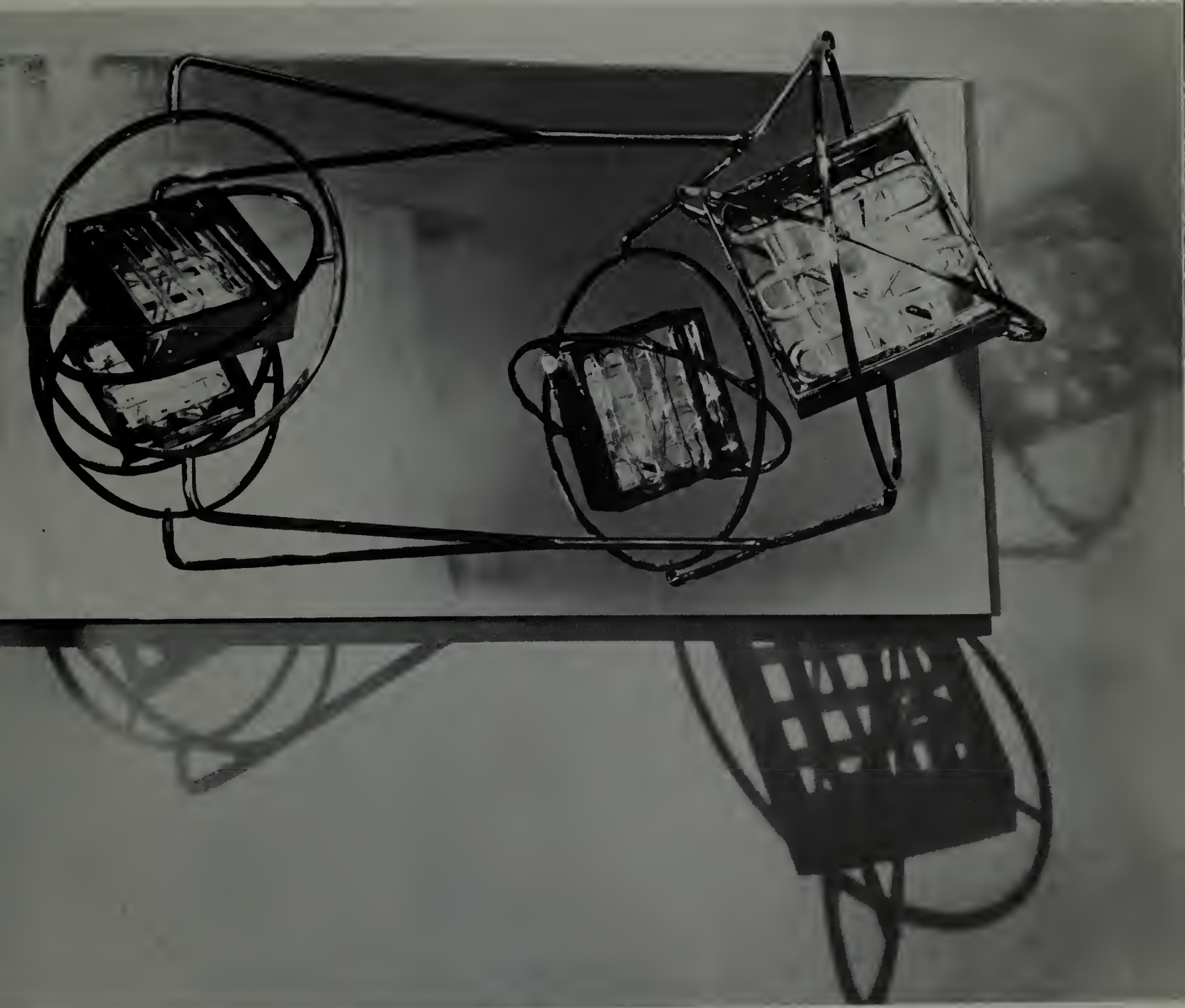


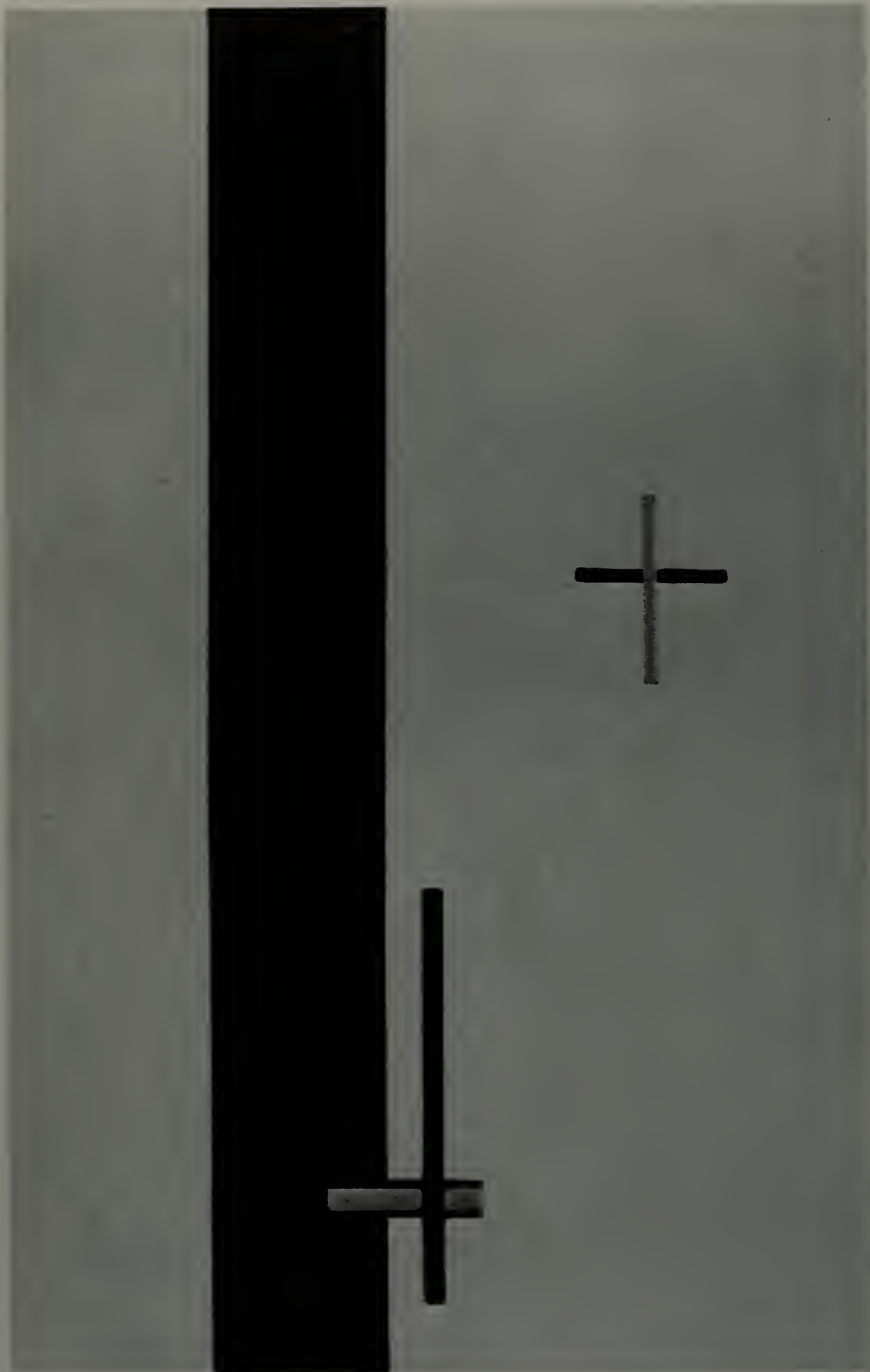
65 Wood Sculpture. c. 1921

66 Construction with 'h'. c. 1921









69 Telephone Picture, Em 3. 1922

70 Telephone Picture, Em 2. 1922











73 Portrait of Ellen Frank. 1929

74 Sibyl Moholy-Nagy. 1942

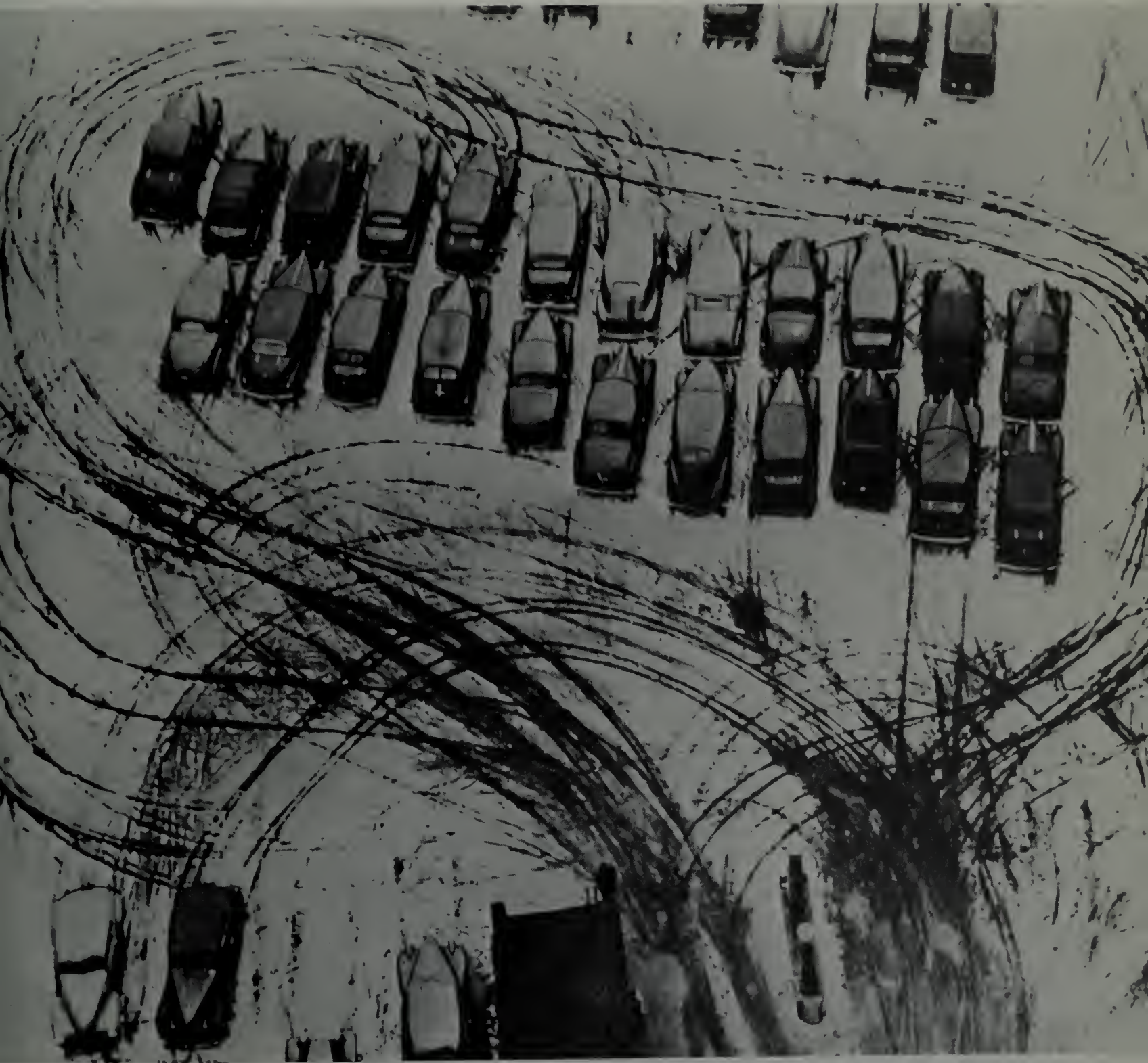


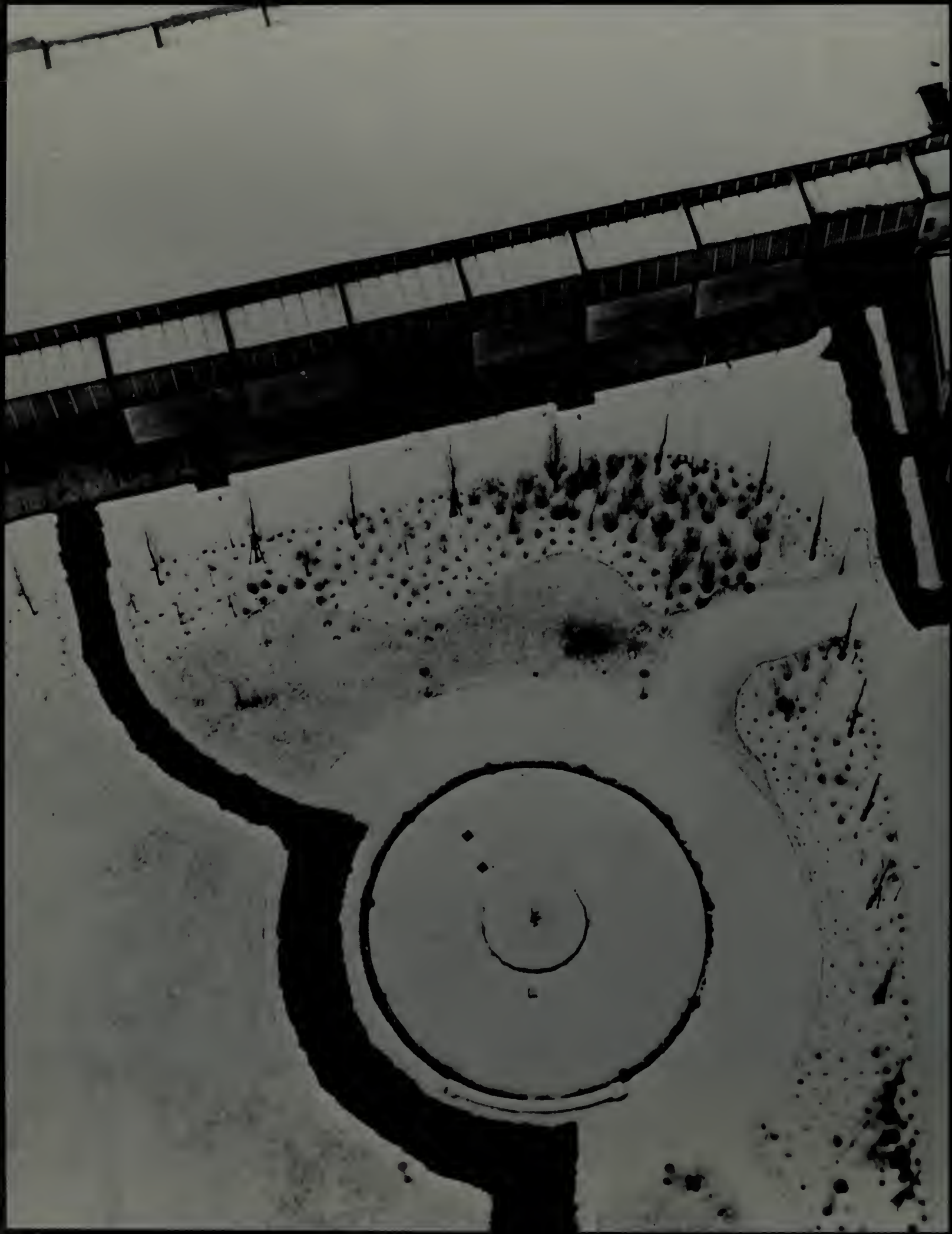


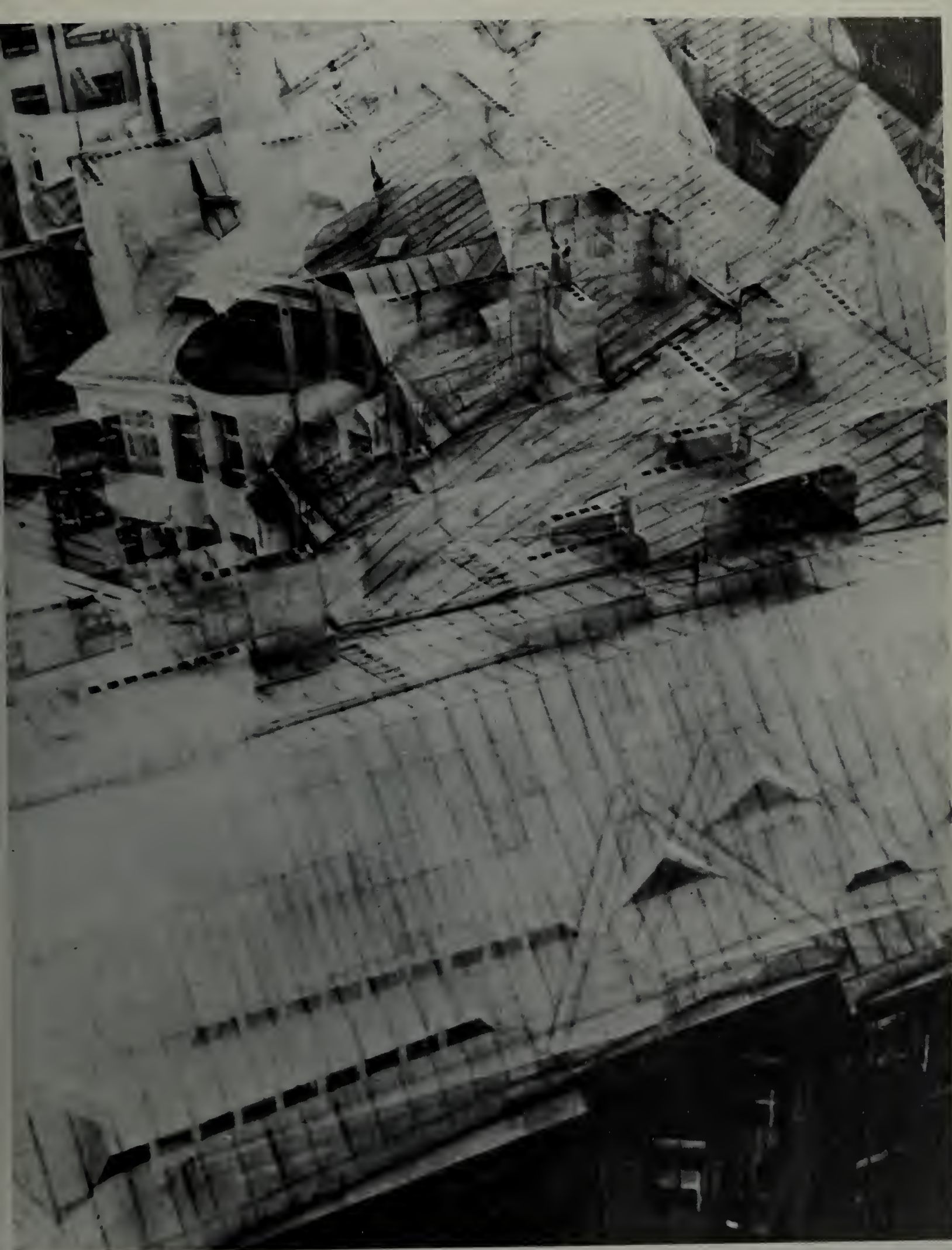
75 Picture of Concrete Tubes. Before 1929

76 Switzerland. 1925











79 View from the Berlin Radio Tower in Winter. 1928

80 Roofs (Helsinki). 1930

MOHOLY-NAGY: FILMVÁZ • A NAGYVÁROS dinamikája

Minden jog, különösen a fordítás és filmben való megvalósítás joga, fentartva
Copyright by Staatliches BAUHAUS WEIMAR

Szemközti házsorok egymáson átlátszóan ellentétes irányban  rohannak és az autók is  mindig gyorsabban, hogy rövidesen káprázik a szem belé.

Alulról: egy a sínek közötti árokból a vonat hasa, ahogy elvágat
Kerék forog — elmosódott vibrálásig



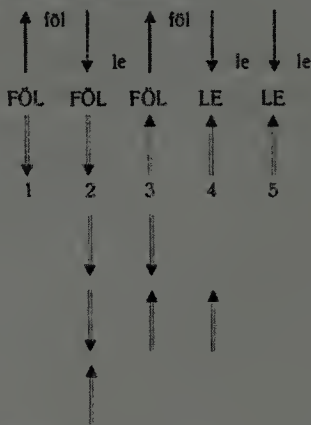
Tigris **TIGRIS** jár ketrecében
dühösen föl s alá
Magasan — fönt — tisztán szemaforok



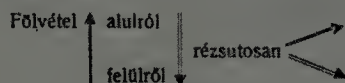
automatikusán

a-u-t-o-m-a-t-i-k-u-s-a-n

mozognak (nagy részletfölvétel)




Vasdaru építése
(A trükkasztal-fölvétel — rajz — lassan természetfölvételbe olvad át)
Házépítésnél mozgó emelő







Téglafölvonó.
Körben-mozgó darú



Ezt a mozgást tovább folytatja egy automobil, amelyik balra

 rohan. A kép közepén folyton egy és ugyanazt a házat látnt; (t. l. a házat mindig vissza kell a középbe fotografálni). Megjelenik egy másik automobil, amelyik az elsővel egyidejűleg, csak ellenkező trányban,

száguld 

Az utca egyik házsora ugyanebben az irányban  rohan úgy, hogy a kép közepén levő ház átlátszik rajta. A házsor elfut:  és visszajön 

Teherpályaudvar
Váltóállomás
Raktárépületek és pincéik

SÖTÉT SÖTÉT
SÖTÉTSÉG

Vasut:

Országut (járművekkel). Hid. Viadukt. A mélyben: uszó hajók. Fölötte lebegő vasut (Elberfeld)

Vonatfölvétel magas töltésről: részutosan Bakter haptákban szalutál Szemei megüvegesednek (Nagy RÉSZLET-fölvétel)

A vonat egy hidról: fölülről



TEMPÓó
TEMPÓ
TEM PÓ
TEM PÓ

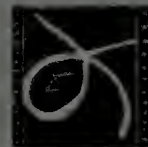
TEEM
M P Ó Óóó

Áruházban üvegfölvonók négergyerekkel
Ferdén
Eltorzított perspektíva

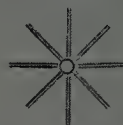


Kilátás. CSÖDÜLET

A bejáratnál kikötött kutyák
Az üvegfölvonók mellett üveges telefonfülke telefonálóval Földszintfölvétel az üveglapokon át
A telefonálóknak foszfóreszkáló anyaggal bedörzsölt (hogy ne keletkezzék sziluett) ARCA közvetlenül a fölvévegép mellett lassan elfordul jobbra
Feje fölött spirálisan húzódik el egy messziről röpkülő aeroplán



Röpkülőfölvétel csekély magasságból: tér, ahová sok utca torkollik



Járművek tömege: villanyos, autó, teherkocsi, konflis, bicikli, autóbussz, cölönött hajt gyors tempóban kifelé egyszerre visszafordul mind a közepén összefutnak



a tér közepe megnyílik, minden belesülyed
(A felvevőgépet fölbillentik, hogy a nézőben a zuhanás érzése támadjon)

TEMP



Földalatti
Kábelek
Gáztartány
Csatornák (mélyen a város
alatt kiépített kloakák)

Fény tükrözik a vízeken

Ivlámpa



Szikra SPRICCEL
Autótú éjjel, csillogó aszfalt

Földről és elsuhanó részút autók
5 MASODPERCIG csak FEKETE vászon
Fényreklám eltűnő és megjelenő fényirással:

ΠΙΣΤΟΛΑΚΑ ΠΙΣΤΟΛΑΚΑ

Tűzijáték az Angolparkban



Utazás a
Hullámvasúton
Száguldó

ORÍÁSKerék
A csudaház
Torztükrök
Más Viccek
Kijállítás- vagy pályaudvar-csarnok felvétel:
A fölvevőgépet vízintés körben,
utána függőleges körben forgatják
Feszülő
Telefónhuzalok és sürgönydrótok a házak között

Porcellánszigetelő-tornyok

Antennák a háztetőn



Gyár:



Kerekcek forognak

Artista forog, bukfacezlik

Rudugrás Lezuhan. **10X** egymásután.

Varieté. Örült tevékenység
Labdarugóérkezés. Gorombán. Erős tempó
Nőbirkózás. Giccs!
Jazzbandhangszerek (Részletfölvétel)



A PUBLIKUM ELLEN

Belül üres, csillogó lémtölesért
hajítanak a fölvevő-
gép lencséjéhez
(Közben:)
Egy ember
villámgyorsan
elrántja tőle a
fejét (Részletfölvétel)

Pohár **VIZ**

(csak a víz tükre nagy részletfölvételben)
Mozgásban
Főlcsep mint Szökőkút

Jazzband a beszélő filmmel

FORTISSZIM

Vad tánckarikatura
Utecalányok
Boxolás. Részletfölvétel:

CSAK a gömböskeztük
az Időnyújtó- (Zeittampe) géppel
Füstgomolyog (hid fölött, ahogy vonat fut el alatta)

Gyárképmény részút

Buvár lejjel sülyed a vízbe
Propeller munkában a víz alatt
Csatornanyílások a víz fölött és víz alatt



A csatornán körösztül motorcsónakkal a

SZEMÉTGYÁRBA ←

Szemét földolgozás.

Ócskavashegyek.
Óregcipődobok
Konzervdobozkazlak

PÁTERNOSZTER-fölvonó kilátással. Körben.

Innen az egész részt a
JAZZBANDig (ezt is megfordítva)
fejte. Öre állítva vissza kell kurblizni

fortisszimótól **PIANISSZIMÓ**IO

Hullaház. Fölvonó
Katonaparádé
Mars — mars



Nők lovagolnak ↑
A két fölvétel egymásra másolva átlátászon

Vágóhid. Ökrök
A hűtőterem gépei
Kolbászgép. Kolbász ezerszámra
Vicsorgó **OROSZLANFEJ** (Részletfölvétel)
Szinház. Zsinórpadlás
Vicsorgó **OROSZLANFEJ** (Részletfölvétel)
Rendőrgumribottal forgalmas tér közepén
A **BOT** (Részletfölvétel)
Szinházpublikum
Vicsorgó **OROSZLANFEJ** (Részletfölvétel)

Pár másodpercig feketeiség.

KÖR

Cirkusz.
Trapéz.

TEMPÓ

MOHOLY-NAGY LÁSZLÓ: A NAGYVÁROS DINAMIKÁJA

Minden jog, különösen a meg-
filmesítés és fordítás joga a szerző
és a kiadó részére fenntartva.

VÁZLAT EGY FILM
FORGATÓKÖNYVÉHEZ
1921/22



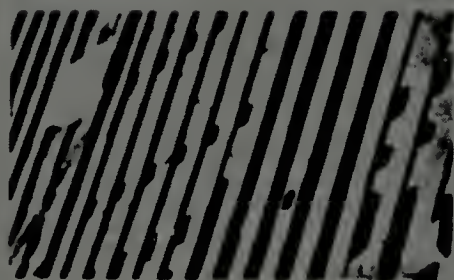
Fémkonstrukció
szerkesztése

Elcinte trükkasztal-felvétel mozgó
pontokból és vonalakkól, amelyek
a maguk összességében lassanként
egy zeppelin képévé (természet-
felvétel) alakulnak át.

Építkezésnél
használatos daru
mozgás közben:
Felvétel
alulról
felülről



120



Tégelfelvonó
Ismét a daru, amely most körben
mozog



Nagyközel.

Az előbbi mozgást tovább folytatja egy automobil, amely bal felé rohan. Az autóval szemben, a kép közepén állandóan egy és ugyanazt a házat látni (ezt a házat ugyanis jobb felől mindig vissza kell középre fotografálni; ez valami merev, lökésszerű mozgást visz a filmbe). Megjelenik egy másik automobil, amely az elsővel egyidejűleg, de ellenkező irányban száguld tovább.



Egy tigris fut körbe dühöngve ketrecében.

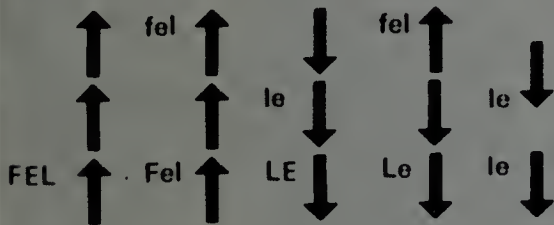
TEMPÓ TEMPÓ TEMPÓ

Magasan fenn – egészen tisztán kivethető – szemaforok:



(Nagyközel)

Valamennyi automatikusan, au-to-ma-ti-ku-san mozog



Az utca egyik oldalán házsor iramodik úgy, hogy a kép közepén levő ház átlátszik rajta: jobb felé rohanó házsor, amely jobbról megint vissza, bal felé halad. Egymással szemben álló házsorok, egymáson áttűnve száguldanak ellentétes irányban és az automobilok is mind gyorsabban, úgy, hogy rövidesen KÁPRÁZIK belé a szem.



1 2 3 4 5
1 2 3 4 5
1 2 3 4 5

Rendezőpályaudvar
Vasúti kitérőhely

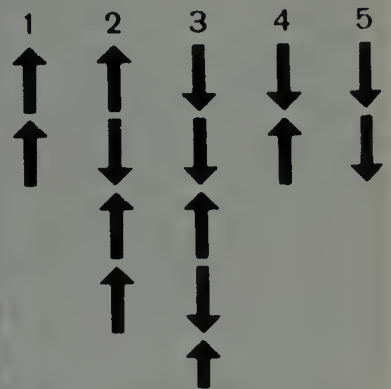
Ez a rész brutális bevezetőül szolgál a lélekszakadt rohanáshoz, a nagyváros fergeteges zűrzavarába.

Az itt még szigorú ritmus a játék folyamán fokozatosan fellazul.

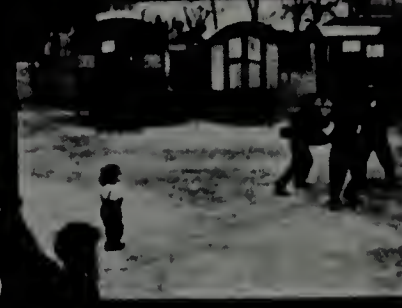
TEMPÓ
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TEMPÓ

A tigris:

a szorongatottság, a mozgás korlátozottságának kontrasztja a szabad, korlátlan száguldással szemben, hogy a közönséget már kezdetben a meglepetésekhez és a logikátlansághoz szoktassuk.

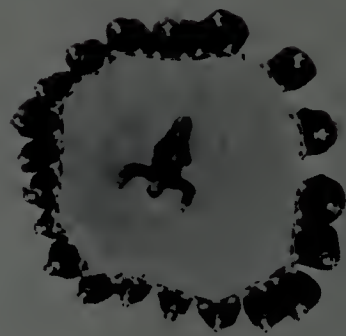
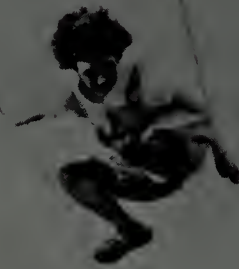












89 Between Heaven and Earth (Look before you Leap) I. c. 1926

90 Between Heaven and Earth (Look before you Leap) II. c. 1926









93 Broken Marriage. 1925

94 Jealousy. 1924-27









97 Korsettstange. 1927

98 Structure of the World. 1925









△ 99 Boat, Negative. 1927

100 Boat, Positive. 1927

101 Double Portrait of and Old Woman. 1923-26

102 Nude Positive and Negative. 1931

103 Nude Negative and Positive. 1927-29





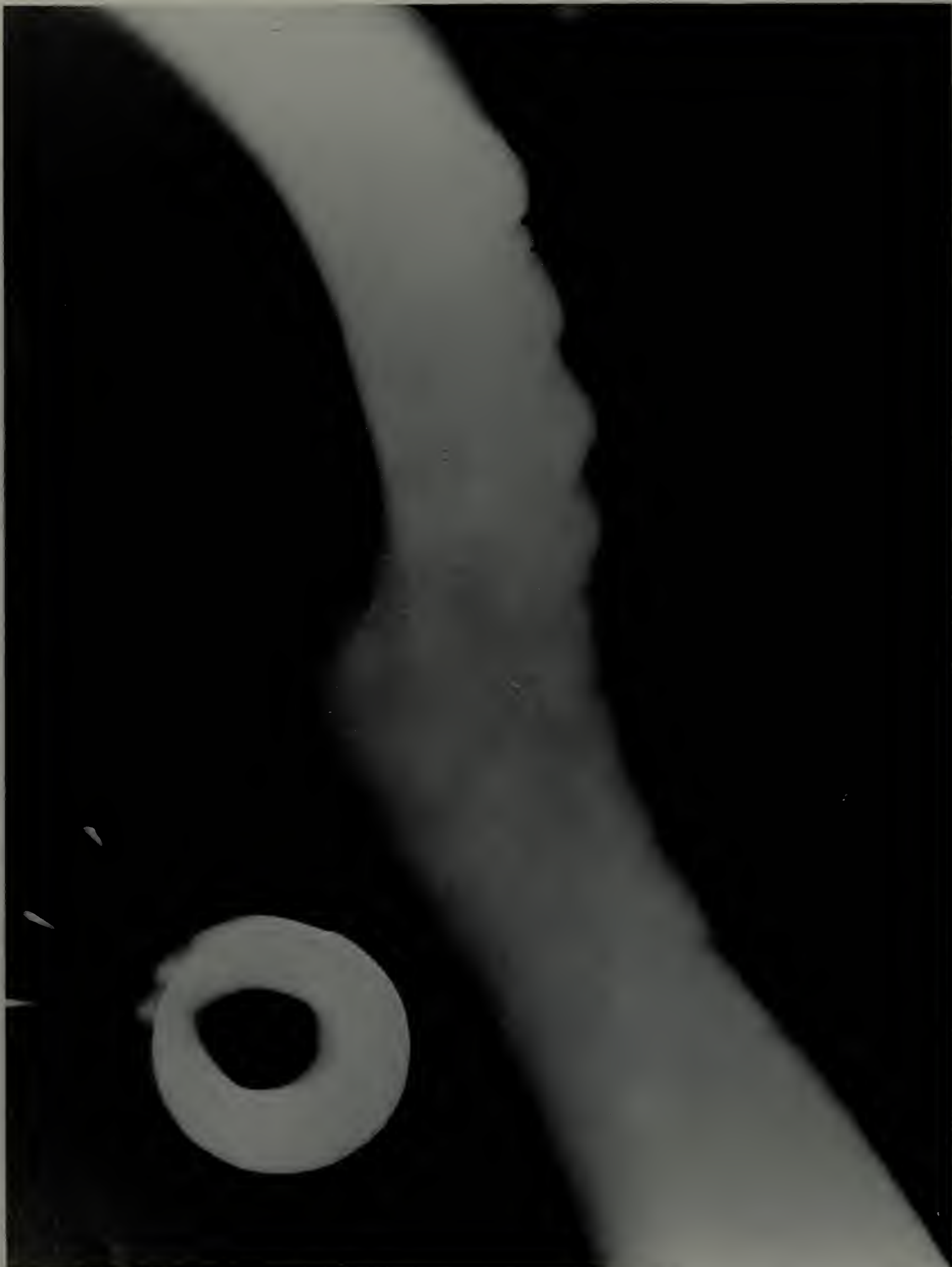


105 Photogram: Double Portrait (László and Lucia). c. 1923



106 Mask (Self-portrait). 1922

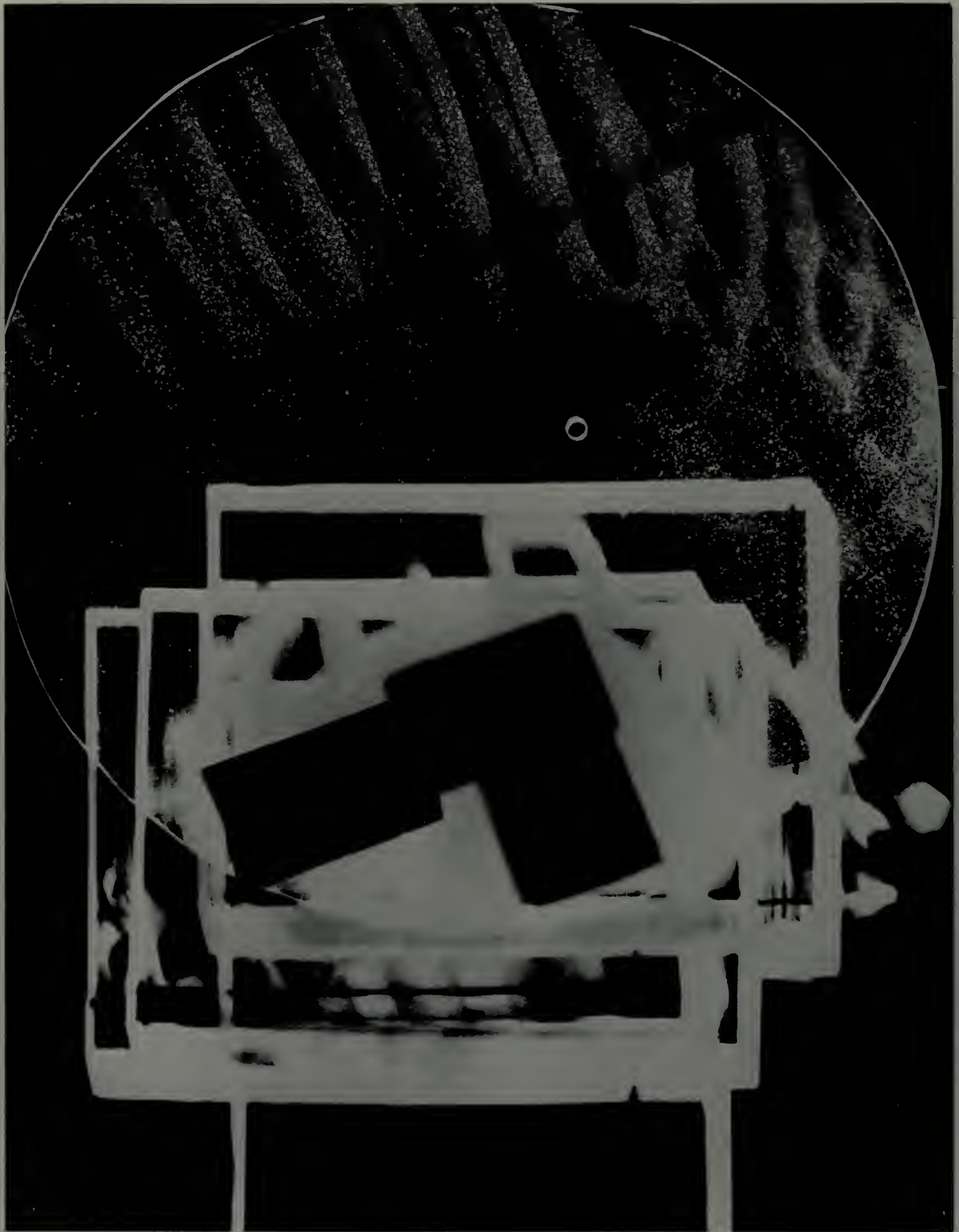


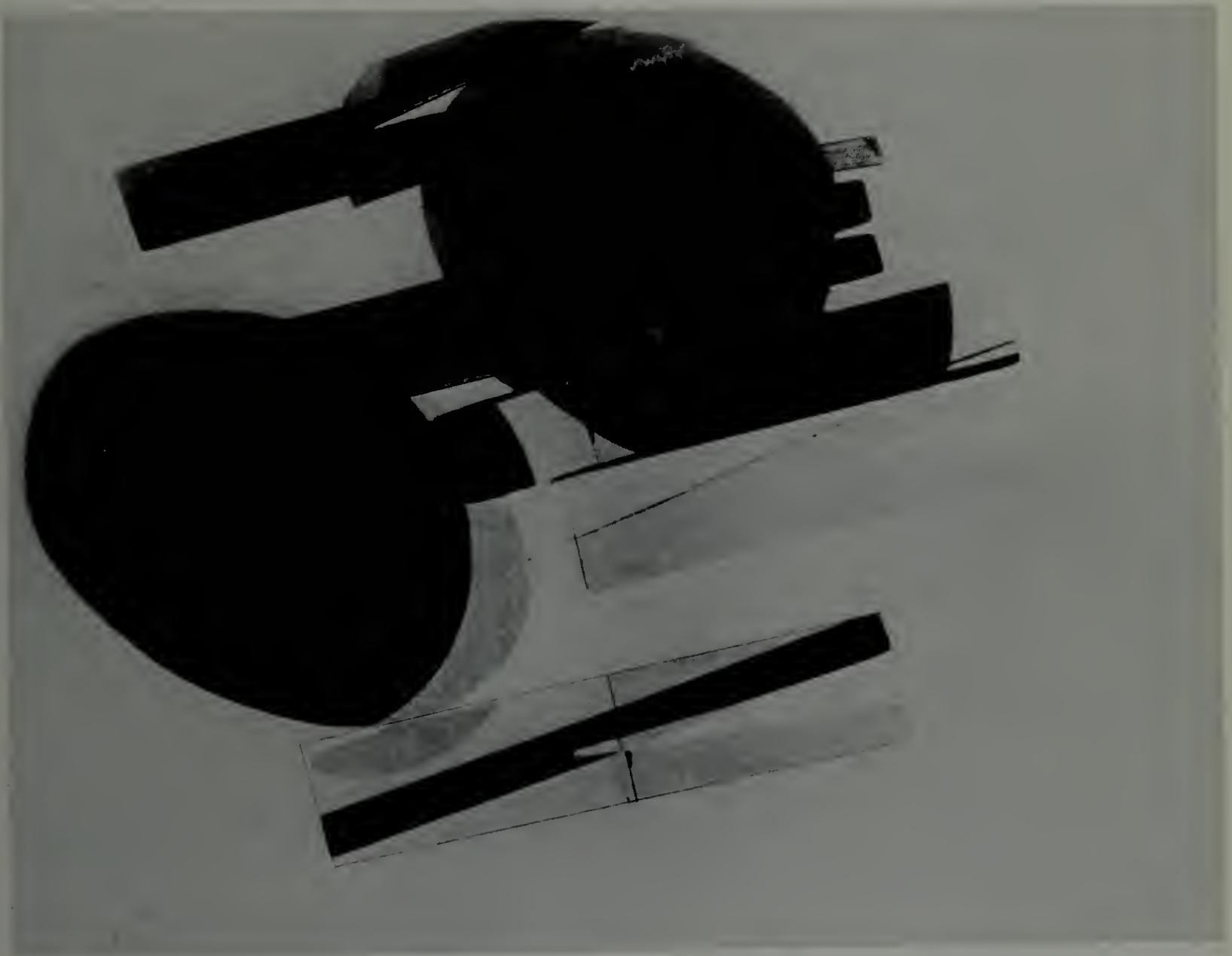




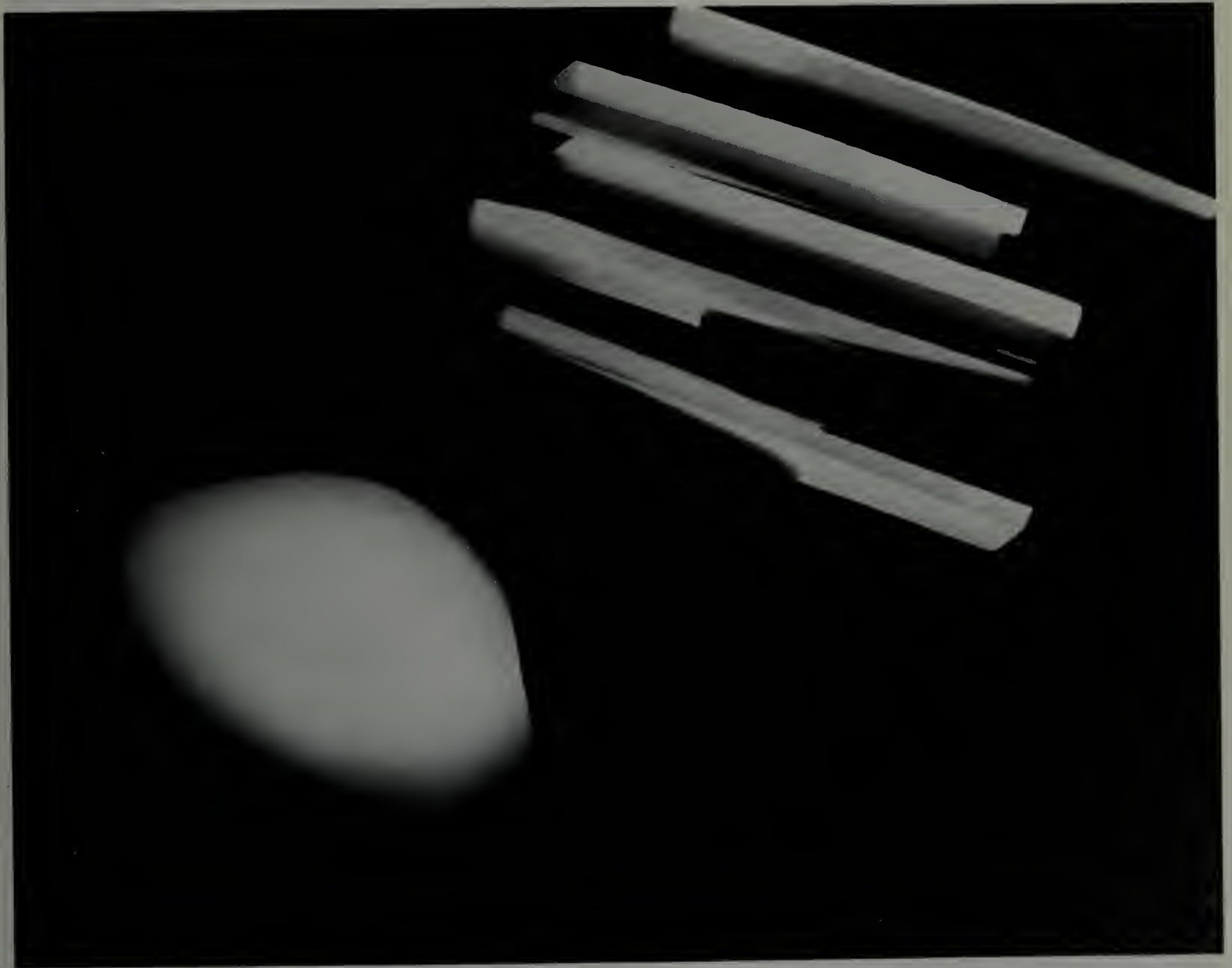
108 Photogram. c. 1925

109 Photogram. c. 1925







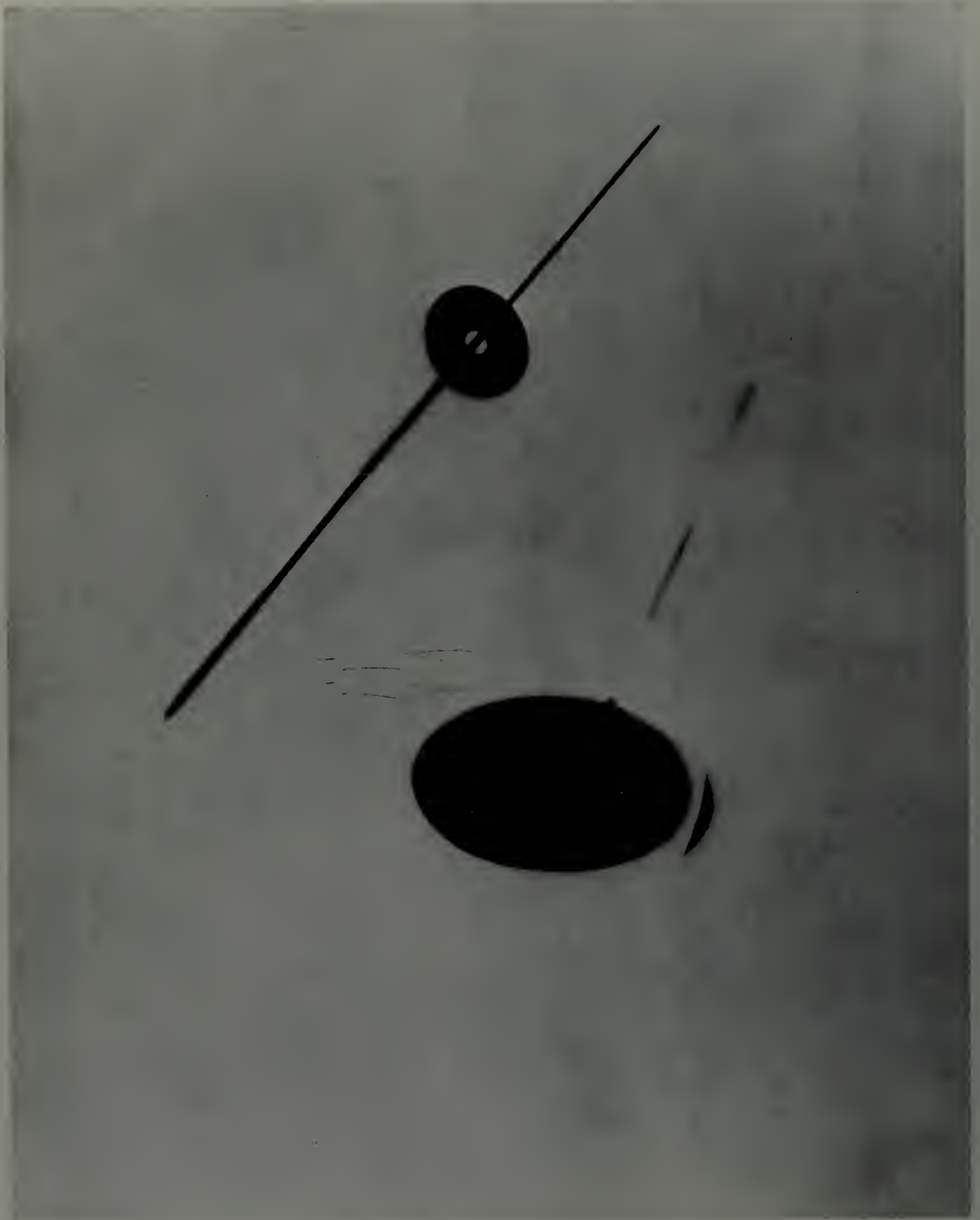


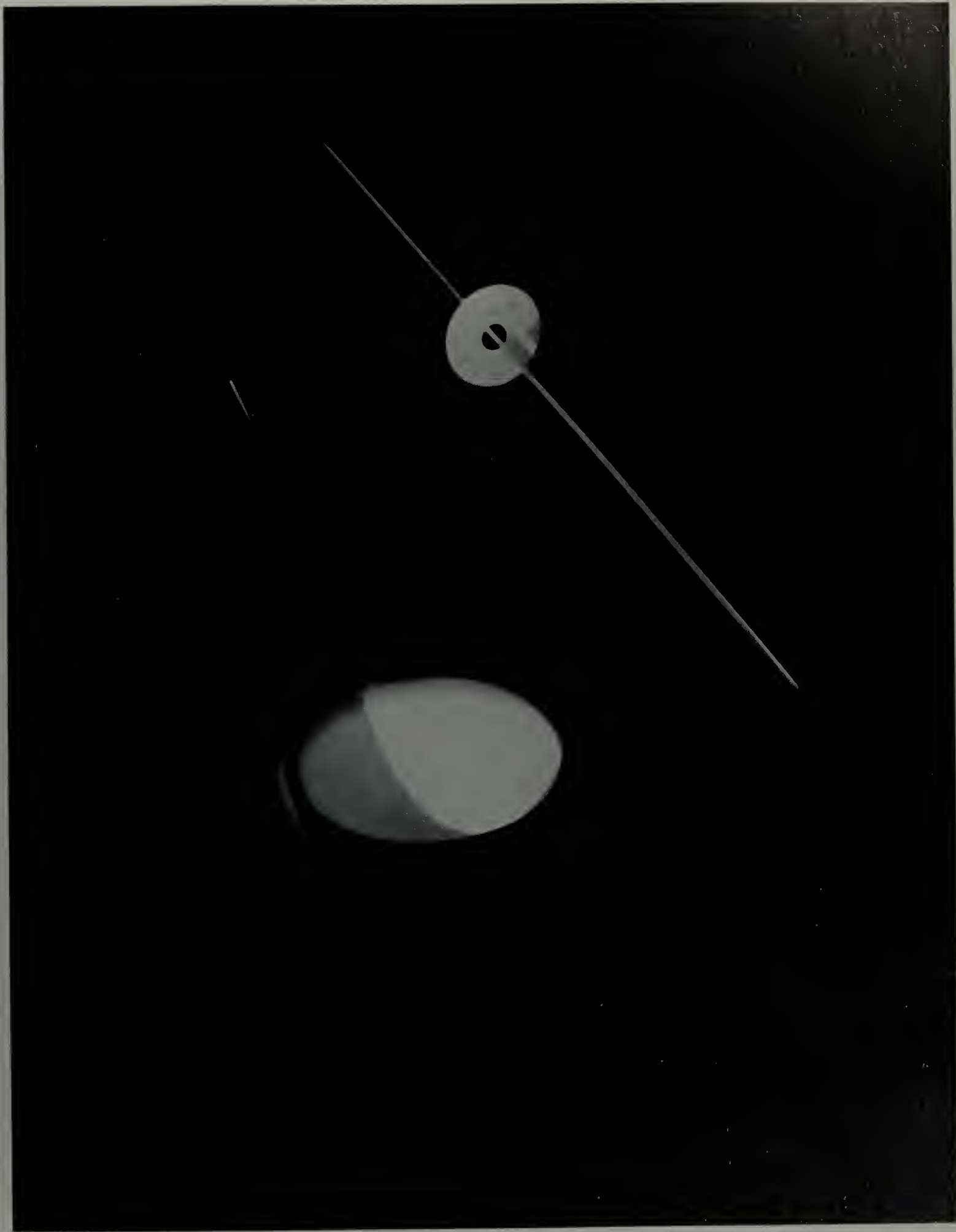
112 Photogram. 1922-26

113 Photogram. 1923-25





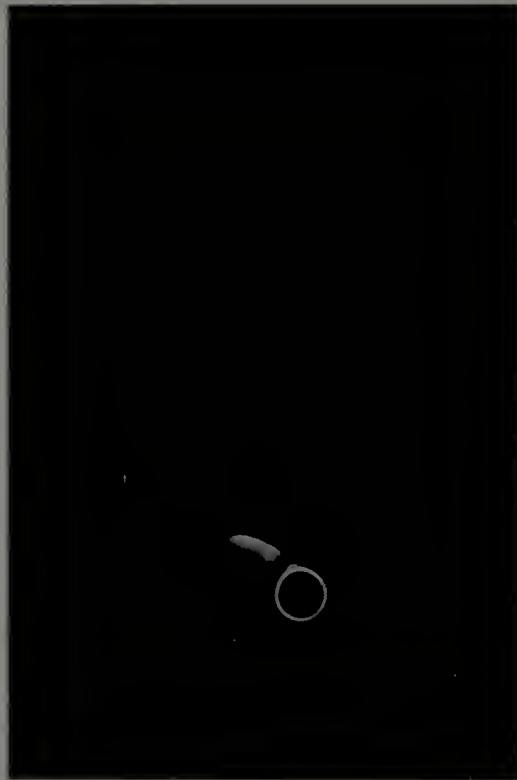








119 Photogram: Transparent Disc. c. 1924



120 Photogram: Triptych. 1922

121 Degrees. 1924





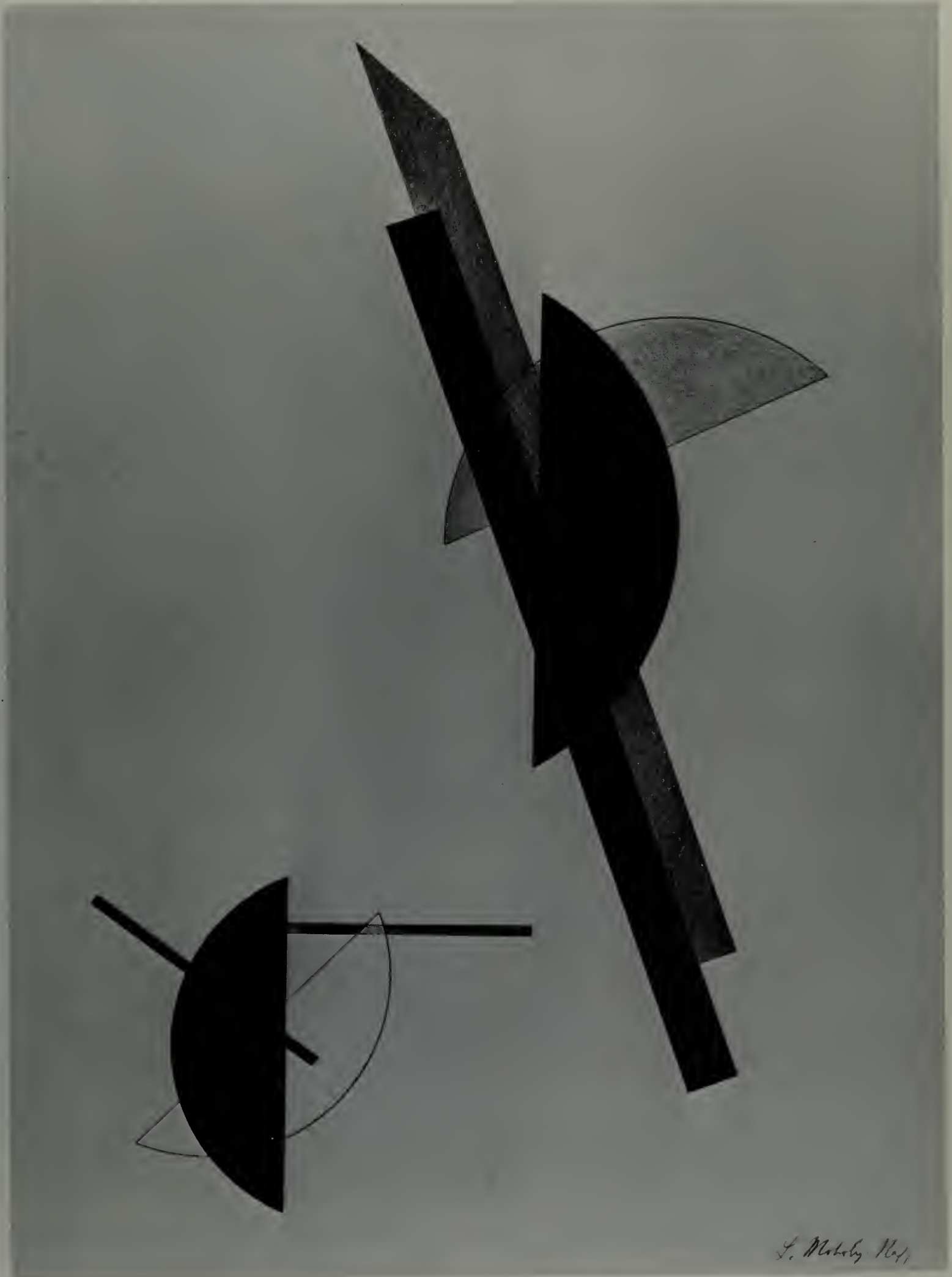
122-127 Six sheets from the *Kestnermappe*. 1922-23



Richard May



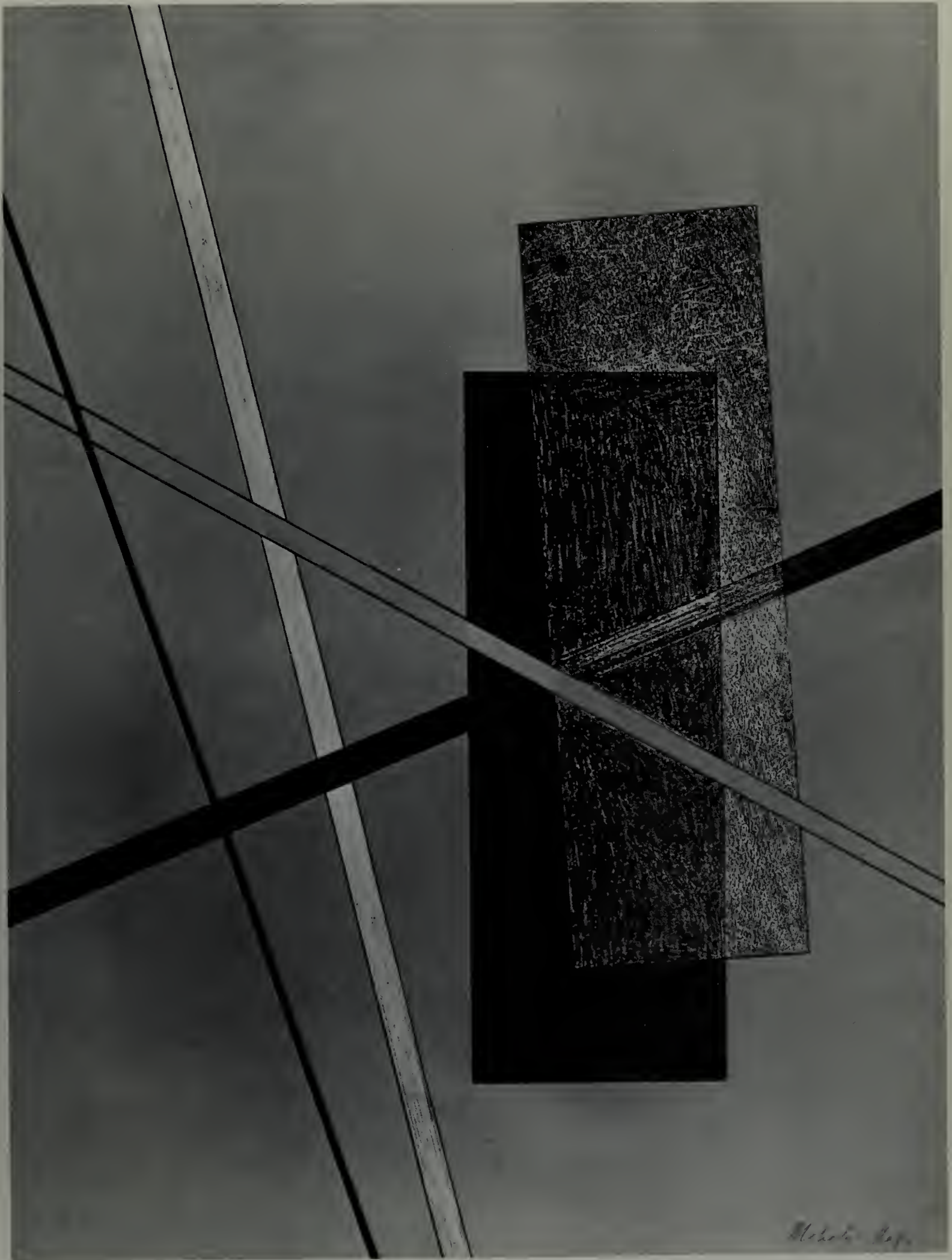
L. M. ...



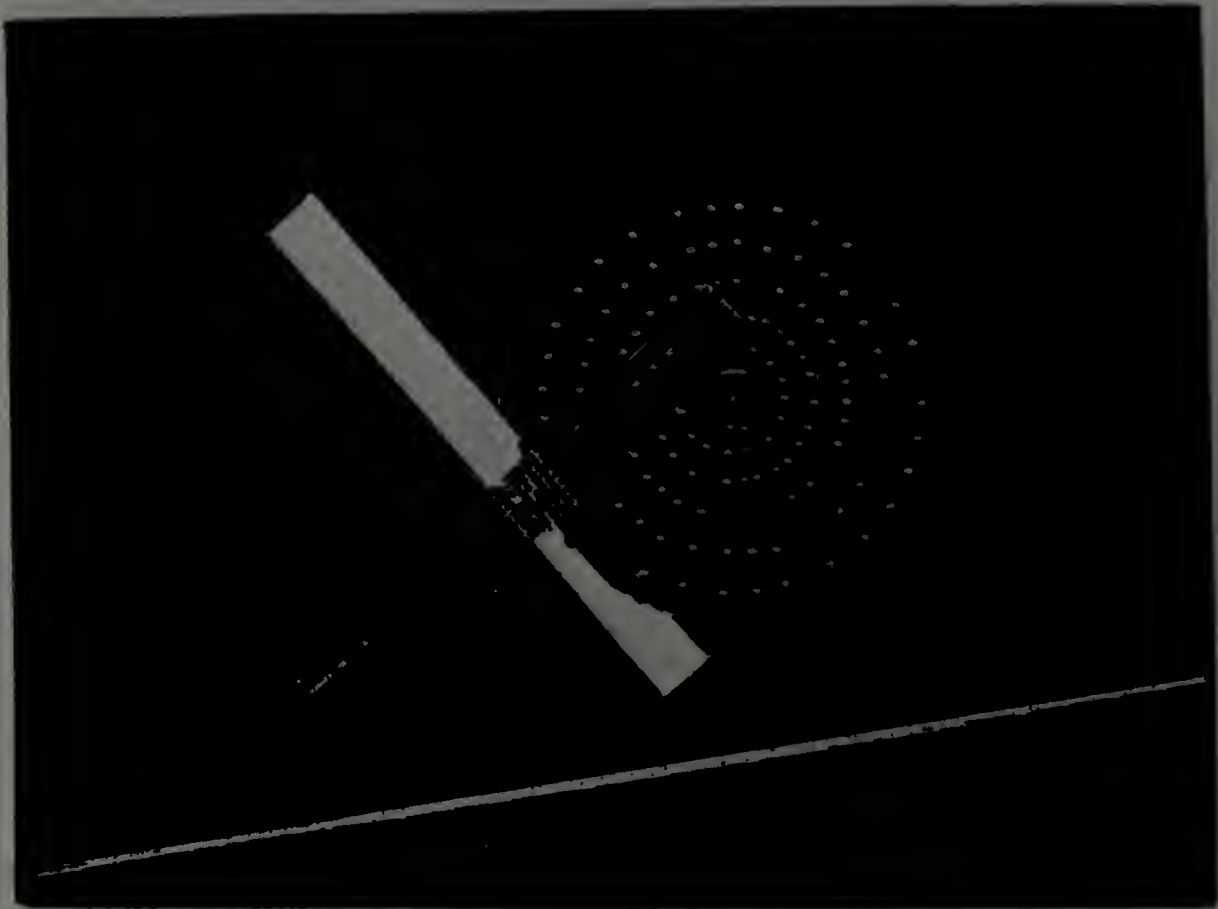
L. Moholy Nagy



L. Moholy-Nagy

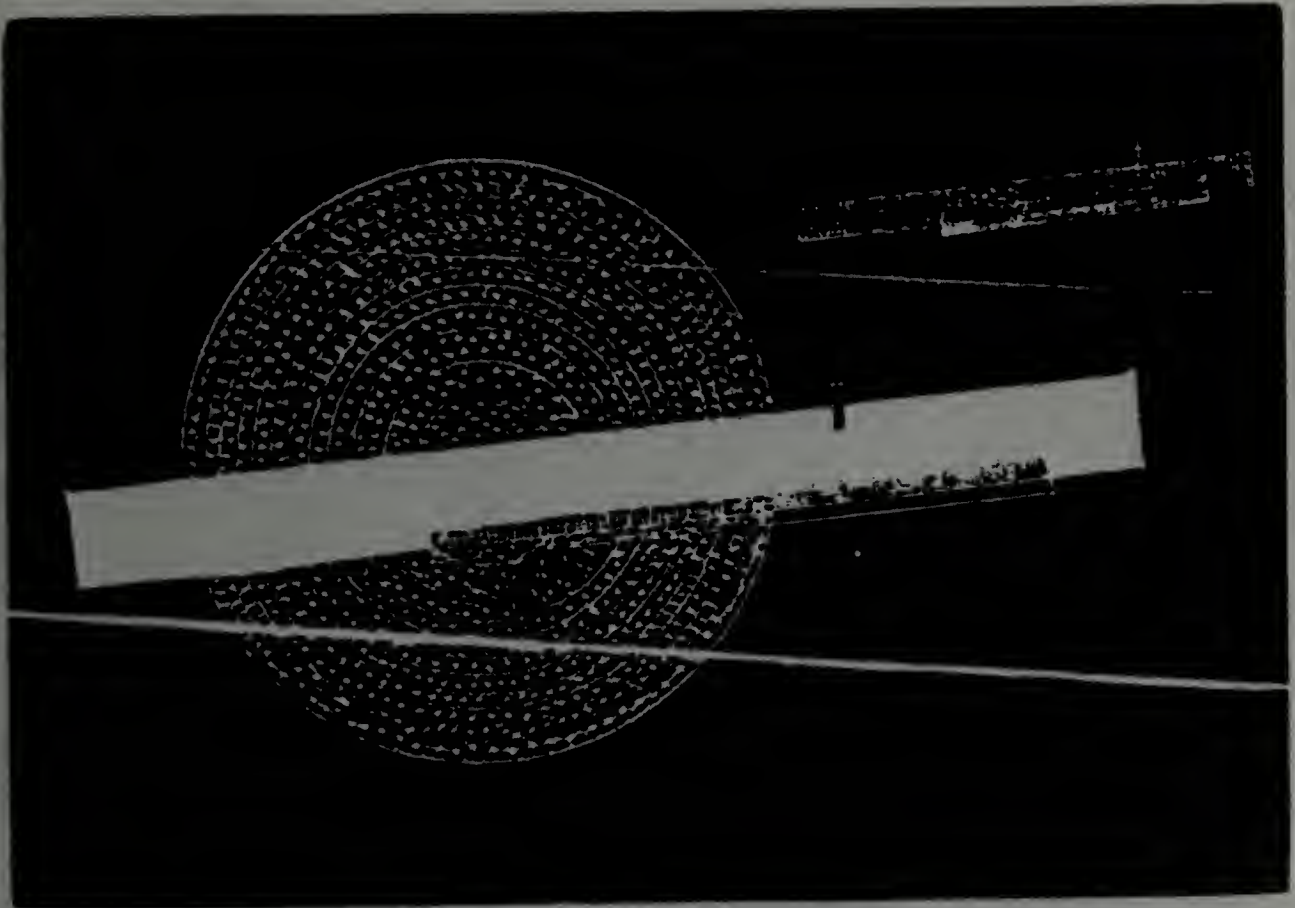


Melchior Hoff



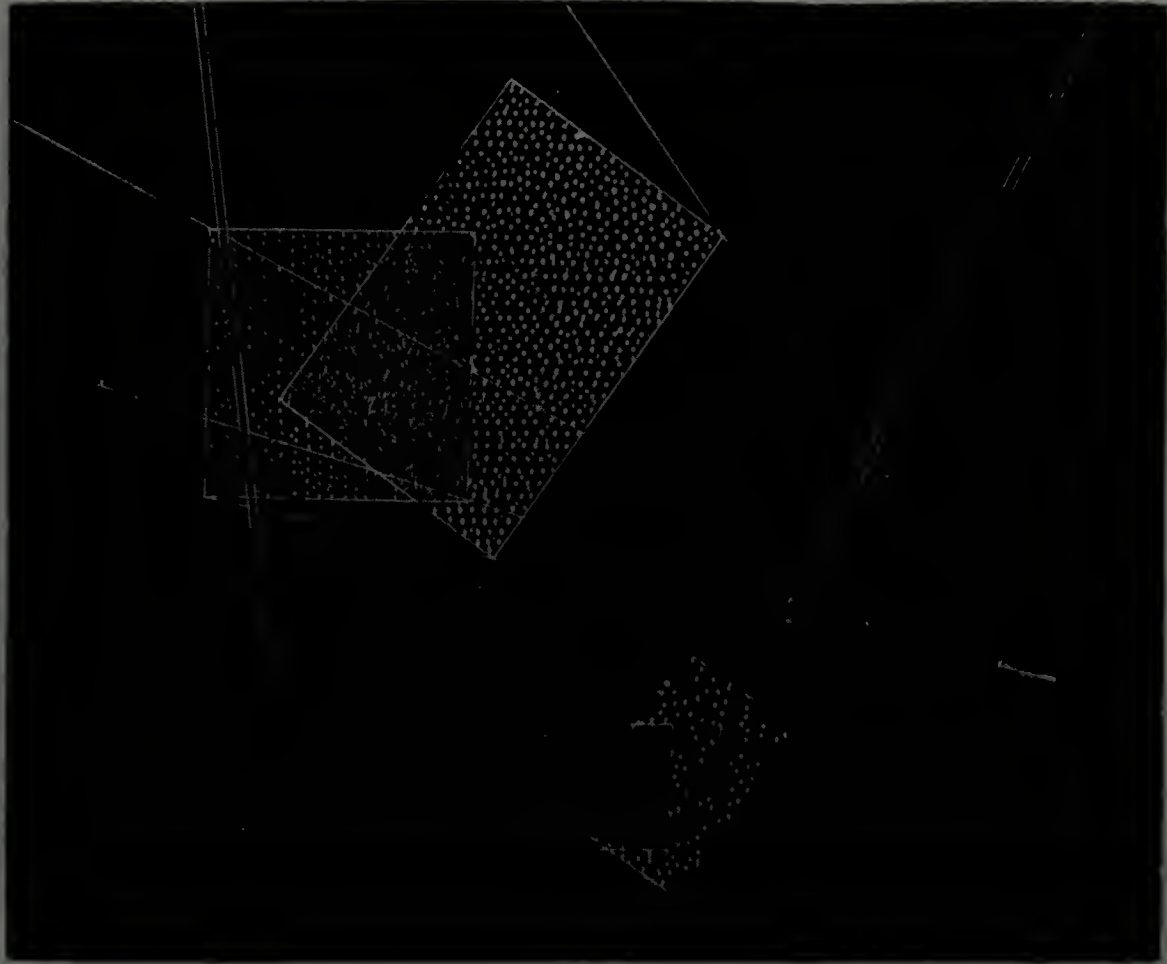
1. Probedmets

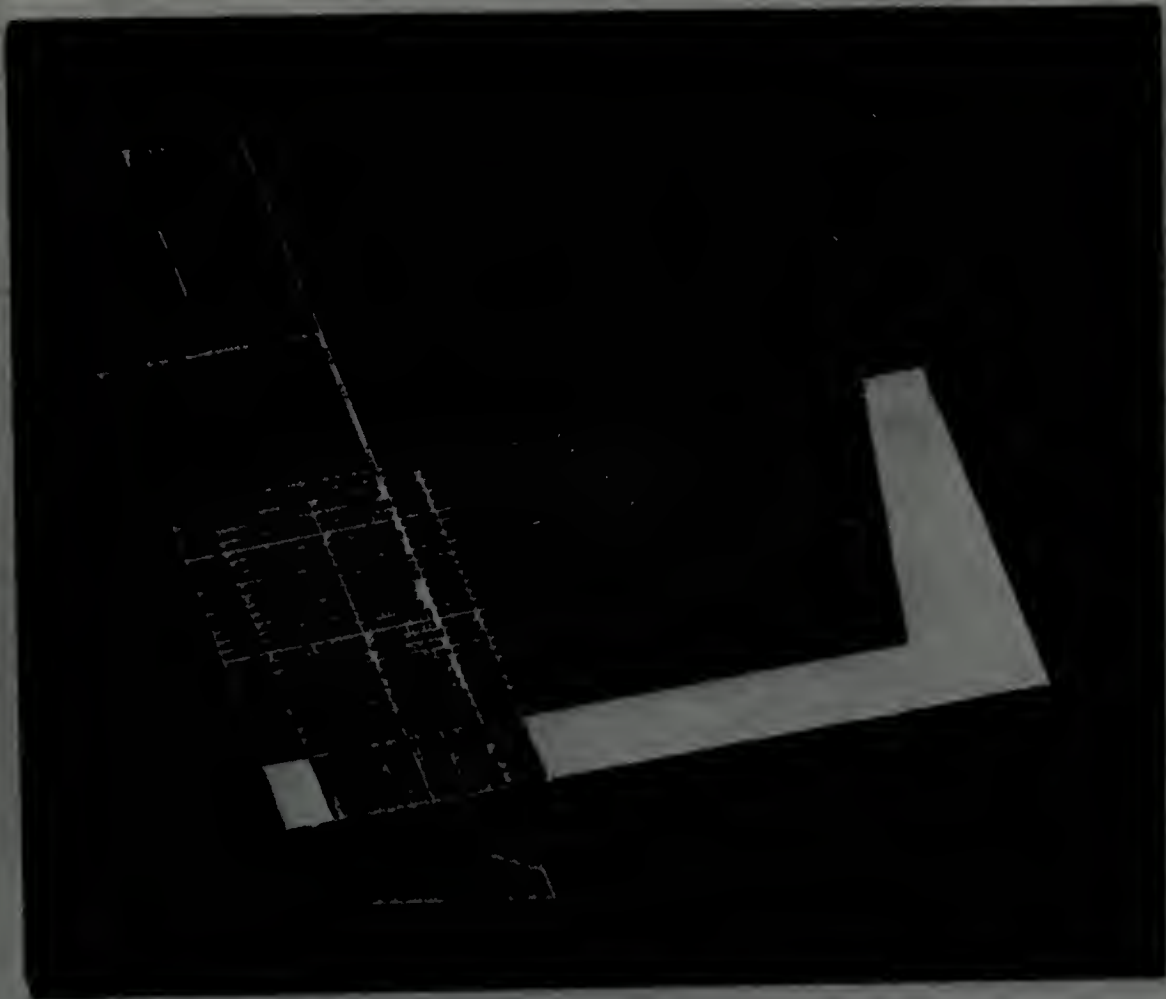
Moholy = Nagy



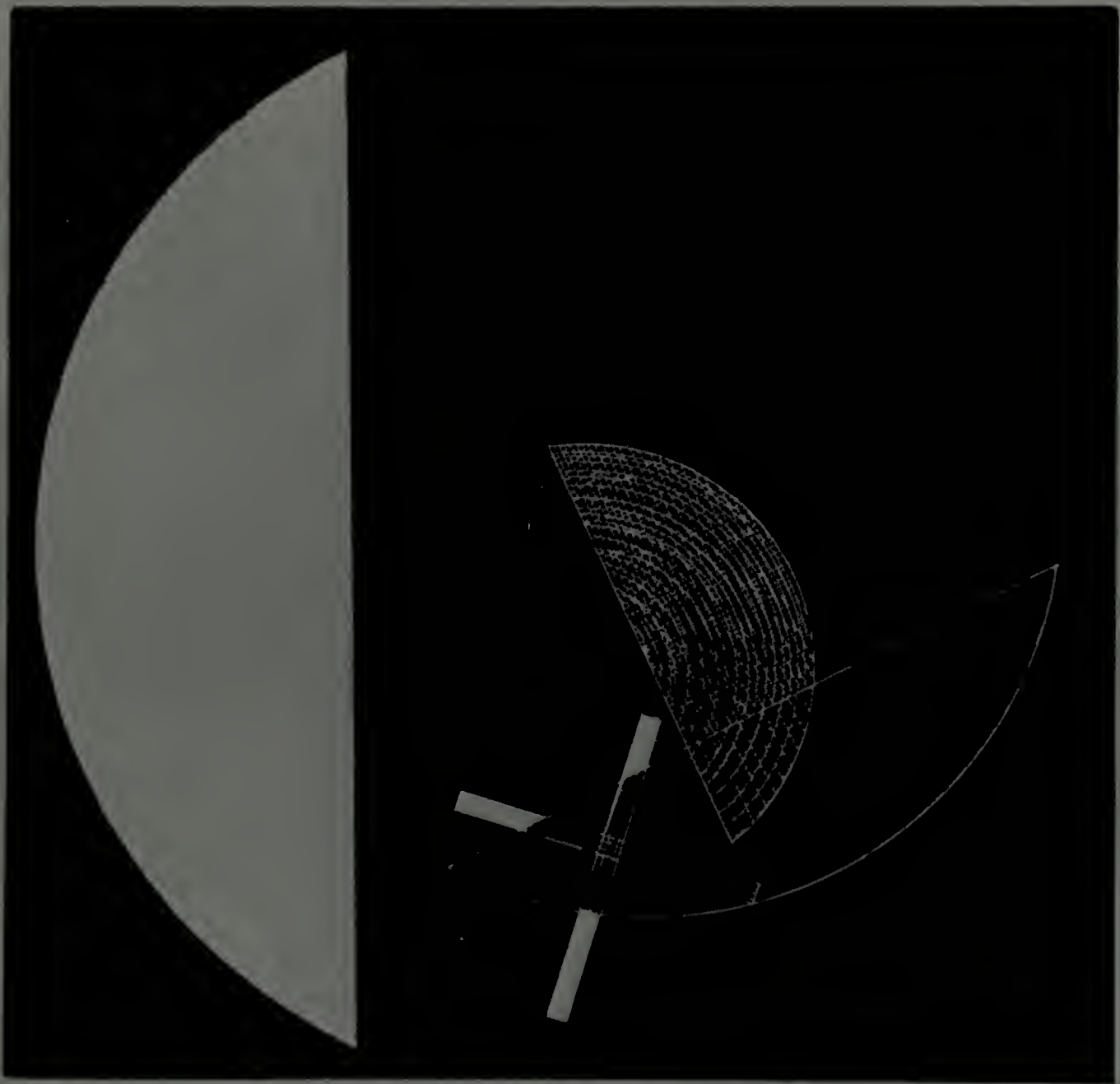
Rooted me?
J. P. [unclear]

Michael [unclear]

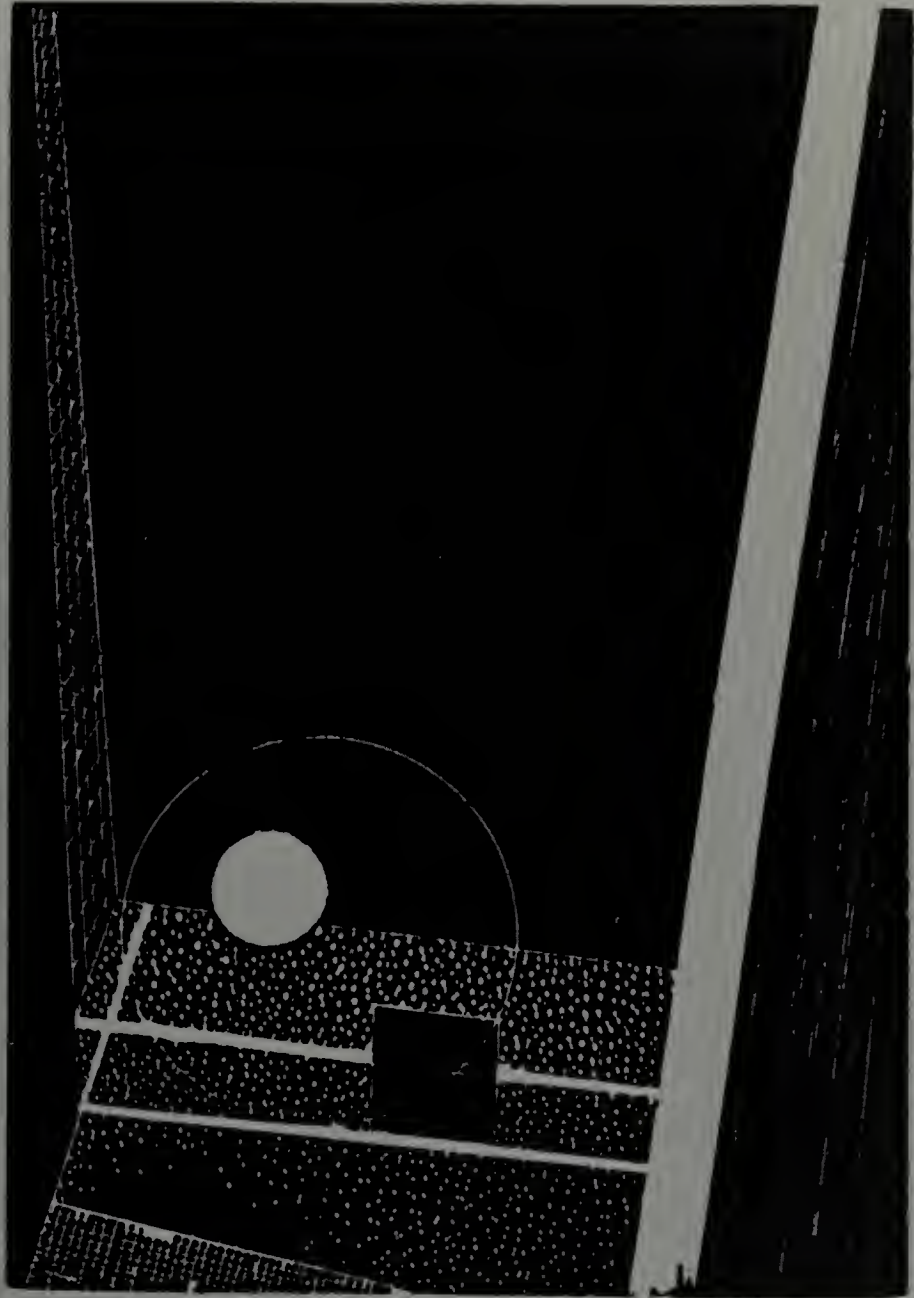




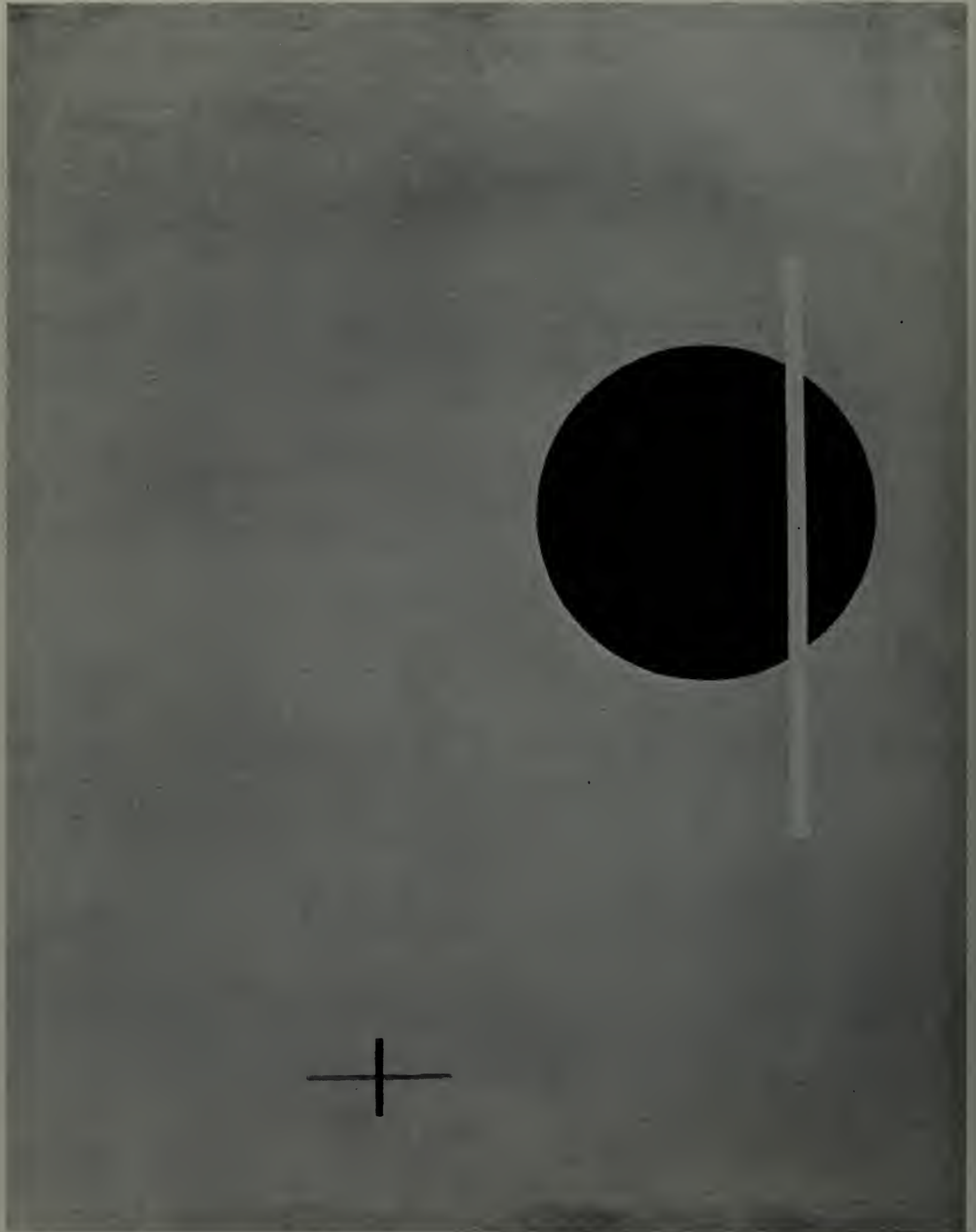
Mondrian

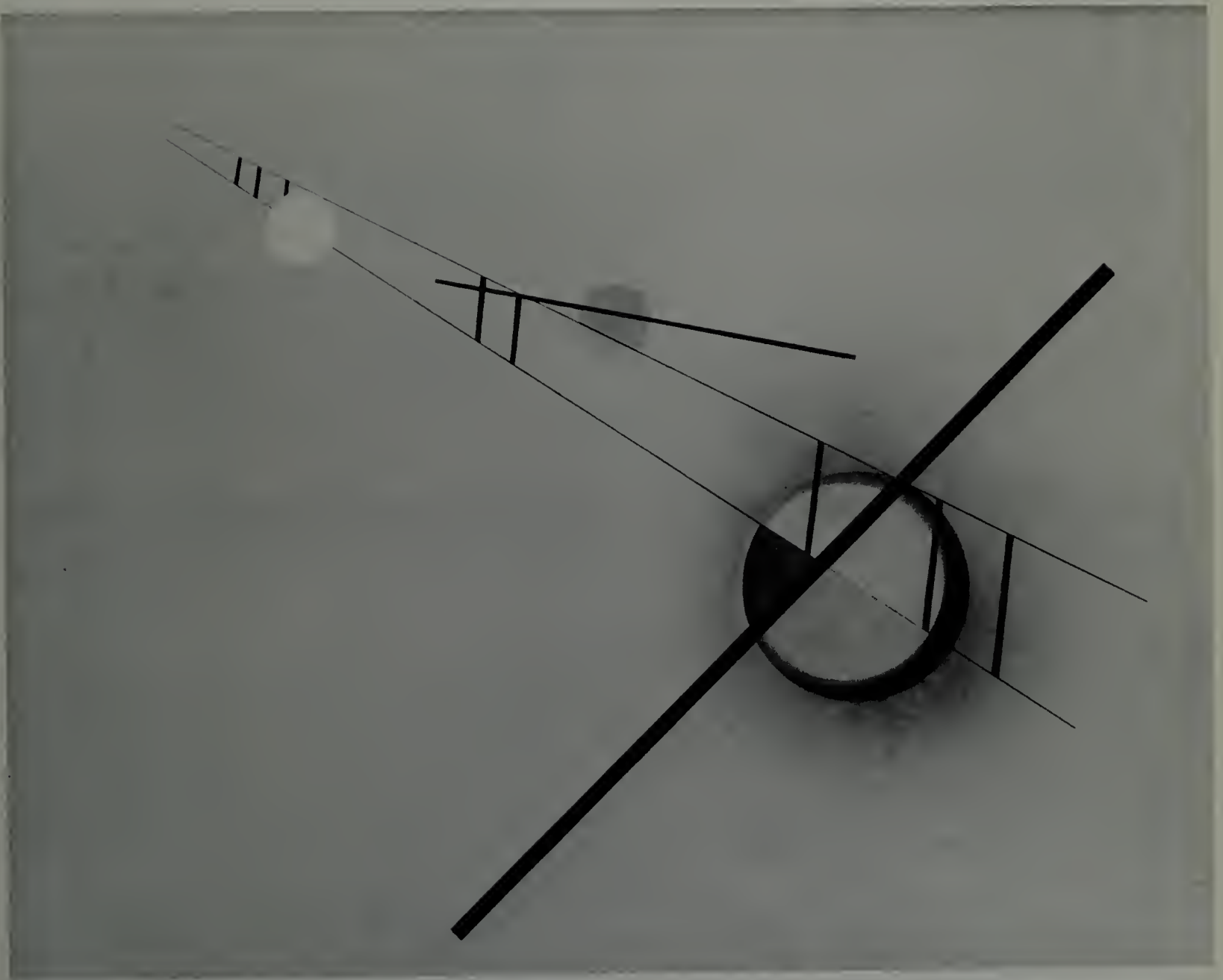


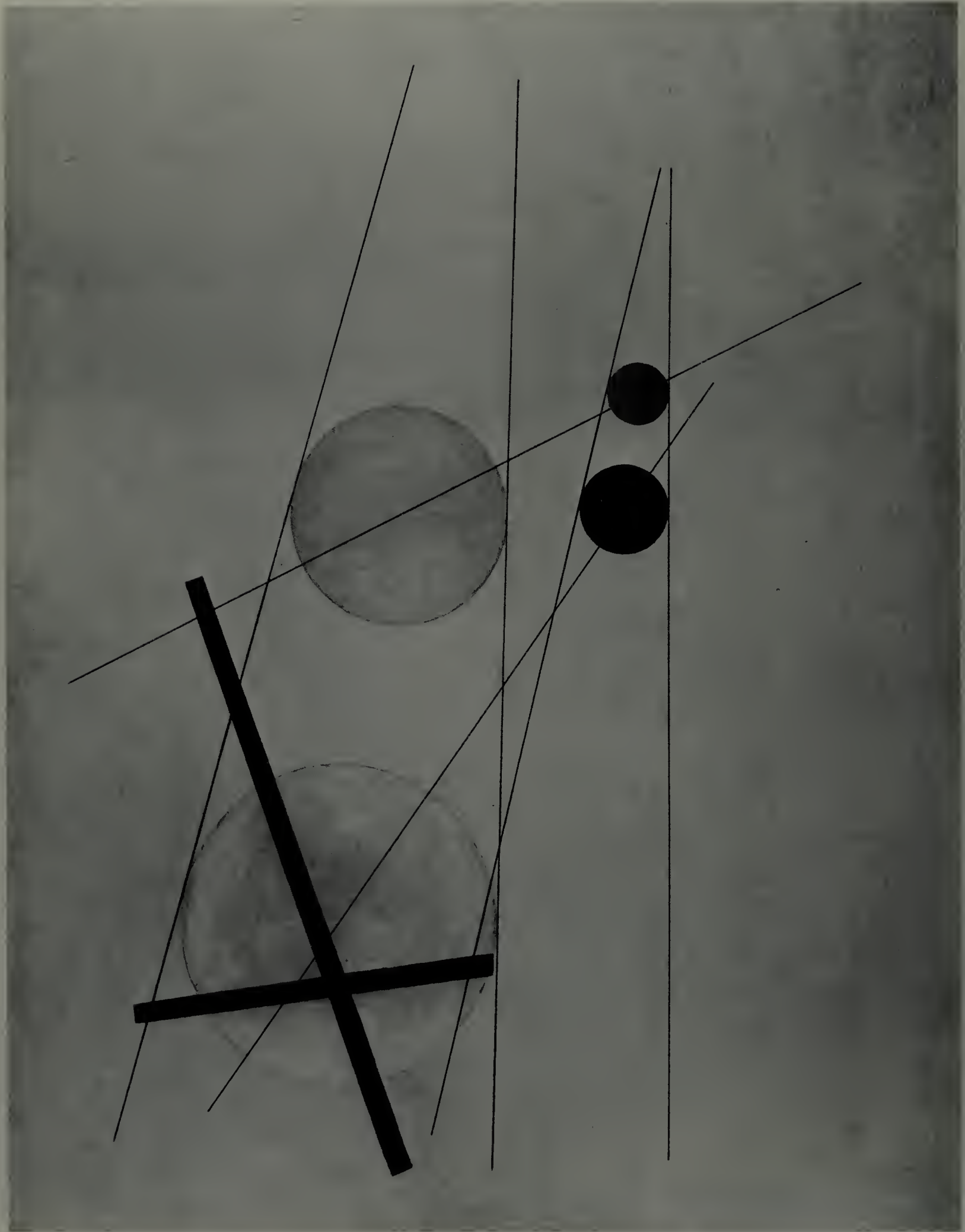
Segments of Circle with Cross



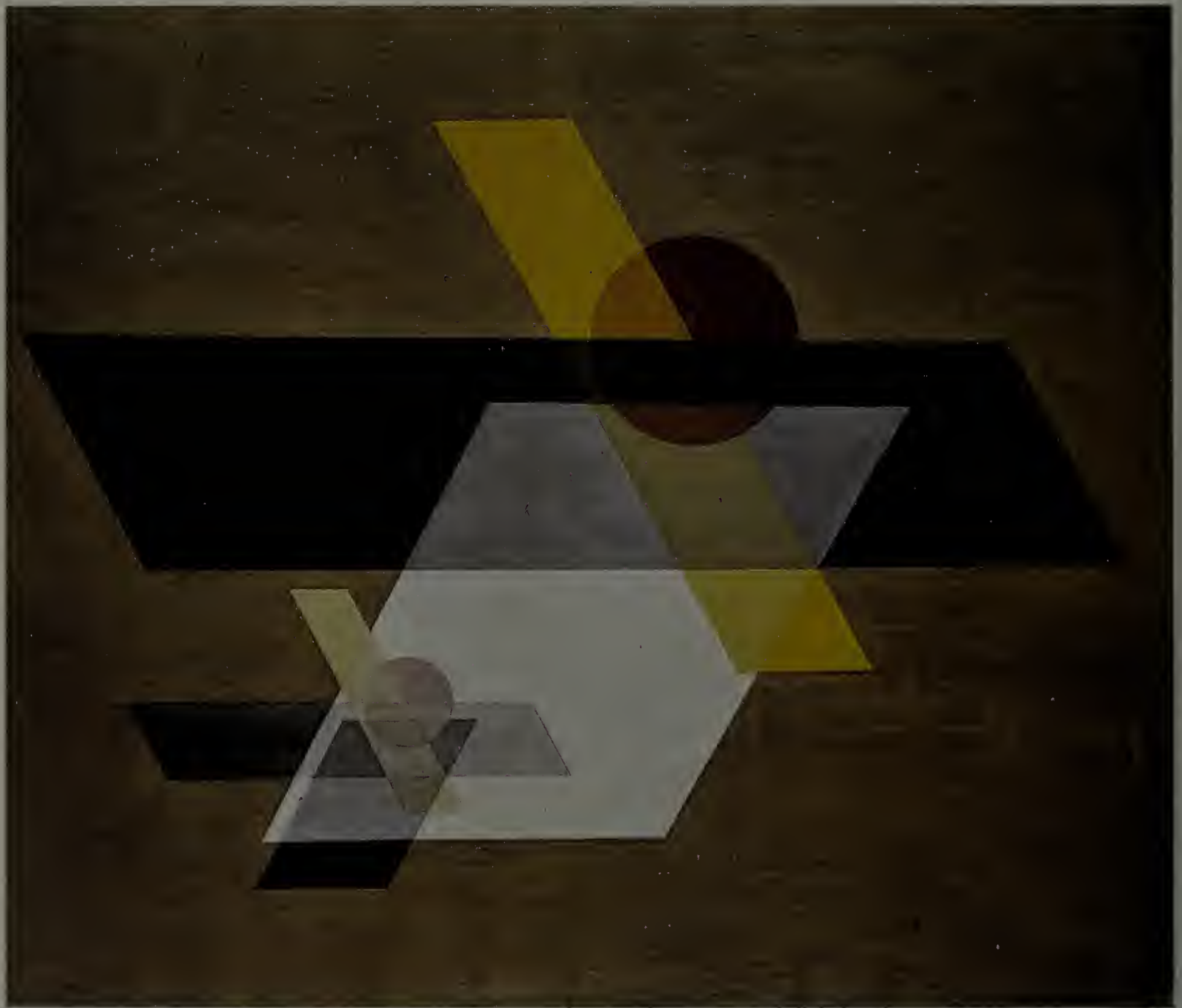
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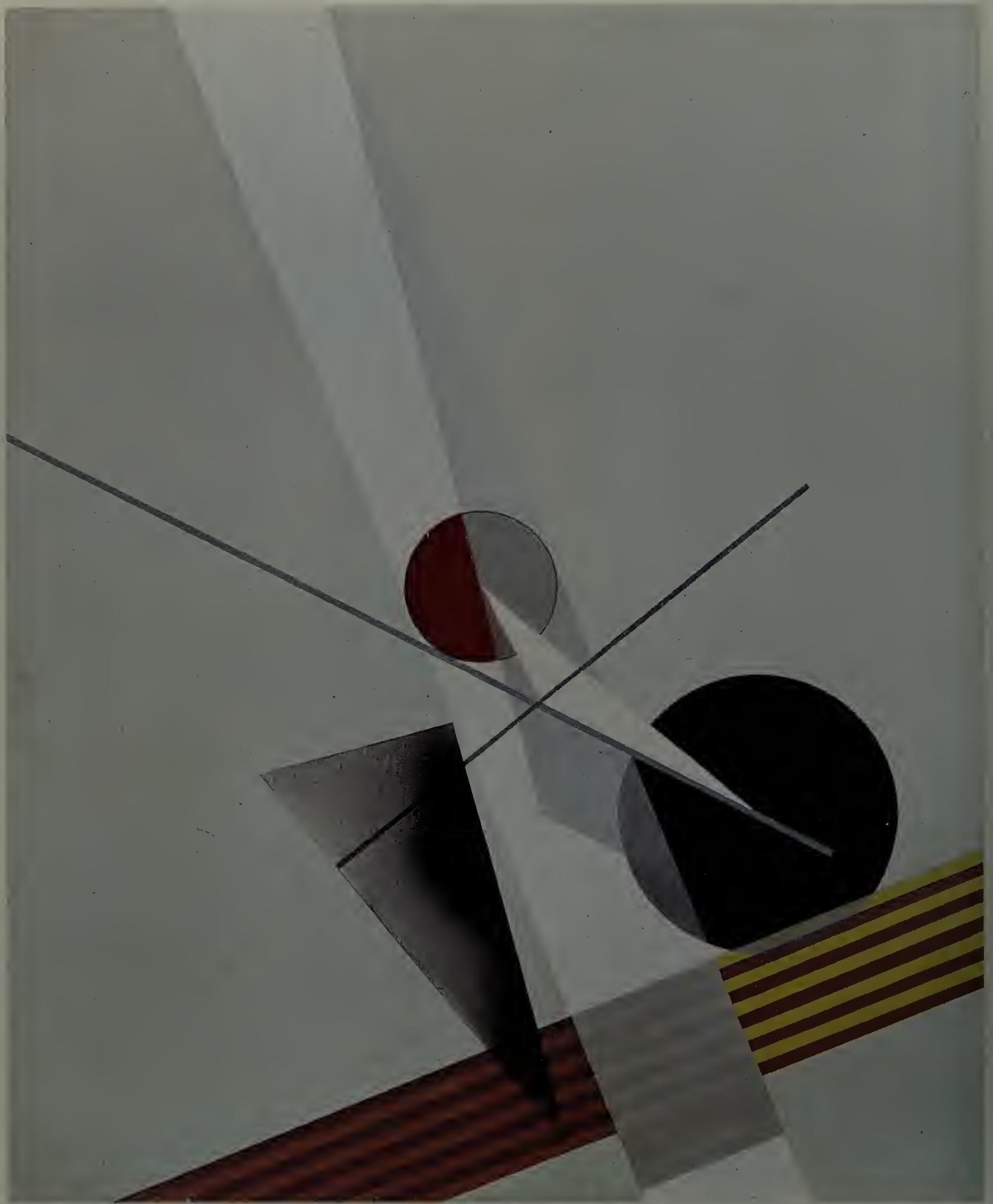




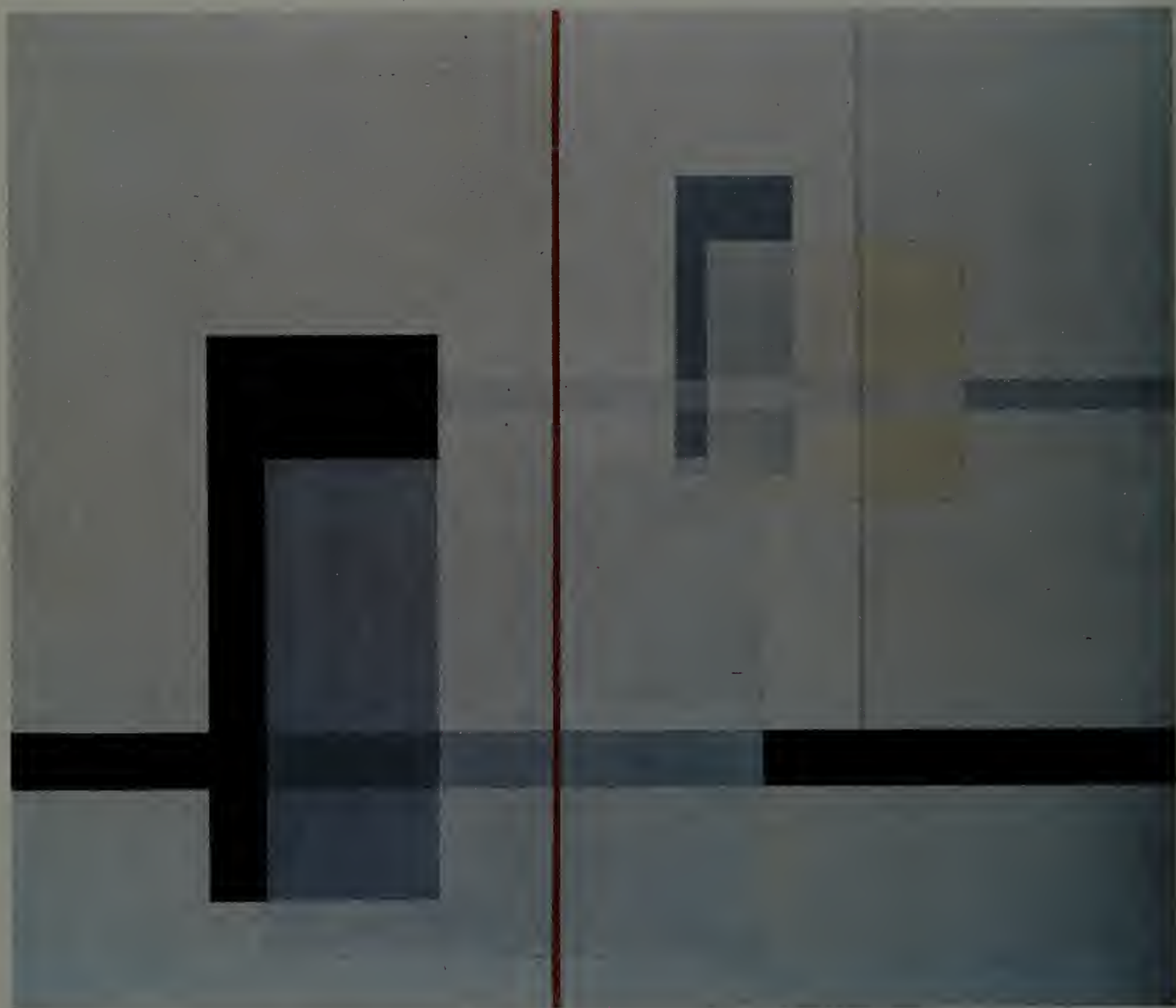








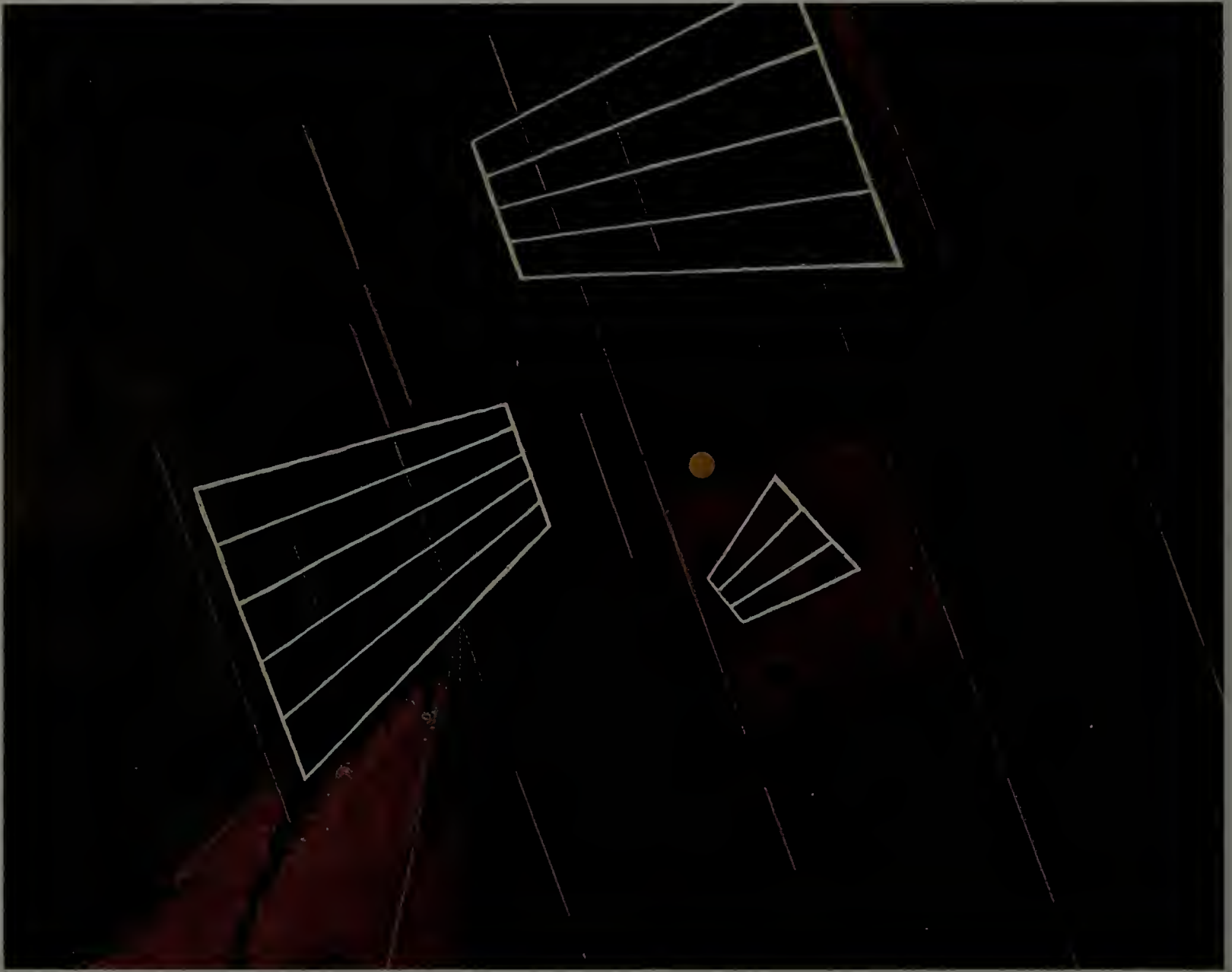










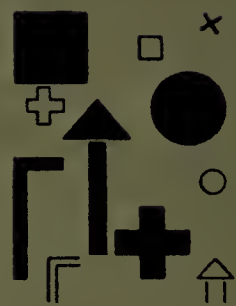


MA

AKTIVISTA FOLYÓIRAT



A - V
= C · B



BAUHAUSVERLAG G.M.B.H. SITZ WEIMAR

GESCHÄFTSSTELLE
MÜNCHEN



STAATLICHES
B **BAUHAUS**



1919
1923

WEIMAR - MÜNCHEN
BAUHAUSVERLAG

BAUHAUSVERLAG

MÜNCHEN
Wormserstraße 1



BAUHAUS
BÜCHER

IM VERLAG

ALBERT LANGEN MÜNCHEN

erscheinen die

BAUHAUSBÜCHER

SCHRIFTLEITUNG:

WALTER GROPIUS und L. MOHOLY-NAGY

Die Herausgabe der Bauhausbücher geschieht von der Erkenntnis aus, daß alle Gestaltungsgebiete des Lebens miteinander eng verknüpft sind. Die Bücher behandeln künstlerische, wissenschaftliche und technische Fragen und versuchen, den in ihrer Spezialarbeit gebundenen heutigen Menschen über die Problemstellung, die Arbeitsführung und die Arbeitsergebnisse verschiedener Gestaltungsgebiete Aufschluß zu geben und dadurch einen Vergleichsmaßstab für ihre eigenen Kenntnisse und den Fortschritt in anderen Arbeitszweigen zu schaffen. Um eine Aufgabe von diesem Ausmaße bewältigen zu können, haben die Herausgeber bestorientierte Fachleute verschiedener Länder, die ihre Spezialarbeit in die Gesamtheit heutiger Lebenserscheinungen einzugliedern bestrebt sind, für die Mitarbeit gewonnen.

SOEBEN IST DIE ERSTE SERIE ERSCHIENEN :

8 BAUHAUSBÜCHER

| | | | PREIS | |
|---|---------------------------------------|--|---------------------|-------------------|
| | | | stift broch. | i. Leinen geb. |
| 1 | Walter Gropius, | INTERNATIONALE ARCHITEKTUR. Auswahl der besten neuzeitlichen Architektur- Werke. | 101 | Mk. 5 Mk. 7 |
| 2 | Paul Klee, | PÄDAGOGISCHES SKIZZENBUCH. Aus seinem Unterricht am Bauhaus mit von Ihm selbst gezeichneten Textillustrationen. | 87 | Mk. 6 Mk. 8 |
| 3 | Ein Versuchshaus des Bauhauses. | Neue Wohnkultur; neue Techniken des Haus- baues. | 61 | Mk. 5 Mk. 7 |
| 4 | Die Bühne im Bauhaus. | Theoretisches und Praktisches aus einer mo- dernen Theaterwerkstatt. | 42 3 Farbtafeln | Mk. 5 Mk. 7 |
| 5 | Piet Mondrian, | NEUE GESTALTUNG. Forderungen der neuen Gestaltung für alle Gebiete künstlerischen Schaffens. | | Mk. 3 Mk. 5 |
| 6 | Theo van Doesburg, | GRUNDBEGRIFFE DER NEUEN GESTALTENDEN KUNST. Versuch einer neuen Ästhetik. | 32 | Mk. 5 Mk. 7 |
| 7 | Neue Arbeiten der Bauhauswerkstätten. | Praktische Beispiele neuzeitlicher Wohnungs- einrichtung. | 107 4 Farbtafeln | Mk. 6 Mk. 8 |
| 8 | L. Moholy-Nagy, | MALEREI, PHOTOGRAPHIE, FILM. Apologie der Photographie, zugleich grund- legende Erkenntnis abstrakter und gegen- ständlicher Malerei. | 102 | Mk. 7 Mk. 9 |

Die Reihe wird in schneller Folge fortgesetzt.

IN VORBEREITUNG:

BAUHAUSBÜCHER

BAUHAUSBÜCHER

- W. Kandinsky:** Punkt, Linie, Fläche
Violett (Bühnenstück)
- Kurt Schwitters:** Merz-Buch
- Heinrich Jacoby:** Schöpferische Musikerziehung
- J. J. P. Oud (Holland):** Die holländische Architektur
- George Anthell (Amerika):** Musico-mechanico
- Albert Gleizes (Frankreich):** Kubismus
- F. T. Marinetti und Prampolini (Italien):** Futurismus
- Fritz Wichert:** Expressionismus
- Tristan Tzara:** Dadaismus
- L. Kassák und E. Kállai (Ungarn):** Die MA-Gruppe
- T. v. Doesburg (Holland):** Die Stijlgruppe
- Carel Telje (Prag):** Tschechische Kunst
- Louis Lozowick (Amerika):** Amerikanische Architektur
- Walter Gropius:** Neue Architekturdarstellung ● Das flache Dach ● Montierbare Typenbauten ● Die Bauhausneubauten in Dessau
- Mies van der Rohe:** Über Architektur
- Le Corbusier-Saunier (Frankreich):** Über Architektur
- Knud Lönberg-Holm (Dänemark):** Über Architektur
- Friedrich Kiesler (Österreich):** Neue Formen der Demonstration
Die Raumstadt
- Jane Heap (Amerika):** Die neue Welt
- G. Muche und R. Paulick:** Das Metalltypenhaus
- Mart Stam:** Das „ABC“ vom Bauen
- Adolf Behne:** Kunst, Handwerk und Industrie
- Max Burchartz:** Plastik der Gestaltungen
- Martin Schäfer:** Konstruktive Biologie
- Reklame und Typographie des Bauhauses**
- L. Moholy-Nagy:** Aufbau der Gestaltungen
- Paul Klee:** Bildnerische Mechanik
- Oskar Schlemmer:** Bühnenelemente
- Joost Schmidt:** Bildermagazin der Zeit I
- Die neuen künstlichen Materialien**

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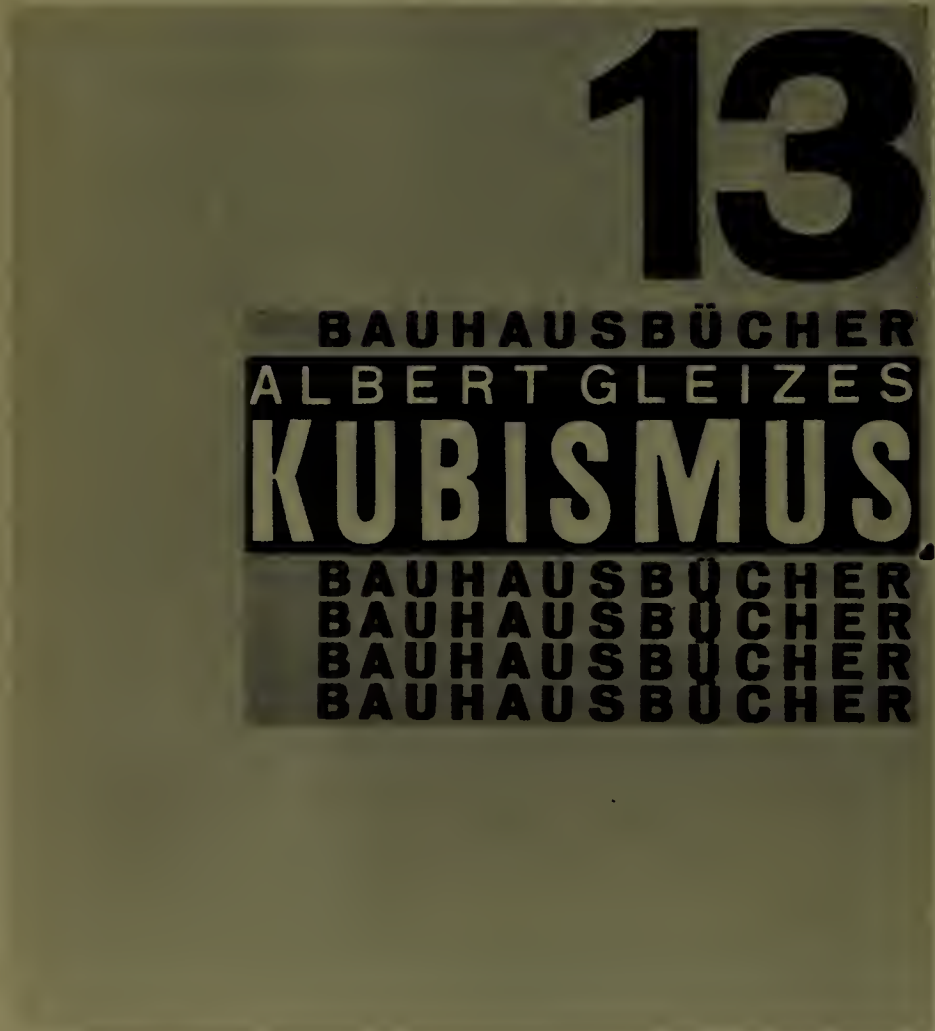
VERLAG

ALBERT LANGEN

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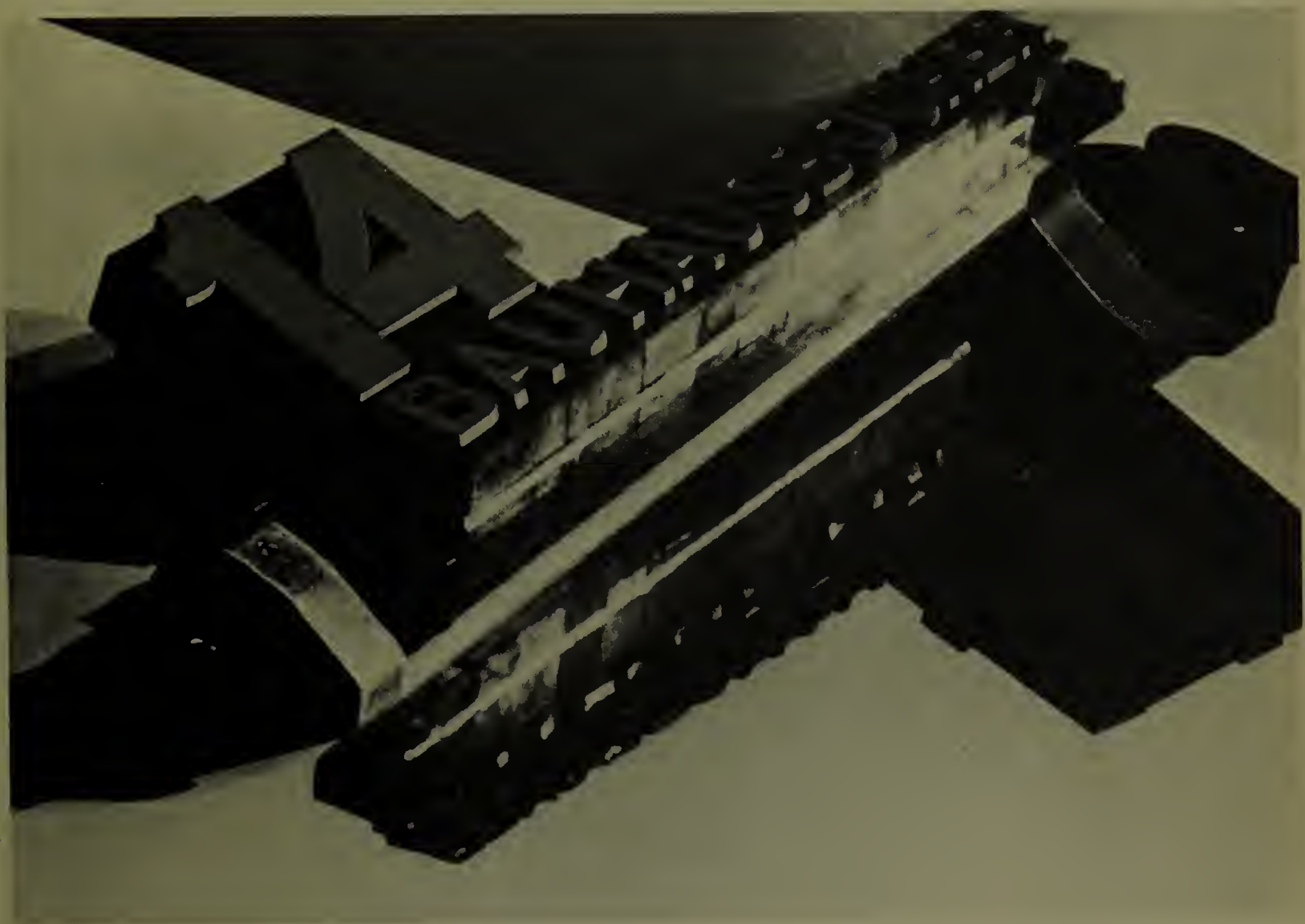


Bestellkarte liegt diesem Prospekt bei.



157 Book cover for No. 12 of the Bauhaus book series. 1927

158 Book cover for No. 13 of the Bauhaus book series. 1927



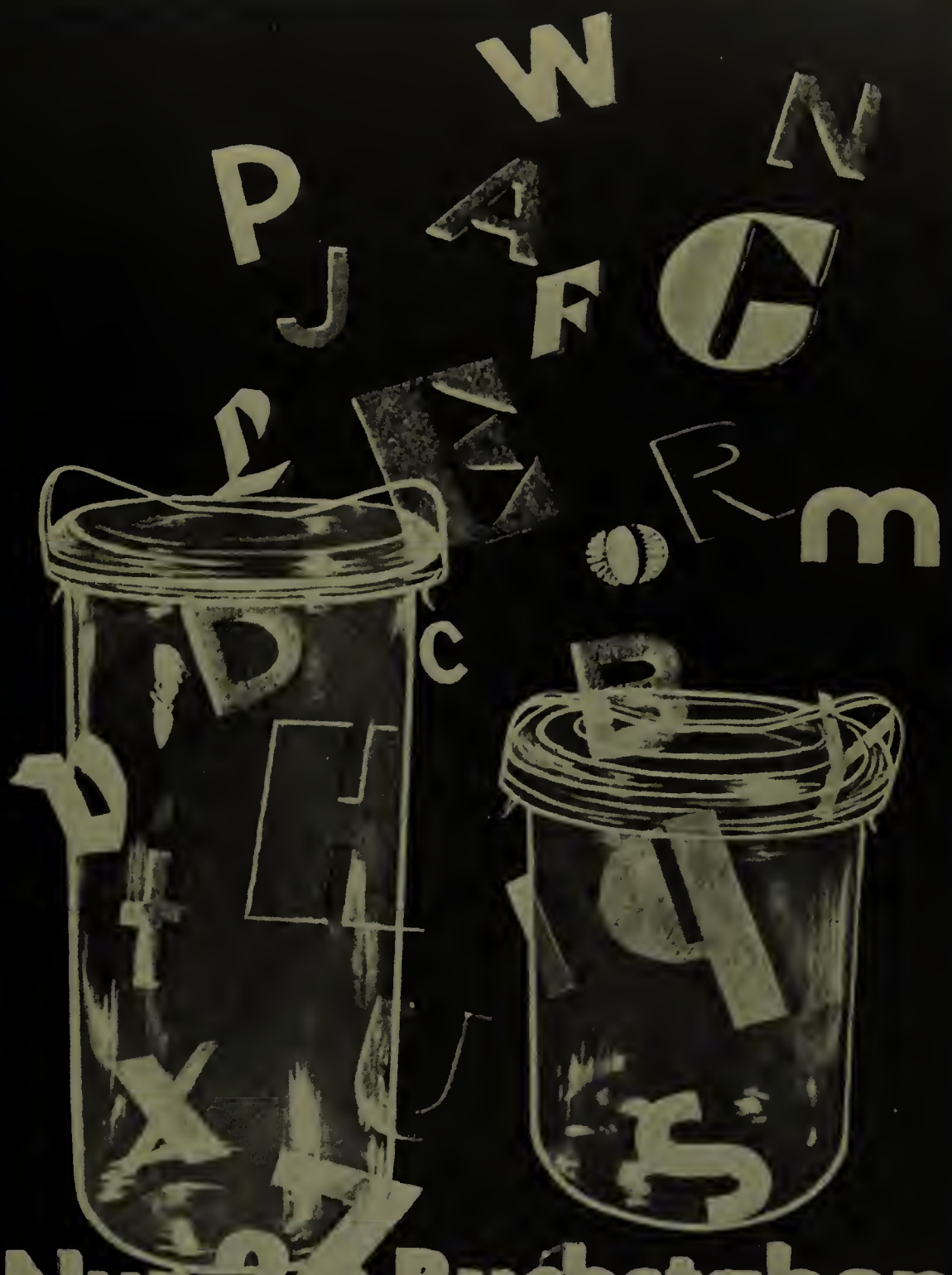
1923
VII-IX

BAUHAUS
AUSSTELLUNG
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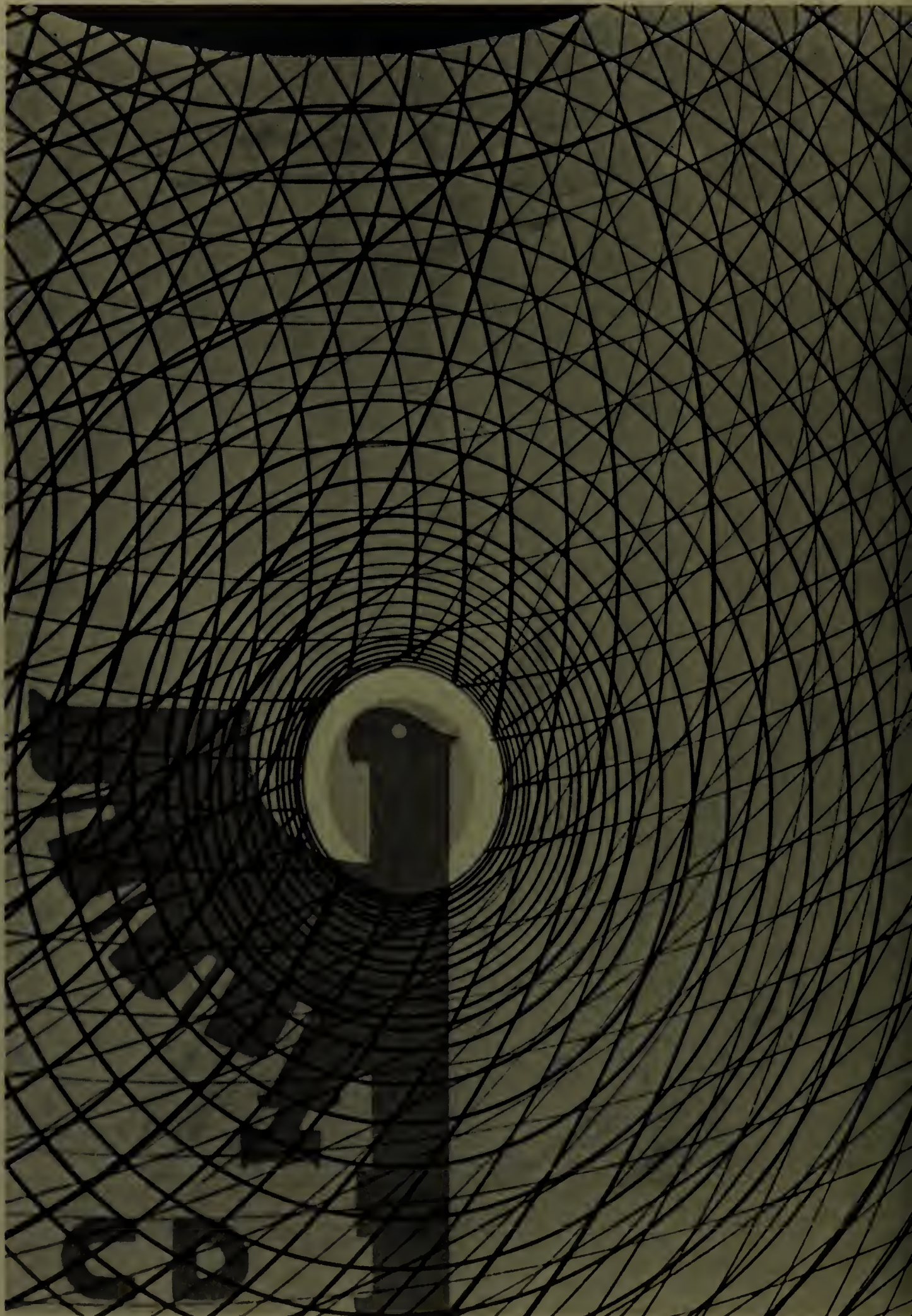


L. Michalski = N. S. G.





**Nur 26 Buchstaben
hat das ABC, doch...**



165 Cover of the 1931/1-2 issue of *Foto-Qualität*

WAGNER & MERTENS
Haupt • GMBH • DESSAU
SCHRIFTFLEITUNG UND
KUNSTLERISCHELEITUNG:
CARL ERNST HINKEFUSZ
BERLIN

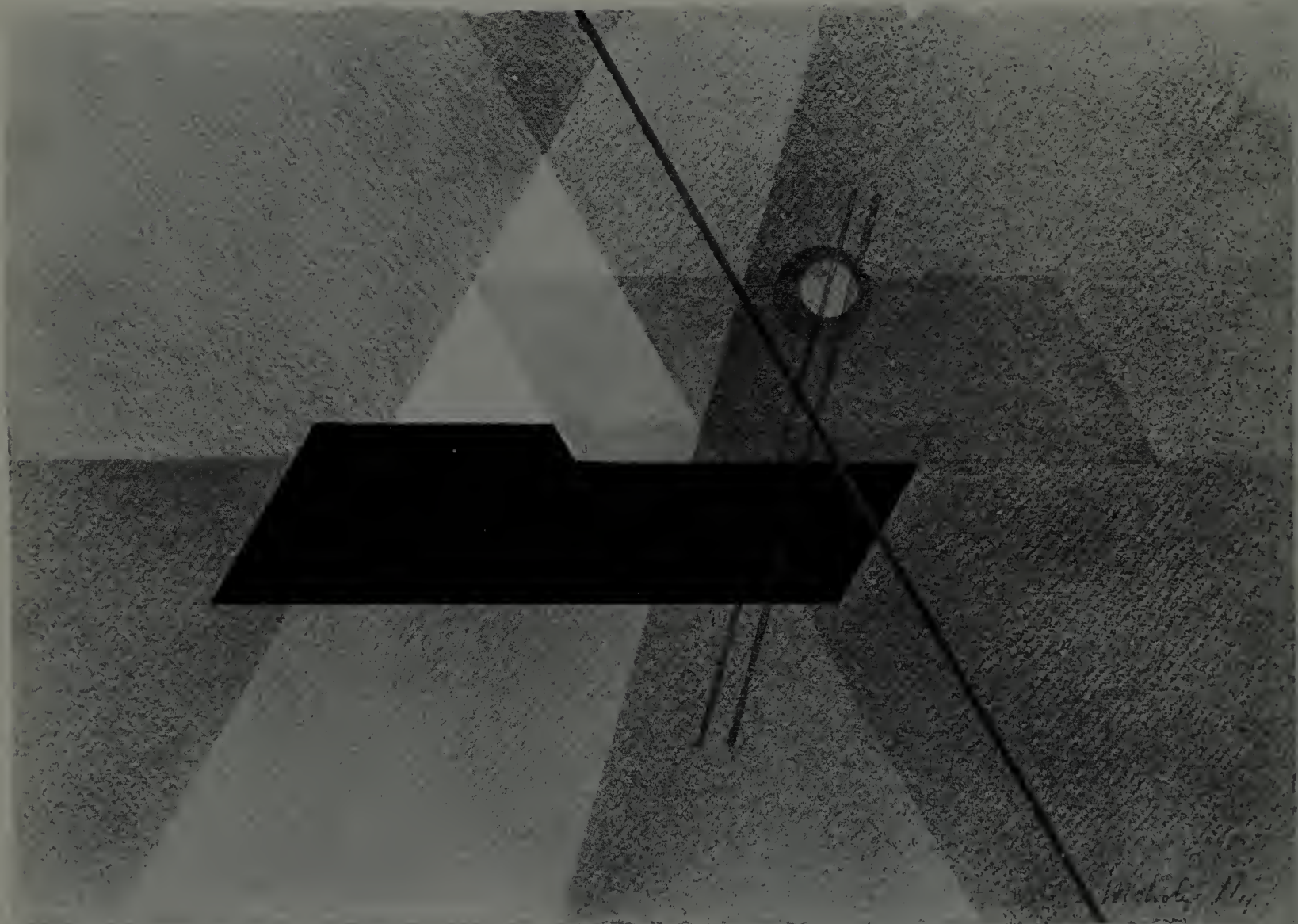
WAGNER & MERTENS KAMERA LEITUNG

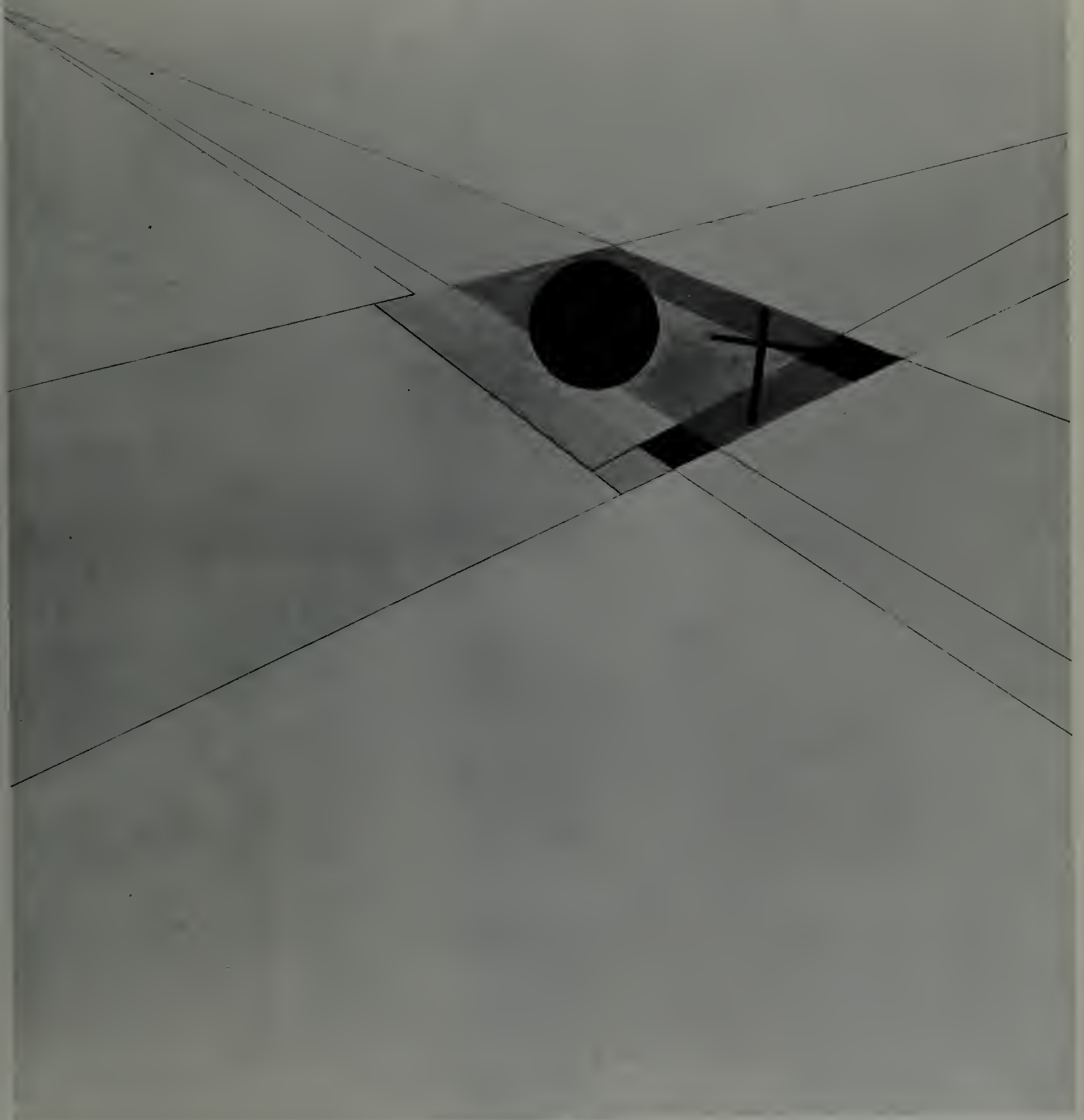


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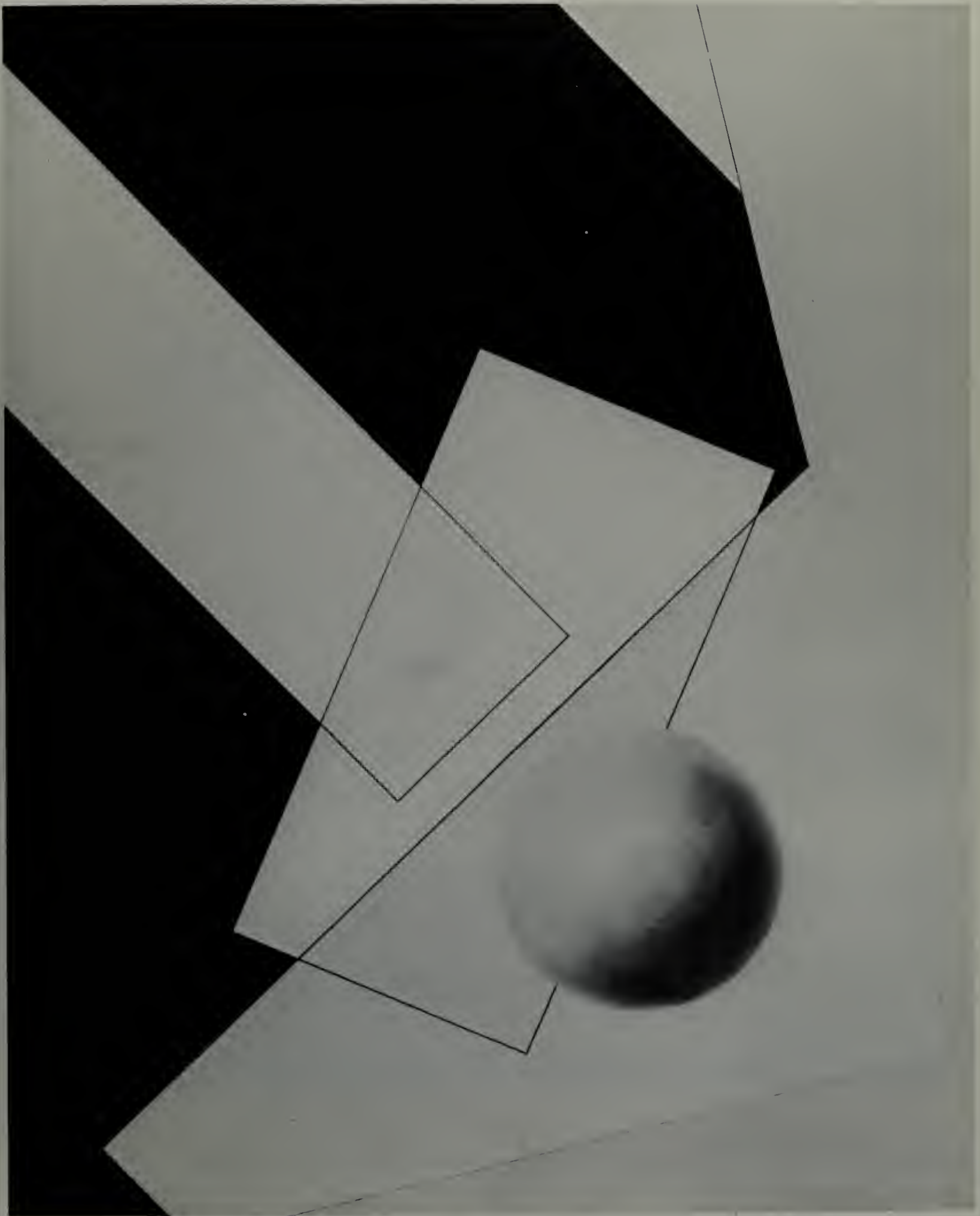


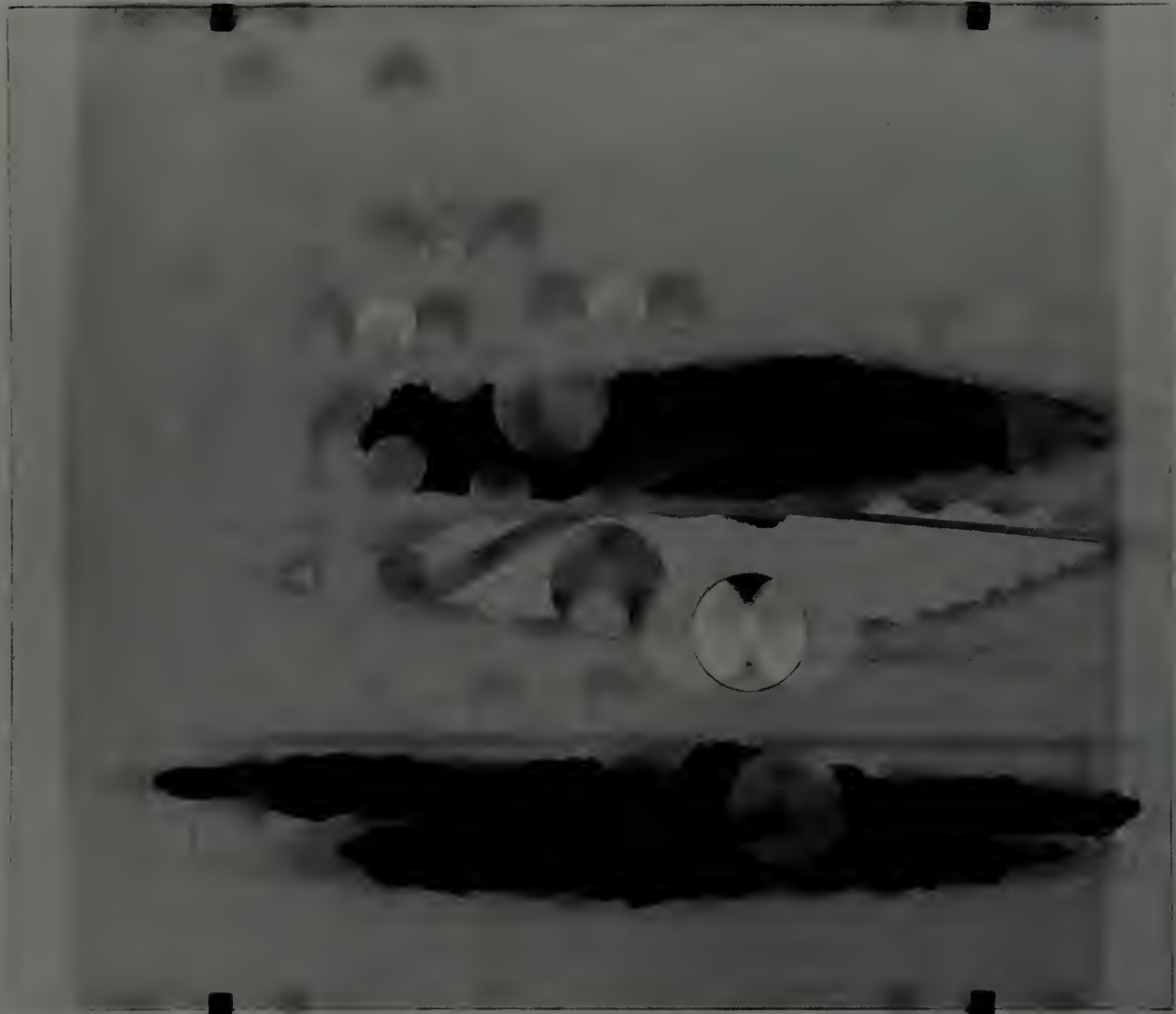


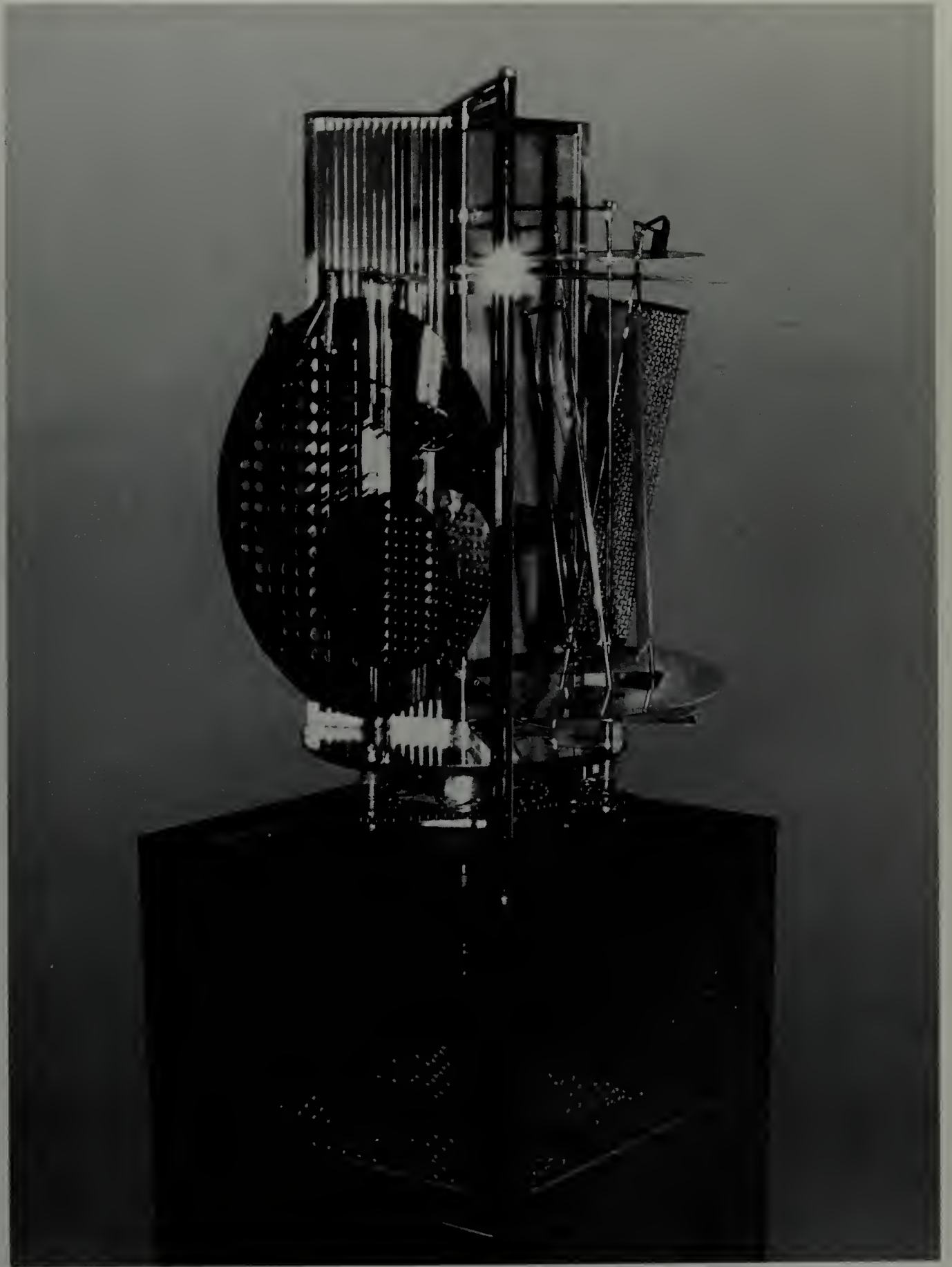




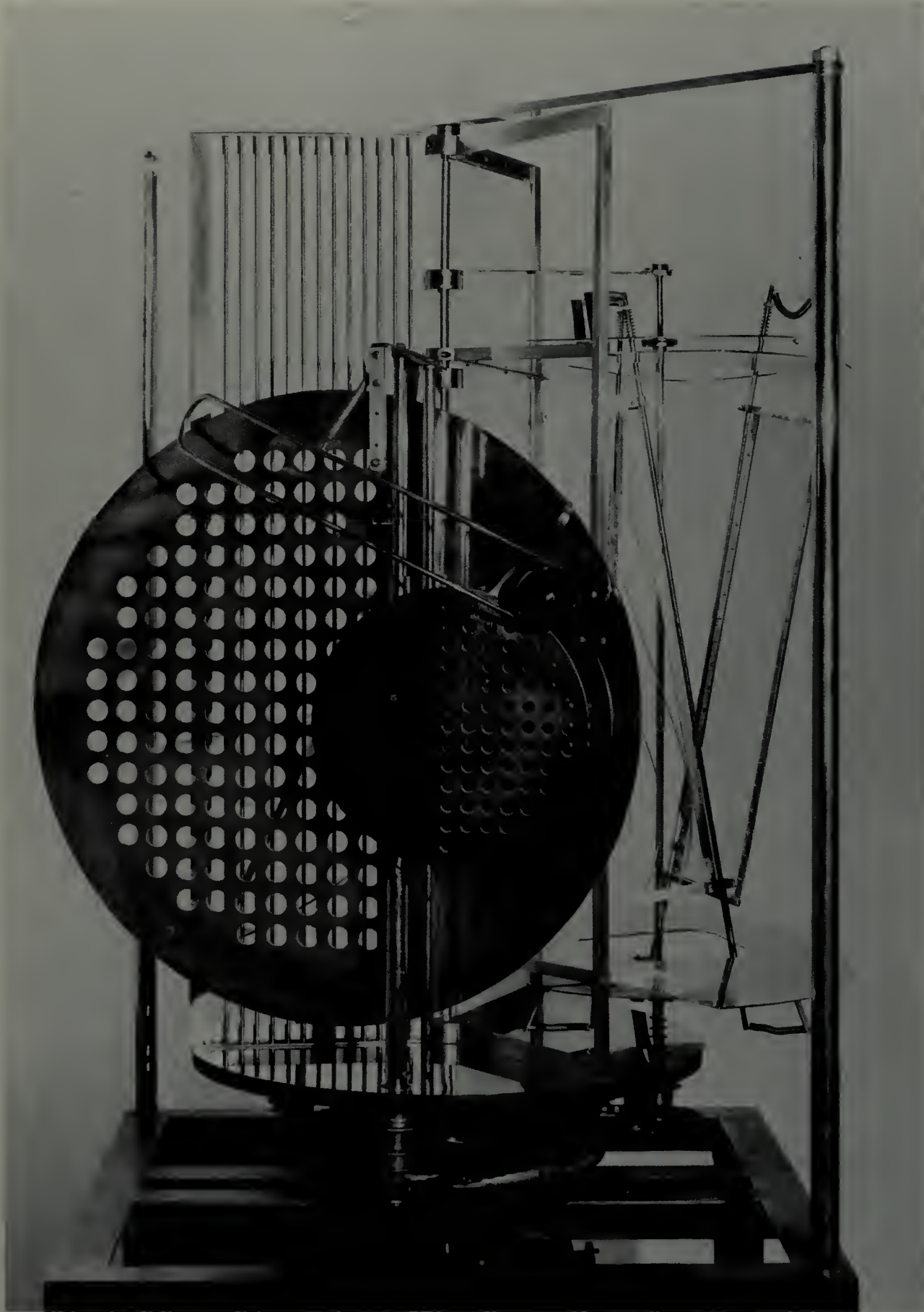




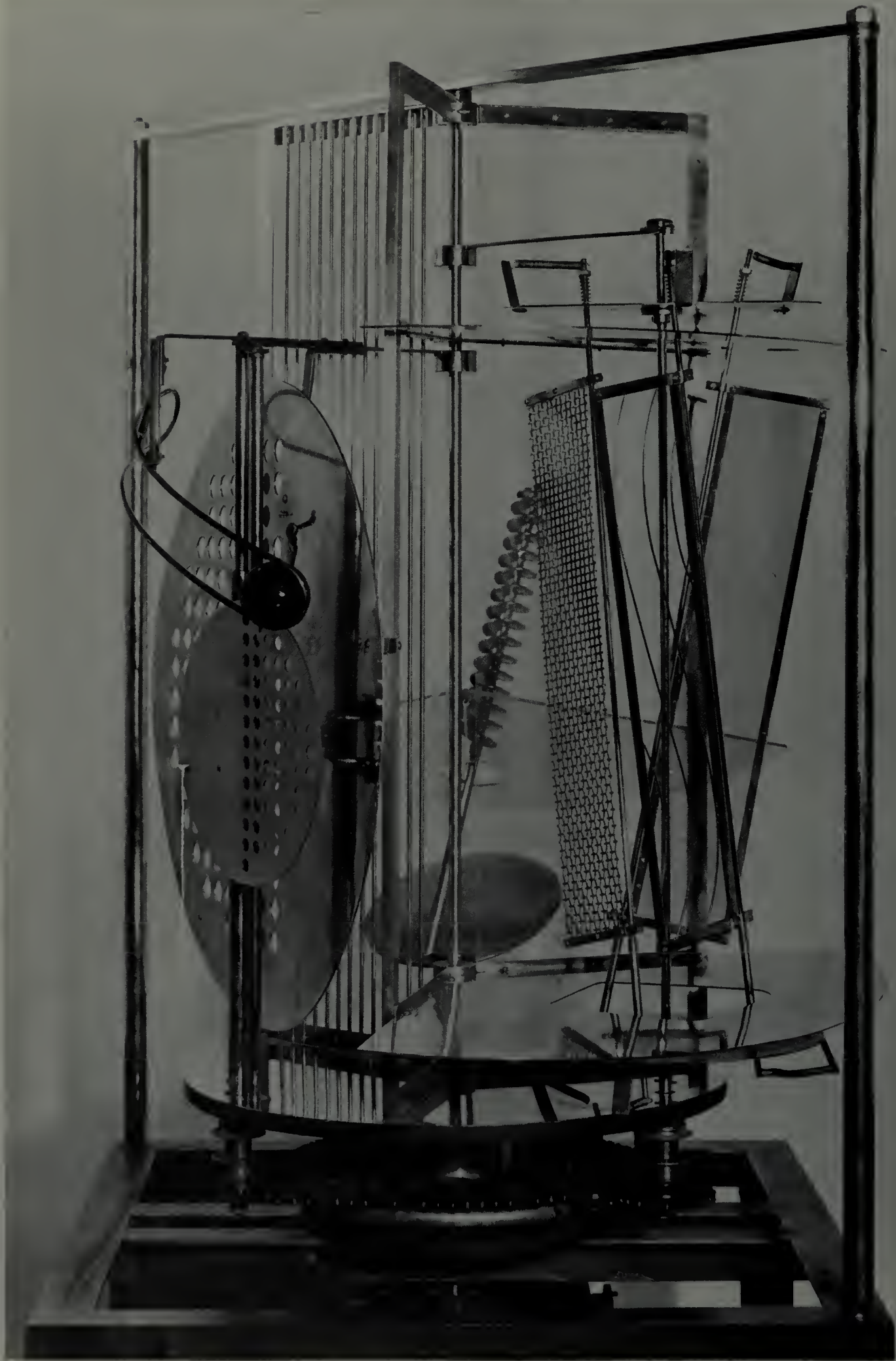


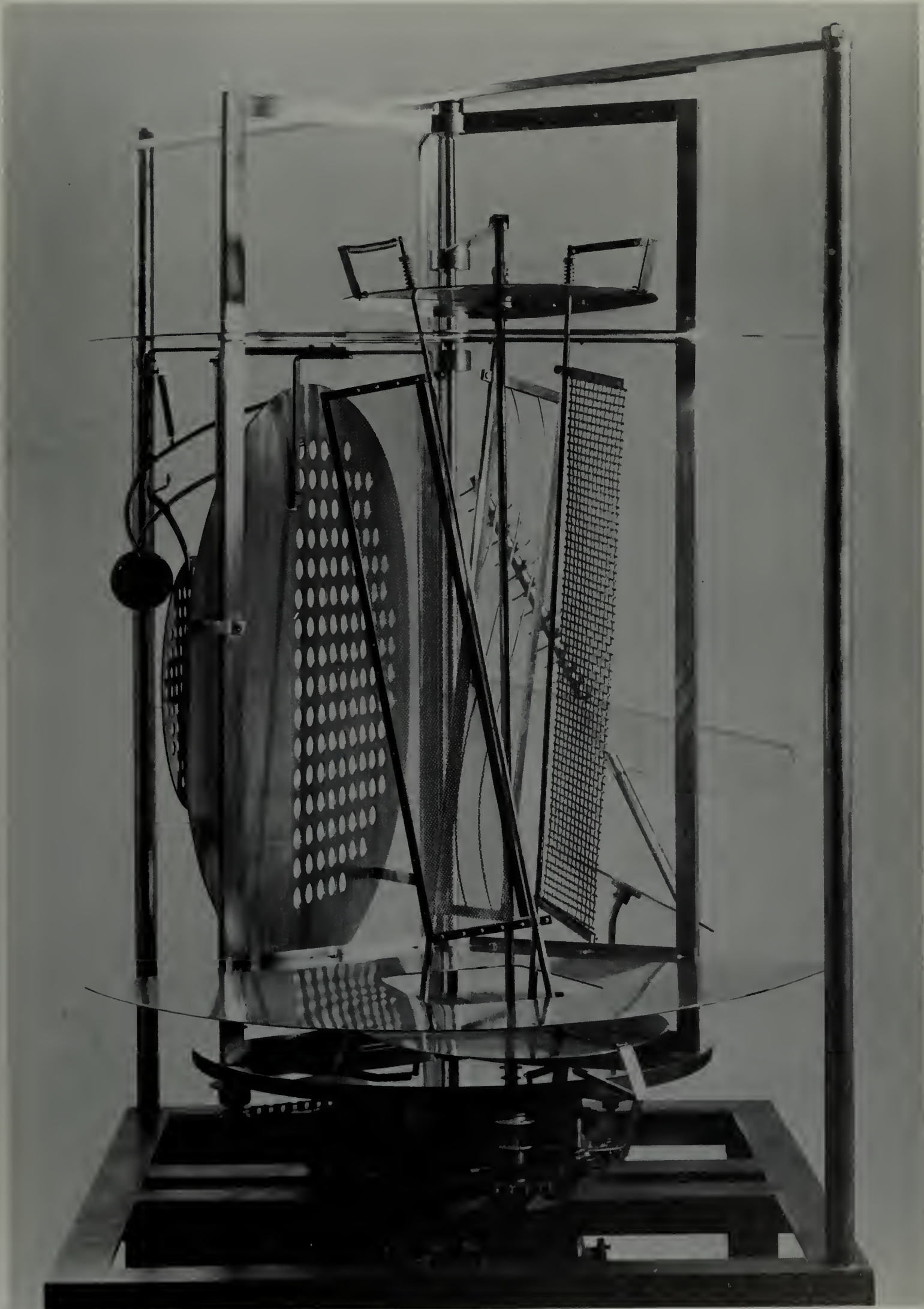


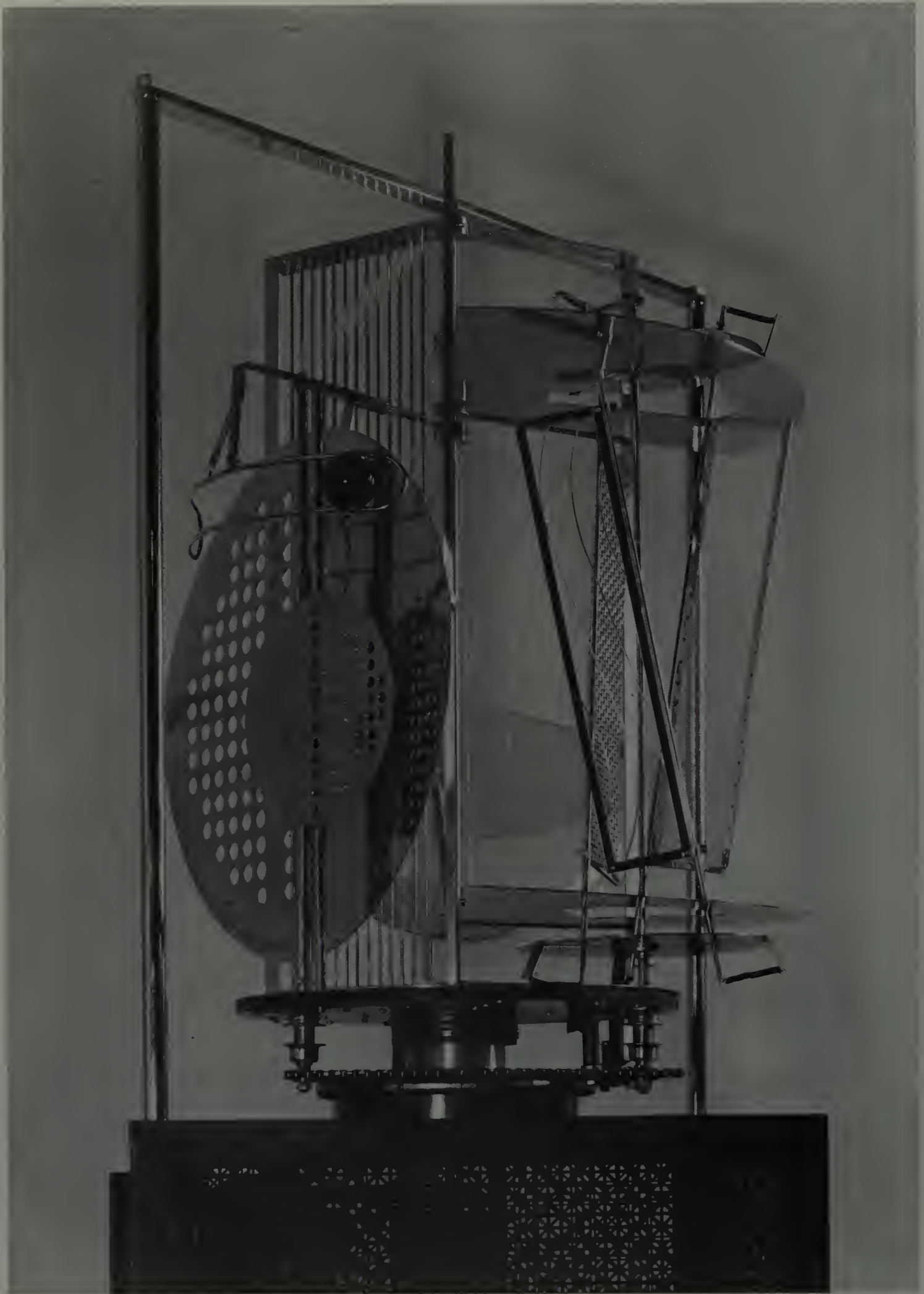
176-183 Light-Space Modulator (The Light Prop). 1922-30

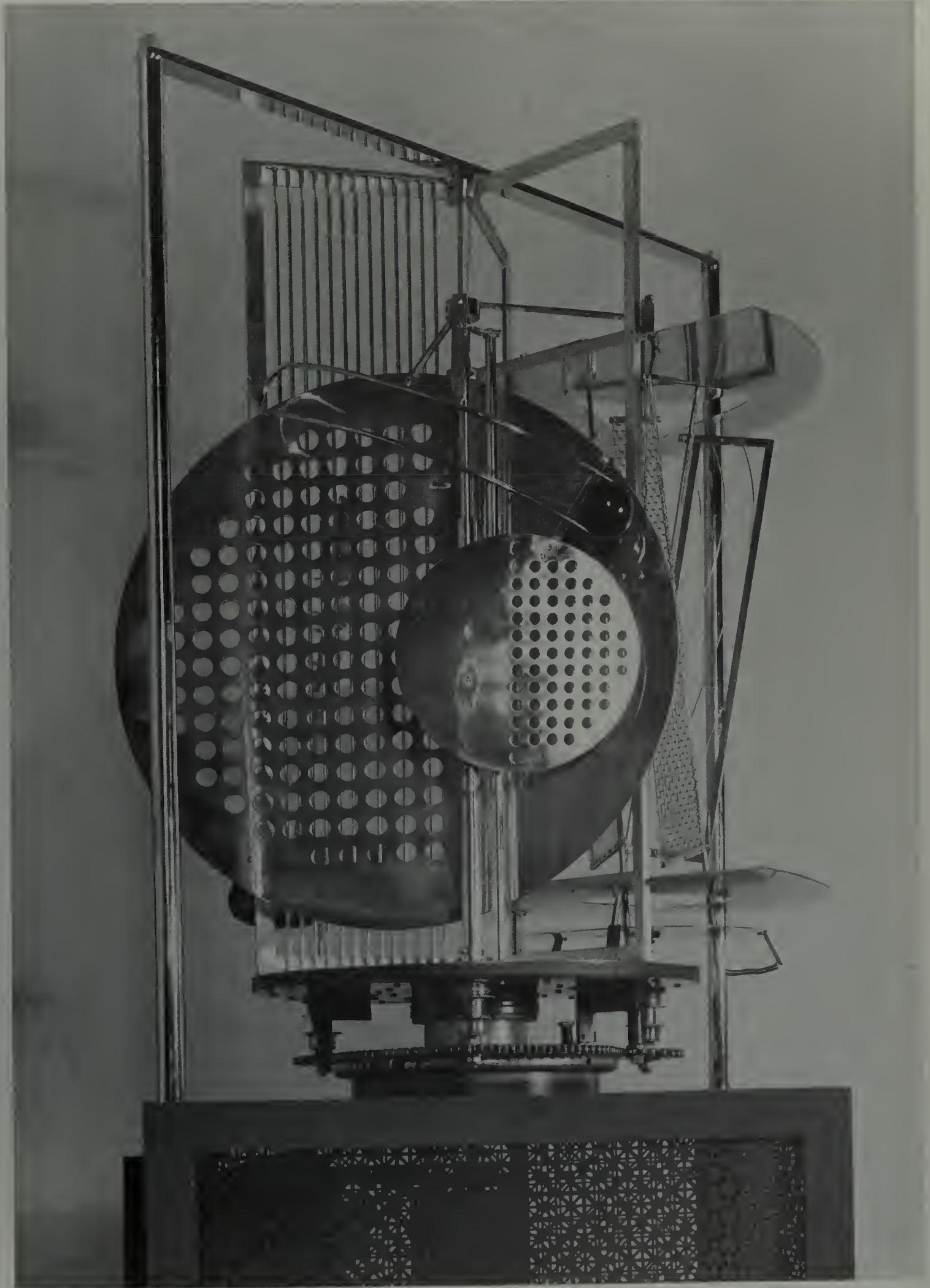












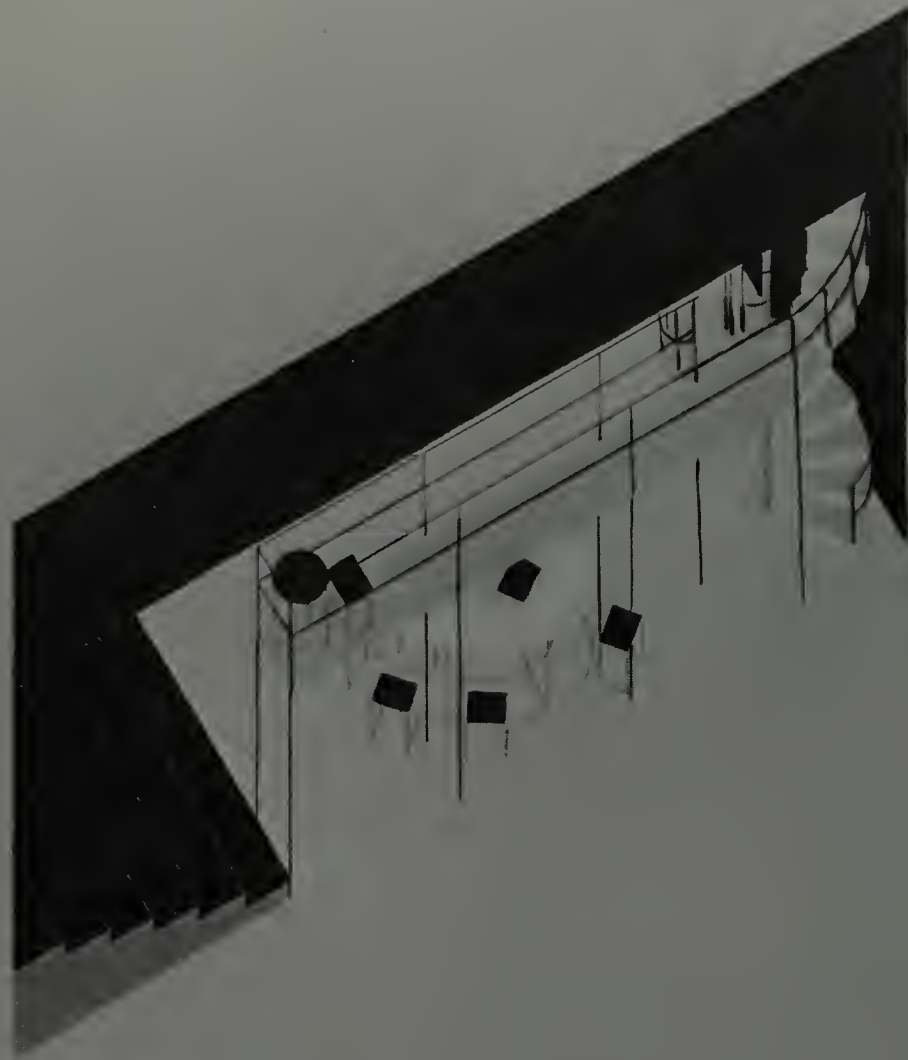


DER KAUFMANN VON BERLIN

von **WALTER MEHRING**

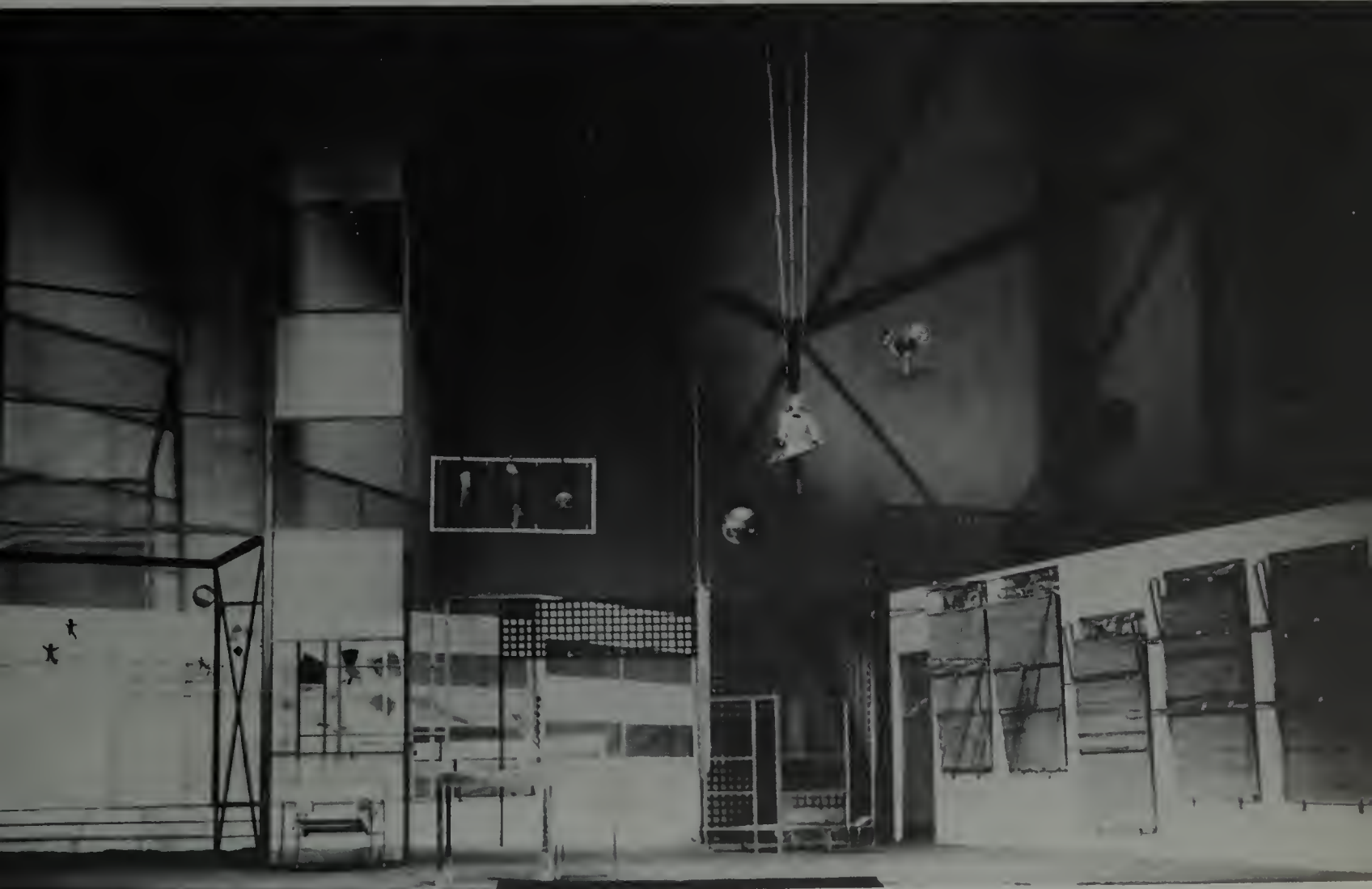
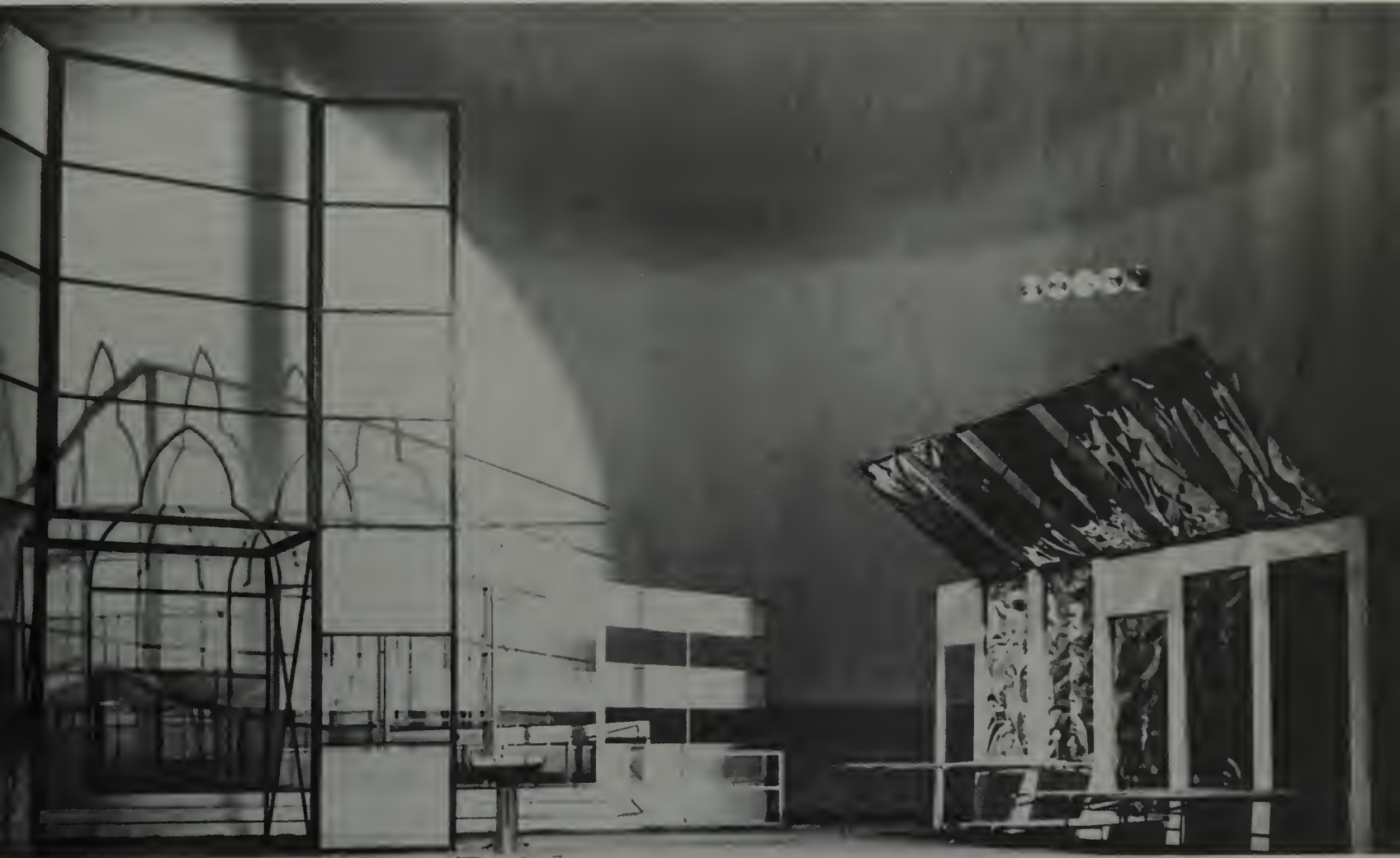
Bühnenbild: L. Moholy-Nagy





185 Stage design for *Tales of Hoffmann*. 1929

186–187 Stage set for *Tales of Hoffmann*. 1929



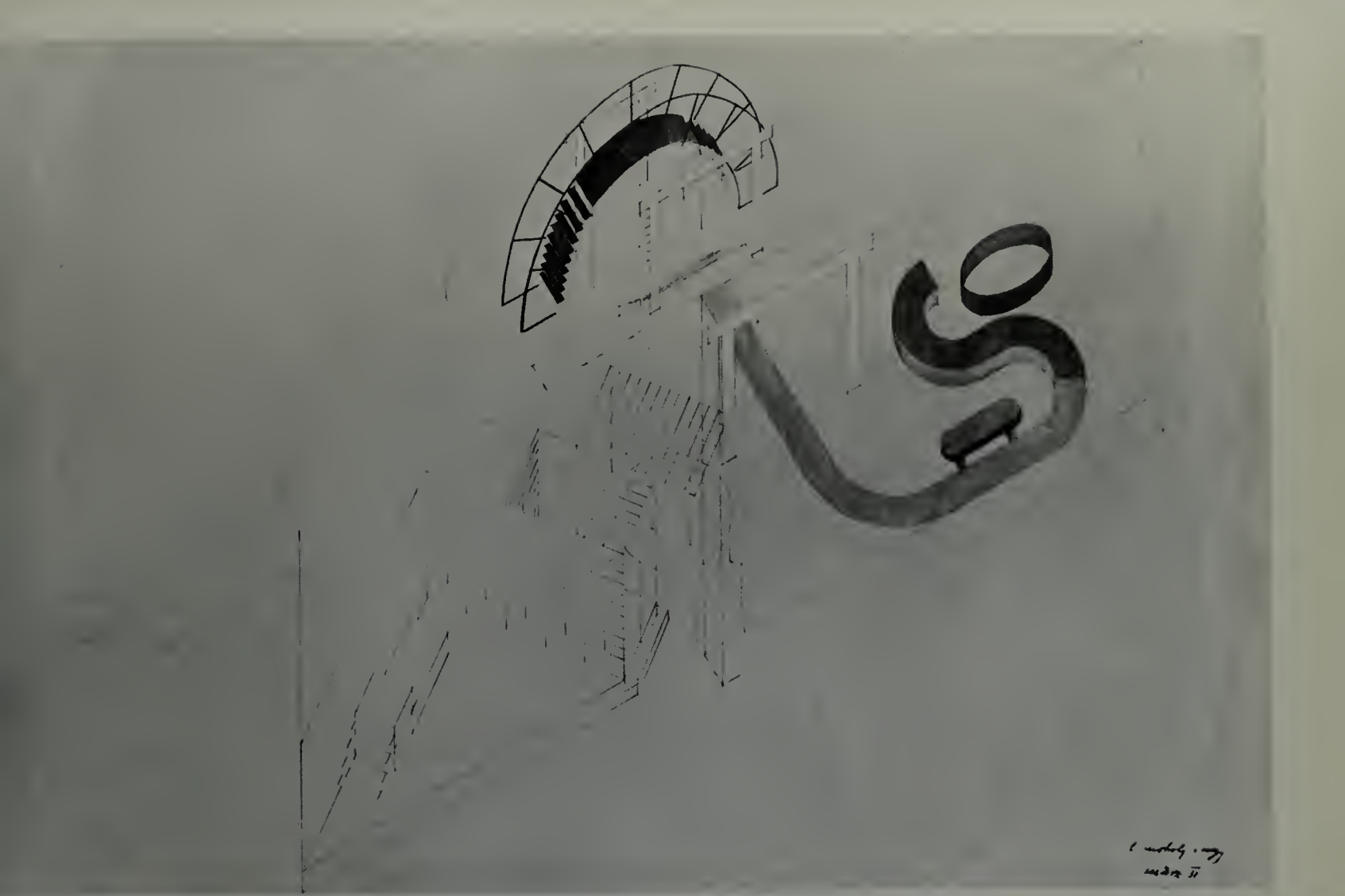


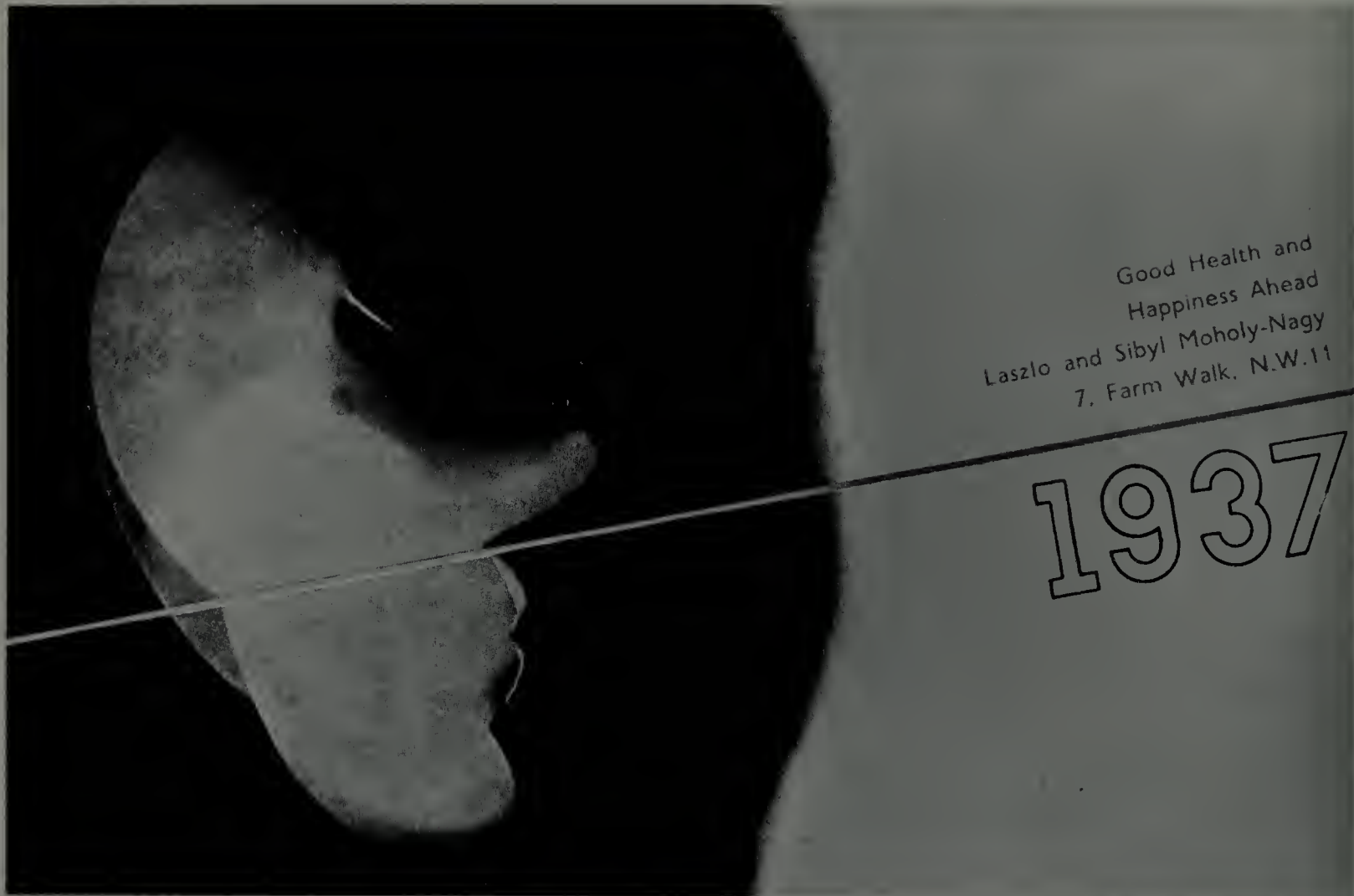


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! unholy = ugly





190 Costume design for *Madame Butterfly*. 1931

191 Stage design for *Madame Butterfly*. 1931

192 Stage set for *Madame Butterfly*. 1931

193 Greeting card. 1937



Heartiest Greetings from
Sibyl and László Moholy-Nagy
1210. Astor Street, Chicago, Ill.

1938



NS IN SPACE

GABO

G A B O

28 CORK STREET W.1

JANUARY 29

I. moholy-nagy

The exhibition will be opened by
Professor Walter Gropius
on Thursday the 31st December at 12 noon.

LONDON GALLERY 28 CORK STREET W.1
LONDON W.1

195 Invitation to Naum Gabo exhibition. 1936

196 Invitation to Moholy-Nagy exhibition. 1936

the new bauhaus

AMERICAN SCHOOL of DESIGN

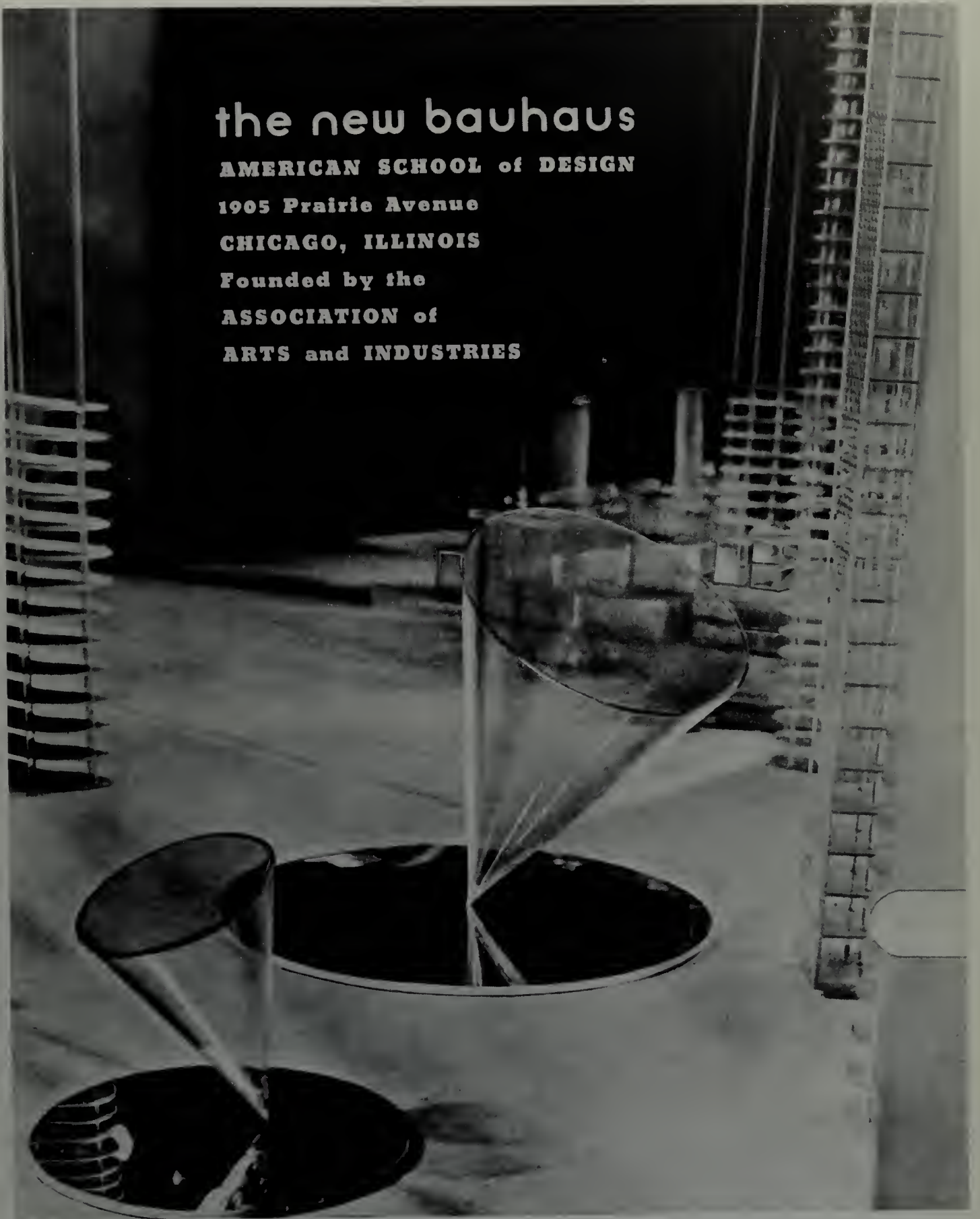
1905 Prairie Avenue

CHICAGO, ILLINOIS

Founded by the

ASSOCIATION of

ARTS and INDUSTRIES





198-199 Sketches for Korda's film *Things to Come*. 1936



200 Werkbund exhibition (with W. Gropius and H. Bayer). 1929

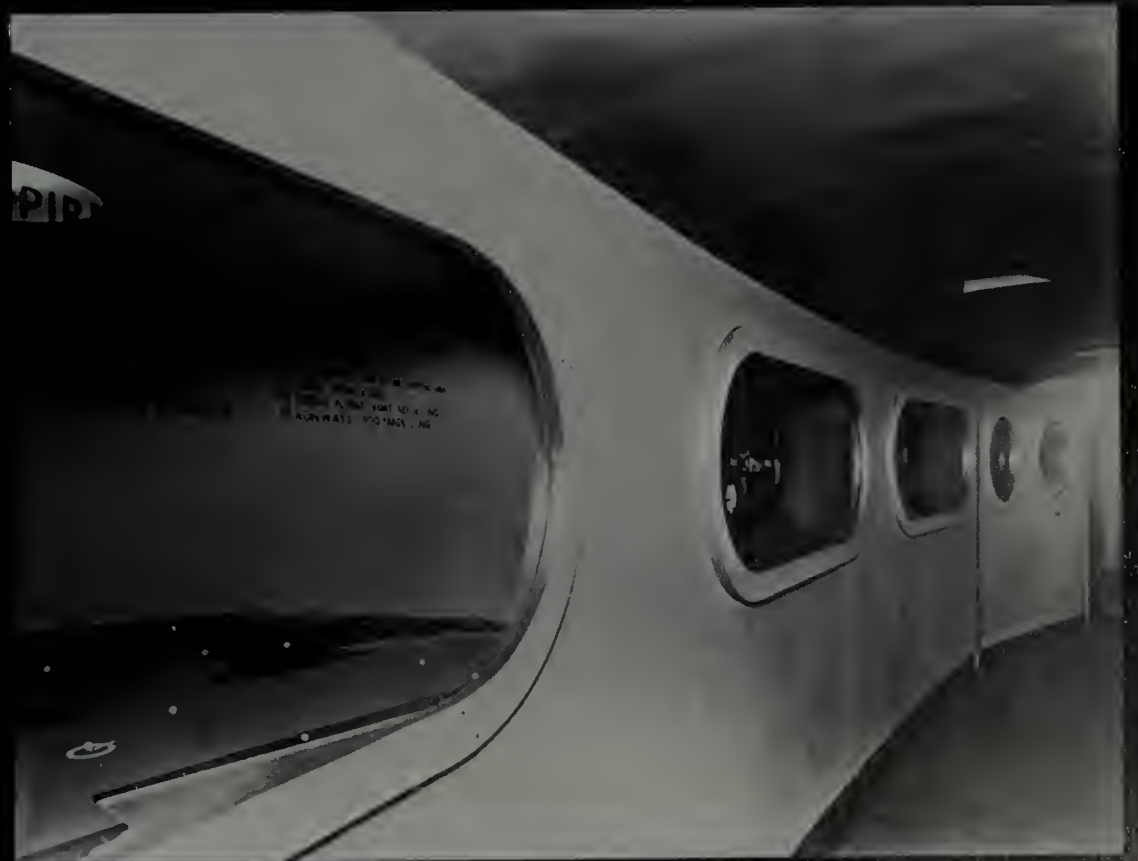
201 Exhibition installation. 1934



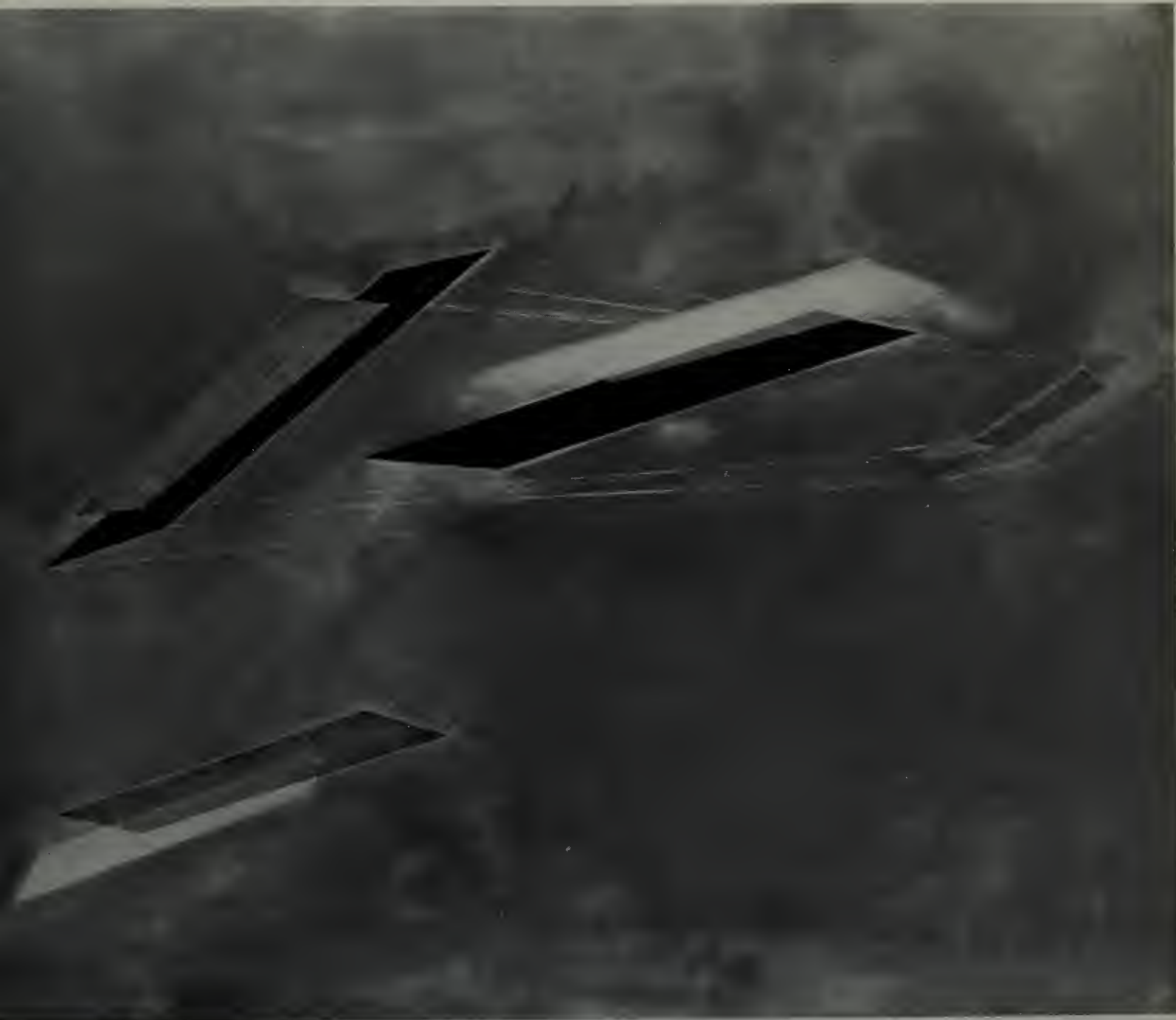
202 Exhibition model (with M. Breuer). 1936

203 Exhibition installation (with R. Rapson). 1945

204 Aircraft engineering exhibition. 1937



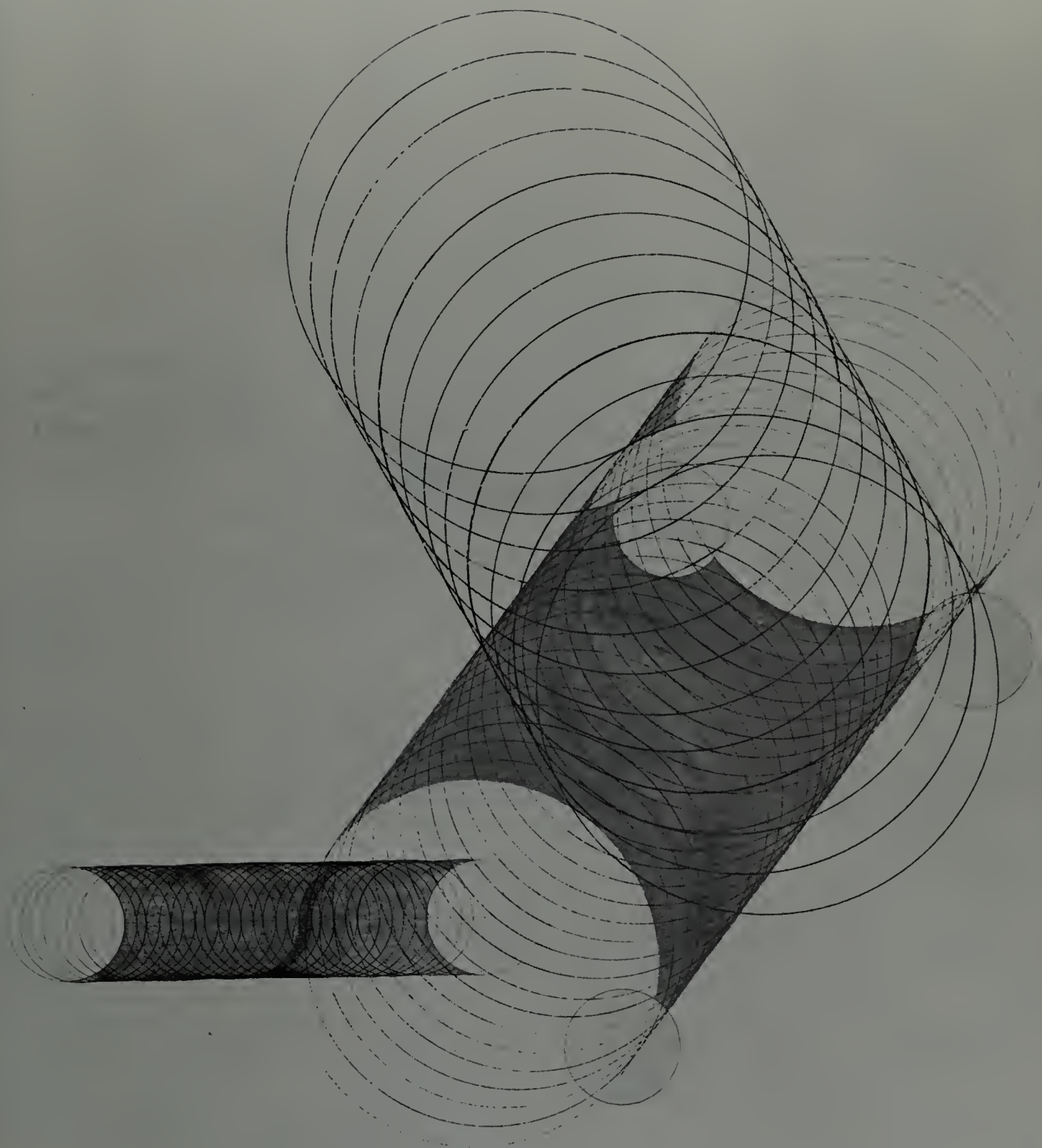






207 Collage. 1920

208 Spiral. 1921



relief

relief horizontal



Mohr - Nigg

bas relief
for the
deep big forms

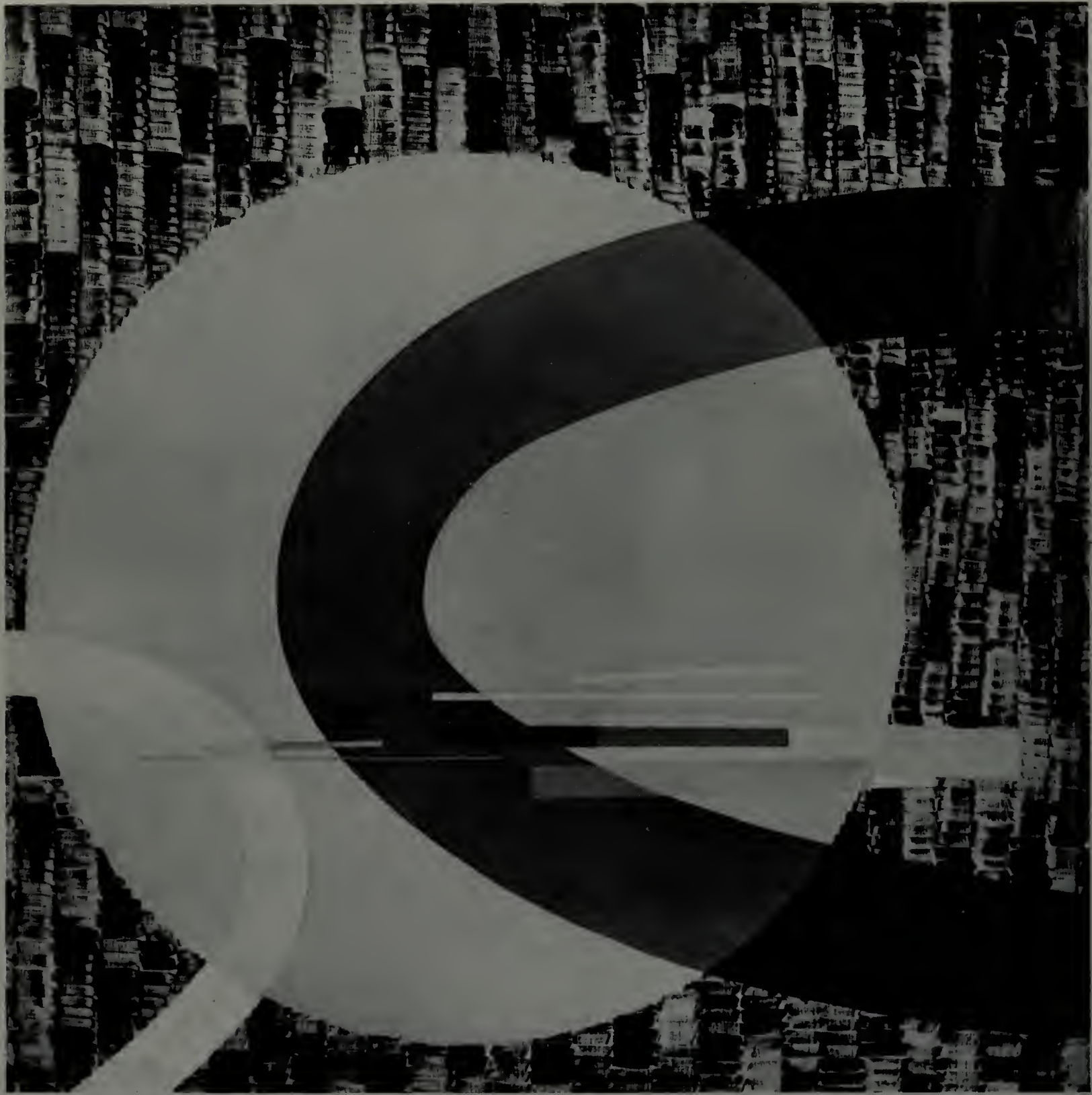
U-11 Jan 9

209 Three-dimensional Relief with Deep, Large Shapes. 1937

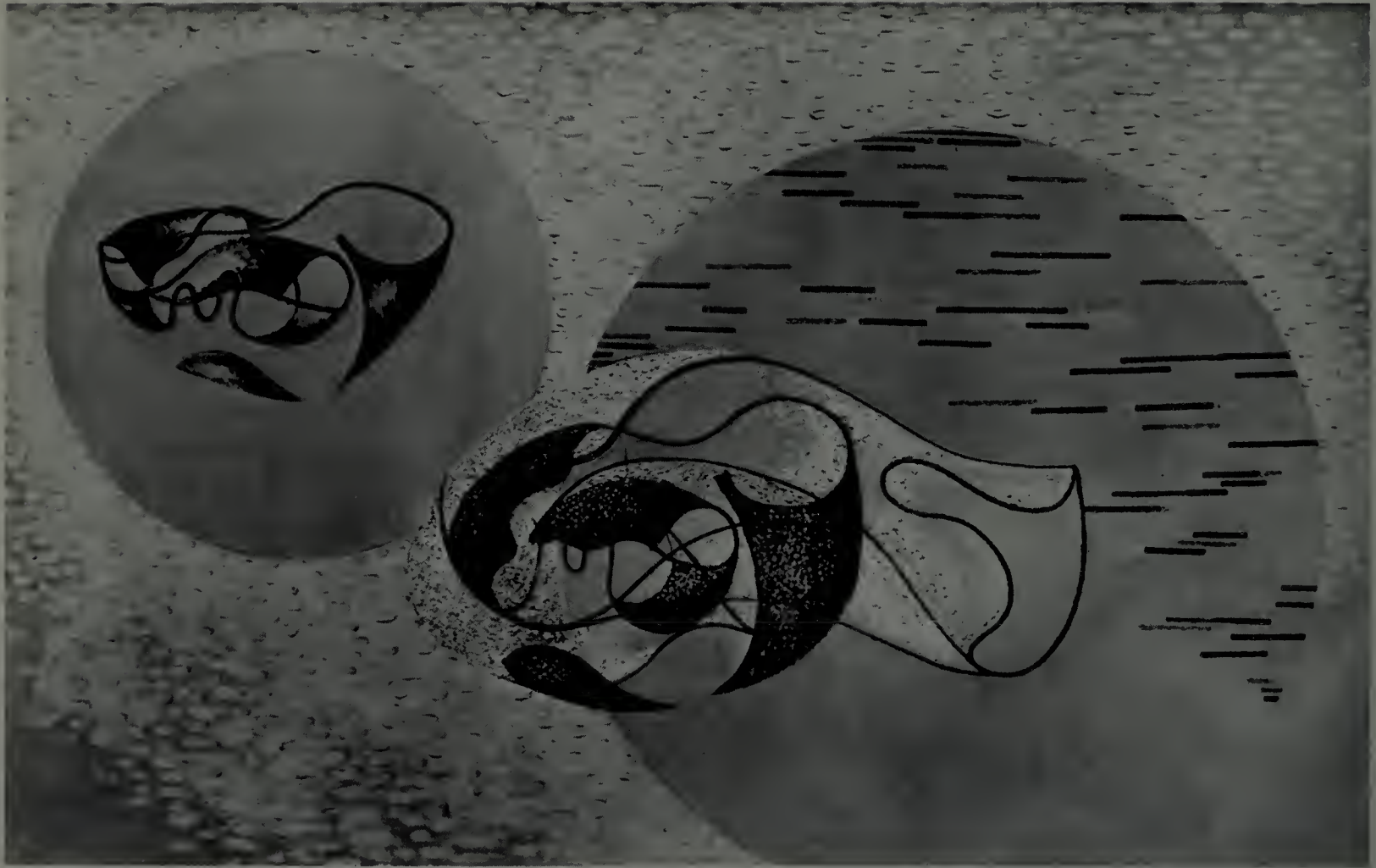
210 Space CH 3. 1938

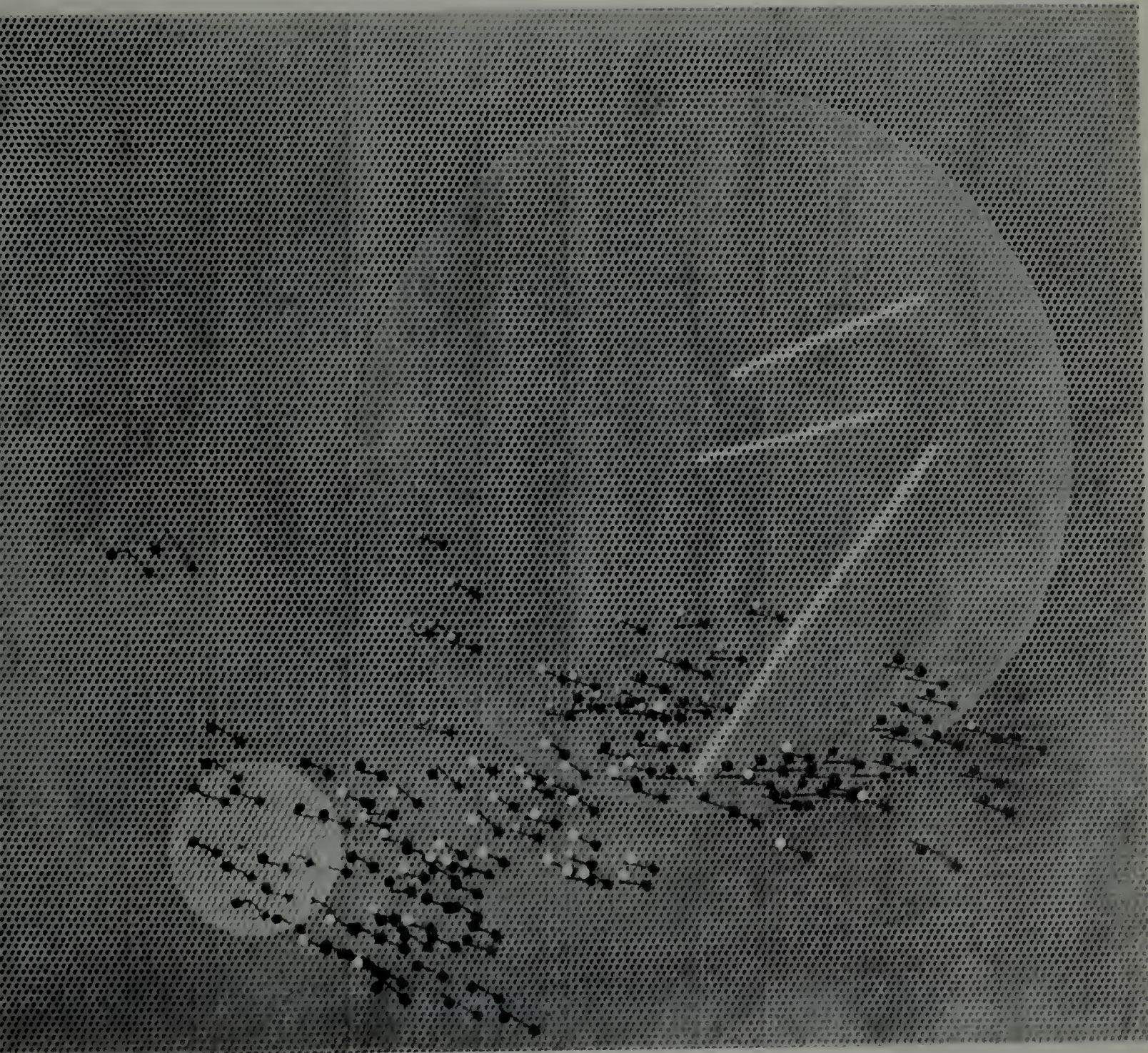
211 Space CH 4. 1938











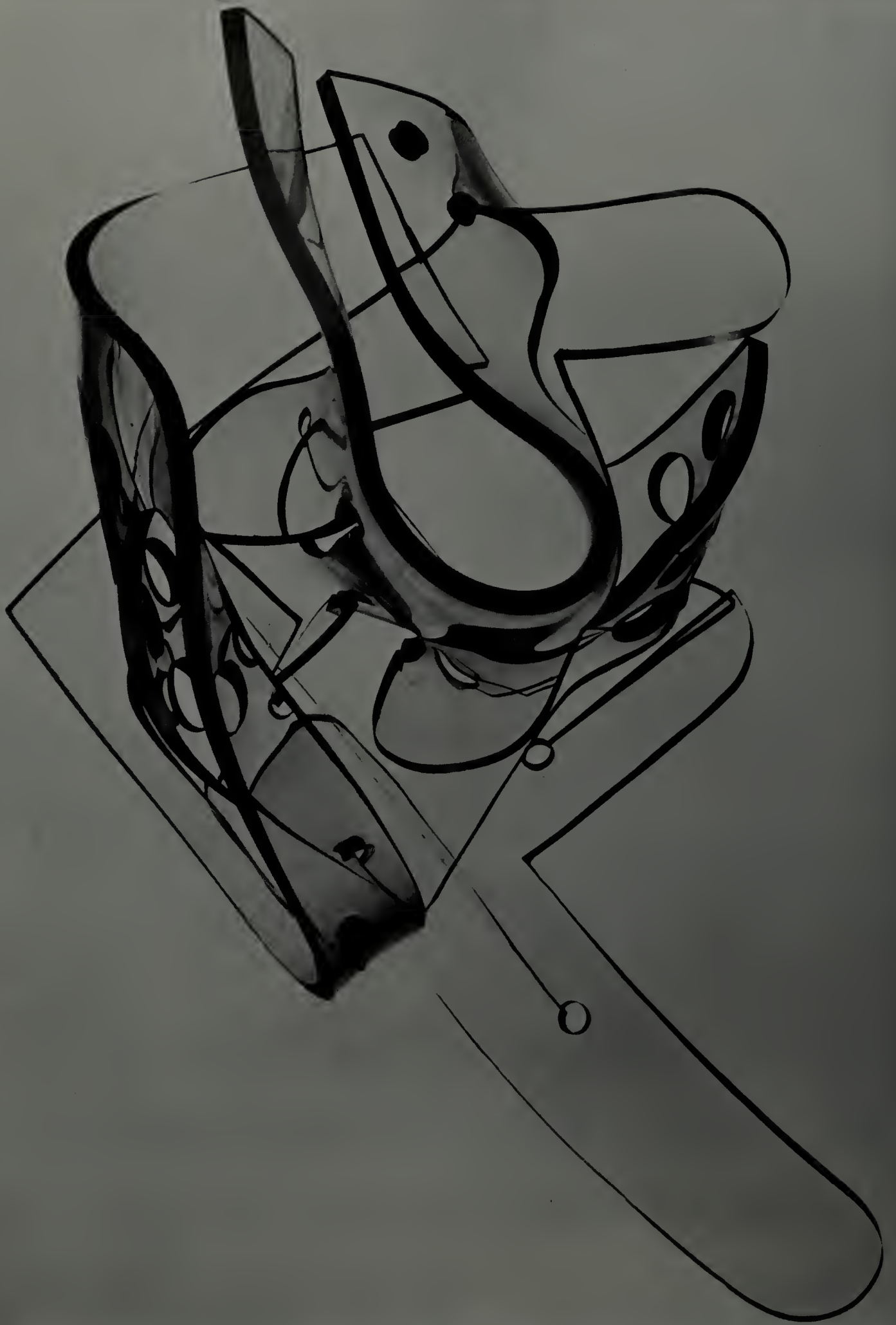


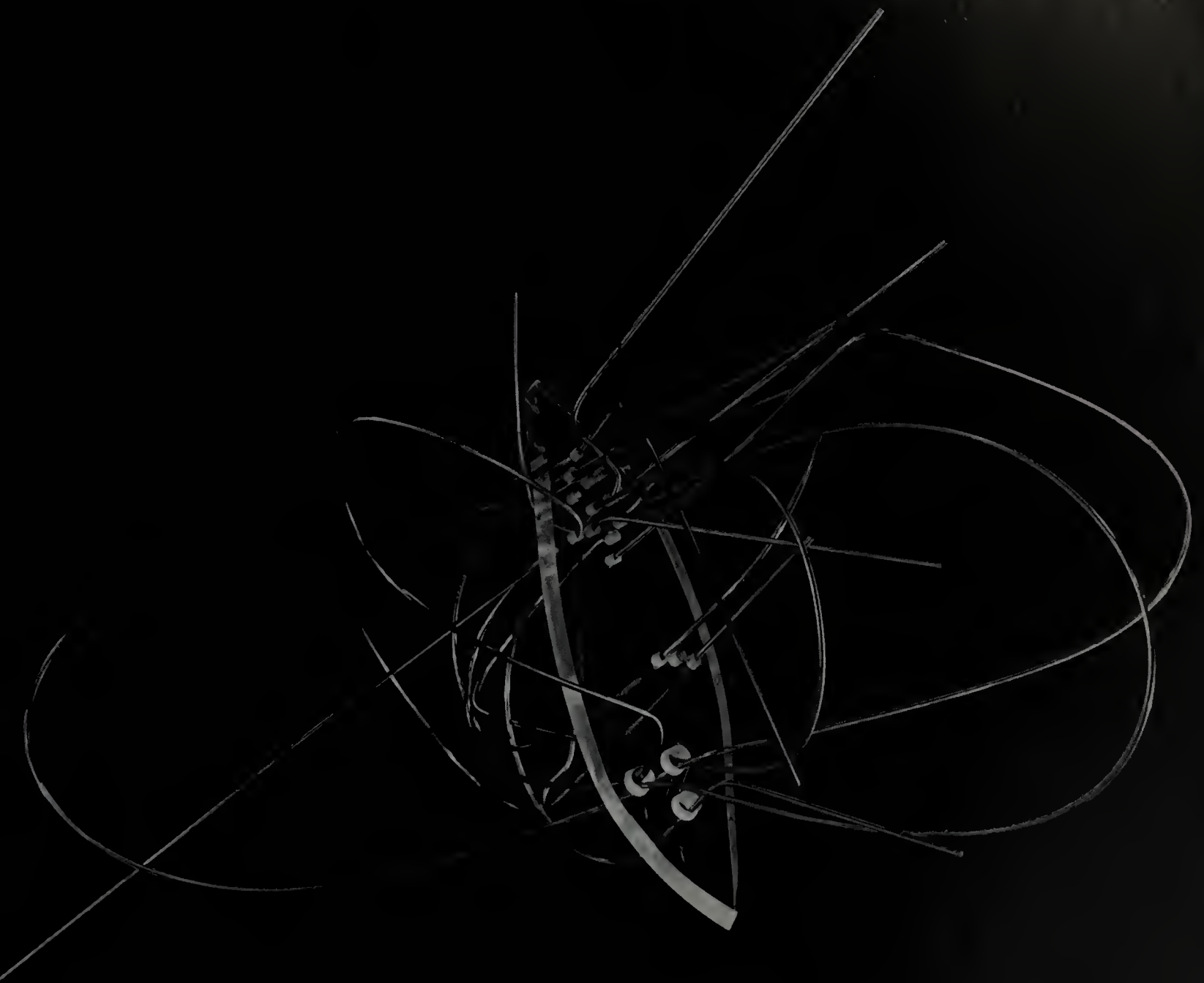


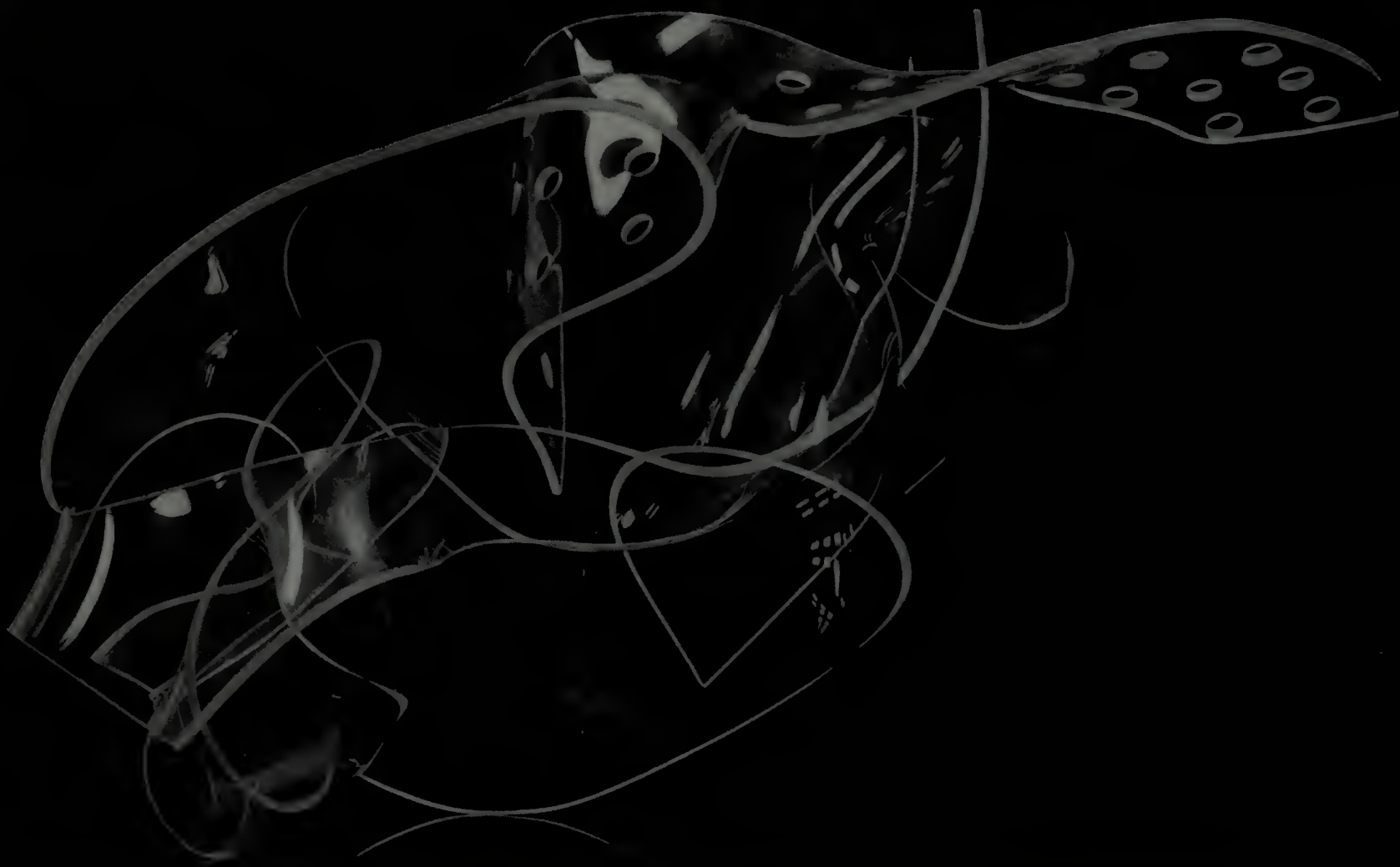
217 Composition CH7. 1941

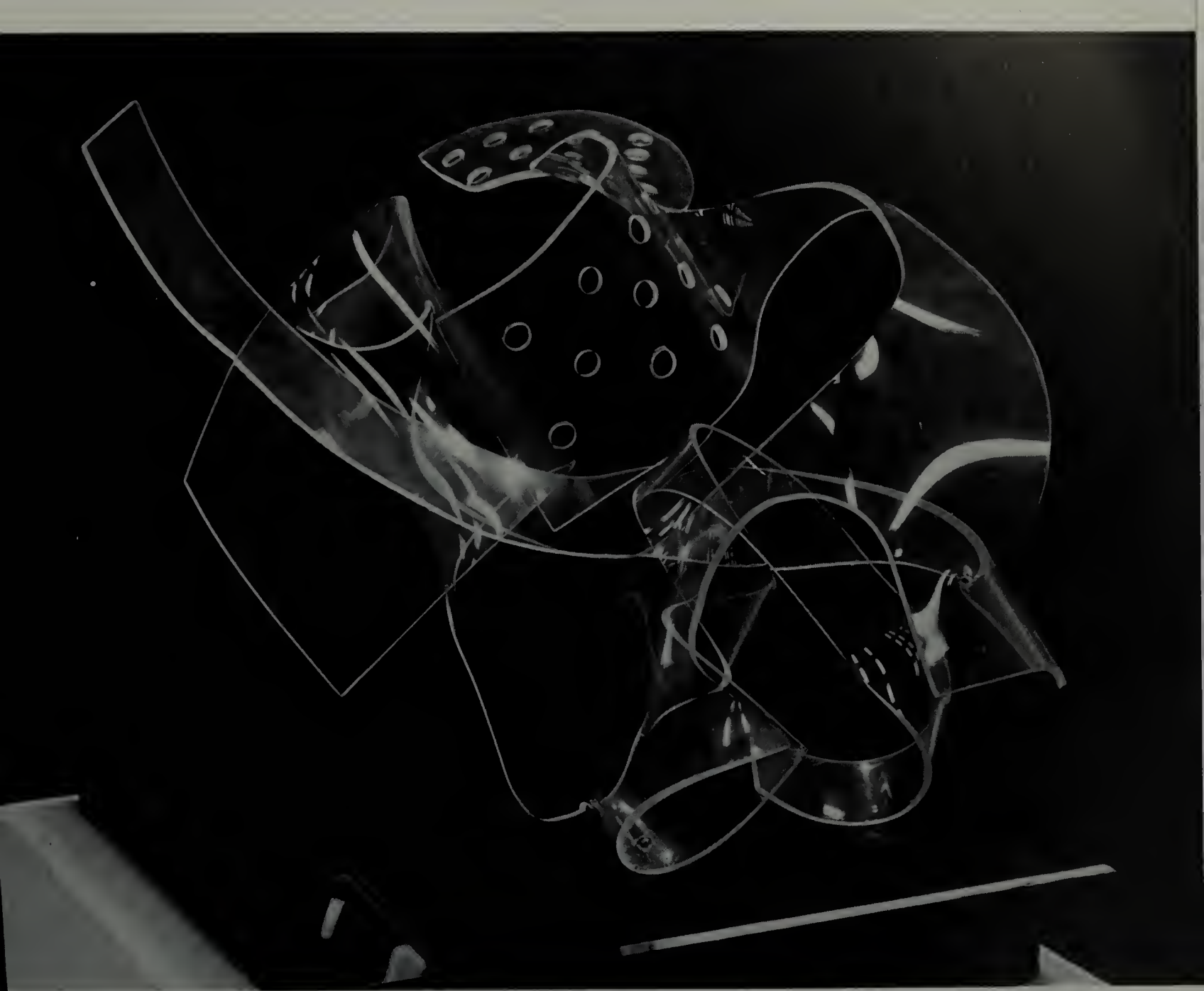
218 Leda and the Swan. 1945

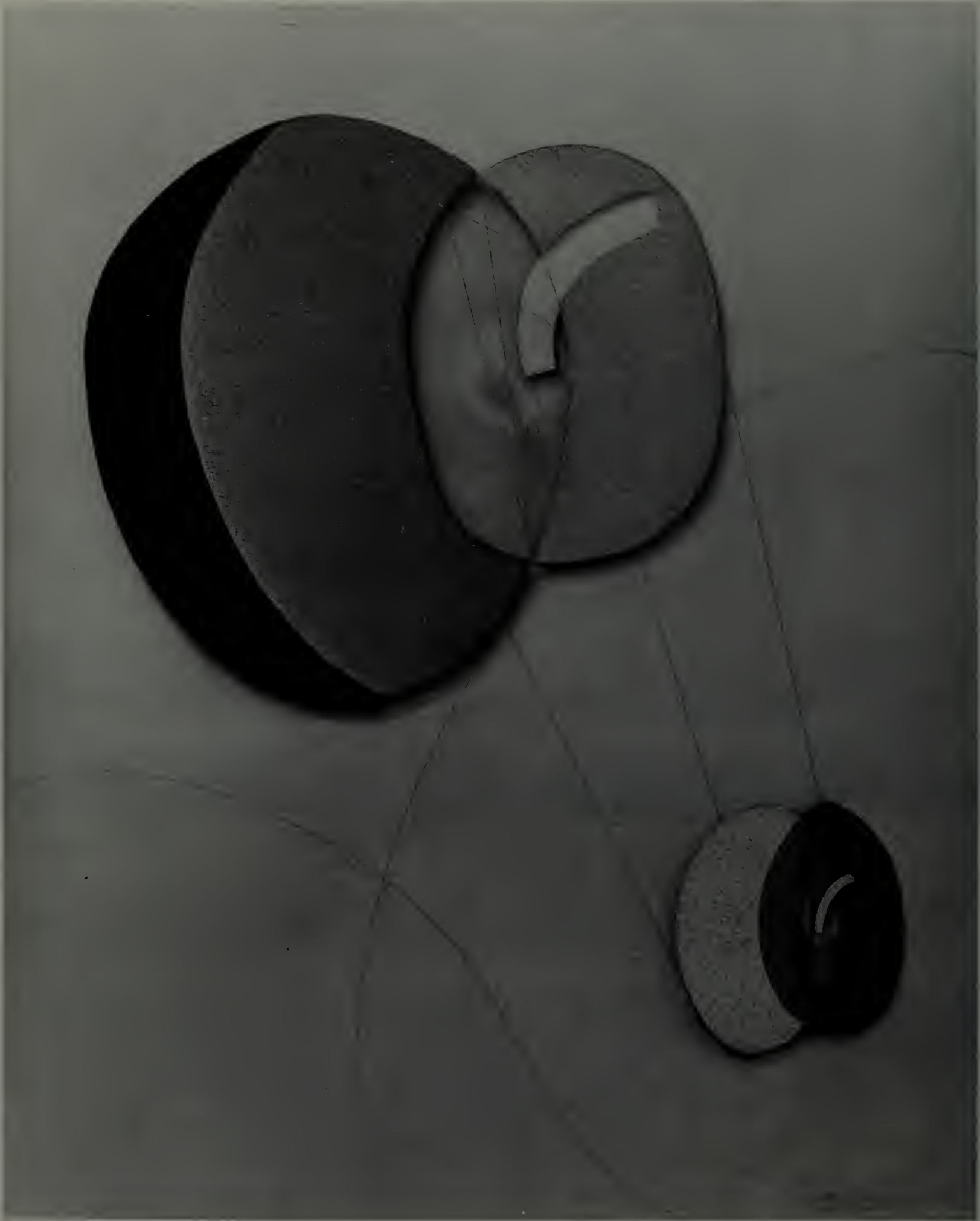
219 Double Form with Chromium Bars (Wire Curve). 1946











PART THREE

The selection which follows represents no more than a small part of the extremely rich Moholy-Nagy literature. It does not aim to be exhaustive, but merely to provide a distinctive portrait of this unusually versatile artist through the written documents. We have selected some of the most important contemporary criticisms and reviews and also documents and reminiscences relating to the artist's life and creative undertakings which are intended here to convey the outlines of an artistic biography.

Most of his books, famous throughout the world, have appeared in English. The systematically ordered thoughts contained in these books were previously elaborated by Moholy-Nagy in various studies and articles. Accordingly, we decided that the only way we could offer something new to the reader would be by providing a selection of the artist's writings from newspapers and periodicals, thereby sketching Moholy-Nagy's conceptual development and illustrating his great inventiveness and many-sidedness. Some of his writings were published in several places in several languages, with some slight linguistic modification. In this edition we have used published English or American translations where available.

1 ARTICLES, ESSAYS, SCENARIOS

Manifesto of Elemental Art

To all artists of the world!

We love bold invention, innovation in the arts. Art is actually the consequence of all the forces of an era. We live in the present, and therefore we postulate the consequence of our era, in an art that cannot derive but from ourselves, one that did not exist before us and shall not be when we are gone – not as some changing fashion but out of the recognition that art is eternally new and does not stop at the consequences of the past. We commit ourselves to elemental art. Art is elemental when, rather than philosophizing, it constructs itself out of the elements that belong solely to it. To be an artist is to surrender to the elements that give form. Only an artist can discover the elements of art. They are not born out of his individual will; the individual is no isolated entity and the artist is but an exponent of the forces that give shape to the elements of the world. Artists! Declare your solidarity with art! Reject styles! We demand a world without styles in order to arrive at *style!* Style is never plagiarism!

We consider this manifesto an act. Permeated by the dynamism of our era, we proclaim through elemental art the innovativeness of our attitude, of our conscience by the sources of power constantly intersecting and constituting the spirit and the form of an epoch; these sources create art as something pure, liberated from utility and beauty, as something elementary within the individual. We demand elemental art! Down with reaction in art!

Berlin, October 1921

Raoul Hausmann, Hans Arp, Ivan Puni, Moholy-Nagy
'Aufruf zur elementaren Kunst'
De Stijl, 1921, No. 10

On the Problem of New Content and New Form

Because articles on the fine arts appearing in the first number of *A. E.*¹ have elicited responses from several quarters suggesting that they be reexamined, we have decided that the problem – because it truly is a problem and because there is a need to clarify the misconceptions that have been engendered – must be properly discussed. We shall discuss the responses to the articles on this subject published below, and in several future numbers as well, in a long comprehensive article when the time comes. Below, we commence publication of the articles in the order they were received.

MOHOLY-NAGY:

I welcome the appearance of *A. E.*, for it is brave and defiant; but, regardless of how happy I am that it is with us, I must take issue with many of its opinions because I find them retrograde and inherently dangerous.

Why should it be a matter for debate whether a person has the right to express himself in words or colours, in forms or light? In every one of his gestures, in every one of his manifestations, man gives himself. At most, we may ask whether the painter is as much of a man as a poet or a technician, a sculptor or a scientist. Who dares doubt it? Today, if someone has arrived at the natural point of view that every man has an equal right to enjoy the goods about him and made for him, and if he knows that today the only way to realize this is through class struggle – and he not only knows this but consciously stands his ground in this matter – then this person, through his own unique creative talent (as painter, engineer, artisan, scientist) will in any event become the mouthpiece of this human attitude.

The artist, however, does not achieve more by dint of giving form to something, since he can project from within only that which was already there. The ethic of the need to create lies precisely in the fact that the artist does not wish to keep the values that have accumulated within him for himself, but wants to share them with his fellow men. (The work and struggle of the artist amount only to the fact that he would like to convey the things breaking forth from his intuitive depths in their entirety, although he is never completely successful in this.) And since works of art originating from intuition can be grasped at first only intuitively, who is to say that the 'entirety of the Word' has a greater value than manifestations of colour and form?

We, who today have become one with the necessity and the condition of class struggle in all respects, do not think it important that a person should find enjoyment in a picture, in music or in poetry. The primary requirement is that those who have not yet reached the contemporary standard of mankind* should be enabled to do so as soon as possible through our work. And because a person's intuitive understanding varies, because one is more interested in expression through colour and another in words, it is our duty to open all the channels of intuition so that we may influence the maximum number of people.

The fact that capitalist society often abuses works produced with the highest ethical aims in mind, and that it may even use them against the proletariat, must not make us enemies of art. (The British Luddites!) It is dangerously short-sighted to try to do away with the wonderful qualities of machines and the power over nature they deliver into our hands by bringing up the example of the dreadnought and the skyscraper. We need the machine. We need it, free from romanticism. The skyscraper really is an unhealthy construction not to be emulated, but we can stand up for funiculars and cranes and water towers which are the ingenious creations of the same spirit of construction. The absolute value of a piece of work cannot be prejudiced by the extortionist, corrupt practices of the society in question. It is not the machine that is bad, but today's social order. That is why, concurrently with the products of the imagination, we have great need of the kind of political propaganda that can convince the proletariat that everything created by man serves his ends *if and only if* he takes the reins of his destiny into his own hands.

Our special problems – I myself paint and make spatial constructions – surely cannot be solved by any insistent posing of the question of 'content and form'. The unity and totality of a work is manifest in the total interdependence of 'form and content'. That is to say, this 'interdependence' is merely a fictive dualism because for me 'form and content' are indissoluble. Modern man** is satiated with the 'formal and contextual' meaning of culture to date; and first, he burst open his inherited fetters (Impressionism), and then he tried to create a new unity from the broken pieces (Cubism, Futurism, Expressionism). Once he realized that he could not create something new out of the bits and pieces of the old, he scattered the pieces to the winds with an impotent, desperate laugh (Dadaism). There was new work to be done; for a new ordering of a new world the need arose once again to take possession of the simplest elements of expression, colour, form, matter, space. And just as in our striving towards a new life we cannot be satisfied with the dogmas of existing societies, inasmuch as we are searching for the very laws of our humanity, so we had to start from scratch upon the work of determining the interrelationship of colours, forms and tensions (Suprematism, Constructivism). This is how we arrived in painting, for example, at the simplest and also the most complicated problems, the building up of a given surface by the ego, in which it is no longer so much the subjective experience that dominates but rather the objective demands of colour. This is the essence of the use of the much-ridiculed square. While a triangle set on any one of its angles or a trapezoid or an irregular form has a pronounced psychological effect by dint of its form, the square, being the most neutral form, is of consequence only as a bearer of colour and creates least disturbance among the interrelationships of the colours. The same applies in the case of spatial and material constructions. We seek for that simplest solution which will provide maximum possibility for the treatment and for spatial tension so that, on one hand, man may learn to handle his materials, while on the other he may participate with his own tensions in his environment, thereby increasing its vitality.

It is no use announcing that easel painting is dead, and that colour can function only as the material aspect of architecture, if we are unable to define the essence of this architecture with the required precision. True, considered as a mass tending to move towards collectivity, slowly we are moving towards architecture; but we are not yet in possession of the necessary components, nor can we even handle in a new way that which could serve that architecture today, because we have not yet been able to do away with tradition in our lives. Our task, therefore, is to clarify what is requisite for giving birth to this architecture (in politics, economics, education, the medical and natural sciences) as well as for consciously shaping the physical components of construction (matter, space, form, colour). We cannot build without building materials, neither can we build first and only after the roof is in place decide what we intend to do with the building. The creative activities of the cultural revolution will clarify the colour,

* The current standard of mankind is always the standard of the living artists of a particular period.

** And what is most interesting is that if he is an artist, he is often intuitively revolutionary, even without having taken a conscious political stand.

shape, material and layout of the room that man, who will in no way be identical with his old self, shall wish to live in. It is his subconscious intuitive awareness of these things that has driven every artist of recent times to produce works that have as their goal the definition of the elements composing them and the know-how to handle them in an autonomous way.

It is my contention that the fine arts and the sciences have advanced further in this respect than literature, which at most indulges in Dadaist gibberish and advances towards the 'Word', its only source of light, with extreme hesitancy.

The role of 'militant painting' as propaganda is something else again. In these days of the cinema and posters that can be shaped with the help of photography, the poster as we know it today will not help us achieve our aim. We deal with this problem, too, because it is very important, less from the point of view of the necessary path which the development of painting will take than from the point of view of *learning how to affect the masses psychologically*.

One thing is certain. If all of us who are fighting for the realization of a communist way of life would band together and concentrate all our energies on solving the problems facing us, instead of contending with each other, we would arrive at our goal that much sooner.

I sincerely hope to work together with *A. E.*; but let Sándor Barta not make the mistake of excluding some people from work because he either does not know or does not understand what they are doing.

No man can take upon himself the burden of responsibility and of battle. We too are at work, work that is no child's play.

'Az új tartalom és az új forma problémájáról'
Akasztott Ember, 1922. Nos. 3-4, p. 3.

Manifesto²

We are aware that Constructivism today is increasingly developing bourgeois traits. One of the manifestations of this is the Dutch Stijl group's constructive (mechanized) aestheticism as well as the technical Naturalism achieved by the Russian Constructivists (the Obmokhu group) with their constructions representing technical devices.

Every form of art that sees itself as hovering above the current social forms in aesthetic or cosmic perspective exists on a bourgeois level even if its adherents call themselves Constructivists. The same holds true for all forms of contemporary naturalism, whether its subject be the machine or nature herself.

For this reason, we make a distinction between the aestheticism of bourgeois Constructivists and the kind of constructive art that springs from our communist ideology. This latter, in its analyses of form, matter and structure, is breaking the ground for the collective architecture of the future, which will be the pivotal art form of communist society. As such it will not think of itself as either absolute or dogmatic, in that it *clearly sees the partial role it fulfils in the integrated process of social transformation at the present time*. It is raised above bourgeois Constructivism and against the bourgeois construction of life in today's society by that constructive content which is indicative of constructive potentialities, which can be fully realized only within the framework of communist society. In contrast, the bourgeois Constructivists provide only the haute bourgeois forms of today's capitalist society with the adequate and simplest artistic construction which can be realized in today's society.

This kind of reappraised (from a bourgeois point of view, destructive) Constructivism (to which only a tiny portion of those contemporary movements in art that are known by the name of Constructivism belong) leads, on the one hand, in practical life to a new constructive architecture* that can be realized only in a communist society, and, on the other hand, to a nonfunctional but dynamic (kinetic) constructive system of forces which organizes space by moving in it, the further potential of which is again in practice dynamic architecture. The road to both goals leads through interim solutions.

In order to bring about a communist society; we artists must fight alongside the proletariat, and must subordinate our individual interests to those of the proletariat. We think that this is possible only within the communist party, by working in co-operation with the proletariat. For this reason, we think that a *Proletkult organization* should be established, an organization

* City construction based on a unified plan with new materials selected to satisfy the collective needs of communist society (and not used hitherto in architecture), and with forms developed from the constructive potentialities of the new materials.

that would make such co-operation possible; that is why we join the *Egység*, since it was the one to begin work in this direction.*

The new *Proletkult* organization must turn against bourgeois culture (destructive work) and must look for a road leading to a new communist culture (the constructive aspect of the work); furthermore, it must liberate the proletariat from the pressure of bourgeois culture, and substitute for their bourgeois intellectuals' hunger for culture a wish for the most advanced organization of life. The artists of the *Proletkult* must pave the way for a high-standard (adequate) proletarian and collective art.

Ernő Kállai, Alfréd Kemény, László Moholy-Nagy, László Péri
'Nyilatkozat'

Egység, 1923. No. 4, p. 51.

Production – Reproduction³

If we want to understand correctly the mode of human expression and shaping in art and in other related domains, and if we want to achieve progress therein, we have to examine the contributing factors: namely, man himself as well as the means he applies in his creative activity.

Man as construct is the synthesis of all his functional apparatuses, i. e. man will be most perfect in his own time if the functional apparatuses of which he is composed – his cells as well as the most sophisticated organs – are conscious and trained to the limit of their capacity.

Art actually performs such a training – and this is one of its most important tasks, since the whole complex of effects depends on the degree of perfection of the receptive organs – by trying to bring about the most far-reaching *new* contacts between the familiar and the as yet unknown optical, acoustical and other functional phenomena and by forcing the functional apparatuses to receive them. It is a specifically human characteristic that man's functional apparatuses can never be saturated; they crave ever new impressions following each new reception. This accounts for the permanent necessity for new experiments. *From this perspective, creative activities are useful only if they produce new, so far unknown relations.* In other words, in specific regard to creation, reproduction (reiteration of already existing relations) can be regarded for the most part as mere virtuosity.

Since it is primarily production (productive creation) that serves human construction, we must strive to turn the apparatuses (instruments) used so far only for reproductive purposes into ones that can be used for productive purposes as well. This calls for profound examination of the following questions:

What is this apparatus (instrument) good for?

What is the essence of its function?

Are we able, and if so to what end, to extend the apparatus's use so that it can serve production as well?

Let us apply these questions to some examples: the phonograph and photography – single pictures (stills) and film.

Phonograph. So far it has been the job of the phonograph to reproduce already existing acoustic phenomena. The tonal oscillations to be reproduced were incised on a wax plate by means of a needle and then retranslated into sound by means of a microphone (correctly: diaphragm, moving cone).

An extension of this apparatus for productive purposes could be achieved as follows: the grooves are incised by human agency into the wax plate, without any external mechanical means, which then produce sound effects which would signify – without new instruments and without an orchestra – a fundamental innovation in sound production (of new, hitherto unknown sounds and tonal relations) both in composition and in musical performance.

The primary condition for such work is laboratory experiments: precise examination of the kinds of grooves (as regards length, width, depth etc.) brought about by the different sounds; examination of the man-made grooves; and finally mechanical-technical experiments for perfecting the groove-manuscript score. (Or perhaps the mechanical reduction of large groove-script records.)

Photography. The photographic camera fixes light phenomena by means of a silver bromide plate positioned at the rear of the camera. So far we have utilized this function of the apparatus

* We take note of this joining. We do not agree with the over-evaluation of Constructivism, and shall return to this in the course of an essay in our next number. – Ed.

only at a secondary level: in order to fix (reproduce) single objects as they reflect or absorb light. In the event of reevaluation taking place in this field, too, we will have to utilize the bromide plate's sensitivity to light to receive and record various light phenomena (parts of light displays) which *we ourselves* will have *formed* by means of mirror or lens devices.

Many experiments are needed here, too. Telescopic recordings of stars as well as radiography represent interesting preliminary stages.

Film. Kinetic relationships of projected light. This can be achieved by sequences of fixed partial movements. Cinematography as practised so far is limited mainly to the reproduction of dramatic action. There are certainly many important activities to be carried out in the domain of film. Some are scientific in nature (dynamism of various motions: of man, animal, city etc.; different observations: functional, chemical etc.; wireless projection of film news etc.); some involve the completion of reproduction itself from a constructive standpoint. But the main task is the formation of *motion as such*; naturally, this cannot be realized without a man-made play of forms as motion carrier.

Naive experiments relative to such development were the trick-films (advertisements). Much more highly developed are the works of Ruttmann and the *Clavilux** of Th. Wilfred; these, however, presented motion as an objectless dramatic action (abstraction or styling of erotic or natural events), albeit by trying to introduce the colour picture.

So far the most perfect works are those of Eggeling and Richter, in which instead of dramatic action there is already a play of forms, although to the detriment of kinetic formation. In fact, movement is not given formal purity, for over-emphasis upon the forms' development absorbs almost all the kinetic forces. The way ahead here will be the formation of motion without the support of any direct formal development.

‘*Produktion-Reproduktion*’
De Stijl, 1922. No. 7, pp. 97–101.

Dynamic-Constructive System of Forces

Vital constructivity is the embodiment of life and the principle of all human and cosmic development.

Translated into art, *today* this means the activation of space by means of dynamic-constructive systems of forces, that is, construction of forces within one another that are actually at tension in physical space and their construction within space, also active as force (tensions).

Constructivity as an organizing principle of human efforts has led the arts in recent times from technology to the sort of static form-invested procedure which has been reduced either to technical naturalism or to an over-simplification of form limited to the horizontal, the vertical and the diagonal. The best instance was an open, eccentric (centrifugal) construction which indicated the tensions of forms and of space, without, however, resolving them.

We must therefore replace the *static* principle of *classical art* with the *dynamic principle of universal life*. Stated practically: instead of static *material* construction (material and form relations), dynamic construction (vital construction and *force relations*) must be evolved in which the material is employed only as *the carrier of forces*.

Carrying further the unit of construction, a DYNAMIC-CONSTRUCTIVE SYSTEM OF FORCES is attained whereby man, hitherto merely receptive in his observation of works of art, experiences a heightening of his own faculties, and becomes himself an active partner with the forces unfolding themselves.

There is a close correlation between the problems of this system of forces and the problem of freely floating sculpture as well as of film as projected spatial motion. The first projects looking towards the dynamic-constructive system of forces can be only experimental demonstration devices for testing the connections between man, material forces and space. Next comes the use of the experimental results for the creation of freely moving (free from mechanical and technical movement) works of art.

L. Moholy-Nagy, *Alfréd Kemény*
‘*Dynamisch-konstruktives Kraftsystem*’
Der Sturm, Berlin, 1922. No. 12.

* The name indicates a kind of colour organ, although we are concerned with light projection on the plane and not in space.

New Form in Music. Potentialities of the Phonograph

Among present-day musical experiments, an important role is played by researches conducted with amplifiers which open up new paths in the production of acoustic phenomena. The aims of the Italian Bruitists, in constructing new instruments with new sound-formations, have been substantially fulfilled by experiments with the amplification tube as a specific instrument which permits the production of all sorts of acoustic phenomena. However, this alone does not exhaust the potentialities that might be expected as regards the transformation of music. I refer to the excellent paper by P. Mondrian, 'New form in music and the Italian Bruitists' (De Stijl), where the basic principles of innovation in creation with sound are analysed.

Mondrian says among other things, 'Music cannot develop through enrichment in terms of sounds or through refinement, but through the abolition of the duality of the individual and the universal, the natural and the spiritual; in other words, the achievement of human equilibrium is the aim of all creation.' And he goes on: 'Noises in nature result from simultaneous and continual fusion. By having partly destroyed this fusion and continuum, the music of the past has derived from this noise certain sounds which it has arranged in a certain harmony. In order to achieve a more universal mode of creation, the new music will have to attempt a new order of sounds and non-sounds (certain noises). The main point is to deliver ourselves through creation from the "natural", from the "animal", the characteristics of which are fusion and repetition. If the fusion and hereby the predominance of the individual is to be avoided, instruments will have to form the sort of sounds in which both wavelength and frequency must remain as even as possible. Therefore instruments must be constructed in such a way that every after-oscillation can immediately be interrupted. This kind of creation is inconceivable without a different technique and different instruments.'

If they are to be realized at all *externally* by technical inventions, these postulates will actually be met through employing the amplification tube.

My ambitions in the same field of experimental transformation in music are of another kind, though closely connected with the thinking of Mondrian. In what follows I shall pass over the motives for new sound-creation and shall present just one suggested means for its possible realization with the help of a new means of expression.

I have already suggested that the phonograph be transformed from an instrument of reproduction into one of production; this will cause the sound phenomenon itself to be created on the record, which carried no prior acoustic message, by the incision of groove-script lines as required.

Since my description of this process served elsewhere as an example to illustrate another idea, I was very brief in specifying the potentialities, without presenting detailed arguments, for the transformation of our musical conceptions along these lines. In speculative terms, the following is clear:

- 1 By establishing a groove-script alphabet an overall instrument is created which supersedes all instruments used so far.
- 2 Graphic symbols will permit the establishing of a new graphic and mechanical scale,* that is, the creation of a new mechanical harmony, whereby the individual graphic symbols will be examined and their relations formulated within a rule. (We may allude here to an idea that sounds rather utopian as yet; namely, the transposing of graphic designs into music on the basis of strict regularities of relationships.)
- 3 The composer would be able to create his composition for immediate reproduction on the disc itself, thus he will not be dependent on the absolute knowledge of the interpretative artist. So far, the latter was in most cases able to smuggle his own spiritual experience into the composition written in note form. The new potentialities afforded by the phonograph will re-establish the amateurish musical education of our day on a more wholesome basis. Instead of the numerous 'reproductive talents', who have actually nothing to do with *real* sound-creation (in either an active or a passive sense), the people will be educated to the *real* reception or creation of music.
- 4 The introduction of this system in musical performances will also facilitate to a significant degree independence from large orchestral enterprises, and the large-scale distribution of original creations by means of a simple instrument.

* Our present scale is approximately one thousand years old, and it is not absolutely necessary to be bound by its inadequacies today.

(The efficiency of the phonograph has been substantially improved lately by certain technical innovations. Among others, there are two important inventions in this field. One is electrical operation, the other a newly invented diaphragm which ensures almost completely friction-free reproduction of recorded compositions. I think that if we regard these as a necessary condition, then we shall have technically perfect apparatuses within the shortest time.)

I consider that the following practical experiments with the phonograph in the realm of musical composition should be initiated:

1 Since the grooves on the mechanically produced record are microscopic in size, we shall first have to devise a method for reducing by technological means down to the normal size of a present-day record any large-scale groove-script record that can conveniently be worked on by hand. It would be desirable to make a photograph of a present-day (reproductive) record and to make a photo-cliché or photo-engraving of the photograph by a zincographical or galvanoplastical process. Should such a record prove to be just more or less playable, the basis for subsequent work along these lines will be established.

2 Study of the graphic symbols of the most different (simultaneous and isolated) acoustical phenomena. Use of projectors. Film. (Specialist works on physics already include detailed descriptions thereof.)

3 Examination of mechanical, metallic and mineral sounds. From these, attempts to devise – for the time being, in a graphic way – a special language. Special attention to be paid to symbols created by different tonalities.

4 Graphic production of the largest contrasting relations. (Before beginning experiments on the wax plate, it is suggested that one trace with a needle the graphic wave lines of music on a [reproductive] phonograph disc; these lines will become well known to the experimenter who will acquire therefrom a sense for graphic representation.)

5 Finally, there are improvisations on the wax plate to be considered, the phonetic results of which are theoretically unforeseeable, but which may permit us to expect significant incentives since the instrument is rather unknown to us.

*'Neue Gestaltung in der Musik.
Möglichkeiten des Grammophons.'*
Der Sturm, Berlin. July 1923, No. 14.

Light – A Medium of Plastic Expression⁴

Since the discovery of photography virtually nothing new has been found as far as the principles and technique of the process are concerned. All innovations are based on the esthetic representative conceptions existing in Daguerre's time (about 1830), although these conceptions, i. e., the copying of nature by means of the photographic camera and the mechanical reproduction of perspective, have been rendered obsolete by the work of modern artists.

Despite the obvious fact that the sensitivity to light of a chemically prepared surface (of glass, metal, paper, etc.) was the most important element in the photographic process, i. e., containing its own laws, the sensitized surface was always subjected to the demands of a camera obscura adjusted to the traditional laws of perspective while the full possibilities of this combination were never sufficiently tested.

The proper utilization of the plate itself would have brought to light phenomena imperceptible to the human eye and made visible only by means of the photographic apparatus, thus perfecting the eye by means of photography. True, this principle has already been applied in certain scientific experiments, as in the study of motion (walking, leaping, galloping) and zoological and mineral forms, but these have always been isolated efforts whose results could not be compared or related.

It must be noted here that our intellectual experience complements spatially and formally the optical phenomena perceived by the eye and renders them into a comprehensible whole, whereas the photographic apparatus reproduces the purely optical picture (distortion, bad drawing, foreshortening).

One way of exploring this field is to investigate and apply various chemical mixtures which produce light effects imperceptible to the eye (such as electro-magnetic rays, X-rays).

Another way is by the construction of new apparatus, first by the use of the camera obscura; second by the elimination of perspective. In the first case, using apparatus with lenses and mirror-arrangements which can cover their environment from all sides; in the second case, using

an apparatus which is based on new optical laws. This last leads to the possibility of 'light-composition,' whereby light would be controlled as a new plastic medium, just as color in painting and tone in music.

This signifies a perfectly new medium of expression whose novelty offers an undreamed of scope. The possibilities of this medium of composition become greater as we proceed from static representation to the motion pictures of the cinematograph.

I have made a few primitive attempts in this direction, whose initial results, however, point to the most positive discoveries (and as soon as these attempts can be tested experimentally in a laboratory especially devised for the purpose, the results are certain to be far more impressive).

Instead of having a plate which is sensitive to light react mechanically to its environment through the reflection or absorption of light, I have attempted to control its action by means of lenses and mirrors, by light passed through fluids like water, oil, acids, crystal, metal, glass, tissue, etc. This means that the filtered, reflected or refracted light is directed upon a screen and then photographed. Or again, the light-effect can be thrown directly on the sensitive plate itself, instead of upon a screen. (Photography without apparatus.) Since these light effects almost always show themselves in motion, it is clear that the process reaches its highest development in the film.

Broom, *IV*, No. 4 (1923)

Contemporary Typography – Aims, Practice, Criticism

Typography is modern if its means are employed according to its own laws and if it is in a constant state of resonance with the surrounding life, i.e. in a continuous state of relaxation and of tension.

In recent years, several aspects of human behaviour and creativity have been clarified for the long run. The effects of theoretic-emotional recognitions can be observed everywhere. In fact, their development often follows so quickly – at least in a speculative way – that we would like to realize the already recognizable future forms of appearance at once, without the inevitable intermediate stages.

In this context there is a certain observable perspective in the development of our means of communication and the entire news service, leading to a substantial reduction in the role of typographical communication in the form of books, posters, newspapers, etc. The diffusion of the film, phonograph and radio has led to a major turning-point. It is not utopian to say that film and record collections will often replace the libraries of today. The improvement of phonograph techniques and the amplification tube as well as the development of a mechanical language phonetically best suited to such instruments, will probably result in future authors publishing their works not in an optical-typographical but in a phonetic-mechanical way (gramophone records, perforated tapes for the amplification tube, radio) or possibly by optophonetical techniques (sound film). This is not the place to specify the various possibilities of applying these methods to current printed materials – handbills, catalogues etc. Newspapers are already partly replaced by the radio. Musical enterprises already protest against competition from broadcasting companies, and it is quite possible that printing houses will do the same tomorrow. However, it is more logical and useful to try to raise typography to an as yet unattained level of expressive power and optimum productive capacity.

Every doubt about the justification of a field of creativity must lead to examination of its constituent elements.

It is the utilization of potentialities offered by the machine that is characteristic of and, in terms of evolution, authoritative for the techniques of our present-day works. Thus, printed matter today will have to correspond to the most modern machines; that is, it must be based on *clarity*, *conciseness* and *precision*. The development from manual to machine type-setting was lengthy and full of complications; and the final unambiguous introduction of machine type-setting will lead to yet more acute tensions. The future form of typographical communication will largely depend on the development of mechanical methods.* On the other hand, the development of typographical machines will also be determined in many respects by new attitudes to typography still to be adopted for the most part by hand-setting.

* Here we must not think first of the speed of the printing process. Industry also requires time for producing models. In the same way, the typographic work to be produced in thousands of copies will require profound study – that is, time.

The typographical process is based on the efficiency of visual relationships. Every age has its own visual forms and, accordingly, its own typography; and the latter, being visual form, has to take into consideration the complex psycho-physical effects upon our organ of vision, the eye. An articulated visual experience relies on light and dark or colour contrasts. If light is completely absent, that is, in blackness, we are as unable to distinguish objects as in the case of its total presence, that is, whiteness (dispersion). The old manuscripts and even the first incunabula made ample use of the contrasting effects of colours and forms (initials, multi-coloured writing, colour illumination).

The widespread use of printing processes, the great demand for printed matter, along with the economical and lucrative use of paper, of the small format, of cast letters, of monochrome print, etc., have changed the lively, contrastful layout of earlier works into the usually rather monotonous grey of later books.

As far as newspapers, posters and job printing are concerned, the situation is much better, since whatever typographical development has taken place has been only in these areas. In spite of the fundamental technological changes in their manufacture, the majority of our books are by no means superior to Gutenberg's productions in their typographical-visual-synoptical form. This will be made quite clear by the next stage of development.

Due to present-day machine type-setting, we are left in most cases with a sober, homogeneous grey surface. The monotony of our books results in certain disadvantages: first, despite the considerable possibility of articulation offered by the setting process, it is still difficult to obtain a clearly articulated composition; second, the reader grows tired much faster than he would looking at a layout made up of contrasting colour and light values. All present experiments in typographical innovation we actually know of depart consciously or unconsciously from the above. We must certainly distinguish between conscious and unconscious attempts, since whether or not they produce exemplary values depends as much on their means as on the use to which they are put. The monotony and absence of contrast in recent books have been instinctively appreciated by a number of present-day typographers, but the ensuing reaction has been but a retrospective demonstration. They have actually produced some unusual effects with manual type-setting which in fact was often used in a typographically senseless way; yet they have called attention to the hitherto unrecognized appeal of such typographical elements as lines, rules, circles, squares, crosses, etc. By means of these elements they have fabricated – in a genuinely craftsmanlike manner – illustrations, objects and figures which were interesting on account of their uniqueness. Taken as a whole, however, they were very far from intervening decisively in a prospective development of typography. This is left to those typographers who are able to grasp not only the potential uses and variability of typographical machines and materials* but also a widened range of present and future visual experiences. Innovations such as photography, film and the spread of photo-engraving and electroplating techniques have produced a new and steadily expanding basis of creation for typography as well. The invention and perfection of the photo-engraving and the photographic typesetting machine, the introduction of illuminated advertisements, the experience of visual continuity in the film, the simultaneous effects of perceptual events (big city) permit and require an entirely new level in the visual typographical sphere. The grey text will change into a coloured picture-book and will be conceived as a continuous visual experience (a coherent sequence of many individual pages). With the perfection of reproduction techniques, of photo-engraving and telephotography, permitting the instantaneous exposure and printing of precise illustrations, all literary works, including probably philosophical ones, will be printed using the same means for illustration – even at a higher level – as current American magazines. Every printing-house will have its own photochemical-photomechanical workshop, thus eliminating a number of hand-setting activities.**

While typography, from Gutenberg up to the first posters, was but an intermediate (though necessary) link between the content of a communication and its recipient, the first posters opened up a new phase of development. In the typographical material used so far (object-like) as an instrument only, there were now potential effects of their own (subject-like) existence to be recognized, i.e. it was taken into consideration that form, size, colour and layout of the typographical material (letters, symbols) may exercise a strong visual effect. The organization of these possible visual effects provides the content of communication with a visual validity;

* For instance, the possibility of a quick-hardening mass for fixing the typographical material.

** Cf. chapter 'Typophoto' in my book *Painting, Photography, Film*.

in other words, by means of printing, the content will be recorded pictorially as well. To support, strengthen, emphasize and, above all, *represent* this, is the actual task in creative visual-typographical work.

Of course, we must not overlook the risks of excessive accentuation.

In view of such theoretical considerations, present typographical practice seems inadequate, in spite of highly developed newspaper and job-printing. However, there are already some principles of the crystallization of form to be recognized which are soon to be established for lettering, symbols, surface, colour and layout, and which are going to determine the future form of all typographic works.

We need, for instance, a standard way of writing, without lower-case and capital letters; letters standard not only in size but also in *form*. At the present time we do not even possess a type-face that is correct in size, is clearly legible and lacking in individual features and that is based on a functional form of visual appearance without distortions and curlicues.

On the other hand, there exist suitable type-faces for labels and headlines, such as Venus-Grotesque and Lapidar, the geometric and phonetic archetypes of which – such as the square and circle – come into display without distortion. Combined with any kind of grey standard type, they are – by their dark character – most suitable even today for producing chiaroscuro contrasts. Used in quantity, however, they vibrate. The sharpest tension through contrasting visual effects can be achieved with the following opposites:

empty – full
light – dark
multicoloured – grey
vertical – horizontal
upright – oblique etc.

These contrasts will be produced mainly by means of types (letters). Harmony between typographical form and typographical aim might in certain cases justify the use of line directions other than horizontal. Type and utilization of printed material are determined by the nature and aim of the communication (handbill, poster). Typographical signs may also be brought into service, but for the time being we have next to nothing along these lines, apart from ornaments and stylized frames.

Today we seek to create a 'style' for our works not from borrowed requisites but out of the most objective typographic material. There are quite a number of forms and techniques contributing to the precision and clarity of the visual image: dots, lines, geometrical forms, the whole range of photo-engraving techniques.

An essential component of typographical order is the harmonious articulation of the surface, permitting not only a symmetrical, balanced composition but also various other possibilities of balancing. As opposed to the centuries-old static-concentric equilibrium, we try to produce today a dynamic-eccentric state of balance.

In the first case the typographical object is grasped at a glance, since all the details – even the peripheral ones – are centrally focused; in the second case the eye is gradually led from one point to another, without losing sight of the interdependence of the details (posters, job-printing, book-titles, etc.).

Mastery over typographical balance is closely bound to the prevailing epoch. Existing up-to-date and objective commitment to the gradually developing visual forms may act here as a guide to the typographer. The use of different colours may also be similarly regarded.

We could indicate many other relevant possibilities, all along the lines of typographical progress considered here as essential. However, optics – visual culture and observation – will be more instructive than short notes. With their help it will be clear to everybody that typography is not an end in itself, that typographical communication has its own specific forms determined psycho-physically and by its content, and it must never be subordinate to some speculative aesthetics.

'Zeitgemässe Typographie – Ziele, Praxis, Kritik'
Gutenberg Festschrift, 1925

The Bauhaus in Dessau

The staff of the state Bauhaus in Weimar continues its activities from April 1, 1925 on in Dessau (Anhalt). This removal requires an overall assessment of its work to date and of its aims, its practical results and future perspectives not only for ourselves but for all co-operators. The invitation of the editor of *Internatio* affords a welcome opportunity to attempt this.

Antecedents

Foundation of the Bauhaus

In 1919 Walter Gropius was appointed Director of the grand-ducal Applied Arts School in Weimar, succeeding the Belgian Van der Velde who was relieved of his office during the war. Management of the grand-ducal Art High School was also entrusted to him. He united both institutions under the name 'Bauhaus' that they might become a productive community, and he has initiated thereby a new stage of productive-artistic education in Germany. Education according to the Bauhaus programme was intended to solve the old and acute problem of the artist's isolation in his studio, from which he secured but minimal contact or even none at all with practical life and whose designs, when they had a practical end in view, were determined by formal trends only. Each Bauhaus pupil – initially they were mostly painters – had to learn a trade and undergo examination by the Chamber of Industry under the same conditions as any apprentice to a profession.

The Bauhaus and its educational system were founded in an awareness of a productive period of new creative possibilities. Technological progress, new inventions, and the changing economic methods of the 19th and 20th centuries required a way of life adapted to these changes. Forms of existence still dragged along from the past had to disappear, and a new way of life, adapted and subordinated to the productive mentality, had to be created. The requirements of and from life had to be reconciled with the new spirit of production. Traffic, telecommunications, technology and laboratory work have adapted their methods to modern times, but nowhere did tradition-bound inadequacies survive so long as in house-building and furnishing. The most urgent response to these conditions, and the most unambiguous and realistic means of improvement, was the foundation and very existence of the Bauhaus.

Laboratories and experimental stations had already been established for very many enterprises – from broadcasting stations to the utilization of wastes – but practically nothing has been done so far in examining the functions of housing, the elementary conditions of everyday life, although it is precisely in the construction and furnishing of living quarters that a special research centre was required a long time ago. Although extensively practised in all spheres of activity, the division of labour and the establishment of norms and standardization have but theoretical vanguards in architecture. There exist plans which ought to be supported in practice by adequate experiments, such as Walter Gropius's concept of the production of uniform houses or house parts to be kept in stock and the erection of these houses or house parts within two to three days by means of a dry assembly technique instead of the wet mortar method used so far; the same applies to the production of standard items of house furnishings out of natural and artificial materials, as partly used and partly required by Bauhaus workshops. The economical utilization and application of natural and artificial materials we know permit an unsuspected improvement in results and productivity in every respect. By correct working of the materials we may achieve striking effects in all products without having to use functionally alien embellishments.

The Bauhaus programme was aimed at elucidating the function of the dwelling and of the different commodities, and adapting their forms to the present industrial process. These projects should cover the whole range, from the simplest object of furniture to the completed house. This means in practice that the Bauhaus aims to produce models which industry may take over for mechanical multiplication so that they will become available for many people. The 'Applied Art' of the penultimate epoch constructed machines which endowed its mechanically produced goods with a crafts-like appearance; that is why it will have to give place to a mode of production suited to producing attractive, practical and inexpensive objects under present technical and mechanical conditions. It is clear that these products will lead to a new, up-to-date style, but it is equally obvious that the standard products of this style will not be obtained at first; in fact, they can only result from the co-operation of all those persons at present creatively active. In the six years during which the Bauhaus has been active it has not neglected to establish direct or indirect contacts with all these forces. The teaching staff was also hired in accordance with these motive forces.

From the very first the Bauhaus was exposed to constant attacks. The city of Weimar, with its ideology based on ancient tradition, treated the Bauhaus's aims and intentions with animosity. The artisans especially felt themselves threatened, although they ought to have realized that the Bauhaus is opening up new ways for them. The Bauhaus programme wants not only to maintain the crafts industry but also to consolidate its position in an up-to-date way. It may realize the potentialities of craftsmanship in modelling for industry.* Before very long, industry

will carry out production for the most part with unskilled labourers in a short working time and with a small staff of modellers, i.e. craftsmen perfectly familiar with functions, materials and production processes.

In spite of all these attacks as well as the fact that three quarters of the Bauhaus's efforts were absorbed in defensive operations, the Bauhaus has managed already in Weimar to present initiatives for rational productive work in its workshops for joinery, metal-work, pottery, weaving, printing, wall-painting, glass-work as well as in its departments of stagecraft and architecture. In the summer of 1923 the Bauhaus opened an exhibition presenting not only the products of the different workshops but also an *experimental house* built in collaboration between all the workshops. With this experimental house and its practical layout the way was paved for the adoption of up-to-date building methods and for a new housing culture persuasive in its simplicity.

It can be said that the industry and technology of our day present among their products individual standardized items which it is possible, with some effort, to assemble into an almost homogeneous complex of equipment. However, there exists no institution other than the Bauhaus that would present the totality of such products in all their unambiguity and up-to-dateness. In the course of its activities there certainly occurred some mistakes and inadequacies; but it is its essential merit that its whole effort went to exert an influence on the present age which is going to result in developments on a new scale. This was one of the reasons for the widespread protests by significant experts inside and outside the country against the measures taken in 1925 by the Thuringian Government to interrupt the activities of the Bauhaus in Weimar.

The Bauhaus in Dessau

After the anti-Bauhaus action of the Thuringian Government, consideration had to be given to whether it was right to resume work forcibly interrupted. Fortunately, however, numerous offers came from various German cities (Dessau, Frankfurt am Main, Mannheim, Munich, Darmstadt, Krefeld, Hamburg, Hagen, etc.), urging the continuation of the Bauhaus activities. These offers encouraged the conviction that a new and productive era lies ahead and that it would not be right to close down. The city of Dessau was chosen as the new site: in the middle of a coal district, with rapidly increasing industry and, consequently, a spiritually lively population as well as a far-sighted city administration, it seemed to offer the best conditions.

Promising Start in Dessau

The city of Dessau authorized the construction of a common edifice for the new Bauhaus and the already extant Applied Arts School that was simultaneously entrusted to Bauhaus management. Individual dwelling-houses were built for the professors of the Bauhaus, together with a studio centre for the students. Thus, a positive start was secured for the establishment of the institute.

It is planned to establish gradually a solid reciprocal relationship between the Applied Arts School of Dessau and the Bauhaus.

Curriculum of the Bauhaus

The Bauhaus educational programme includes:

- 1 Preliminary Course
- 2 Workshop training
- 3 Architectural training

Preliminary Course

Every applicant on demonstrating talent will be admitted on probation. The course is compulsory for every student and lasts for two semesters. It is here that the intellectual groundwork of Bauhaus members will be established and consolidated by teaching them the basic elements of many-sided knowledge. Their attitude to the environment will be clarified, their often insufficient intellectual activity intensified and placed under the control of their own personality. They will obtain a sound knowledge of nature, colour, surface, form, material, function, proportion and space. By means of training in manual skill, of study of materials and drafting

* Today, after the Bauhaus's departure from Weimar four months ago, the Weimar Chamber of Industry praises the excellent professional training of apprentices by the Bauhaus.

the student becomes familiar with Bauhaus activities so that, by the end of the Preliminary Course, he will be in a position to choose the workshop he would most like to join on probation, on condition that he passes the final examination of the Preliminary Course.

Workshop Training

begins with six months probation. After successfully completing this, the student will be enrolled as an apprentice at the Chamber of Industry. The first stage of his training ends with an examination by 'independent masters of the manufacturing industry', following which he may then join the modelling department of the workshop in question.

At present, the Bauhaus includes the following workshops:

- Carpentry Workshop
- Metal Workshop
- Weaver's Workshop
- Wall-painting Workshop
- Print Shop and Advertising Department
- Stone-carving (Modelling) Workshop
- Stage Workshop

Unfortunately, for the time being, a glasswork and ceramic workshop could not be introduced in the Bauhaus structure in Dessau. This is all the more regrettable, because the ceramic workshop is an essential constituent part of the Bauhaus, and because it had been precisely this workshop which produced excellent, generally appreciated models; furthermore, it had extended its activities from earthenware to porcelain as well.

Bauhaus hopes that the highly developed ceramic industry of the German empire will make it financially possible to rebuild in Dessau the ceramic Bauhaus-workshop. If not done within a short time, it is feared that the precious experience gained over the course of six years will become lost through the dispersal of the workshop's members.

Architectural Instruction

In a specialized programme of this type, the work done in the architecture department will be of special importance. It will lead the Bauhaus member, familiar with a trade up to the craft examination level, to what is the synthesis of Bauhaus activity, namely architecture. The structure of the Bauhaus programme as described above aims at enabling not only artistically talented but averagely endowed persons to achieve at least adequate professional – if not always creative – results, by making reasonable use of the knowledge obtained of materials and functions.

Experimental and Modelling Workshop

As far as practical work is concerned, the main task of the Bauhaus consists in the productive application of its educational programme in the experimental and modelling workshops, which are most closely connected with the training shops. After receiving a comprehensive preliminary training in the total Bauhaus curriculum – gaining thereby simultaneously adequate technical and artistic skills – students are able independently to carry out modelling work and to develop standard items in conformity with the requirements of real life. They undertake systematic preparatory work for industry and handicrafts. The items to be produced should not represent utopian objects but must take into consideration, even in the initial stage, the production methods of industry as well as the receptivity and conditions of the market. As to production, Bauhaus does not want to improve the old forms of the way of life, nor to modernize the traditional appearance of objects. It tries to single out from among the possibilities and means of present industrial and technical civilization all that is practical and attractive in order to create for man up-to-date furnishings and an adequate way of life. This is done by, among other things, selling models to the relevant branches of industry, and by the resulting exemplary effect of the products multiplied by industry. Of course, these efforts cannot be successful unless industry also gets in touch with Bauhaus. At the moment, the conditions for such contacts are most favourable, since industry lacks the resources of an organic division of forces, in spite of fundamental technological experiments and modelling. In our century, specialization and the lack of unity between the different branches of work have led to uncertainty about the necessity of many-sided contacts. Mere technical knowledge of materials and functions is not sufficient for successful production, if a sure sense for the representation of correct proportions is missing. The sense of proportion is based partly on talent and partly on studies developing sensitivity in the artist in every respect. Only this can bring about an

integration of knowledge obtained in the arts, sciences and technology. And this is what the Bauhaus programme aims at.

Position of the Bauhaus in Present Economic Life

In order to facilitate approaches from industry, Bauhaus has established a special business organization; this has the task of selling models to the appropriate branches of industry which will multiply the ready-made models. The royalties are used by Bauhaus for developing its workshops and for paying those students who do productive work there. It can thus maintain valuable members of the community who would otherwise be compelled to go to work in other enterprises without having finished their Bauhaus training. It is precisely this that is an essential aspect of the Bauhaus: collective work, emanation of energy, transmission of vital forces from one generation to the next.

The funds made available by the city of Dessau secure the financial basis of Bauhaus as an educational establishment. It is to be hoped that industry will also realize the importance of its experimental and modelling activities and contribute in various ways to their further expansion. For instance, co-operation on the technical production of models and the execution of experiments would be desirable. Among other things, there are plans to conclude option contracts between different workshops and the relevant branches of industry. The workshop would commit itself to offering for sale a model of every new product in the first place to the enterprise in question, while the latter would have to pay a certain annual option fee. If the enterprise is not interested in buying the models they may be freely disposed of. For the time being, implementation of the commercial aspect is only in the initial stages and the results will depend to a considerable degree on the attitude and support of industry.

If industry and finance will regard Bauhaus as their natural laboratory for up-to-date creation and the production of essential items, and if this results in their active support of Bauhaus activities, it may be hoped that the Bauhaus in Dessau will shortly become of major educational and practical importance in the community.

'Das Bauhaus in Dessau'
Qualität, May/June 1925, Vol. 4, No. 5/6.

Total Theatre is the Theatre of the Future

Each work of art, each representation of our existence – apart from generally applicable laws – has its own specific premises. When selecting among its means of expression, one must start from these specifics. An examination of the nature of the much-debated means at one's disposal actually throws light on the essence of representation on stage, whose means are speech as well as other capabilities of man, the creator on stage.

The origin of music as a conscious act of creation can be derived from melodic performance. At the time when the system of this kind of recitation was developed, allowing for the use of sounds at certain pre-determined intervals and eliminating the so-called noises, this specific 'forming of noise' could be applied in poetry. This was the basic fact from which the Expressionist, Futurist and Dadaist poets and theatrical people began in their sound and letter poems. But today, when music has expanded to include many kinds of noise, the sensory and mechanical effects of these noise-relations are no longer the monopoly of poetry. The elemental formation of noise and sound relations belongs to the sphere of music, just as the task of painting is to systematize the primary, perceptual effect of colours.

This reveals the error in reasoning of the Futurists, Expressionists, Dadaists and others of similar inclination. However, we cannot deny that their efforts signified some advance in the problem of theatrical creation when they turned against literary-illustrative conceptions. They put an end to the rule of logical-intellectual evaluation. But neither human speech nor the associations held to be necessary – that is, man himself – can be eliminated from the ways and means of the stage. In any case, man is no longer the centre, as he formerly was in the traditional theatre, but now only one of a number of equally important requisites for creation.

As the most active phenomenon in life, man is undoubtedly one of the most effective instruments of dynamic theatrical creation. The full use of his actions, speech and reasoning faculties is functionally well-founded. His brain, dialectics and adaptability in all situations enable him to utilize his powers to the full. His mastery of his physical and mental faculties makes him of use in concentrating the plot. If there were no stage to afford the possibility for developing all these human skills, we would have to look for some other field of creation in which to use them.

But man's new role must be clearly distinguished from his traditional role on the stage to date. Hitherto, he was the interpreter of a poetically conceived personality or type. *On the total stage* he mobilizes the physical and intellectual means at his disposal, drawn from within himself, in a *productive manner*. He will take part in the creative process on an *initiative* basis.

In the Middle Ages, and in fact even today, the main characteristic of theatrical performance was the portrayal of various types (hero, Harlequin, peasant, etc.). The task of the *actor* of the future is to involve the *totality* of people in the action.

Traditional situations of logical cause and effect, and those that affect the senses, cannot assume a leading role in the planning of the new theatre. Acting on stage is equivalent to a *work of art*, and it must learn from the mode of thinking prevailing in the fine arts.

Just as it is impossible to ask what this or that man (organism) means or stands for, so it is unforgivable to ask a similar question about a modern non-representational painting because that, too, is an independent entity, a perfect organism. The new painting manifests through various colours and planes references which – partly by logical, conscious stands, partly by as yet unanalysable imponderables – represent artistic creation.

And so it is with *total theatre*. The totality of the interrelated references of light, colour, sound, movement, form, plane, man – all the possible variations and possible combinations among them – result in a work of art becoming an organism.

Man's role in stagecraft should not be burdened with moralizing tendencies or scientific issues concerning the problems of the individuum. Man's role on stage is to act as carrier of the functional elements organically at his disposal. It follows that all other means of stagecraft must have a role *equal to man's*. Man, a living, psycho-physical organism, the creator of much more highly developed stages and infinite variations, draws up after him to a high level of development those factors working along with him.

How to Create Total Theatre?

There is an important notion current according to which theatre is the concentration in action of sound, light (colour), form and movement. This would make man's co-operation superfluous. High-performance structures can be devised which can perform man's *merely mechanical role* much better. Another notion abroad does not dispense with man as the most adequate means of stagecraft. But even in the most recent past, no one has been able to solve the problem of how to use man on stage successfully as a creative force. Indeed, is it possible to involve man in today's concentrated stage action without falling into the trap of imitating nature or else ending up with a scissors-and-paste, though seemingly ordered, Dadaist or MERZ character? The fine arts have found their pure means of creation in the primary colours, volume, materials, etc. But how can we take the processes of human movement and thought and put them in order in a way equivalent to those 'absolute' elements of sound, colour (light), form and movement which we have learned to master? To the new artists of the stage, we can make only general suggestions. For example, the *repetition* of a thought in the same words, in the same or a varying inflection, by several performers at the same time, could be an appropriate means for the synthetic stage. (It would be a chorus, but not the passive kind of antique accompaniment.) Or there could be faces rendered huge by enlarging mirrors, with *enlargement* of the actor's gestures together with his words amplified through an acoustic funnel. We can obtain the same effects from the simultaneous, synoptic, synacoustic (optically or phonetically mechanical) expression of thoughts (film, phonograph, loudspeaker) or by the building-up of interrelated thoughts like cogwheels.

The literature of the future – dispensing with musical-acoustical effect – will develop language primarily in accordance with its own basic data. (Through association, its data branch out in many directions.) This will surely also affect the presentation of word and thought on stage.

This means that presentation of the subconscious psyche and fantastic or realistic dreams, which till now belonged to the sphere of so-called 'chamber theatre', will no longer play a decisive role. If conflicts resulting from social stratification, the universal technological setup, pacifist, utopian or any other revolutionary trends, should have any place on stage at all after this, that place will be much less significant than before.

Presentation according them a central role belongs to the realm of literature, politics and philosophy.

We conceive of the complex of actions on stage as a vital, dynamic-rhythmic process of creation which binds together the huge mass of means working together (their accumulation) and the tension between quality and quantity in an elementary, concentrated form. In addition,

smaller contingencies of independent value may also be considered for the simultaneous enactment of strong contrasts: comical–tragical, grotesque–serious, small–monumental, aquarium spectacles, acoustic and other jokes, etc. The contemporary *circus*, *operetta* and *variety*, American and other *clown-spectacles* (Chaplin, Fratellini) offer most in this respect, with the elimination of the subjective, though naively and superficially. It would be hasty judgment to dismiss as ‘kitsch’ such large spectacles and stunts. We may state once and for all that the much disdained crowd, despite its ‘backwardness’, which is the verdict of academic opinion, evidences quite healthy instincts and wishes. Our task is to recognize the non-apparent, but real, needs and to serve them in a creative way.

‘A jövő színháza a teljes színház’
Dokumentum, March 1927. pp. 6–7.

Contribution to the Debate on the Article ‘Painting and Photography’ by Ernő Kállai⁵

The mode of the production process is present in the finished object. *The way in which* it presents itself is called *surface treatment (factura)*. It would be mistaken to term surface treatment only that which exists on the palpable surface, because most earlier manual techniques represented tactile values as well.

It is because I do not regard surface treatment as being the equivalent of tactile values that the problem raised by Ernst Kállai’s article is pointless for me; I rather see in it a covert attempt to salvage the *manual*, hand-made, representational painting.

There is nothing wrong with representation; it is one form of communication concerning millions. Today, visual representation can be performed by film and photography with unprecedented exactness. Manual procedures cannot compete with these techniques, not even with their surface treatment values. Indeed, this would be the last place for it. If surface treatment were to become an end in itself, it would be the equivalent of ornamentation.

This should not mean that the present form of abstract, i.e. non-representational painting will be proclaimed as binding for all time. At present it is far from being so, amounting only to an intensive search for biologically founded elements of visual expression in which we are mirrored more unambiguously and more frankly than in an outworn form of appearance which has been used to satiety.

The same holds for photography. It must also be employed in its primal reality – today but a postulate. The fanaticism typical of today’s ubiquitous snapping away seems to indicate that those ignorant of photography will be the illiterate of tomorrow. In the future photography will be a subject of instruction comparable with the alphabet or multiplication table. All the desires of today’s photographic gourmets will then be self-evident, if not fulfilled automatically.

Beyond all this, photography has – despite existing prejudice – justification not only as a reproductive technique, for it has already yielded productive results. Its potentialities enable it to demonstrate refined use of available means. Due to a chemical process, delicate nuances are achieved in a homogeneous layer; the coarse grain of the pigment disappears and *surface treatment by light* comes into being.

The black-and-white effect of the photo-sensitive layer has yielded substantial results quite apart from representation (photogram); the same will apply to colour photography. Our medieval painting methods will be supplanted by the achievements of colour chemists and physicists, with polarization, interference, and the subtractive blends of light.

Of course, this does not mean that pictorial-manual activity should be damned either now or in future. What has ‘spiritualized’ former ages can still be helpful as an educational technique in developing intrinsic contemplation. But to recognize or re-invent a mode of expression developing out of biological factors, being therefore a matter of evident fact, can certainly not be regarded as an outstanding performance. The personal mode of the development of an individual – re-inventing in a creative way all forms of visual action ‘*déjà vu*’ – will not be a constraint upon the development of higher forms, upon the universal.

I think that the ‘vital problem’ is not a choice between painting or photography, but rather to seize upon visual creation at every point and from all directions justified today. These are to be found at present in photography and film as well as in abstract painting and coloured light displays.

The new generation, which does not have to rid itself of as many things – sentiments and traditions – as we do, will certainly profit by the problem being put in this way.

*'Diskussionsbeitrag zu Kállais Artikel
"Malerei und Photographie."
i 10, 1927, No. 6, pp. 233–234.*

Photography is Creation with Light

The photographer makes pictures by means of light, so photography is creation with light.

If the main point in photography were not the alternating play of light hardly perceptible by other means, we would declare good every flat, dull, grey photograph where an object is discernible. However, today nobody will do so who is at all accustomed to seeing photography.

So this is the first and most elementary prerequisite for handling a not yet fully exploited instrument. It is basically valid also if we want to make photographs without a camera, that is, if we manage to utilize the essence of photography, the possibilities of the photosensitive layer, for the purposes of construction.

As a matter of fact, the main instrument of the photographic process is not the camera but the photosensitive layer; the specific rules and methods of photography accord with how this layer responds to lighting effects produced by different materials according to their light or dark, smooth or rough characteristics.

Only after elucidation of this problem – that is, in the second line – will it be possible to examine the characteristic feature of photography known so far, that is the coupling of the photosensitive layer with a camera obscura. The result will again be the same: photography must not be mistaken for pictorial or graphic performance; photography has its own sphere of action, its own rules for the utilization of requisites, and everything depends on exploiting and developing these rules as far as possible.

Instead of lengthy theoretical explanations, description of some practical experiments will make for better understanding, experiments divided into three groups:

1) Photographs made without a camera, that is, 'photograms', obtained by fixing light effects in black-white-grey gradations directly on the photosensitive layer. We thus obtain a sublimated, radiant, almost dematerialized effect. The possibilities of treating light will be incomparably more exquisitely revealed than formerly with all the products of painting. Contrasts between the different gradations of converging grey values, the deepest black and the brightest white produce a penetrating light effect which can be registered by anybody as a direct optical experience without any objective meaning.

2) Photographs made with a camera obscura on the basis of new and expanded regularities.

3) Making of photomontages and photoplastics; superimposition; cutting; tricks.

1 Cameraless photograph: the 'photogram'

If an object is placed on printing paper, in sunshine or diffuse daylight, it can be observed that the contours and the silhouette of the object appear on the dark base as a bright surface. The same can be achieved in artificial light with artificial cloth paper, the difference being that the picture's formation process cannot be observed continuously as it can in daylight.

Now, if instead of an opaque object we take a transparent or translucent one, such as crystal, glass, liquid, a veil, net, sieve etc., we obtain gradations of light values instead of hard silhouette effects. If these values and objects respectively are combined according to certain principles, the result will be clearer and richer, depending on concentration and practice.

However, rules for this can only be outlined since we have to manage an area of creativity unknown so far, with an entirely new mode of visual creation, while at the same time reevaluating all the photographic work hitherto undertaken. It amounts to having an unerring sense for the phenomena of light – its active daylight, its passive night-time qualities – for the very subtle radiation distribution involving a perfect balance of the smallest and largest tension values.

There is no possibility of comparison with materials in other areas of creation. The rules of organization here follow from actual practical work, from the human organism's encounter with newly discovered matter.

Previous experience shows that the subtlest transitions can here be of high intensity; in fact, too strong black-and-white contrasts may weaken the effect.

A small amount of white is able to counterbalance large areas of deepest black; it all depends on the quantity and position of the different light phenomena rather than on creating form.

It should also be noted that negatives of photographs made without a camera are of a wonderful softness with blending grey values, whereas the positives – which can also be made from paper negatives – give harder, often flat grey values. Their own distinct character asserts itself in stages only.

Photogram experiments are of basic importance for both the layman and the photographer. They furnish richer and more significant information concerning the nature of the photographic process than camera photographs for the most part made almost unconsciously or even mechanically. Here, the light effect is organized in a sovereign manner, so that the picture-maker accords it a proper independence from the restrictions and contingencies of objects.

The photosensitive layer – plate or paper – is a tabula rasa where we can sketch with light in the same way that the painter works in a sovereign manner on the canvas with his own instruments of paint-brush and pigment.

Whoever obtains a sense of writing with light by making photograms without a camera, will be able to work in the most subtle way with the camera as well.

2 Photographs made with a camera

The camera has furnished us with surprising possibilities, the exploitation of which is only just about to begin. These optical surprises latent in photographic processes were often realized in incidental work by amateurs, in objectively ‘non-artistic’ snapshots by natural scientists, ethnographers etc. From these we have learned quite a lot about the specific and unique qualities of the photographic process and the instruments given us by photography.

As far as expansion of vision is concerned, even the presently imperfect lens is no longer bound by the narrow limits of our eye. No instrument of manual creation (pencil, paint-brush, etc.) is able to fix comparable details of the world. Equally it is impossible for either manual means or the eye to capture the quintessence of movement. Even the lens’s possibilities for distortion – so-called defective photographs (bottom view, top view, transverse view) – must by no means be estimated only in a negative way; they actually provide unbiased visual effects which our eye, being bound by rules of association, is unable to achieve.

And there is yet another aspect, in which the subtleties of grey tones create such a sublime effect, differentiation between them being equivalent to that between the most intensely different colours.

In mentioning these we have by no means exhausted all the possibilities. Although photography is more than a hundred years old, in its progressive development only in recent years have we been permitted to see beyond its specific features to its wider consequences for creativity. Only in recent years have our eyes learnt to grasp these interrelationships.

If we want to suggest a programme of practical work, on the basis of these preliminary and fragmentary perceptions, we must from the first proceed in conformity with the specific features of photographs. An infinite number of possibilities are inherent in photographic material. If we want rightly to comprehend the autonomy of its means, we must carry out practical experiments.

- a) photographs of various structures, textures and surfaces, as regards their reaction to light (absorption, reflection, mirroring, diffusion, etc.);
- b) photographs made in an unconventional way: unusual views, transverse, top and bottom views, distortions, shadow effects, tonal contrasts, magnification, micro-photographs;
- c) photographs made with novel lens-systems, concave and convex mirrors, stereo-photographs on a single plate, etc.

The limits of photography are incalculable; everything is so recent that even the mere act of searching may lead to creative results.

Evidently, technique is here the trail-blazer. The illiterate of the future will be the person ignorant of the use of the camera as well as of the pen.

3 Photoplastics (photomontage)

Photoplastics demonstrate quite clearly how to change the imitative photographic process into purposeful creativity.

Photomontage (photoplastics) goes back to the naive but very skilful process of old photographers who composed a new picture out of separate details. For instance, they had to compose a group photograph of persons who for some reason could not be photographed simultaneously, but only separately. They copied or applied the individual portraits against a common, usually scenic background, and one was not supposed to observe that the group was pieced together. This was the first photomontage.

The Dadaists extended the scope of photomontage; partly in order to puzzle, partly to demonstrate, and partly to make visual poems, they stuck together details of different photographs. When combined these often seemed almost meaningless, but could, however, have an upsetting effect. These pictures were far from being made to create an illusion of reality; brutally they demonstrated the process of creation, the cutting up of photographs, the rough slice of scissors. These 'photomontages' were the true brothers of the Futurist, brutalist music composed of scraps of noise which sought to transmit an acoustic experience composed of various individual elements, such as the exciting experience of a city's awakening etc.

Photoplastics, on the contrary, may be regarded as a kind of organized chaos. It has a clearly discernible centre of meaning and vision which permits of a clear view of the whole, although it often consists of different optical and speculative superimpositions and intersections.

In this respect it approximates to the structure of a fugue or the order of an orchestra, since both express unequivocal meaning though consisting of more or less numerous superimposed layers.

The effect of photoplastics derives from the penetration and blending of things that are inherent though not always visible in life, the visual perception of the simultaneity of events.

Before the Futurists appeared on the scene, this simultaneity was speculatively present in the mind, but could not be sensuously apprehended. The Futurists touched on this problem not only in their music but in their pictures as well: 'The noise of the street penetrates into the house' or 'Remembrance of a ball', etc. However, compared with that of photomontages the structure of Futurist pictures was still not sufficiently dynamic. On the other hand, Dadaist photomontage with its unruliness and its great agitation was far too individual to be readily conceivable. Its ambition was excessive, seeking to present, on one static plane, a kinetic performance that only film could achieve. It overreached itself and its visualizing power failed.

The difference between photomontage and photoplastics can at once be seen in technique. Like photomontage, photoplastics are also mounted, applied and retouched elements of different photographs which are assembled on one plane. But in representing simultaneity, photoplastics aim at moderation. Photoplastics are arranged clearly and utilize photographic elements to achieve a concentrated impact free of any disturbing side-effects. They actually portray concentrated situations which can be developed in an extremely short time through associations.

This economical method makes for easier intelligibility, even revelation of an otherwise hidden meaning.

Since we have confidence in the objectivity of photography, which seemingly does not permit of a subjective interpretation of an event, the combination of photographic elements with lines and other components results in the production of unexpected tensions going far beyond the meaning of the individual parts. Mere graphic or pictorial representation of the same forms could hardly produce a similar effect. It is precisely the combination of the photographically represented elements of events, the variety of layering ranging from the simple to the intricate, which take on a particular unity moving on an optically prescribed path, as though on the rails of ideas. This unity can act upon the viewer in an exhilarating, touching, appalling, satirical, visionary, revolutionary way.

Photoplastics often express a speculatively hardly conceivable range of the most diverse connections, the most bitter jokes, blasphemy; in them we may often see the evil side of human nature, or the revolt against mediocrity, in a clownish, witty, tragic and serious manner.

Photoplastics are grounded in that kind of cerebral and ocular gymnastics which most city-dwellers are compelled to perform day by day.

Now an example. We travel by streetcar and look out of the window; a car is following us, its windows also transparent, through which we see a shop with equally transparent windows; in the shop we see customers and salespeople; a person opens the door, people pass by the shop, a policeman holds up a cyclist. We take in all this within the moment, because the windows are transparent and everything happens within our field of vision.

A similar process takes place in photoplastics on another level, not as a summary but as a synthesis; speculative-associative and visual-sensory components result here in superimpositions and interpenetrations.

By means of photography we can thus express experiences and speculative interrelationships otherwise unattainable to the same extent. Visual and speculative factors are and must be conceivable at the very same moment if the effect is to be obtained. This is why here a balanced composition of the speculative and the visual is particularly important. However, the pictorial construction of photoplastics is not a composition in the earlier sense, it does not aim at a

formal harmony, but is rather a composition directed towards a target: the representation of ideas.

The speed of optical perception and association may be extremely rapid when there is prior knowledge of the actual period, of different cultures, political events and current problems, etc.

This is why an Eskimo will be unable to understand a photoplastic sheet. On the other hand, a non-objective picture can be accessible for anybody without any prior conditioning, since it is based on the biological regularities of the purely visual experience, and these regularities are common to everyone.

Even some city-dwellers may experience difficulty in grasping photoplastics. People who must always be in a state of intellectual readiness, for instance those who drive a car in difficult situations, will possibly react far more easily than those who are not accustomed to observing keenly their environment and to taking note of signs indicating what is about to happen.

Thus, a demonstration should begin with simple superimpositions, while easier understanding would be assisted by an appropriate summarizing title.

Every sheet has its own title, sometimes even several. Often it will be the observer who will find the most appropriate title. By means of a good title a picture's grotesque or absurd entirety may become a sensible, 'persuasive truth'.

Photoplastics can be used in many different ways.

Among the numerous possibilities is that of concentrating into scenes whole acts of stage or film; an entire drama or film-script can be summarized in a single sheet of this kind.

Another application is the illustrating of a concept or emotion. Propaganda – illustration, advertisement, poster. Topical satire etc.

The joke of the future will probably be published in photoplastics, not with graphic illustrations; similarly, cinema posters will be produced by photography and photoplastics, which will certainly be more appropriate for the substance of films than the present-day cinema posters which are drawn according to the film's dramatic situations and poetically coloured.

The exploration of this new range of effects is about to begin; before long we shall see that this material, however inflexible it may appear, may be easily shaped once we have gradually explored its specific qualities.

'Fotografie ist Lichtgestaltung'
Bauhaus, II/1 (1928)

Photogram and Frontier Zones

The technical process of the photogram is a matter of common knowledge, obtainable by all within a very short time. However, the process of creating form by photograms is quite another matter. The indescribable effect of surfaces suffused with light and shadow in all their light and dark relationships, radiant white contrasting with darkest black and often dissolving into subtlest grey values, so far unknown in the art of painting, cannot be explained with current notions. In short, today's desire for visual expression can accord with the grade of knowledge given by light.

The invention of photography, the introduction of powerful artificial light sources, the variability of lighting effects have become elements of an innovation for visual expression.

Until recently painting was regarded as the apogee of visual creation. Its *métier* was to work with the different reflecting capacities of variously coloured matter. If coloured matter was able to reflect or absorb light, it was used for the formation of a visual effect that was supposed to represent the world through the play of light. There is no doubt that direct light radiation can produce a far more intensive effect than this process, once it is mastered to the same extent as pigment painting. And indeed this is the problem of the future of visual creation: *creation with direct light*. This is not to dispute the educational value of manual pigment painting for the individual; but it will have to renounce its traditional valuation as the sole source of 'art'. The photogram appears to be a bridge leading to new visual creation for which canvas, paint-brush and pigment cannot serve, but only through reflecting play of light, with 'lighting frescos'. In the case of the photogram, the coarse pigmented material forms are absent; the materialization of light, hitherto secondary, becomes more direct. Light is captured as it fluctuates and oscillates in its own radiation almost without any transmission. And although some material effects do remain, as light is translated through the photosensitive layer of the photogram into

an almost immaterial substance, the way of the future to a more sublimated visual mode of expression may already be observed.

This insight is leading to an extraordinary refinement in the means of visual expression and to the clarification of the problem of visual creation; indeed all its fruitful consequences are as yet unforeseeable. Requirements and results overlap one another: manual painting becomes 'mechanical painting', without the risk of creative performance being downgraded by mechanical work.

In addition to the creative intellectual process of artistic composition, the question of technical facility is important only in so far as it must be completely mastered, whereas its mode – whether personal or by power transmission, manual or mechanical – is inconsequential.

However, practical problems are far from being solved by theoretical elucidation. The difficulties here are economic in nature. Experiments leading to new visual creation cannot be private in nature any more, since they are impossible to carry out without major financial resources, laboratory equipment, projectors, spotlights, polarization devices and various optical instruments. It is some small comfort that a provisional survey of the field is possible through the financing, so far by foreign capital, of some activities not regarded as visual performances in the strict sense of the word, such as: working with *lighting equipment* on the stage, at public meetings, exhibitions, illuminated advertising ('week of light'), etc.

But the real source of innovation would be if light studios were to replace the obsolete academies of painting, thus dealing at long last with the means of expression that are essential today. At present the State and various community organizations spend millions on an antiquated system of art management; more than fairness is involved in supporting what is feasible today, instead of pushing it aside as a utopian illusion.

'Fotogramm und Grenzgebiete'
i 10, 1929, No. 21/22, pp. 190–192.

Sharp or Fuzzy?

I

A photo shop in Munich (Schaja, Maximilianstrasse 32) publishes an excellent periodical under the title *Schaja-Mitteilungen*.

One of its editors is Hans Windisch (editor of the volume *Das deutsche Lichtbild*, Verlag Bruno Schultz, Berlin W 9), who reports regularly on technical and general photographic questions under the name 'Professor Schaja'.

The following paper by Professor Schaja appeared in *Schaja Foto-Mitteilungen*, Vol. 5, Nos. 9 and 11*:

'If you keep your eyes open you must have noticed that certain photographs in some respect differ from your own photographs – in "atmosphere", "contour", "presentation".

'Your photo is like the ones in a "wanted" notice or a passport, rendering with appalling exactness the geography of the face: every single hair, every pore and every freckle can be seen in sharp focus. This is certainly the gentleman or lady in question, but you would never have thought that he or she is so perfectly suited for a "wanted" notice.

'There are instances where the implacability of the photographic lens produces pictures which have the character of optical vivisection.

'So must a portrait be as blurred as possible, or do we even have to cheat a bit? No – but photography must not become microscopy. A man's face creates a general impression made up of the hundred faces of that person overlapping one another in our imagination, whereas the photographic *lens records* but one of these hundred in a diligent, dull and witless way, but it does it *with an exactness our eye is absolutely unable to achieve.*

'In its fanaticism for exactness it reproduces everything that is alive as something rigid and hopelessly unchangeable; it is certainly an incorruptible witness; a witness, however, who is prevented by the details from comprehending the whole. The photographic lens relies for its effect upon every freckle and every scar cut by the razor; but the comprehensive total impression, which is often only to be guessed at, remains a matter of indifference for photographic

* In order to make it more readily intelligible, I have abbreviated the text already published in *Schaja-Mitteilungen*. The italics are mine. If desired, the original text is available. – m-n.

optics. Some portraits are so staggeringly “similar” and so one-sidedly exact, that we would rather prefer not to look at them.

‘It is said that “the camera does not lie” – and this is true in the objective sense [in German “lens” is “objective”], but it does lie constantly in the subjective sense, because it cannot separate what is important from what is quite unimportant.

‘Our eye sees in another way from that of the lens.

‘We do not speak here only of portrait photography; there are innumerable photographic undertakings which suffer from the more or less amateurish exactness of the modern, excessively corrected lens, which in fact actually fail because of it.

‘We realize one day that we have to simplify and to convey the essence of a thing – but how?

‘This is possible, in an exact optical way, without retouching and without manipulating the negative in any way.

‘However, not every category of snapshot suits the planar, summarizing mode of presentation achieved by the lens of our day in such highly precise and clear-cut pictures of, for instance, insects, flowers or mosses – in the cases of which we desire this sharpness and enjoy it. *But it would be less expedient if I were now to make a photograph of you, with among other things the rather visible signs of your unshavenness today. I think you would have to be treated quite differently from a dozen bumblebees. With a different lens, I mean. Excessive exactness is always disturbing when the general impression is the main point. It is like looking at a mosaic too meticulously from too near.*

‘So if we care to protest against the quasi-scientific rationalism of the anastigmatic picture, and if we enjoy much more a picture emphasizing only what is essential, this is because it resembles more closely what our eye sees – irrespective of its artistic values.

‘The reason why in our eyes the photograph is often “emotionless” and “dead” lies in the essential physical difference between the eye and the lens. In addition to the physiological reasons leading to this rejection of what is too photographic, there is, however, yet another and perhaps even more important consideration, namely the psychical. When looking at landscapes, pictures, portraits etc., we prefer to be able to take a spiritual excursion between and behind the objects therein. We want to carry on and to interpret what the picture has just suggested. We accept what is final, that’s all there is to it.

‘This is why there has always been an attempt to devise lenses that work in a more “eye-like” fashion and have an overall visual effect. Many slightly (spherically and chromatically) undercorrected lenses have been developed in recent decades, all of them according to the model of the first and simplest of all lenses, the monocular lens.

‘In our present eye-glasses we have photo-optics that have been freed of the worst defect of the old monocular lens, distortion. The monocular lens has every possible optical defect, in particular coma, chromatic and spherical aberration, and astigmatism.

‘But we can turn to account these very defects.

‘We seek the following:

‘1) *Suppression, or at least the subduing, of what is over-photographical, too much for the picture.*

‘2) *Close gradation of tonal effects, the soft blending of contours, but without the photograph being fuzzy.*

‘Anyone working at a more profound level with such a primitive lens will realize how very similar are its operations to those of the human eye: summarizing, acting in a “posterlike” way, and with a considerable depth of focus. The sharp centre of the picture is surrounded by softer and more indistinct images; thus, in spite of the centre’s sharp contours, we do not get the inexorable exactness of the anastigmatic picture. Furthermore, light that emanates from very bright surfaces endows the picture with a luminous, unfixed and oscillating character, and indeed this is the special charm of this mode of optical operation. The anastigmat gives illumination, while the spherically and chromatically uncorrected lens gives light.’

My reply to Professor Schaja in No. 11 of *Schaja-Mitteilungen* was as follows:

‘In the matter of “objective” photography or that which is “reduced to essentials” my opinion differs from yours, and I feel compelled to declare this publicly, since what you refer to seems to me of vital importance for the present state of photography.

‘(Besides, your views might tempt some optical factories to install into amateur cameras those lenses that produce soft contours instead of highly corrected lenses, since they might presume this to be financially advantageous.)

‘Partly due to the present tempo of life, partly also because of laziness, we are unfortunately too much accustomed to let the individual pass before us in a schematically simplified form, instead of looking him straight in the face. Too often we perceive only social gestures.

‘We must remind ourselves that there is a biological way of looking at man, where every pore, every wrinkle and every freckle is of importance.

‘The objectivity of the lens [“objective”] and the right use of light have a thousand times more to say about man than the lens which with soft outlines attempts to capture the “total impression” of different positions in life.

‘The desirable way of activating the observer does not consist in “carrying further what the picture suggests”, but rather in urging him to an intuitively exact interpretation of real correlations as given in the representation of the signs of life as objective primary material. This is why I protest against impressionist suggestions that are easily misunderstood, because today we possess the basic technical prerequisites to combine objective exactness with the most wonderful light effects and to create out of these elements the visual representation of the world – with the right man behind the camera.

‘In fact, I even presume to say that – for pedagogical reasons – I prefer a thousand times an exaggeration of objectivity, of sharpness, outlines and details than a mode of presentation that combines, no matter how skilfully, the planes, but omits the details. Objective photography has to teach us to see. We do not want to subordinate the lens to the insufficiencies of our faculty of seeing and perceiving: it must help us to open our eyes.’

The reply of Professor Schaja appeared in the same issue:

‘You will certainly believe that I also am protesting against photographic nebulosity. On the other hand, I am convinced that so-called objective photography may very well be a falsification. I am ready to take a most exact photograph of your wife, and to disfigure her photographically to such an extent that it would never enter your mind that it represented your wife. And then I would take another photograph of her, in which you would recognize her at least as a distant acquaintance. That is to say: I will neither practise photographic psychiatry on your wife, nor catch her in an incidental state of mind nor examine her skin under the microscope; I just want to express by means of a photograph what I like about the architecture of her head and the composure of her nature.

‘But this has nothing to do with her freckles or any other side-issue. I am certainly not going to undertake semi-psychiatric procedures with the insufficient (and deceptive) means of the lens.

‘The complementary ideas of our imagination are much more revolutionary [? m-n] than the most exact description of life. As far as portraiture is concerned, “objective” photography is grotesque, ridiculous, appalling and eventually even a mere falsification of the living being. There are certainly some sensational effects in “objective” photography, *but radicalism concerning instruments and technique has no place in it*. Thin or thick paint-brushes were never regarded as artistic criteria. Let us have no doubt on this score, the “objective”, the anastigmatic lens of our day is anything but an objectively working instrument. In some cases its exactness may be fascinating, in others it is insensitive. It may happen that it falsifies by excessive zeal; in fact, that we may use it only with an eye-guard. I personally prefer seeing photographs taken as I see with my two eyes. Your brain says “objective”, i.e. “this is so”. However, in your case there is no question of objectivity either, but merely of a new and refreshing playing with something we call optics.

‘All in all, I think it will and must always remain a matter of temperament, of what attitude we have to the world and objects, and what instruments we use for approaching them.

‘You think that photography is perhaps a cultural factor of outstanding importance? For whom? For those who make moving pictures out of cellulose and just as casually some explosive agents as well?’

II

I consider the question discussed here important enough to be taken out of the restricted professional sphere of *Schaja-Mitteilungen* and to be presented to a larger reading public. In the following lines I shall respond briefly to Professor Schaja’s last answer:

‘It is staggering for me to see Windisch – whom I thought so far to be my comrade-in-arms – using such outdated arguments. How can he still arrogate to himself even today the

sentimental postulate of subjective interpretability, denounced long ago? How can he locate therein the criterion of delight in art, of quality? Does he not know that art is something complete in itself that can never be interpreted but only conceived – according to our frame of mind? He would leave all the doors wide open to our poor, misguided, short-sighted and reticent contemporaries indulging in their accustomed notions, instead of activating them by showing them in an unprecedentedly exact way what they have never seen or heard.

‘I do not want to insist on particular words. The word “objective” can certainly be misinterpreted. But in this case “objective” and “subjective” are not the main question; they indicate the possibilities of photographic procedures transcending ocular experience. It is fully possible that our eye, as stated by Windisch-Schaja, does see the world only in a fuzzy, summary way. *But why should the photographic camera conform to the human eye?*

‘Windisch quite disregards the fact that the main point in art always resides in those values which human intensity is able to bring forth from the material, from the instrument.

‘If the camera is able to work more exactly – or, to be specific, in another way – than our eyes, we ought to be glad! And if somebody believes the camera to be therefore unsuitable for portraiture, he should simply not use it for that purpose. Photography has not been created simply to accomplish the aims of manual painting. We should use the camera for performances not otherwise conceivable.

‘A mistaken view like that of Windisch caused a fatal confusion 30 to 40 years ago.

‘In those days, mechanized work was supposed “to aim at” the beauty of handmade articles. That was a merry time indeed! But let us not mourn for it: we have it again, it seems, this time in photography.

‘There are many other details in Windisch’s paper we could also touch upon. But especially in the case of innovations any decision is determined not only by intellectual argument but also by sure intuition.

‘In spite of our habitual way of seeing and our own ophthalmic apparatus, we must do our best to investigate the actually unknown or otherwise unattainable possibilities of photography and to employ them for human expression.

‘Certainly, I also regard photography as a cultural “factor”, even if irresponsible persons over and over again distort correct perceptions and great inventions.’

‘Scharf oder unscharf?’
i 10, 1929, No. 20, pp. 163–167.

Man and his House

The dire lack of housing demands building. In Germany alone, many hundreds of thousands of apartments must be built soon, and this brings up a variety of social, economic, technical and hygienic problems. It is probable that our solution to the housing shortage will influence not only our lives but the lives of the next generation as well.

Despite its pressing nature and the concomitant great responsibility, this question is but rarely approached properly. The few who bring some new perception to bear and who are trying to rethink and realize new possibilities, are hardly at all involved in practical work. Today the builder generally still has the first and last word on construction. Added to this is the fact that the social, economic, technical and hygienic problems are by no means the only ones involved in the solution of the housing problem. True, it is already a great step forward when economic, technical and ecological considerations win some degree of recognition. But beside the specific architectonic concepts, constructional, economic, technological and ecological problems are also winning some recognition. But the *construction of space*, that special architectonic consideration, is usually not mentioned because for most people it is alien.

Yet, beyond the satisfaction of his elementary bodily needs, man must also experience space in his home – at least, he must learn to experience it. The home must not be allowed to be an escape from space but a living-in-space, an honest relationship with it. However, this means that it is not the more or less superficially understood relationship of cost and speed of construction, nor matters of practicality, building materials and economy which must determine home construction – but first and foremost the *experience of space*, which is the basis of the mental as well as the physical well-being of the inhabitants.

This requirement must not be regarded as a mystical, empty platitude; in the not-too-distant future, we shall recognize in it the clearly definable necessity of the architectonic conception. That is, instead of regarding a building as a group of inner spaces that protect us from the

exigencies of the weather, a static enclosure, or an unchanging spatial situation, we shall regard it as the mobile vehicle of increasing life's intensity, as an organic part of life itself.

In its highest form, the new architecture will have to eliminate the present contradiction between organic, open and closed, between town and country. Architecture must be *positive*. We are used to disregarding the basic question of the architectonic in building our homes, since the utility of the home is the foremost concern, where we may rest and replenish our energies. The architecture of the future must understand and realize the total situation of man in his home; like the parts of a practically-constructed biological organism, each part of the house must serve not only for rest and regeneration, but must also contribute to the enhancement of the occupier's energies and the harmony of his activities. There are many ways in which to accomplish this. But one day we shall conceive of space as something shaped, of the need for shaping the space we occupy. Then the architect will no longer consider the needs of certain individuals or certain special groups, but rather in a more general sense, *the biologically necessary attributes of dwelling-space*. This general basic form may then be varied according to whatever individual needs have to be taken into account.

Naturally, no positive recommendations can be made for the architecture of the future. Every age has its own architecture. Ours must clarify and generate an awareness of thousands upon thousands of technical and other questions. At the same time, man's – and especially youth's – instincts must be protected, and must be made to form a strong foundation in this process of rationalization.

Young people today are undertaking research into many areas of life and its biological basis and needs. The theses of these sciences, which are causing a general upheaval, seem to be generally fruitful and complementary.

Experiments along the lines of a new approach to space and its formation, though important, can only be regarded as one component of a new orientation on a wider scale. Today, however, even the primary sources of the experience of space are still obscured by technical common-places. No architecture of the future, no new creation of living space, can come about on such a footing.

Architecture will be on the way to finding its proper solutions only when we have arrived at a more profound understanding of life in its complete, physiological entirety. One of the most important momentums in this respect is the placing of man in space, making space intelligible, seeing architecture as the articulation of space in general. The roots of architecture lie in the handling of the problems of space, in the problems of practical construction.

'Az ember és a háza'

Korunk, 1929, No. 4, pp. 298–299.

Light-Space Modulator for an Electric Stage⁶

Rich lighting effects can be produced by means of regulatable artificial light. Electric impulses make it possible to realize different precalculated movements which may be repeated without change. According to their present relationships, light and movement have again become elements of creation. Fountains, water play, and scenery in the age of the Baroque can be renewed in a creative way by light displays and mechanical-electric kinetic displays. These techniques will probably be employed in the near future for advertisements, as entertainment in popular festivals, and in theatres for heightening tension. It may even be predicted that such light displays will be relayed by the radio, partly as tele-projection and partly as real light shows, when radio receivers have their own illuminating device with regulatable electric colour filters to be controlled from the centre at long distance. Stencil shows are also conceivable; for instance, cardboard cut-outs may be placed into the device, which are supplied like arts supplements together with the radio programme. The first experiments will have to be limited to the most simple light and kinetic processes, since most people have not been prepared to receive such phenomena nor have they any practical experience. Such an initial step is the 'Light-Space Modulator for an Electric Stage', made by the theatre department of AEG for the Werkbund Exhibition in Paris.

The light-space modulator is a device for demonstrating light and kinetic phenomena. The model consists of a cubical box, measuring 120 × 120 cm, with a round hole (stage aperture) at the front. Around the hole there are yellow, green, blue, red and white electric glow-lamps mounted on the rear side of the plate (*ca.* seventy 15 Watt bulbs for illumination and five 100 Watt spotlights). Inside the box, parallel to the front, there is another plate, with different electric glow-bulbs mounted equally around the hole. The glow-bulbs flash at different places

according to a prearranged scheme. They illuminate a continuously moving mechanism consisting of translucent, transparent and perforated material in such a way that, on the back plate of the closed box, linear configurations of light appear. (If the performance is held in a dark room, the back plate of the box is removed and the colours and shadows are projected on a screen of any size placed behind the box.)

The main part of the apparatus is a circular plate onto which is fixed a framework consisting of three sectors. The partitions are made of transparent cellon and vertical metal bars. Each of the three sectors of the framework makes possible a kinetic play triggered off whenever the wheel rotating on the disc appears in front of the stage aperture.

First sector's kinetic play: three bars are rocking (since the upper and the lower frames are somewhat different) on an endless path; mounted on the three bars are different materials, such as transparent screen linen, parallel horizontal bars and wire mesh.

Second sector's kinetic play: located on three planes one after the other: a large, immobile aluminium disc, in front of it, a small nickel-plated, polished and perforated brass plate moving up and down, while a small ball flips between the two in a loop.

Third sector's kinetic play: a glass bar with a glass spiral describes a conical path in the direction opposite to the large disc. The point of the cone touches the base that consists of a slanting segment-shaped glass plate floating over a reflecting circular plate.

The light-space modulator can be put to use in various optical experiments, and I find it reasonable that such experiments be carried on systematically, for they lead us towards new possibilities of optical and kinetic creation.

'Lichtrequisit einer elektrischen Bühne'
Die Form, 1930, V, Nos. 11-12.

Problems of the Modern Film⁷

The Present Situation

Of late years the principle, that all artistic creation should be appropriate to the specific technical potentialities of its medium, has been generally accepted at least in theory, if not always in practice.

Like other artists, film producers have for the last decade endeavoured to apply this principle to their craft. Nevertheless the film today is still to an overwhelming extent governed by conceptions derived from traditional studio painting; and there is little in the current practice of film production to show that the essential medium of the film is *light* not pigment. Moreover, the film today is exclusively confined to the projection of a sequence of 'stills' on a screen and it is apparently not generally realised that mobile spatial projection is the form of expression most appropriate to this medium. The same conservatism is found in the use of the acoustically amplified film, the sound film, in which the theatre chosen for the first model is still meticulously copied. Even theoretical attempts to discover independent forms peculiar to this technique are still exceedingly rare.

The Responsibility

The more the technical equipment of the film and of other related forms of communication and expression (wireless and television with all their manifold possibilities) is perfected, the greater will be the responsibility for elaborating a rational programme of work.

The problem is still generally perceived and approached – in a traditional sense. The technician unquestioningly accepts the conventions of the present form of the film, i. e. recording the visual and acoustic reality and reproducing it in two-dimensional projection.

Different aims would certainly lead to different results, and the whole direction of technical enquiry would be changed. A new programme of research would lead to the discovery of an entirely new, so far unprecedented form of expression and entirely new possibilities of artistic creation.*

*The distinguished scientist Theremin, inventor of ether wave music, provided a good example of a false method of approach, when he aimed at imitating the old orchestral music with his new ether wave instrument.

The Problem

In order to grasp the problem in its full complexity, it is necessary to examine the most important aspects of the film:

- the optical sphere (vision),
- the kinetic sphere (motion),
- the acoustic sphere (sound),

one by one. The psychological (psycho-physical) problem – e. g. as it appears, in surrealist films – can only be hinted at in this paper.

The Optical Sphere: Picture Production, or the 'Morphosis of Light'?

It is quite conceivable that painting, as an exclusively manual craft, will continue to exist for some decades to come and that it will be retained for pedagogic reasons and as a means of preparing the way for the new culture of colour and light. But this preparatory phase can well be shortened, if the problem is correctly postulated and systematic optical research is organised on these lines.

Symptoms of the commencing decline of traditional painting – I am not referring to the terrible economic plight of the artists at the present time – are already apparent in a number of directions. The development of the suprematist* Malevich may serve as an example. His last picture: a white square on a square white canvas is clearly symbolic of the film screen, symbolic of the transition from painting in terms of pigment to painting in terms of light. *The white surface can serve as a reflector for the direct projection of light, and what is more, of light in motion.*

Malevich's work is a remarkable example of the new cultural outlook. It might be regarded as an intuitive victory over the misguided efforts of the present-day film, which is more or less successfully imitating the out-dated technique of easel painting in its pictorial composition, its not infrequent lack of movement and its picturesque settings. Suprematism superannuated a clean slate of manual craftsmanship in painting. How can the film revert to the aesthetics of the easel picture, when even painters are venturing on new courses? *We must make a fresh start*, taking the new medium and its specific possibilities as our only basis instead of the fundamentally alien technique of pictorial art. That is why the victory of the so-called abstract movements in painting is the victory of a new aesthetic of light, which will not merely transcend the old easel picture, but even the most advanced experiments and achievements of modern painting, and their culmination in the picture of Malevich.

These considerations alone do not, however, enable us to formulate all the basic principles of optical creation. Direct light morphosis and kinetic and refractory light displays both require systematic investigation, the problems of painting, photography, the film are parts of one single problem.

The Light Studio of the Future

The indispensable elements for a new culture of controlled light are: reliable sources of artificial light of variable intensity, reflectors, projectors, instruments for the polarization, integration and refraction of light, improved optical equipment for the reception of images, and above all increased sensitiveness of the receptive medium (including the technical perfection of the three-dimensional and colour film.**

Significance and Future of the Film Studio

In our politically and economically disrupted epoch the film as a record of facts, as film reportage, has become an educational and propaganda medium of the very first importance. Nevertheless, it is essential to remember that – like all other means of expression – the film with

* Suprematism is a Russian type of abstract painting which has been evolved by Malevich.

** If such a provisional laboratory for research into the abstract properties of light could be established anywhere under present conditions it would probably be in Russia. In my opinion, a fair proportion of our present art schools could also without difficulty be transformed into 'light academies'. But Russia is the only country today in which the production of films is not governed by commercial considerations; optical creation generally, as here conceived, is only in Russia regarded as a cultural activity instead of the manufacture of a commodity. Moreover, no other country provides the same possibility for a radical change in the interpretation of the tasks of art. In Russia the old conception of the 'artist' is definitely exploded – the old craft mentality is being superseded by a new conception of mental and cultural organisation – invention is no longer exclusively confined to the manual sphere. Instead of thinking in terms of detail the Russian artists attempt to think synthetically (in terms of mutual relationship).

its characteristic elements of light, motion, psychological montage, has also a purely biological appeal, independent of any social factor (e. g. abstract films). It is for this reason that the studio will continue to play an important role in future film production, for it provides more suitable conditions for the conscious control of this appeal. I do not, of course, deny that even such films will be definitely related in some way to their particular period. On the contrary, I believe that this relation is far more profound than the obviously time-conditioned factor of topicality and that it is predominantly rooted in the subconscious mind and thus constitutes one of the most effective means of ideological preparation for the society of the future.

The studio for the manipulation of light will not, of course, be imitative like the film studios of today. It will not be its ambition to transform plywood into forests or jupiter lamps into sunshine. Work in that studio will proceed from the basic elements of the medium employed and the development of its inherent potentialities.

The film architect will naturally conform to this new orientation. Apart from its acoustic function, the scenic background of the future will be conceived as a mechanism for the production of light and shade (trellis and skeleton construction) and as a complex of planes for the differential absorption and reflection of light (walls built for this purpose.)

Camera-less photography, the so-called 'photogramme', gives us the key to the morphosis of light. Its wide scale of black-white values and of innumerable shades of grey (in the future certainly also of colour values) is of profound significance for the film. The same is true of the superimposition of different images.

It is the non-imitative studio alone which will enable us to create these forms of light, whose artistic possibilities have so far remained unexplored. Light morphosis is not, however, the sole problem of the film, problems of motion and sound demand a solution in equal measure. Nor is this all. The film contains a series of aspects, which are partly of a photographic nature and in part derived from its new educational function (e.g. the problem of finding an appropriate means for expressing the new concept of space-time).

The Creative Use of Motion

As yet there is no tradition for the use and control of motion in films, for practical experience has been confined to a few decades. Even the first principles of this work remain to be evolved. That is the reason why motion is still so primitively handled in the majority of films.

Our eyes are still untrained to the reception of a number of sequences in simultaneous. In the majority of cases the multiplicity of phases in a system of interrelated movements, however well controlled, would still produce an impression, not of organic unity, but of chaos.

For that reason experiments of this kind – however important aesthetically – will for the time being have little more than technical or pedagogic interest. Though in some respects questionable, Russian montage is so far the only advance in this sphere. The simultaneous projection of a number of complementary films has so far not been attempted.*

Reflections on the Sound Film

The sound film is one of the most important inventions of our time. It will enlarge not merely the visual and acoustic capacities of mankind, but also his consciousness. But the sound film I have in mind has nothing whatever to do with the reproduction of the usual dramatic dialogue and sound sequences. Nor will its sole function be to provide a documentary record of acoustic reality. In so far as it will fulfil this particular function, it will only be in a similar manner to the use of photomontage in the silent film.

Sound would scarcely be able to enrich the scope of the silent film, if it were confined solely to underlining or emphasising an optic montage, complete in itself. Results already achieved in one medium – optically – would not be rendered more convincing by being paralleled in another. Only the combined use of both as mutually inter-dependent components of an indivisible whole can result in a qualitative enrichment or lead to an entirely new vehicle of expression. This is also the only proper field for reportage sound films.

* Montage alone by no means exhausts the possibilities inherent in motion. The Russian directors' sense of motion is impressionistic rather than constructive. Russian montage is particularly successful in the use of associative impressions (which are, however, intentional and not accidental). Through rapid cutting often also of spatially and temporally distinct shots it created the necessary links between the individual situation and the whole.

The constructive montage of the future will give more attention to the totality of the film – in light, space, motion, sound – than to the film as a sequence of striking visual effects. Eisenstein ('General Line'), Werthoff ('The Man with the Movie-Camera') and Turin ('Turksib') have already made concrete advances in this direction.

The Present Problem in the Sound Film

We must diligently expand our acoustic receptivity, if we hope to make any real progress with the sound film. Contemporary 'musicians' have so far not even attempted to develop the potential resources of the gramophone record, not to mention the wireless or ether-waves. They have a great deal of leeway to make up in remoulding their mentality in conformity with these developments.

The sound film ought to enrich our aural experience sphere by giving us entirely unknown sound values, just as the silent film has already begun to enrich our vision.

It is our task to achieve a true opto-acoustic synthesis in the sound film, which will immeasurably surpass public taste that is still captivated by the novelty of this medium. In the last resort such a synthesis inevitably implies the emergence of the *abstract sound film*, which will provide invaluable examples for all other types of films. The 'documentary sound film' and the 'abstract sound film' will be reinforced by the 'montage sound film', by which must be understood not merely montage of the optical and acoustic sections, but a mutually integrated montage of both. We ought to begin with a series of experiments in the sound element. In other words, sound should at first be isolated from the image sequence, experiments in cutting being confined to the sound track. (It is obvious that musical convention is as much out of place here as the tradition of popular anecdotal painting is in the optical sphere of the film.) The next phase, which could also be absolved simultaneously, should proceed somewhat along the following lines:

- 1 Experiments in the use of acoustic realism: natural sounds, the human voice, or musical instruments;
- 2 Experiments in the use of sound units, which are not produced by any extraneous agency, but are traced directly on to the sound track and to be translated into actual sound in the process of projection. (E. g. the tri-ergon system uses parallel lines of a varying brightness, the alphabet of which must be previously mastered; but since every mark on the sound track is translated into some note of noise in projection, my experiments with drawn profiles, letter sequences, finger prints, geometrical signs printed on the track also produced surprising acoustic effects.) Finally:
- 3 Experiments in the combination of both.

The first of these three series of experiments raises the following issues:

The talking film need not necessarily embody an uninterrupted sound sequence. The acoustic impression can be doubled in intensity if sound is arranged in phases of varying length, commencing or ceasing abruptly.

Just as it is possible to arrest an object visually in a great many different ways, from above or below, profile or full face, in normal perspective or foreshortened, similar possibilities must exist in regard to the sound. There must be different sound angles, just as there are different angles of sight. Various graded combinations of music, speech and noise will be the main method of realising these effects. In addition there are numerous possibilities for acoustic close-ups, slow motion (the slowing down of sound), acceleration (sound contraction), distortion, duplication and the other methods of sound montage. Optical simultaneity must find its counterpart in the realm of sound. In other words there must be no hesitation about amplifying the acoustic flow, even of speech, with additional, simultaneous sound patterns, or interrupting it by other sound values, whether to slow it down, distort or contract it, and only later to continue the original line, etc. Acceleration or deceleration of normal sound sequences produces the extraordinary metamorphosis of individual notes into higher or lower octaves as the case may be. These can also be combined in a variety of ways; unlimited opportunities for comic effects are provided by such methods.

In regard to the second series it will not be possible to develop the creative possibilities of the talking film to the full until the acoustic alphabet of sound writing will have been mastered. Or in other words, until we can write acoustic sequences on the sound track without having to record any real sound. Once this is achieved the sound-film composer will be able to create music from a counterpoint of unheard or even nonexistent sound values, merely by means of opto-acoustic notation.

The first talking-film worthy of this name will be made by the artist who succeeds in discovering forms of acoustic expression that are convincingly appropriate both to the different objects and events and which he selects for his composition for their reactions to one another.

That discovery would enable us to produce acoustic sketches of anything and everything (including topical events). We should also be able to take acoustic 'close-ups' (which would represent not a differentiation but an emphasis of sound 'situations').

Projection

The rectangular canvas or metal screen of our cinemas is really only a mechanised easel painting, our conception of space and of the relations of space and light, still absurdly primitive, being restricted to the everyday phenomenon of light rays entering a room through an aperture in one of its walls.

It is possible to enrich our spacial experience by projecting light on to a succession of semitransparent planes (nets, trellis-work, etc.). I did this in my scenic experiments for the 'Kaufmann von Berlin' performed at Piscator's theatre in 1929. It is also quite possible to replace a single flat screen by concave or convex sections of differing size and shape that would form innumerable patterns by continual change of position. One might also project different films on to all the walls of the cinema simultaneously as has been advocated with films.

Equally astonishing effects might be obtained by simultaneously focussing a number of projectors on to gaseous formations, such as smoke clouds, or by the interplay of multiform luminous cones. Finally the abstract morphosis of light and objective film reportage will gain by the emergence of plastic projection which is promised by the development of stereoscopic photography. (The object to be recorded might be surrounded by a ring of synchronised lenses and then similarly projected.)

The sound film and its almost entirely neglected acoustic possibilities will almost certainly lead to revolutionary innovations in these as well as in the following directions.

The Task of Film Production

The creative use of the three main elements of the film: light, motion and sound, depends on the cooperation of a whole body of specialists and technicians, since it requires the active collaboration of the photographer*,

the physicist and chemist,
the architect, lighting expert and operator,
the director of the film and the author of scenarios.

The creative use of the film as dependent upon the technical possibilities of recording; optical equipment; the degree to which the receptive medium is sensitive to light; the use of ultra-violet and infra-red rays; super-sensitization (just as we can train our eyes to see in the dark, we shall one day have cameras able to react even at high speeds in complete obscurity). It depends on the perfection of

colour film;
plastic film;
sound film;

and upon the problems of

three-dimensional projection: succession of screens arranged in space and smoke reflectors; duplicate or multiple screens; automatic superimposition and masking;
and finally on mastery of

the problems of
sound and acoustics and of
the synthetic coordination of every one
of these elements

in the art of film montage.

1928–1930

'Az új film problémái'

Korunk, 1930, No. 10, pp. 712–719.

Reprinted in English in *New Cinema*, 1934, No. 1, and *Telehor* (Brno), 1936.

* Inability to use a camera will in the future undoubtedly be regarded as analogous in point of illiteracy as inability in the use of the pen, but up to the present the study of photography has nowhere been pursued systematically in a manner adequate to its importance. Thus – in spite of the proverbial German thoroughness – the Prussian minister of education was unable to indicate any guiding principles for this work, when in 1928 he officially authorised the teaching of photography in schools. But a syllabus for study and experimental research in photography could easily be drafted on the following lines:

1 arresting the action of light with or without a camera (ordinary photography, photogramme, x-ray and night exposure). 2 The factual record as documentary work: a) amateur photography, b) scientific (technical) photography (microphotography, enlargement). 3 Fixation of movement and high-speed snapshots (reportage). 4 The study of various mechanical, optical, chemical reactions such as distortions of the optical instrument and of the sensitised medium (melting of the emulsion), intentionally 'accidental' exposures, etc. 5 Synchronisation: superimposition, montage.

Light Display Film

I

The film in question is possible on the basis of the light-space modulator introduced by the AEG at the Paris exhibition of the Industrial Association in 1930. I wrote at length about the significance and use of this device in *Die Form*, 1930, Nos. 11–12. It actually prepares the way for the possibility of light creation. This would be a great step forward in the evolution of the film. Analysis as well as the gradual enhancement of light effects should prove that, today, with the scientific know-how of physics and technology (electrical energy, optical apparatus), creation with light is not only possible but necessary. It would build a sensory bridge to our capacity for creating abstract concepts, which today can be approached only through extremely difficult and obscure forms of thinking.

A listing of the fundamental vehicles for creating with light constitutes an introduction to the optical culture of our age.

II

Handling the new effects of creating with light brings us face to face with film problems both technical and formal in nature. These may already exercise a certain influence on the further development of film. The systematic use of light and shadow in film may result in discovering a new, specific dimension for film: that of light (similar to the experiments in cameraless photography, the 'photogram', a completely new branch of static photography). The film's photosensitive layer is suited to much more varied handling than is generally realized today. In practice, conscious creation with light phenomena involves a fuller use of raw film, to produce an infinitely rich gradation, from the brightest white flooded with light to the deepest black, through the subtlest grey values.

Scenario of a Light Display Film

1

The representation of light – especially artificial light – in the most varied forms in which it appears.

A large quantity of matches scattered on a hot metal sheet, which suddenly light up.

Scenes with candle light, kerosene light, gas light, electric light.

The manufacture of an electric light bulb.

Photogram 8 and its preparation.

Searchlights.

Effects of light in motion; iris diaphragm with spiralling movements, apertures contracting and enlarging, automatically shutting masks.

Searchlight beams at night, directed at the sky.

Play of searchlight beams.

Ships in the night.

Airplanes in the night.

Car driving along a highway in deep snow. The road is lit up by headlights placed low.

Street at night with illuminated advertisements. (Not the usual effect, but fixed light formations that define space.) Wet asphalt road, water surface with light reflections.

2

Smelting mill.

Molten steel glowing white.

Drawing of wire, burst of sparks.

Fireworks, fire-ball, carousel in the night.

Illuminated revolving paddles of a windmill.

Illuminated waterfall at night.

Basic components: luminous sticks and rotating planes which, when rotated optically, form cylindrical and other stereometric figures. Multiplication, jerking, with a refracting prism; the use of a mirror, by which some of the former scenes are repeated.

3

Some parts of the light-space modulator are processed in a metal workshop.

Working with the vice, lathe, grinder and planisher.

Glass blowing, the manufacture of the glass components of the light equipment.

Drawing the glass spiral.
Grinding the pieces of glass in a glass-cutting shop.
Montage with the light-space modulator.
Motor, drum contact, cogwheel transmission, light bulb.
Play of stencils with certain components. Perforated tin sheet, barbed wire fence, etc.
Play of balls. In a complex mechanism, tiny balls fly into a very small hole bored into the centre of a vertically-positioned metal sheet.
Various types of kinetic toys in which the emphasis is on the mechanism of motion rather than on performance. (These scenes prepare the way for the light and motion play of part 4.)

4

Shadows of the rotating light prop; superimposition of shadows on metal details.
The light prop rotates; from above, normal, accelerated, retarded rotation.
Positive, negative; over-setting diaphragm.
View through a narrow aperture.
Automatically moving masks.
Tricks; alterations.
The whole is revolving so quickly that everything is dissolved in light.

'Fényjáték-film'

Korunk, 1931, No. 12, pp. 866–867.

New Film Potentialities

(Light Display: Black–White–Grey)

1 The film, the content of which follows below, forms part of a larger work intended to be popular, yet can be realized on its own as well. In making this scenario I sought to demonstrate in motion black and white values asserting themselves in cameraless photography (photogram). The film is made possible by a device built by the AEG on the basis of my design, for the purpose of experimenting with painting with light.

2 Developing elemental means for optical and kinetic creation reveals the foundation of today's optical culture. Searching for new effects is conducive to artistic and technical development in film-making. By using light and shadow systematically, film will conquer a whole domain of its own. (Just as the photogram contributed to new possibilities in making stills, conscious utilization of kinetic relationships will yield similar results.) The photosensitive layer of the film will be used to a much greater extent than expected by today's technicians. By employing light consciously, film in its material nature can be put to better use. An endlessly rich gradation can be produced, from the light-flooded white to deep black and subtle greys.

As for the aesthetic values of film, it should be noted that all forms of optical creation – like art itself – can be enlisted in practice for the educational work that aims at shaping a new way of thinking for the new society. This film will not be (political) propaganda art, the merits of which we acknowledge but will not go into here. This film, instead, will take account of man's subconscious, emotional properties through which his eyes can be activated.

3 Sketch of a film:

A) Light, especially artistic light, manifests itself in various forms:

Matchsticks are thrown on a glowing metal sheet, which light nearly at once with little explosions.

Lightning, then scenes with bonfire. Candle light, kerosene light, gas light; electric light.

Acetylene lamp, arc lamp, magnesium.

The manufacture of an electric light bulb.

Floodlights.

Kinetic light effects. Iris diaphragm opening in a spiral movement; aperture closing and opening.

Searchlights directed at the sky at night.

Play of searchlight beams.

Lighted boats at night.

Fishermen with their acetylene lamps in boats.

Airplanes in the night.

Car drives along a highway in deep snow. The road is lit up by headlights.

Street at night with illuminated advertisements – not the usual effects, but forms articulating distance. Wet asphalted streets; puddles with reflections and mirror effects.

B) Iron-smelting mill

Glowing molten metal. Steel bars. Rain of sparks.

Magnesium balls. Merry-go-round at night. A lighthouse.

Rolling-mill. Rain of sparks. An oven.

The rotating wings of a windmill.

Fountains by night, illuminated.

Elements of a light-flooded fountain: luminous arcs, ring-formations on planes so that in their optical effect they produce cylindrical and other stereometrical forms. Multiplication and distortion by prisms. Some of the above scenes doubled in a mirror.

Mirror; combined with a concave mirror, etc.

C) Theatre, Opera

The light equipment, rehearsal, etc.

Cinema, film studio. Photogram.

D) Manufacture of the different parts of the Light Prop in the metal workshop:

Vice, lathe, smoothing and polishing.

Glass-blowing workshop, the manufacture of the glass parts of the apparatus: glass spirals, etc.

Glass-grinding workshop, smoothing of glass arcs.

Assembling of the apparatus. Motor. Electrical contact. Cogwheel transmission. Electric light bulbs.

E) Individual parts of the apparatus: perforated tin sheet, wire grid, lattice, etc.

Play of balls (sorting machine). Small ball bearings are thrown on a nickel sheet, from there they fall through a small hole drilled in the centre of a slanting partition.

Kinetic parts of various types; the essential thing is the mechanism of motion and not the form represented.

(This scene prepares, in an optical and kinetic sense, the 6th part in which the assembled apparatus itself is displayed.)

F) (This part of the film has been realized.)

The shadow of the rotating apparatus. The superimposition of metal details with the shadows.

The light apparatus rotating: seen from above, below, frontwards, backwards; in normal, accelerated and retarded motion.

Details.

Positive, negative pictures. Fading. Prisms.

Views through small openings.

Automatically changing formations. Tricks.

Rotation increases; in the end everything dissolves in light.

'A film új lehetőségei (Fekete, fehér és szürke filmjáték)'

Munka, 1932, No. 24, pp. 685–687.

Painting and Photography

We are living in revolutionary times. In the distorting mirror of growing reactionism, the dialectical process of development is forcing us to reconsider our ideas.

In the fine arts, painting and photography are among the concepts still to be clarified.

Today, painting and photography are often played off against each other. It is said that, of the two, only painting expresses our inner being, while photography is merely the mechanical reproduction of reality and cannot expect to be counted among the arts.

After more thorough examination, however, it turns out that both belong to the problematics of optical creation; so that whatever is true of optical creation is true of them as well.

Optical works are one of the unconscious, unintentional educational tools with which we are trying to prepare a form of consciousness appropriate for the society of the future. But we are not thinking primarily of so-called propaganda art, which active politicians think exclusively

important and are always urging. What we are thinking of, first of all, is the activation of the energies of the subconscious through the optical organ of the eye.

Values mediated in this manner are usually rejected by political activists as being 'aesthetics' and therefore lacking in effectiveness. However, this is only because they are so involved in day-to-day problems that they feel they must protect themselves against what they regard as possible complications by resorting to 'revolutionary' theories. The reason some artists take offence at this reaction by the 'professional revolutionaries', thereby causing their solidarity with political activism to be shaken, is that most artists, despite having the best of intentions, are ignorant of their role within society as a whole.

Since the birth of scientific socialism, we know that social relationships are basically determined by economic factors, while our actions are mainly determined by social factors.

So we also know that this is also at the heart of every artistic act, and that artistic work does not contain any problematical questions (any content of consciousness) different from those of other creative disciplines. For man is constantly striving to describe the forces that are creating and activating him.

Today, it is vitally important to recognize that, thanks to capitalism, we have reached a stage of economic and social development detrimental to healthy and satisfactory life. This phase is best expressed by capitalism's anti-biological use of technology. The capitalist motto of 'profit above all' turns the machine against man. This has already caused irreparable damage; generations have become enfeebled in their biological functions.

The class struggle offers a way, a very effective way, of eliminating the mistakes of the capitalist system, thereby improving the organic conditions of life. But there are other ways as well, which are less conscious, but which have as their aim to inform man – not so much through his intellect as through experience (the five senses) – about what he will need to rebuild his life after the partial or total collapse of the present system.

Art is that unconscious preparation, the education of man's subconscious.

'Festészet és fényképészet'

Korunk, 1932, No. 2, pp. 104–105.

New Film Experiments^{8*}

In what follows, we shall try to provide a short summary of the problems in film today from the point of view of the amateur. We shall also report on the practical achievements of the amateur film-maker who – in spite of the seeming lack of perspective of his efforts – has taken upon himself the task of solving certain specific problems of a film industry otherwise oriented entirely towards commercial concerns and centralized into trusts.

The amateur today is especially important, because he has taken over the role of the group that not so long ago liked to call itself the avant-garde. Today's avant-garde is in a very bad way; its members have been either absorbed or else liquidated by industry. In this respect, let me mention the old, large-scale films of Eggeling, René Clair, Picabia, Léger, Cavalcanti, Renoir, Feyder, Buñuel, Ruttmann, Man Ray, Beaumont, Ivens, whose bold and thought-provoking experiments became a reality of production, though more on account of their technique than their inherent intellectual content. On the occasion of this obituary, it is our duty to mention that the work and experiments of the avant-garde of those times was by no means acknowledged by official film production. And when the film industry had finally matured enough to deal with these problems and involve the avant-garde in the practical aspects of film-making, a fatal situation developed, namely, that under pressure from the industry, the avant-garde themselves abused their own tools. That is why the public learned so quickly to value the idiom of the avant-garde only from the point of view of technique and form. As a consequence of imitating stage performance and of the battle cry of 'no intellect', the fact that the new idiom of filmic expression, just like the creation of space through light and movement or the theoretical significance of film montage, was originally not only technical and formal but deeply contextual as well, quickly sank into oblivion. This means that the

* This lecture was delivered by our distinguished contributor in various schools and lecture halls in Germany. Where the lecture was in its original form interrupted by screen projections, we have made stylistic corrections as necessary. (*The Editor, Korunk*)

proper use of the former – i.e. its revelation – demands a changed intellectual perspective, as well as a new technological function which may become the *vital force* behind a new form of expression. Whether this is realized *by design* or instinct is no concern of ours. That is why, due to the lamentably sterile intellectual orientation of film production throughout the world today, we must make the following observations.

1 The adaptation and use of avant-garde elements in the interest of sensationalism and box-office returns is not an intellectual act; on the contrary, it is the debasement of pure and elemental feelings.

2 The amateur or professional film-maker involved in production today must derive his aims not from the basic tenets of commercialized production but from his own views of the problems and aims of film.

What, then, is the basic problem of film?

Today, we are living in an age of profound intellectual and material change. We have no control over all the manifestations of the industrialized aspects of our lives. In fact, we may openly state that our attitude to most of the phenomena of our lives is, above all, *obsolete*. People as a whole are incapable of asking the appropriate questions about the origin of these phenomena, not to mention the fact that they have no wish to change them for better. One precondition in the area of creative effort is the mainly instinctive work of instruction; here, there is an attempt to bring about a general rise in cultural standards whereby today's problems can be recognized as such, and thereby solved.

This preliminary training applies just as well to film-making as to all other areas of creative activity. It has to be thus! We cannot establish a universal intellectual attitude or cultural standard from one vantage point only, such as cognition by means of logic, or the sciences, nor indeed from the arts exclusively. In order to form a comprehensive attitude to existence we must start out *simultaneously* from emotion and cognition.

In this respect, film for us is psycho-physical; to quote Goethe, it is sensuous and moral instruction for the eye, of a much more extended *framework* than the previous forms of optical creation at our disposal (painting and still photography). Looked at in this way, film is one of the most important means of *spatial orientation* in the future. In order to simplify our examination: this orientation is the common denominator for all the partial problems in film: that of perspective (bird's-eye view, aerial photography), blending, together with light, movement and even sound. Spatial orientation is also the common denominator for purely technical problems such as plastic and colour film, three-dimensional projection and simultaneous projection.

As can be seen, this is such fertile ground that we cannot cover it adequately in a short lecture. Let us keep in mind, though, that the optical foundations of a spatial culture are still very rudimentary, despite the experimentation with film to date; therefore, every *film-maker* will have many possibilities open to him for a long time to come.

But let us be realistic. Can an amateur be trusted to carry out in good faith such a work programme? It is difficult to answer with an unqualified yes, though we would gladly do so. Today, the film is technologically so advanced, and any commercial film has so many technically well-trained and qualified experts working on it, that, in comparison, the amateur with his primitive equipment and lack of capital is at a great disadvantage. In addition, since the advent of the sound film, the acquisition of equipment needed to produce sound film, even in the case of very short features (e.g. a 300 metre long film), poses very grave difficulties. Nevertheless, we must not give up hope. There will always be a need for the amateur, so that – though under very adverse financial circumstances – the work of experimentation may continue. The so-called small film is of great help in this respect, because it can be obtained for only half or one third of the price of standard film. Nor must our work today depend on whether large audiences can get to see our films. Most experimental films are condemned to death by the present-day system of exchange and contingency, by theatre policy and censorship. Furthermore, private intellectual interests can no longer depend on the financial assistance of well-to-do circles once they have broken with business. Despite the above, however, we must urge, time and time again: Amateurs of the film, forward! Amateurs of the film, to work!

So, what can the amateur really do today?

(The feature film – which is, at least intellectually, a dubious category of film-making – is *a priori* out of the question.) So we are left with reportage, experimentation with colour, perspective and motion, trick film and film montage, which include all the other categories. Further, thanks to the practical experiments of Pfenninger and Fischinger, the area of sound-writing has also been opened to the amateur.

[After showing his film entitled *Marseille*, shot with a non-professional camera, the lecturer continues:] I had a pre-determined length (300 m) of film stock, and decided that there was no way to capture a large city in so few metres. So I chose a small slice of the city, the *Vieux port*, one hitherto little known to the public due to its bad social circumstances, poverty and dangerous character. I tried to approach it with reportage that was not merely impressionistic; but finally I had to make do with a sketchy picture of the situation, since I was not even able to shoot from some higher point in order better to portray the totality of the processes before me. In this gloomy quarter, when after a long haggles I finally entered an apartment situated several storeys up, I was received in such an unfriendly manner that I had to flee from the house; in fact, I was often physically threatened even on the street. Nevertheless, as even a cursory glance into this semi-social reportage will reveal, the possibilities for a better-equipped film expedition to Marseille or some similar city do exist.

Of course, even the simplest film of reportage poses more than just technical problems in shooting. 'Most film-goers today do not like reportage.' That's what the producers say, and the distributors and cinema owners repeat it after them. Whether this is true or not is difficult to decide, because of the existence and attitudes of a censorship which, prohibiting any true representation of social reality today, stands in the way of any realistic discussion. Censorship does not allow any such films to reach the public. In Germany, for example, it fights against any healthy social outlook in films by refusing to grant tax-concessions (to educational films, art films, public education films). Obviously, there is not much we can do about this publicly. Censorship has become the servant of politics. This is wrong, for the lie of censorship has consciously become the enemy of democratic constitutions espousing as one of their basic premises freedom of thought and speech. But even if the state wishes to protect itself against all kinds of dangerous subversion, and assumes that it can win protection from social understanding and the power of the intellect through censorship, such measures in the area of film are today inadequate. As for film, protection of the state has become protection of reactionary instincts, of archaic morality. And since film today is still the concern of industry and not of general culture, film censorship is most devastating in that it results in self-censorship on the part of film-makers. In order to avoid conflict with the censors, every brave and intellectually valuable initiative is stifled in the early stages of the film's inception. (For example, Paramount has given its script-writers and directors a list of the words which the censors would probably take exception to.) In this way, censorship and self-censorship consciously kill off every instinctive, natural and exciting experience; its aim is a flat, bland and pliant pedagogy.

What lessons can we draw from the above? How can we fight them? How can the amateur silence censorship of the film and all direct and indirect censorship?

There are two possibilities, one outside and one within the profession.

Outside of film-making: unrelenting emphasis on permanent intellectual-revolutionary education.

Within the trade: the establishment of film leagues and collectives in which, because they are closed bodies, censorship-free showings can be a reality.

At the same time, we must educate the public and ourselves to an understanding both of the documentary film and what it is all about. Due to the way censorship functions today, the third act of Victor Albrecht Blum's film *Quer durch den Sport* probably could not be shown. This film is from the silent film era. It was put together from weekly magazines, that is, it consists of documentary footage, with a conscious tendency to satirize the nonsensical exaggerations and meaningless striving for new records in sport.

The next group of amateur films is represented by Fischinger's abstracts, partly based on the works of Viking Eggeling who passed away early in life, who, as early as 1920, made films still unsurpassed in the tension of their movement and their formal structuring. Ruttmann and Richter are working along the same lines. The basic motive force of their films is the conscious handling of various phases of movement independent of the contingencies of montage which occur in naturalistic films, with the contrast of opposites or the finest of differentiations. The importance of these films lies, among other things, in that they train the eye to perceive more complicated movement, since today we can hardly recognize more than three or four simultaneous movements. These films also attempt to formulate their own idiom of movement optically, and to come up with a new dimension of filmic expression. Many other less important things could be said of the films of Eggeling, Fischinger and Ruttmann; but since we have focused on the common denominator of capturing space – the culture of space (movement taking place in space!) – we shall add nothing to the brief comments made above and not deal with other structural elements of such films.

In what follows, I shall report on the invention which means the revolutionizing of the sound film in its entirety. While previously music, speech and noise were reproduced through the use of the light-sound technique, that is, while in the past real acoustical phenomena were reproduced with the help of the microphone and were changed into electronic light signals through the means of the so-called photo-electric cell – sound-script makes possible acoustic phenomena which conjure up out of nothing audible music without the previous play of any musical instrument. We are in a position today to be able to play written sounds, music written by hand, without involving an orchestra, by the use of the apparatus of the sound film. It is a great pleasure for me to be able to report on this acoustical phenomenon; inasmuch as I had already explained it in articles and lectures ten years ago, although I was not fortunate enough to be able to experiment with it then, I am very happy today to witness the successful realization of those of my suggestions previously labelled absurd. At the time, my starting point was that phonograph recordings could be made on the basis of an ‘etched alphabet’. These recordings, without any sound having previously been played and captured by them, are inscribed exclusively on the basis of the imaginative world of the composer and would have been played only subsequently. A few years later I extended my phonograph experiments to include radio, sound film and television. And today, thanks to the excellent work of Rudolph Pfenninger, these ideas have been successfully applied to the medium of sound film. In Pfenninger’s sound-script, the theoretical prerequisites and the practical processes achieved perfection. Not long ago, Pfenninger’s film was shown at the German Cinetechnical Society and the assembled technicians asked with no little irony, ‘Why so complicated, when it could be done more simply?’ That is, why bother with written sound-scripts when light-sound apparatuses have been perfected? The comment elicited much laughter. Everyone was under the impression that this Pfenninger is some sort of a queer fish who deals in obviously unnecessary things. This intermezzo of laughter was amusing. But since they had acknowledged the priority of my theory during the course of the lecture, I was able to point out to those sceptics for whom the subject was unfamiliar, on the basis of many years experience, the following consequences of the existence of sound picture-writing. I would like to mention a few of these now.

In the first place, through sound-writing the complete restructuring of music becomes possible. With its help, we can create a whole series of new sounds. Sound-writing is especially suited to producing music made up of clear sounds without overtones. Besides these compositional possibilities, sound-writing is also suited to the production of synthetic singing. With its help, the creation of the ideal synthetic tenor is within reach; that is, it makes possible the use of synthetic notation in place of the bass, baritone and tenor notations in the composer’s scoresheet. Familiarity with the so-called ‘coefficients’, the vocal and tonal characteristics of a singer, will be sufficient to produce synthetically his voice, his manner and tone of singing. A bad singer can be turned into an outstanding singer by erasing the faults on the sound reel. To these will be added trick sound-recording. With this process, it is easy to produce sound-recordings that either expand or contract time as well as to make acoustical close-ups, sketches and blending. In order to give you some idea of what I have been talking about, I wish to refer to a few as yet embryonic experiments conducted at the laboratory of the Berlin School of Music. For example, there the composers Hindemith and Toch have achieved some startling results by the application of the mechanical process of the phonograph. Thus, with the help of mechanical procedures, Hindemith transposed a vocal composition four octaves lower for one part, and four octaves higher for another. By increasing the speed with which he recorded a fugue made up of vocal parts only, Toch was able to produce an as yet unrecognized aspect of the human voice. Toch did the same with a choir composed of many voices, when he recorded a text that is simple but hard to pronounce (‘Popokatepetl lieght nicht in Afrika, sondern in Mexico’) at increasingly greater speeds; at high speed the recording gave back a perhaps never before suspected aspect of the human voice, one never even heard before, impossible to produce in any other way. This is the principle of sound-time expansion.

Besides these musical problems, we can also count on sound-writing to develop a scientific, direct grapho-phonetic writing. As you probably know, we have often suggested the rationalization of typography by substituting, for the lower-case and capital letters of the German and Roman types, just one symbol for each sound; that is, instead of using the small ‘a’ and the capital ‘A’ from the German typefaces, one should use only one ‘A’, for these signs should make for a unified script. The lower-case script popularized a while back by the Bauhaus may be regarded as a primitive, provisional attempt in this direction; yet to this day we have been unable to make the public accept the intellectual and financial advantages of this simplification. One German police headquarters, for example, ‘prohibited’ the small typescript of the Bau-

haus. Apparently, this police establishment has not yet been informed that the German Imperial Post Office has been using the lower-case script exclusively in telegrams for years. The acceptance of sound-writing will most probably lead to the speedier fulfilment of our goals – especially, if I may mention it here, of a plan dating from 1926 (my old hobby-horse!). I am referring to the optophonetic type-setting machine. This machine employs an apparatus similar to that of sound film, and produces print directly from dictation, that is, someone dictates, and the printed text comes out of the machine. This principle can be applied to the typewriter as well. How long we shall have to wait for this machine and other similar inventions will depend on the general increase of knowledge of all these things. It is said that Pfenninger is in a position today to write down every word and name; that is, he can read sound-writing on sight! What is one man's unique capability today will, in the course of development, become the common property of all. That is why it is a fortunate circumstance that not only Pfenninger but, for example, Oscar Fischinger and the engineer Berthold Fries are also working on these problems, as well as an expert in Germany, one in England and another in Russia. In view of their trials and work, we can look forward to even more surprising experiments, such as Fischinger's experiments with sound ornamentation. Besides the sound-script experiments, Pfenninger has also worked with other optical forms. For example, he drew ornamental forms which he then recorded with a film camera; with the help of the sound-film projector, he then transformed these into an acoustical medium. So it should not surprise us if in the future every optical form can be transformed into 'sound'. Such grapho-phonetic experiments have been conducted for years now. I had written about this long ago in my book *Malerei, Photographie, Film*, with reference to light displays with searchlights. With these techniques – according to Brinkmann – they can be heard. For example, the following experiment was conducted in America: the profile of a man was drawn on a strip of film and made audible. This particular profile produced a sound similar to that of an oboe. This has further perspectives that I leave to your imagination. The subject came up not long ago in certain company. The composer Toch declared that, in the future, the statement that 'someone's nose is not attractive' will be countered by someone saying, 'just wait till you hear it!'

A distinctively positive element of film-making is the predetermined use of regulated artificial light. But at present our use of light is rather primitive, and we lack knowledge of its effects.

The great problem of our day, the development of the culture of coloured light instead of pigment, can be solved only by these and similar experiments. In this respect, colour film, which is still being used in a rather awkward way, will play a decisive role. However, working with colour film today calls for even more capital and equipment than does regular film.

[In the course of the rest of his lecture the lecturer shows the film *Light Display: Black-White-Grey*, which was originally intended as a colour film, since its apparatus, the 'light prop', was first made for coloured light-play. The device, designed by the writer of this article, was made by the Theatre Department of AEG and shown specifically on Gropius's initiative at the Paris World Exposition (1930). The apparatus was fitted with 40 coloured light-bulbs which were projected automatically through 30 different kinds of illumination, when the apparatus was the basis of the 'black, white, grey' light display, and the major role was played not so much by the apparatus itself as by its effects, shadows, blending and light effects.

Besides these light effects, another experiment was undertaken: one to expand time, which was realized in slow, floating movements, so that the four minutes – the length of the short film – seem very stretched out – as the closing film of the lecture illustrated.]

'Új filmkísérletek'

Korunk, 1933, No. 3, pp. 231–237.

From Pigment to Light

The terminology of art 'isms' is truly bewildering. Without being exactly certain what the words imply, people talk of Impressionism, neo-Impressionism, Pointilism, Expressionism, Futurism, Cubism, Suprematism, Neoplasticism, Purism, Constructivism, Dadaism, Superrealism – and in addition there are photography, the film, and light displays. Even specialists can no longer keep abreast of this apocalyptic confusion.

It is our task to find the common denominator in all this confusion. Such a common denominator exists. It is only necessary to study the lessons of the work of the last hundred years in order to realise that the consistent development of modern painting has striking analogies in all other spheres of artistic creation.

The Common Denominator

The invention of photography destroyed the canons of representational, imitative art. Ever since the decline of naturalism painting, conceived as 'colour morphosis', unconsciously or consciously sought to discover the laws and elementary qualities of colour. The more this problem emerged as the central issue, the less importance was attached to representation. *The creator of optical images learnt to work with elementary, purely optical means.*

Approached from this point of view all the manifold 'isms' are merely the more or less individual methods of work of one or more artists, who in each case commenced with the destruction of the old representational image in order to achieve new experiences, a new *wealth of optical expression.*

Signs of the New Optics

The elements of the new imagery existed in embryo in this very act of destruction. Photography with its almost dematerialised light, and especially the use of direct light rays in camera-less photography and in the motion-picture, made clarification an urgent necessity.

Investigations, experiments, theories of colour and light, abstract displays of light-images – as yet far too fragmentary and isolated – point towards the future, though they cannot as yet provide a precise picture of anything like the future's scope.

But one result has already emerged from these efforts: the clear recognition that apart from all individual emotion, apart from the purely subjective attitude of the spectator, objective factors determine the effectiveness of an optical work of art: factors conditioned by the material qualities of the optical medium of expression.

Minimum Demands

Our knowledge concerning light, brightness, darkness, colour, colour harmony, – in other words our knowledge of the elementary foundations of optical expression is still very limited (in spite of the tireless work of the numerous artists). Existing theories of harmony are no more than the painters' dictionary. They were elaborated to meet the needs of traditional art. They do not touch our present aesthetic sensibilities, our present aims, much less the entire *field of optical expression.* Uncertainty reigns even with regard to the most elementary facts. Innumerable problems of basic importance still confront the painter with the need for careful experimental enquiry:

What is the nature of light and shade?

Of brightness – darkness?

What are light values?

What are time and proportion?

New methods of registering the intensity of light?

The notion of light?

What are refractions of light?

What is colour (pigment)?

What are the media infusing life with colour?

What is colour intensity?

The chemical nature of colour and effective light?

Is form conditional on colour? – On its position in space? – On the extent of its surface area?

Biological functions?

Physiological reactions?

Statics and dynamics of composition?

Spraying devices, photo and film cameras, screens?

The technique of colour application?

The technique of projection?

Specific problems of manual and machine work? etc. etc. etc.

Research into the physiological and psychological properties of the media of artistic creation is still in its elementary stages, compared with physical research.

Practical experience in the creative use of artificial colour (light) as yet scarcely exists.

The Fear of Petrification

Artists frequently hesitate to apply the results of their experiments to their practical work, for they share the universal fear that mechanisation may lead to a petrification of art. They fear

that the open revelation of elements of construction, or any artificial stimulation of the intellect or the introduction of mechanical contrivances may sterilise all creative efforts.

This fear is unfounded, since the conscious evocation of *all* elements of creation must always remain an impossibility. However many optical canons are elaborated in detail, all optical creation will retain the unconscious spontaneity of its experience as its basic element of value.

Despite all canons, all inflexible laws, all technical perfection, this inventive potency, this genetic tension which defies analysis, determines the character of every work of art. It is the outcome of intuitive knowledge both of the present and of the basic tendencies of the future.

Art and Technique

The attempt was made, at least partially, to restore the capacity for spontaneous colour experience – which has been lost through the spread of the printed word and the recent predominance of literature – by intellectual means. This was only natural, for in the first phase of industrial advance the artist was overwhelmed by the intellectual achievements of the technician, whose achievements embodied the constructive side of creation.

Given a clear determination of function, the latter could without difficulty (at least in theory) produce objects of rational design. The same was assumed to be true in art, until it became apparent that an exaggerated emphasis on its determinable intellectual aspects merely served as a smoke-screen, once the elements of optical expression as such – quite apart from their ‘artistic’ qualities – had been mastered. It was of course necessary first to develop a standard language of optical expression, before really gifted artists could attempt to raise the elements thus established to the level of ‘art’. That was the basic aim of all recent artistic and pedagogic efforts in the optical sphere. If today the sub-compensated element of feeling revolts against this tendency, we can only wait until the pendulum will react in a less violent manner.

From Painting to the Display of Light

All technical achievements in the sphere of optics must be utilised for the development of this standard language. Among them the *mechanical and technical* requisites of art are of primary importance.

Until recently they were condemned on the grounds that manual skill, the ‘personal touch’, should be regarded as the essential thing in art. Today they already hold their own in the conflict of opinions; tomorrow they will triumph; the day after tomorrow they will yield results accepted without question. Brushwork, the subjective manipulation of a tool is lost, but the clarity of formal relationships is increased to an extent almost transcending the limitations of matter; an extent in which the objective context becomes transparently clear. Maximum precision, the law of the norm, replaces the misinterpreted significance of manual skill.

It is difficult today to predict the formal achievements of the future. For the formal crystallisation of a work of art is conditioned not merely by the incalculable factor of talent, but also by the intensity of the struggle for the mastery of its medium (tools, today machines). But it is safe to predict even today that the optical creation of the future will not be a mere translation of our present forms of optical expression, for the new implements and the hitherto neglected medium of light must necessarily yield results in conformity with their own inherent properties.

Purposive Progress of Thought, Circular Advance of Technique

During the intermediary stages, however, we must not overlook a well-known factor retarding the advance of art: individual pioneers invent new instruments, new methods of work, revolutionising the traditional forms of production. But usually a long time must elapse before the new can be generally applied. The old hampers its advance. The creative potentialities of the new may be clearly felt, but for a certain time it will appear clothed in traditional forms that are rendered obsolete by its emergence.

Thus in the sphere of music we must for the present content ourselves with the noisy triumphs of the mechanical piano and of the cinema organ, instead of hearing the new electro-mechanical music that is entirely independent of all previously existing instruments. In the sphere of painting the same revolutionary significance already applies to the use of spraying devices, of powerful enamel reflectors and of such reliable synthetic materials as galalith, trolit, bakelite, zellon, or aluminium. The situation is similar in the realm of the cinema, where a method of production is regarded as ‘revolutionary’ whose creative achievements are scarcely greater than those that might be obtained could classical paintings be set in motion.

This situation is unsatisfactory and superannuated when judged in terms of a future in which light displays of any desired quality and magnitude will suddenly blaze up, and multicoloured floodlights with transparent sheaths of fire will project a constant flow of immaterial, evanescent images into space by the simple manipulation of switches. And in the film of the future we shall have constant change in the speed and intensity of light; space in motion constantly varied through the medium of light refracted from efflorescent reflectors; flashes of light and black-outs; chiaroscuro, distance and proximity of light; ultra-violet rays, infra-red penetration of darkness rendered visible – a wealth of undreamt-of optical experiences that will be profoundly stirring to our emotions.

'A festéktől a fényig'

Korunk, 1933, No. 10 pp. 751–753.

In English: Telehor, Brno, 1936, Nos. 1–2, pp. 32–34.

A New Instrument of Vision

In photography we possess an extraordinary instrument for reproduction. But photography is much more than that. Today it is in a fair way to bringing (optically) something entirely new into the world. The specific elements of photography can be isolated from their attendant complications, not only theoretically, but tangibly, and in their manifest reality.

The Unique Quality of Photography

The photogramme, or camera-less record of forms produced by light, which embodies the unique nature of the photographic process, is the real key to photography. It allows us to capture the patterned interplay of light on a sheet of sensitised paper without recourse to any apparatus. The photogramme opens up perspectives of a hitherto wholly unknown morphosis governed by optical laws peculiar to itself. It is the most completely dematerialised medium which the new vision commands.

What is Optical Quality?

Through the development of black-and-white photography, light and shadow were for the first time fully revealed; and thanks to it, too, they first began to be employed with something more than a purely theoretical knowledge. (Impressionism in painting may be regarded as a parallel achievement.) Through the development of reliable artificial illumination (more particularly electricity), and the power of regulating it, an increasing adoption of flowing light and richly graduated shadows ensued; and through these again a greater animation of surfaces, and a more delicate optical intensification. This manifolding of graduations is one of the fundamental 'materials' of optical formalism: a fact which holds equally good if we pass beyond the immediate sphere of black-white-grey values and learn to think in terms of coloured ones.

When pure colour is placed against pure colour, tone against tone, a hard, poster-like decorative effect generally results. On the other hand the same colours used in conjunction with their intermediate tones will dispel this posterlike effect, and create a more delicate and melting impression. Through its black-white-grey reproductions of all coloured appearances photography has enabled us to recognise the most subtle differentiations of values in both the grey and chromatic scales: differentiations that represent a new and (judged by previous standards) hitherto unattainable quality in optical expression. This is, of course, only one point among many. But it is the point where we have to begin to master photography's inward properties, and that at which we have to deal more with the artistic function of expression than with the reproductive function of portrayal.

Sublimated Technique

In reproduction – considered as the objective fixation of the semblance of an object – we find just as radical advances and transmogrifications, compared with prevailing optical representations, as in direct records of forms produced by light (photogrammes). These particular developments are well known: bird's-eye views, simultaneous interceptions, reflections, elliptical penetrations, etc. Their systematic co-ordination opens up a new field of visual presentation in which still further progress becomes possible. It is, for instance, an immense extension of the optical possibilities of reproduction that we are able to register precise fixations of objects, even in the most difficult circumstances, in a hundredth or thousandth of a second. Indeed,

this advance in technique almost amounts to a psychological transformation of our eyesight*, since the sharpness of the lens and the unerring accuracy of its delineation have now trained our powers of observation up to a standard which embraces ultra-rapid snapshots and the millionfold magnification of dimensions employed in microscopic photography.

Improved Performance

Photography, then, imparts a heightened, or (in so far as our eyes are concerned) increased, power of sight in terms of time and space. A plain, matter-of-fact enumeration of the specific photographic elements – purely technical, not artistic, elements, – will be enough to enable us to divine the power latent in them, and prognosticate to what they lead.

The Eight Varieties of Photographic Vision

- 1 Abstract seeing by means of direct records of forms produced by light: the photogramme which captures the most delicate gradations of light values, both chiaroscuro and coloured.
- 2 Exact seeing by means of the normal fixation of the appearance of things: reportage.
- 3 Rapid seeing by means of the fixation of movements in the shortest possible time: snapshots.
- 4 Slow seeing by means of the fixation of movements spread over a period of time: e.g. the luminous tracks made by the headlights of motor-cars passing along a road at night: prolonged time exposures.
- 5 Intensified seeing by means of
 - a) micro-photography;
 - b) filter-photography, which, by variation of the chemical composition of the sensitised surface, permits photographic potentialities to be augmented in various ways – ranging from the revelation of far-distant landscapes veiled in haze or fog to exposures in complete darkness: infra-red photography.
- 6 Penetrative seeing by means of x-rays: radiography.
- 7 Simultaneous seeing by means of transparent superimposition: the future process of automatic photomontage.
- 8 Distorted seeing: optical jokes that can be automatically produced by
 - a) exposure through a lens fitted with prisms, and the device of reflecting mirrors; or
 - b) mechanical and chemical manipulation of the negative after exposure.

What is the Purpose of the Enumeration?

What is to be gleaned from this list? That the most astonishing possibilities remain to be discovered in the raw material of photography, since a detailed analysis of each of these aspects furnishes us with a number of valuable indications in regard to their application, adjustment, etc. Our investigations will lead us in another direction, however. We want to discover what is the essence and significance of photography.

The New Vision

All interpretations of photography have hitherto been influenced by the aesthetic-philosophic concepts that circumscribed painting. These were for long held to be equally applicable to photographic practice. Up to now photography has remained in rather rigid dependence on the traditional forms of painting; and like painting it has passed through the successive stages of all the various art 'isms': in no sense to its advantage though. Fundamentally new discoveries cannot for long be confined to the mentality and practice of bygone periods with impunity. When that happens all productive activity is arrested. This was plainly evinced in photography, which has yielded no results of any value except in those fields where, as in scientific work, it has been employed without artistic ambitions. Here alone did it prove the pioneer of an original development, or of one peculiar to itself.

In this connection it cannot be too plainly stated that it is quite unimportant whether photography produces 'art' or not. Its own basic laws, not the opinions of art critics, will provide the only valid measure of its future worth. It is sufficiently unprecedented that such a 'mechanical' thing as photography, and one regarded so contemptuously in an artistic and creative sense, should have acquired the power it has, and become one of the primary objective visual forms, in barely a century of evolution. Formerly the painter impressed his own

* Helmholtz used to tell his pupils that if an optician were to succeed in making a human eye, and brought it to him for his approval, he would be bound to say: 'This is a clumsy job of work'.

perspective outlook on his age. We have only to recall the manner in which we used to look at landscapes, and compare it with the way we perceive them now! Think, too, of the incisive sharpness of those camera portraits of our contemporaries, pitted with pores and furrowed by lines. Or an air-view of a ship at sea moving through waves that seem frozen in light. Or the enlargement of a woven tissue, or the chiselled delicacy of an ordinary sawn block of wood. Or, in fact, any of the whole gamut of splendid details of structure, texture and 'factor' of whatever objects we care to choose.

The New Experience of Space

Through photography, too, we can participate in new experiences of space, and in even greater measure through the film. With their help, and that of the new school of architects, we have attained an enlargement and sublimation of our appreciation of space, the comprehension of a new spatial culture, thanks to the photographer humanity has acquired the power of perceiving its surroundings, and its very existence, with new eyes.

The Height of Attainment

But all these are isolated characteristics, separate achievements, not altogether dissimilar to those of painting. In photography we must learn to seek, not the 'picture', not the aesthetic of tradition, but the ideal instrument of expression, the self-sufficient vehicle for education.

Series (Photographic Image Sequences of the Same Object)

There is no more surprising, yet, in its naturalness and organic sequence, simpler form than the photographic series. This is the logical culmination of photography. The series is no longer a 'picture', and none of the canons of pictorial aesthetics can be applied to it. Here the separate picture loses its identity as such and becomes a detail of assembly, an essential structural element of the whole which is the thing itself. In this concatenation of its separate but inseparable parts a photographic series inspired by a definite purpose can become at once the most potent weapon and the tenderest lyric. The true significance of the film will only appear in a much later, a less confused and groping age than ours. The pre-requisite for this revelation is, of course, the realisation that a knowledge of photography is just as important as that of the alphabet. The illiterates of the future will be ignorant of the use of camera and pen alike.

'A fotográfia: napjaink objektív látási formája'

Korunk, 1933, No. 12, pp. 911-913.

In English: Telehor, Brno, 1936, Nos. 1-2, pp. 34-36.

An Open Letter

To the film industry and to all who are interested in the evolution of the good film

We publish this interesting manifesto by the famous Hungarian camera-artist, not because we necessarily agree with all the views it expresses, but because we believe that bold criticism from a well informed source always gives a healthy stimulus.

Shall we look on while the film, this wonderful instrument, is being destroyed before our eyes by stupidity and a dull-witted amateurism?

The unbiassed observer cannot fail to see, to his great distress, that the film production of the world is growing more and more trivial every year. To the trained eye and mind the present-day film can give no pleasure.

This criticism is not confined to the artistic side of film-making. The whole film industry is in danger. This is shown by its increasing incapacity to produce a financial return. Gigantic sums are swallowed up by desperate experiments, extravagance in superficial matters not strictly proper to the film; monster decorations, piling up of stars, paying huge salaries to secure performers who turn out unsuitable for filming. This expenditure will never bring in its return, so that the film is slipping back with increasing certainty into the hands of the adventurers, from whom it had been rescued after its initial period of being a purely speculative business.

The root of all evil is the exclusion of the experimental film creator, of the free independent producer.

3

Yesterday there were still crowds of pioneers in all countries, to-day the whole field is made a desert, mown bare. But art can know no further development without the artist, and art requires full sovereignty over the means to be employed. Every work of art attains its achievement only through the responsible activity of the artist, driven to his objective by his vision of the whole. This is true of architecture, of painting, of drama. It is equally true of the film, and cannot be otherwise.

4

From the nature of the film arises the difficulty of experimentation, the nursery-garden of good film work; for to the film there is attached a machinery of production and distribution, the organisation of which stretches from the scenario through acting, photography, sound recording, direction, and film-cutting up to press propaganda, leasing and cinema halls. Only thus could what was once a sideshow at a fair be converted into a world-wide business. Amongst the economic complications of this enormous machine the artistic aspect is treated so incidentally, judged so entirely from the mercantile standpoint, that the significance of the creative artist of the film is completely eliminated. One might almost say the director is forced through fear of penalisation to do without the cinematograph art. By becoming part of the prevailing system of production, even the best pioneers have, to the bitter disappointment of all those interested in films, sunk to the level of the average director. The independent producers were an embarrassment to the industry. The existence of the pioneers implied a destructive criticism of official production. The vitality of the small works, their faith in the cinematographic art, while hardly removing mountains, did box the ears of the industry soundly. They swung out for a counter-blow without realising the soundness of these pioneer movements, their effort to press forward on the artistic side. So the industry carefully stamped out anything which was even suggestive of pioneer effort. Their crowning victory was found in the necessity of specially constructed buildings for sound-film production and showing, and consequently the final business monopolisation of the 'art of the film.'

5

The way was freed once more for mechanised business. The industry was victorious all along the line.

Everything contributed to help them; legislation regulations concerning quotas and import restrictions, censorship, leasing, cinema owners and short-sighted critics. But the victory of the industry has been a costly one. Art was to be destroyed in the interests of business, but the boomerang has whizzed back and struck the business side. People do not go to boring films, in spite of the calculation of returns made by the film magnate on the theory that every adult *must* visit the cinema twice weekly at an average price of so many cents, pennies, pfennigs or sous, per ticket.

6

Shall the artist now, after all the kicks he has received, turn round and help the business side to think? Shall he take a hand again, and beg with economic arguments for the weapons of the spirit that were struck from his hands?

7

Good, we will do so.
Now *we* start estimating profits.

8

The culture of the film grew with the onlooker. History records no similar process of general passive participation, extending to all nations and continents, in an applied art and its development to that relating to the cinema. By the numerically enormous part played in human life generally by attendance at cinemas, even the most primitive member of an audience is in a position to exercise criticism of the film and register any slackening of creative interest. This means the necessity of straining every nerve in creative work. But where is that work to come from, if the artist is to be excluded from the creative process?

9

A pioneer group is thus not only an artistic but an economic necessity.

10

All barriers against pioneer effort must therefore be removed. Encouragement, private, industrial and official, must therefore be extended to the independent cinematograph artist.

11

This means that we demand for him:

- (1) From the state
 - (a) Removal of censorship restrictions.
 - (b) No taxation on his creations.
 - (c) Payment of allowances.
- (2) From the industry, in accordance with output.
 - (a) Studio
 - (b) Sound
 - (c) Material
 - (d) Obligatory performances by leasing agents and theatres.
- (3) Education in artistic film work must be begun long before the practical side. The antiquated art school curriculum must be replaced by the establishment of
 - (a) Studios for lighting (artificial light)
 - (b) Photo and film studios (camera technique)
 - (c) Dramatic classes
 - (d) Theoretical, physical and experimental departments.

12

To formulate and fight for these demands is terribly necessary at the present time, for our generation is beginning to exploit without initiative or talent the magnificent technical heritage of the previous century. It remains to be hoped that these statements of opinion will remind a few, at least, of the intellectual problems which the conscience of the thinking man bids him solve.

Sight and Sound, London, 1934. Vol. 3, No. 10.

Paths to the Unleashed Color Camera

1 Color photography is still grappling, as it has been for forty years, with the problem of providing a colored reproduction of nature which should be satisfactory in every respect. Emulsion, color filters, and screen plate transparencies, because of the physical formation of their employed pigments, give only an approximate translation of the object's natural coloring. For instance, it is well known that by means of a subtractive process we can obtain from the three colors, yellow, red, and blue, either an intense blue or an intense green, but not both simultaneously, unless we employ a second blue. This insufficiency undoubtedly sets the color photographer a very important task; he can deliberately choose the nature and degree of his transmutation of nature and lead it to a harmonious result.

This is no unusual statement, only the destruction of an illusion which besets the average spectator of color photography, who is apt to base his criticism upon the assumption that the results must be in full accordance with the reality of the object portrayed.

2 But there is another common illusion which must be dispelled. Most people imagine that the mere existence of color photography means a great advance for photography as a whole. To be sure, it is a step forward in technique, but not in photography. Color photography still sets itself the same tasks which the best photographers of the pioneer period were already solving a century ago. The time is gradually approaching when the color photographer should apply the same practical and theoretical principles which the good modern black-and-white photographer, whether amateur or professional, naturally accepts as a standard.

The impulse to achieve this comes from the new single-exposure camera systems of Bernahl, Reckmeyer, Taylor-Hobson, Klein and others, which enable three colored sectional pictures to be taken at the same time; also from the improved Finlay process and from the increased sensibility of the new auto-chromatic photographic materials (Agfacolor, Dufaycolor, etc.). They are the first steps toward the unleashing of the color camera, since, aided by these accessories, it is possible to take colored instantaneous snaps, thereby opening up in color the whole series of angles and points of view which have already been taught to us by the unleashed black-and-white camera.

3 Thus, intensified possibilities of reproduction may be anticipated for color photography, transcending what is possible in painting or appreciable to the naked eye. But this does not

mean that this technique has as yet created its own problems. All we know at present is that it is a translation of black-and-white photography into color. In order to penetrate into the individual laws of color photography, we should do well to recall an occurrence of fifteen to twenty years ago, namely the way in which the black-and-white film reacted upon static black-and-white photography. We may with certainty assume that the general introduction of color films will give a new impetus to color photography and provide it with an unmistakable range of problems of its own. Today – previous to this introduction – we can only record our own observations, uncertain as yet and feeling our way.

4 It seems to me that the first and most important element of the color film is the artificial source of light. During projection, light penetrates the transparent film, or the layer of color, as the case may be. This gives rise to coincidence between light and color. This coincidence had been lost to color composition since the decay of the art of the stained-glass window.

It has always been one of the aims of painting to reproduce manifestations of colors with the same intensity with which they appear in Nature. This is nothing new to connoisseurs of Impressionist painting, but few are aware that in many points the development of Impressionism has contributed to the clarifying of the problem of the *color film*. It is not only that the Pointillists anticipated the additive method of color photography – Seurat, for example, when he set points of red and green adjacent to one another so as to produce, at a sufficient distance, the illusion of a broad field of yellow, just as in the auto-chromatic Lumière photographic plate or the Dufaycolor film. But in the main it is seen in a healthier attitude to color composition itself, which has not only created a new feeling for color but also laid the foundation of a new confidence in the treatment of *space*. The Impressionists dared to take the first step toward objectivity in optical problems; they were the first to suppress the narrative, story-telling element in painting in favor of the cult of color, and they were the basis of the art of Cézanne, the father of all new forms of expression in painting.

5 It is my conviction that Cézanne's artistic development will for a long time to come remain the practical foundation of color photography and the color film, so that it seems in place here to determine the course of this development.

We can trace three distinct periods in the art of Cézanne, namely; (a) a narrative, psychological stage; (b) a naturalistic period; and (c) an abstract period.

Since, during the first period, we can speak only of Cézanne the man, it has no relation to our special optical problems. These pictures relate sublimated stories, very susceptible of psychoanalysis (*Temptation of St. Anthony, Murder, etc.*). Cézanne's real development as a painter begins with the second period. He had then recognized that his task was to reproduce the colored phenomena of light playing on the surface of things – that is, the most intense effect of light that color in nature can produce. In order to reproduce these effects in paint, the Impressionists invented an extensive scale of new technical artifices, and Cézanne developed the technique still further. Observed close at hand, the pictures belonging to this second period are seen to consist of opalescent shimmering single strokes, points, tracts of color which, seen at a proper distance, resolve themselves into a wonderful unity, glowing with light, the natural reproduction of a scene, usually a landscape.

This analytical, dissective technique permitted a representation of nature and space with an intensity hitherto unknown. Once this step had been taken, Cézanne could direct his interest to the objective problems of the relation of colors, the very existence of color.

His third period, the abstract, was the culmination of this attitude. In these late pictures he is only concerned with the composition of stretches of space-composing color and colored tensions. He begins with nature, but he overcomes the initial structure and uses it merely as a framework.

6 We know how painting continued to develop. Cézanne's objective creative work had opened up a path by way of Expressionism and Cubism to abstract painting. Today it is possible for a painter to work directly in color without employing a naturalistic accessory construction of natural phenomena. I should like to emphasize my belief that color photography will continue to develop Cézanne's principles just as it has already in the art of painting. It is not so much the experimental color film as precisely the commercial color film which I expect will return to Cézanne himself after it has gone through a fruitless period of struggle with useless historic styles.

7 The abstract has now seized upon color as the medium of more objective expression. But it has not yet been possible to create the highest intensity of color, as expressed in nature (through reflection or absorption of light by certain bodies). It is thus once more a question of the same ancient problem, but no longer upon a naturalistic plane.

I made an experiment on these lines in the transparent picture where the picture is painted on the front and back of a transparent material. Adjacent to the colored surfaces there is perforation. This admits unfiltered light, so that in addition to the pigmentary effect of the painted spaces we have a direct material effect derived from the light striking through upon the background. Thus a kind of spatial kinetics also begins to play its part. When the picture is secured at a certain distance from its background, we have effects of light and shade which appear to move as the spectator walks past the picture.

Real painting of light which would also have the advantage of movement could of course come into being if the color film were properly handled. This will not, however, be achieved by means of a *mechanical* photographic reproduction of nature, but by the creation of forms which are non-imitative.

8 As I have already mentioned, we have for this purpose the most proper element of created form—light itself, movable, multicolored, amenable to control. This light can become active, not only through the differentiation of reflection or through the power of absorption of any particular material upon which its rays are cast, but in the first instance through the action of a human will to create. It is here that the real conquest of color begins, the spiritualization of the direct effect of light. The true kinetic representation of color values will bring us the first great sensation in this respect, and probably through a new form of montage which will create continuity and composition by optical, not psychological, means. Much time will elapse before film reaches the point when color will be divorced from its naturalistic-illusionist meaning. The creation of colored form in light, free from these elements, will probably lead in the end to the abstract cinematograph.

The static equivalent would be the color photogram, analogous to the black-and-white pictures taken without a camera. I have already made attempts in this direction, but I feel that without apparatus on a larger, perhaps more scientific scale, it would be difficult at this stage to put them into execution.

9 All in all we can therefore say:

Firstly: that today the color-photographer must transpose his representations of nature in colored expression according to the chemical-physical constituents of his photographic material.

Secondly: that he must use the unleashed color-photo camera in accordance with the recognized principles of black-and-white photography.

Thirdly: in the color photograms which have still to be developed, he will find the right color-key to color photography.

'A felszabadult színfényképezés felé'

Korunk, 1936, No. 12, pp. 1014–1017.

English translation from: Richard Kostelanetz (ed.),
Moholy-Nagy. New York, 1970; London, 1971, pp. 66–70.

Letter to František Kalivoda⁹

Dear Kalivoda,

You are surprised that I am again arranging a growing number of exhibitions of both my earlier and more recent work. It is true that for a number of years I had ceased to exhibit, or even to paint. I felt that it was senseless to employ means that I could only regard as out of date and insufficient for the new requirements of art at a time when new technical media were still waiting to be explored.

1

Ever since the invention of photography, painting has advanced by logical stages of development 'from pigment to light'. We have now reached the stage when it should be possible to discard brush and pigment and to 'paint' by means of light itself. We are ready to replace the old two-dimensional colour patterns by a monumental architecture of light. I have often dreamed of hand-controlled or automatic systems of powerful light generators enabling the artist to flood the air – vast halls, or reflectors, of unusual substance – such as fog, gaseous materials or clouds, with brilliant visions of multicoloured light. I elaborated innumerable projects – but no patron ever commissioned me to create a monumental fresco of light, consisting of flat and curving walls covered with artificial substances, such as galalith, trolit, chromium, nickel – a structure to be transformed into a resplendent symphony of light by the

simple manipulation of a series of switches, while the controlled movements of the various reflecting surfaces would express the basic rhythm of the piece. I longed to have at my disposal a bare room containing twelve projectors, the multi-coloured rays of which would enable me to animate its white emptiness.

Have you ever witnessed a large search-light with its vast cones of light flashing wildly across the sky and searching further and further afield into infinite space? I envisaged similar results. But the flowing chords of my visions formed fully orchestrated symphonies of light, that were not confined to the staccato rhythm of the flash-light signal code. That was only one of my plans, one of many similar dreams of light and movement, for the realisation of which all the resources of physical science with its incomparable instruments (e.g. for polarisation and spectroscopy) were to be utilised.

Although the chances that these dreams will assume a concrete shape in the near future are remote, it is possible even today to envisage the basic system of the future architecture of light.

The creative manipulation of light can be discussed under two main heads.

1 Light displays in the open air:

- a) *The illuminated advertising displays* of today still generally consist of linear patterns on flat surfaces. It is now our task to enter the third dimension and to achieve real special differentiation in such displays by the use of special materials and reflectors.
- b) *Gigantic searchlights and sky-writers* already play an increasingly important role in advertising displays (e.g. American firms, Persil), and
- c) *Projections on to clouds* or other gaseous backgrounds through which one can walk, drive, fly, etc., is already possible today.
- d) *Light displays* revealing a vast expanse of light with ever changing planes and angles, an interminable network of multi-coloured rays, to the spectator seated in an aeroplane will certainly form an impressive part of future municipal celebrations.

2 Indoor light displays:

- a) The *film* with its unexplored possibilities of projection, with colour, plasticity and simultaneous displays, either by means of an increased number of projectors concentrated on a single screen, or in the form of simultaneous image sequences covering all the walls of the room.
- b) *Reflected light displays* of pattern sequences produced by such colour projectors as László's colour organ. Such displays may be of an isolated nature or they may be multiplied by means of television.
- c) The *colour piano*, whose keyboard is connected with a series of graduated lamp units, illuminates objects of special materials and reflectors.
- d) The *light frescoes* that will animate vast architectural units, such as buildings, parts of buildings or single walls, by means of artificial light focussed and manipulated according to a definite plan. (In all probability a special place will be reserved in the dwellings of the future for the receiving set of these light frescoes, just as it is today for a wireless set.)

2

Dear Kalivoda, you are acquainted with my light requisits and with my 'lightplay black-white-grey'. It took a great deal of work to assemble all this material, and yet it was only a very modest beginning, an almost negligible step forward. Nor was I able fully to carry out my experiments even within this limited sphere. You have every right to ask, why I gave in, why I am again painting and exhibiting pictures, after once having recognised what were the real tasks confronting the 'painter' of today.

3

This question must be answered, quite apart from any personal considerations, for it is of vital concern for the rising generation of painters.

We have published many programmes, issued many manifestos to the world. Youth has every right to know why our claims have failed, why our promises have remained unfulfilled. At the same time youth has the duty of continuing the quest, the search for new forms to advance the cause of art.

4

It is an irrefutable fact that the material dependence of the artist on capital, industry and working equipment presents an insurmountable obstacle today to the successful creation of a

true architecture of light; merely produces emotions of space and colour which for the time being are all without any practical value. While the possession of a few brushes and tubes of colour enables the painter in his studio to be a sovereign creator, the designer of light displays is only too often the slave of technical and other material factors, a mere pawn in the hands of chance patrons. Moreover, there is a dangerous tendency to regard 'technique' as the negation of 'art'. Many artists fear to display any exact knowledge and any mastery of skill in technical matters. A cowardly maxim proclaims that intellectual attainments are damaging to the artist, that feeling and intuition alone are required for the task of creation, – as if there had never been a Leonardo, as if the creative energies of the cathedral builders, Giotto [*sic*], Raphael and Michelangelo had not been rendered incalculably more fruitful by their universal knowledge and their mastery of technique. For the artist preoccupied with his task the mastery of the technical problems it implies is not, after all, an insurmountable difficulty. But even when he has solved these problems he is left with the paralysing impossibility of concrete demonstration. Where could he find a hall today in which to demonstrate to the public what he has created? He is forced to put his dreams in cold storage until they evaporate as a result.

It is a superhuman task to fight for the realisation of these plans, if, owing to lack of knowledge of the results that could be obtained, there is no public to assist in the struggle.

5

A further point deserves especial attention: a widely organised and rapid news service today bombards the public with every kind of news, art news included. The virtues of this service are universality of interest and speed; its vices, greed for big 'scoops' and blatant superficiality. Without interest in evolution it overwhelms its public with sensations. If there are no sensations, they are freely invented or deliberately improvised. In their hands the public with its mechanised education and lack of ideas of its own succumbs to the influence of the papers and magazines. The passionate desire for participation, the longing for direct contact with the forces of artistic creation become transformed into the average newspaper reader's 'interest', an artificial interest leading away from the real sources of experience, because it lulls sensibility by creating what is only a semblance of mental activity. As a result all real contact with the forces and achievements of artistic creation ceases, for cheap interpretation renders this superfluous. And yet in spite of all obstacles and in spite of the fact that town life, press, photography, films and the rapid and uncontrolled spread of civilisation have levelled our colour sense to a scale of greys from which most of us will have the greatest difficulty in escaping, we must regain the receptivity for colour that we till recently possessed. We must escape from the exuberance of uncontrolled emotion in our handling of colour and learn to raise the struggle for the mastery of optical technique to a constructive level.

6

There are many obstacles to the accomplishment of this task. Above all the basic discord between man and his technical achievements, the retention of antiquated forms of economic organisation in spite of changed conditions of production, the spread of an outlook inimical to biological necessity, which transforms the lives of workers and employers alike into a ceaseless rush. The productive capacity of man is constantly increasing, but while he is fascinated by the ever renewed spectacle of a record output of commodities, he loses all sense of even his most elementary biological needs – and this at a time when a sane use of his new technique would enable him to satisfy them to a far greater extent than ever before.

7

It would be purely an evasion of the issue, if one were to search for the causes of this state of affairs in mere matters of detail. The reason for our present condition is to be found in the rapid spread of industrialism and the fact that it has been forced into the wrong channels by our capitalist production. The ruling class alone is interested in maintaining the present form of industrialism. Every attempt to create a planned economy, to reconstruct our uncontrolled, industrialised world on a socialist basis, every attempt at enlightenment even, necessarily encounters the conscious or instinctive resistance of the ruling caste of society. And for the same reason every creative achievement, every work of art prognosticating a new social order and striving to restore the balance between human existence and industrial technique, is categorically condemned. The relatively meagre results of new experiments in art are due to the social system that rules our existence, the hidden ramifications of which actually extend to those circles where one would expect to find hostility to it.

8

Thus the pioneers of these experiments are forced to approach a public which is unprepared for their message either by almost devious means or with but small, carefully selected instalments of their creative achievements. According to the temperament of the artist their method of approach usually follows one of two courses. Those who follow the first method apply their creative energies to the problems of the day and to the obvious facts of existence as transmitted by tradition and accepted without question by their contemporaries. Their task is simply the perpetuation of our cultural tradition. Those following the second method derive their creative inspiration from all that is as yet in an embryonic state, all that points to the future and has never been subjected to the test of experience. As true revolutionaries of art they endeavour to take new forms of experience in their single stride. Although this contrast by no means implies a valuation, it is nevertheless true that the tempo of cultural development depends on the depth to which these revolutionary ideas shall penetrate. Even the manner in which the problems of the day are interpreted is directly influenced by them.

But since time is a limiting factor for all of us, we are often forced to select the method of gradual evolution, if we aspire to be able to pass on at least some fraction of our creative achievements.

9

Since it is impossible at present to realise our dreams of the fullest development of optical technique (light architecture), we are forced to retain the medium of easel painting for the time being.

Nevertheless I consider it necessary to continue my experiments with synthetic substances such as galalith, trolit, aluminium, zellon, etc., and to retain them as media for my work, because the use of these materials in art will help to demonstrate their applicability in a wider sphere.

10

This is the chief, though not the sole reason why – without discontinuing my experiments in the use of light – I still paint pictures.

Yours

L. Moholy-Nagy

June 1934.

Telehor, Brno, 1936, Nos. 1–2, pp. 30–32.

Once a Chicken, Always a Chicken

A film script on a motif from Kurt Schwitters's 'Auguste Bolte'

1

A network of lines covers the screen.

A number of eggs roll down an inclined plane – toward the spectator –, those in front are very large, those following diminish in size, single eggs jump into the air.

A hand catches the jumping eggs.

A masked man juggles with eggs.

The man catches eggs out of the air, throws them away again, they vanish. More and more eggs in ever more rapid sequence.

The man can no longer save himself from the deluge of eggs that rains down upon him. He runs away.

The eggs again run down the inclined plane as before.

The eggs are at first small, then increase in size. Some jump, fall, jump again. Some break. The inclined plane is transformed into the side of a roof, down which the eggs are rolling and leaping.

Another egg. It jumps high into the air and runs with lightning speed down the front of the house on to the street.

Down in the street the egg makes a few more leaps.

More and more eggs join it, some break, but the majority roll and leap on.

A street crowded with walking people.
Legs in rapid walking motion, eggs rolling and leaping on the ground between them.
The legs move rapidly, but the eggs even faster.
The legs lag behind, and finally fail to reach the screen.
The eggs roll between the wheels of cars and trams, across tram lines, leap over water courses.
Drops of water and eggs leap into the air. Their whiteness is offset against a dark background.
Now the man is walking along the street. He is moving in the opposite direction to that of the eggs. (Thus if the eggs are moving from the right to the left, the man is walking from the left to the right of the screen. In order to draw the audience's attention to the fact that they change their course and follow the man, some eggs begin to leap in the opposite direction.)
Many eggs roll after the man: small ones, large ones, along a fairly crowded street.
Shops with perambulators. The eggs leap through the open doors of shops. They jump into prams.
Ten women, one after the other, push perambulators through the door of a shop.
Again walking people and eggs rolling between their legs.
In the foreground the man is running. He turns a corner.
Ten pupils of a girls' finishing school, with eggs rolling between their legs.
At the corner eggs leap about in distress – they have lost trace of the man.
One egg rolls away from the others and rolls on and on.
It finally reaches the door of a house.
Slowly the door closes behind it.
The porter's lodge. The staring face of a fat woman door keeper. Mouth gaping in surprise.
The door again opens – very slowly – a young woman – fresh and bright – steps out of the doorway. In rhythmic motion she flicks the broken shells of an egg from her dress. The fat doorkeeper runs after the girl, hands her an enormous baby's milk bottle.
With an ironic and superior smile the girl refuses the bottle. She enters a café.

2

Short montage sequence showing the interior of the café: a waiter balancing a tray; a man who has accumulated all the available newspapers; dogs under the tables.
The young woman enters the garden in front of the café.
She takes a seat and looks about attentively with a bright expression.
Outside idlers, hurrying, though they have nothing to do.
The girl looks at her cup.
She raises it to her mouth – it contains chocolate with cream.
Small white flowers – myrtles – form a wreath.
The head of the girl with bridal veil and wreath.
Shortly afterwards the man with the mask appears.
The girl puts down the cup, looks up.
At this moment ten men with similar masks pass outside.
Nine of them are relatively blurred.
The girl jumps from her seat.
Runs forward and looks after the men oblivious to her surroundings.
Hesitatingly she returns, looks around in a disturbed manner, sits down. Again jumps up.
Runs a few paces, then slows down, thinking.
Slowly she returns.
Halfway she resolutely turns and rushes along between the rows of tables.
The waiter carrying vast quantities of trays and crockery rushes after her wildly shouting and gesticulating in spite of his heavy load. The man with the newspapers appears with an annoyed expression from behind mountains of newspapers and furiously looks after the disappearing girl.
The waiter with his trays bumps into the table of the man.
The man is buried under a deluge of newspapers, which completely engulf him.
The waiter stumbles, but manages to retain his foothold.
Trays, crockery, food – he balances all of it, not a drop of coffee is spilt from the cups. Eggs leap in their glasses.
The girl is standing outside, looks to the right and left.
Then she walks to the left, where the ten men are strolling along the street.
The girl rushes after the men.
Breathless she approaches them, she stops abruptly, in order slowly to overtake them – but

The men have just reached a street corner. Five turn to the left, five to the right. The girl now also reaches the corner.

For a long time she remains standing in despair without knowing what to do. Which way shall she take?

She decides to follow the right group of five men.

She stops halfway, hesitates.

She runs back and follows the left group instead.

Halfway she is again beset with doubts. At top speed she rushes after the right group.

The five men increase their pace.

Breathless the girl again approaches them, stops abruptly, in order to pass them slowly, but

The five men have reached another corner, three turn to the right, two to the left.

The girl has also reached the corner, she stops, thinks, and decides to take the right hand course.

Halfway she stops and turns to the left,

stops, thinks and turns to the right again.

The girl quickly follows the right group of men.

Three men walk along the street.

Openmouthed, breathing heavily, hatless and with dishevelled hair the girl rushes after them.

Close to the men she stops abruptly, brushes her hair back, quickly puts on her hat, prepares to overtake the men – when

The men have again reached the corner, one turning to the left, two to the right.

The girl reaches the corner. Without stopping to think she mechanically turns to the right.

But the men have again reached the corner, when the girl approaches them.

They separate: one turns to the right, the other to the left.

For a fraction of a second the mask of the man walking to the right is sharply defined.

Exhausted the girl reaches the corner.

In stupor she runs a few paces to the right.

The girl suddenly stops and turns to look after the man who went to the left.

But the man has already vanished.

The girl then turns to the right again.

Far down the street the man is just entering a house.

The girl rushes after him.

Completely out of breath the girl is standing in a gateway. It is of an immense size, the girl in front of it very small. In the background there are many other gateways, bearing down upon the girl as in a nightmare. With a tired gesture the girl wipes her forehead.

She is climbing steps. Halfway up the stairs a charwoman washing the steps empties her bucket, and a deluge of water sweeps the girl down the whole flight of stairs again. In vain she struggles against the floods: the hand of a woman pulls a door-bell. (This scene is repeated several times.)

Every time the girl is thrown out of a housedoor, her clothes are more damaged:

first her hat is missing,

then she appears without her coat.

At last her handbag is snatched by someone from inside a doorway.

The bag opens with a sudden jerk: coins and notes fall out, but onto the floor inside the door.

The door is banged, the money gone. In vain the girl belabours the door with both her fists.

Thoroughly worn out she turns away.

She knocks at the door of a flat.

A woman opens it – shakes her head.

Inside a shadow appears in the background. The man with the mask?

The girl pushes the woman aside and rushes towards the man.

A lay figure!

The woman occupying the flat runs after the girl who has begun to demolish the lamp, chairs, table, etc., in a blind rage.

The women fight.

Finally a mighty blow sends the girl flying through the door.

After adjusting her clothes as best she can, the girl continues her search.

Completely at the end of her strength she meets a postman.

Frantically she commences to search the contents of his enormous bag.

The postman lifts up the girl and flings her aside.

The girl is thrown against a notice-board containing marriage bans.

Struggling violently she at once attempts to escape from behind the fence.

At last she succeeds in disentangling herself and slips through the meshes of the fence.
In the background fencing superimposed upon the window of a landing. The girl is standing
at the bottom of the topmost flight of stairs.
Half a storey higher up is the last door.
Summoning all her courage the girl climbs the few steps.
She rings the bell.
The door is opened by the masked young man.
The girl wants to rush in at once, but the door is slammed in her face.
Dumbfounded she rings again.
In vain – she waits for a long time.
Slowly she descends a few steps.
She stops on the landing.
Hesitates,
returns to the door and rings again.
Again she waits in vain.
She returns to the landing.
She stops in thought, looks at the door and finally returns to it hesitatingly and without hope.
She rings,
waits,
no result.
Slowly the girl descends two flights of stairs
and three steps more.
She turns abruptly, dashes upstairs and throws herself with all her strength against the door,
which is shattered by the impact.

3

Inside is the man with the mask. He takes no notice whatever of the girl.
He is catching eggs out of the air and throwing them away again.
The eggs leap and dance all around him, some break.
The girl who has just entered the room with a mighty bounce after having smashed the door,
stops and greets him.
Entirely unconcerned the man continues his game with the eggs.
The girl hesitates, then bows again.
The man still ignores her.
The girl then resolutely approaches and grabs his arm.
The man turns his back on the girl and continues his game.
The girl takes hold of both his shoulders and shakes him furiously.
Suddenly the gigantic figure of the marriage registrar looms up in the room; he is wearing a
top-hat and morning coat. His hand clasps a flaming sword.
The man and girl in front of him click their heels in military fashion and join hands. The
registrar's sword is transformed into a sash.
He walks round them in a circle and encloses them in a flaming ring.
The registrar vanishes as suddenly as he appeared, by walking through the wall.
The man and the girl sit down at two tables facing each other.
They talk, each listening in a detached manner to the other. They almost soliloquize. They make
grimaces at each other. Suddenly the girl jumps from her seat.
The man takes his hat, kisses the woman on her forehead and leaves the room.
The woman goes to the window.
Outside children are playing with balls in a park and digging in the sand of a building-plot;
laughing faces of children. (Springtime.) The man is going to the registry office.
The registry officer enters the birth of a child, just notified by the man, in a large book.
The household of the young couple is poverty-stricken; dirty children, tiny ones and larger
ones. Among them the woman, in despair.
The man is standing at the window and looking out at the street below.
Trees in full blossom, young girls, cars dashing along bright roads.
The man takes his hat.
He goes to the registry office.
The registrar enters another birth in his book.
The woman is standing at the window.
Below children: they play with snowballs in the park and with sledges on the building-plot.

Laughing faces of children,
 The man again goes to the registry office, etc.
 Nine masked men pass the house.
 The woman runs out of the door of the flat on to the staircase, as if intending to follow the men.
 But doubts beset her, she slows down her pace and finally returns to the room.
 Again the poor household, the neglected children.
 The man returns. Without a word of greeting he throws his hat furiously on to the bed.
 The smallest children cry.
 The law-court in which the divorce is being pleaded.
 The judge, the two, very small, in front of him, they are encircled by a ring and make desperate attempts to get away from one another. After a number of unsuccessful efforts they turn against each other and commence to fight.
 The judge places his hands between them and separates them.
 The ring is broken.
 The girl hastily retreats, carrying one half of the broken ring.
 Holding half the ring the girl quickly passes down a street.
 A masked man turns and looks after the girl.
 He follows her.
 At the corner the girl meets another man, also masked.
 He joins the first man.
 The girl accelerates her steps.
 More and more men are following her.
 Finally the girl throws away her half of the ring. It is transformed into egg-shells.
 The egg-shells roll after the girl, overtake her.
 The egg-shells enclose the girl.
 An egg rolls on with ever increasing speed.
 Many masked men are running and running.
 The egg rolls down a hill.
 It comes to rest under a china hen.
 The men also roll down the hill. They turn somersaults and stumble, some remain lying on the ground, others rise again.
 The men stand round the china hen.
 The head of the hen. Its plaster eyelids twinkle.

1925–1930

Telehor, Brno, 1936, Nos. 1–2, pp. 43–45.

Modern Art and Architecture

Between 1920 and 1930, when a good deal of propaganda was being made for the new architecture, you often heard people express the opinion that neither painting nor plastic art had any place in a modern room, but neither in literature nor in discussions do we find anyone taking up a clear and definite stand with regard to this problem, although plenty of strong argument goes on from mouth to mouth. The reason for this seems to be that a number of strong personalities representative of the fine arts sufficed by their very existence to put a veto upon any such definitely negative formula.

The difficulty of finding a place for pictures or sculpture in a modern interior, the sinking sales statistics and the lack of interest taken by the average member of the public in exhibitions all go to show, however, that a certain crisis exists in the relations between the fine arts and architecture.

We might define this crisis in something like these terms: The old conceptions of painting and plastics are shifting and changing. They must either enlarge their boundaries in accordance with the possibilities opened up by our technical age, or they will appeal only to a constantly diminishing and increasingly unimportant proportion of their contemporaries.

The discovery of new artistic materials, the invention of photography and the film, the existence of artificial lighting which can be controlled at will, the new possibilities in transport, the automobile and the aeroplane, the growth of new principles governing mechanical production and the conception of montage have not only contributed to produce a new architecture, but also brought about a new receptivity for the new fine arts which are just coming into being.

We can describe the content and the purpose of this new art in a single sentence: *it is an attempt to get into accord with the new conception of space.*

By space in this sense I mean not only our own intellectual and physical spatial content, the interiors in which we live, but also space itself, which the architect must seize and shape and which we must comprehend with our senses. To-day all the arts concern themselves with these problems of space, based upon our new realisations which go considerably beyond the spatial conception of the Renaissance, which prevailed until the beginning of the present century.

Often one is questioned about the content of an abstract picture or a plastic. At one time it was difficult to give an answer, just because this could only be made up of a number of explanations of detail, having relation only to certain individual aspects of the work of art; for example, that it contains certain colour contrasts, that the component parts are in relation to one another, and so on. The only comprehensive answer, and a very simple one, is, however, that all modern works of art represent the battle to achieve a new relation to space. Of course this battle can be waged by all available means, but it must be equally evident that only new means can adequately express an entirely new conception. This will serve to explain to you why new materials have made their appearance in painting and the plastic arts.

All these formulae, which seem so unusual, will reveal themselves without any effort to those who are filled with the consciousness of the spatial problems of the day, who have gathered a definite conception of space.

But do we really know what we mean by space? Have we made it clear to ourselves that we must have a common definition in order to come to an understanding in common?

In my book, 'The New Vision,' I have devoted a chapter to the problem of space, and I think I can best make clear to you my position with regard to the problem of architecture in relation to art if I read you a passage which explains the problem of space as it presents itself to me.*

In our definition of space considerable uncertainty prevails at present. This uncertainty is evident in the words we employ, and it is precisely these words which increase the confusion.

What we know of 'space' in general is of little help in assisting us to grasp it as an actual entity.

We speak to-day of mathematical, physical, geometric, Euclidian, non-Euclidian, architectural, dance, pictorial, scenic, cinema, spheric, crystalline, cubic, hyperbolic, parabolic, elliptical, bodily, surface, lineal, one-dimensional, two-dimensional, three-dimensional, projective, metric, isotropic, topographic, homogeneous, absolute, relative, fictive, abstract, actual, imaginary, finite, infinite, limitless, universal, etheric, inner, outer, movement, hollow, vacuum, formal, etc., etc., space.

Notwithstanding this bewildering array we have to recognise all the time that space is a reality in our sensory experience. A human experience like others, a means to expression like others. Like other realities, other materials.

Space is a reality, that can be grasped according to its own laws, arranged according to its own laws, once it has been comprehended in its fundamental essence. As a matter of fact, man has constantly tried to use this reality (this material) in the service of his urge for expression, no less than the other realities which he has encountered.

A definition of space which – even if it is not exhaustive – may at least be taken as a point of departure for further consideration is found in physics – 'space is the relation between the position of bodies.'

Therefore: spatial creation is the creation of relationships of position of bodies (volumes).

We must test this definition by sensory experience in order to be able to understand it correctly.

Space is known to man – as relation between position of bodies – first of all by means of his sense of vision. This experience of the visible relations of position may be checked by movement – alteration of position – and by means of touch, it may be verified by another sense.**

Further possibilities for experiencing space lie in the organs of hearing and of balance,*** also in other space-experiencing sensory centres of our body, imperfectly localised according to our present knowledge. These belong apparently to the group of those sensory activities which receive and send out impressions through the atmosphere and by telepathy. The study

* See also: Dr. Rudolf Carnap: *Der Raum*. Kantstudien, Berlin, 1922; and *Der logische Aufbau der Welt*, Weltkreisverlag, Berlin-Schlachtensee, 1928.

** From the point of view of the subject, space is naturally to be experienced most directly by movement; on a higher level, by the dance. The dance is at the same time an elemental means for fulfilment of space-creative impulses. It can compose space, order it.

of newer fields of consciousness will render great services to architecture as well as to other branches of human endeavour.

According to the simplest formula man perceives space: through his sense of sight in such things as: wide perspectives; surfaces meeting and cutting one another, corners, moving objects with intervals between them; interpenetrating objects; relationships of mass, light; through his sense of hearing: by acoustic phenomena; through watching movement: in different directions in space, through means of locomotion; horizontal, vertical, diagonal, intersections, jumps, etc.; through his sense of equilibrium: by circles, curves, windings (spiral stairways).

The biological bases of space experience are everyone's endowment, just like the experience of colours or of tones. By practice and suitable exercises this capacity can be developed. To be sure, there will be many degrees of difference in the maximum capacity, exactly as is the case in other fields of experience – but basically space experience is accessible to everyone, even in its rich, complicated forms.

The road toward experience of architecture thus proceeds over a functional capacity of understanding which is biologically determined.

Those who are eager to enlarge their appreciation, however, still follow for the most part the way of style characteristics, and in particular the characteristics of the so-called monuments of civilisation: Doric pillars, Corinthian capitals, Romanesque arches, Gothic rose-windows, etc.

Only seldom do they grasp the creative origin of these divisions of space, the core of these styles of architecture. The historical method frequently obscures any real knowledge although training in it – learning to distinguish the age of a building from its stylistic characteristics – may be something peripheral. Only a few can go on and experience the marvel of created space.

The 'educated' man to-day possesses in general neither a consciousness nor a sureness of feeling in judging architectural works as the handling of space. He may perhaps be able to judge them according to their point in time, but cannot feel anything essential in them. The actual effect of spatial creation, the equilibrium of taut forces held in balance, the fluctuating interpenetration of space energies, escapes his notice.

Unfortunately this also occurs with architects, who by reason of a pre-determining training look for the essence of architecture in the wrong place. Thus it may happen that many 'modern' architects will take from truly revolutionary architecture only stylistic characteristics, as, for instance, the misunderstood 'cubistic' form of the exterior. It thus occurs that their point of departure is an arrangement in series of the inner spaces, from which they come, to be sure, to some sort of functional solution, but never grasp architecture as space relationship capable of being experienced. Architecture – all the functional parts taken together – must be conceived in the whole, as a whole.

Without this, a building becomes a piecing together of hollow bodies, which may be technically practical, but can never serve in creating space, not to speak of sublimating spatial experience.

The elements necessary in a building, which fulfil its function, group themselves into a picture of space, becoming for us a spatial experience. The space picture in this case is nothing less than the most efficient co-operation between ground plan organisation and the human factor. The present mode of living plays a significant role, but it does not prescribe the manner of space creation. Only when the facilities for moving about, the acoustics, light and equilibrium, are conceived in the constant balance of their spatial relationships, can we speak of a spatial creation.

In the planning of a modern building the most varied problems come up: social, economic, technical, hygienic. It is probable that upon their correct solution the fate of our generation and the next, in an essential aspect, depends.*

Notwithstanding the urgency of this problem and the enormous responsibility bound up with it, it is seldom attacked from the right angle. The few people whose special understanding has

*** In the *Buch der 1000 Wunder*, by Fürst and Moszkowski (46th to 48th thousand, Albert Langen Verlag, Munich), there is a description of some experiments of interest in this connection. *Das wirbelnde Meerschweinchen* (swirling porpoise), p. 106, treats of the localisation of the sense of balance; *Ein Schritt vom Wege* (a step from the path), p. 60, of space orientation; *Biene und Geometrie* (the bee and geometry), p. 83, also deals with the latter. *Das Formhören* (hearing of form), p. 57, gives a report on possibilities of distinguishing forms and space through hearing, as does also the chapter *Augenersatz für Blinde* (substitutes for eyes in the blind).

* Adolf Behne has selected as the slogan for his popular and very human book, *Neues Wohnen – Neues Bauen* (Verlag Hesse and Becker, Leipzig) the gruesome but true saying of Heinrich Zille, 'One can kill a human being with a dwelling just as surely as with an axe.'

equipped them to think through and urge the realisation of the new possibilities in building are seldom attracted to practical undertakings.

It should be added that mentioning, as one always does, the social, economic and hygienic problems, does not absolve us from the responsibility of further understanding. To be sure a great step in advance has been taken, if along with the short-sighted financial and technical considerations, the problems of structure and of social economy, of technique and efficiency, are taken with sufficient seriousness. But the real architectonic conception, looking beyond the meeting of all purposive functions – that of space creation – is usually not even discussed, perhaps because its content is accessible to very few people.

In addition to the fulfilment of elementary physical requirements, man should have opportunity in his dwelling to experience the fact of space. The dwelling should not be a retreat from space, but a life in space, in full relationship with it. This means that a dwelling should be decided upon not only on the basis of price and the time it takes to build, not only upon more or less superficial considerations of its suitability for use, its material, construction and economy. The experience of space belongs in the list too, as essential to the physical comfort of the people who are to live in the house.*

This requirement is not to be taken as a vague phrase of a mystical approach to the subject; it will not be long before it is generally recognised as a necessary element in the architectonic conception, and one capable of being exactly circumscribed. That is, architecture will be understood, not as a complex of inner spaces, not merely as a shelter from the cold and from danger, nor as a fixed enclosure, as an unalterable arrangement of room, but as a governable creation for mastery of life, as an organic component in living.

The new architecture on its highest plane will be called upon to remove the old conflict between organic and artificial, between open and closed, between country and city. We are accustomed to neglecting questions of architectonic creation in the dwelling because the emphasis is upon use, the house as a place of relaxation and recuperation. The future conception of architecture must consider and realise the whole. Individuals who are a part of a rational biological whole should find in the home not only relaxation and recuperation, but also a heightening and harmonious development of their powers. The paths to this end may be of many kinds, but some day we will surely arrive at this elementary requirement of created space, especially of dwelling space. The standard for architects will then no longer be the specific needs in their dwellings of the individual, or of a profession, of a certain economic class, but it will revolve around the general basis, that of the biologically evolved manner of living which man requires.

After this general foundation is established, if there are justified individual needs, variations may be introduced.

Young people are to-day conducting investigations of the biological bases and requirements, in different fields of life. The revolutionary theses of their researches seem to be generally productive of results which are mutually related.

Efforts toward a new spatial conception and creation should therefore – important as they are – be understood only as a component part in this new orientation. The most primary sources of space experience are even to-day submerged under technicalities, a state of affairs which prevents the emergence of the future architecture, the creation of a new life space for men.

Architecture will be brought to its fullest realisation only when the deepest knowledge of human life as a total phenomenon in the biological whole is available. One of its most important components is the ordering of man in space, making space comprehensible, and taking architecture as arrangement of universal space.

The root of architecture lies in the mastery of the problem of space, the practical development lies in the problem of construction.**

*Speech made at an Informal General Meeting
of the R. I. B. A., 9 December 1936.
Journal of the Royal Institute of British Architects,
London, Third Series, Vol. 44, No. 5, January 1937.*

* A very valuable theoretical study, perhaps the most valuable of recent years, on the question of architecture, is found in the book by S. Giedion, *Bauen in Frankreich, Bauen in Eisenbeton, Bauen in Eisen* (Verlag Klinkhardt & Biermann, Leipzig). Giedion attempts in this book to show that in modern construction the correct application of materials and of principles of economy is building up actual architectural creation. But he also says that material and construction are only means to the realisation of an architectural vision.

It must be self-evident that the importance of viewing the problem from the standpoint of spatial creation should not blind us to what is perhaps the most immediate aspect: the demands of the present time.

Light Painting

It is an astonishing fact that, although photography has been in existence for a century and the cinematograph for forty years, although these great industries have been built up in which thousands of pounds are invested, there has never yet been a systematic course of instruction in the use of light. There ought to be an Academy of Light, which would be devoted to teaching and would educate its students to an artistic and economic consciousness of the new creative factor.

The founding of such an academy could be justified on economic grounds alone by reference to the changes in the economic situation, the new forms of appeal to the public – press photos, book illustrations, theatrical lighting, advertising of films and illuminated advertising, to say nothing of the developments the future may bring and all that would be directly born of such a centre devoted to the theoretical and practical study of the uses of light.

On every hand, every day, in spheres of fashion, the films, use of space and in art, we constantly encounter misplaced and misunderstood uses of colour and light. It would only be possible to bring about improvements on a large scale if great numbers of people became clearly awakened to the importance of experiencing colour.

The preliminary condition of such teaching is that the apprehension of colour should be valued as a primary biological law, just as necessary and indispensable for human beings as the fulfilment of other biological functions. The harmonious use of colour is of primary importance as a vitalizing and constructive factor.

All use of colour is dominated by the fundamental law of complementary colours. Every building-up of colour values is based upon our physical perceptions of complementary colour contrasts. Our eyes react automatically to red with the sensation of green, to yellow with blue and so on. Scientific spectrum analysis or Goethe's experiments with coloured shadows clearly demonstrate this.

To be sure, it must be remarked that all use of colour up to the present has shown certain minor variations in the use of the complementary contrasts or, as we might also express it, complementary colour contrasts were not used according to purely physical laws in the historic periods of painting, but according to individual interpretations. Certain colours, particularly broken tones, such as pink and grey, being mainly constructional elements employed by painters, took a very long time to sink into human consciousness. It was not only the religious canons of colour set up in the Middle Ages which were responsible for this, but also the development, step by step, of the power of appreciating and differentiating between shades of colour.

It would be the task of an Academy of Light to examine these questions from the historical, physical, physiological and other points of view and to render the results available to all creators in colour. It looks as if an entirely new colour consciousness were coming into being at the present day. The principal influence comes from the Impressionists, who, as early as seventy-five years ago, were working with great intensity to purify complementary contrasts and render them more objective. They carried out their observation of colours in the open air in all kinds of weather or in the full glare of the sun, in great contrast to their predecessors who had worked only in the light of the studios.

We know that the Impressionists (Manet, Seurat), studied the objectives aimed at by contemporary scientists and technicians and that they divined something of the great problems of the age of industry and the machine. Since that day the problem has become continually more complicated, and today having given rise to much cause of conflict, it has developed until it has also become part of the artist's problems.

Many of the great conflicts of our age are to no small extent the result of the uncritical acceptance of technical results, which in many cases exceed the results previously achieved by individuals or are, indeed, directly opposed to these. Technical achievement ran rough-shod over humanity through automatic production of all kinds of objects which had hitherto demanded creative thought and individual labour to produce.

Thus the spread of civilization and of the machine brought with it automatized colour results which had not been digested by man and were not subject to his command; and, by means of mass production, they are in command of visual life today. The theatre, the colour film, advertising in light, etc., produce colour combinations which very often seem to be contrary to all previous principles of colour, because the light machines, reflectors and lamps produce

purely physical complementary contrasts which have never hitherto been employed since they show automatic effects of light which have not been passed through the medium of the human eye.

The great problem put before our generation is to find the balance between our psycho-physical limitations and the uncontrolled achievements which proceed without any ordered limits from the machine which we ourselves have created.

It seems to me that the artistic and scientific work of the twentieth century shows an instinctive beginning in this direction and that every step farther and every partial problem solved is of vital importance to the whole further development. An Academy of Light which would raise the intuitive proceedings to the level of consciousness and make practical and pedagogic use of them would be the first and most important step towards systematic co-operation between the scattered forces of art and technics.

Circle: International Survey of Constructive Art.

Eds: J. L. Martin, Ben Nicholson, N. Gabo. Faber and Faber, 1937

Education and the Bauhaus

Sectors of Human Development

A human being is developed only by the crystallization of the sum total of his experiences. Our present system of education contradicts this axiom by stressing preponderantly a single field of application.

Instead of extending our milieu, as the primitive man was forced to do, combining as he did in one person hunter, craftsman, builder, physician, etc., we concern ourselves only with one definite occupation – leaving unused other faculties.

Tradition and the voice of authority intimidate man today. He no longer dares to venture into certain fields of experience.

He becomes a man of one calling; he no longer has first-hand experience elsewhere. In constant struggle with his instincts, he is overpowered by outside knowledge. His self-assurance is lost. He no longer dares to be his own physician, not even his own eye. The specialists – like members of a powerful secret society – obscure the road to all-sided individual experiences, the possibility for which exists in his normal functions, and the need for which arises from the center of his being.

Today, the accent lies on the sharpest possible definition of the single vocation, on the building up of specialized faculties; the 'Market demand' is the guide. Thus a man becomes a locksmith or a lawyer or an architect or the like (working inside a closed sector of his faculties) and is at best a happy exception if, after he has finished his studies, he strives to widen the field of his calling, if he aspires to expand his special sector.

At this point our whole system of education has hitherto been found wanting – notwithstanding all our vocational guidance, psychological testing, measurement of intelligence. Everything functions – and functions alone – on the basis of the present system of production, which recognizes only motives of material gain.

A 'calling' means today something quite different from following one's own bent, quite different from solidarity with the aims and requirements of a community. One's personal life goes along outside the 'calling', which is often a matter of compulsion and is regarded with aversion.

The Future Needs the Whole Man

Our specialized training cannot yet be abandoned at this time when all production is being put on a scientific basis. However, it should not start too soon, and it should not be carried so far that the individual becomes stunted – in spite of all his highly prized professional knowledge. A specialized education becomes full of meaning only if a man of integration is developed along the lines of his biological functions, so that he will achieve a natural balance of his intellectual and emotional power, and not along those of an outmoded educational aim of learning unrelated details. Without this aim the richest differentiations of specialized study – the 'privilege' of the adult – are mere quantitative acquisitions, bringing no intensification of life, no widening of its scope. Only a man equipped with the clarity of feeling and the sobriety of knowledge will be able to adjust himself to complicated requirements, and to master the whole of life. Working only from this basis can one find a plan of life which places the individual rightly within his community.

The Present System of Production

All educational systems are the result of economic structure. In the frenzied march of the industrial revolution, the industrialists set up specialized schools to produce quickly the badly-needed specialists. These schools favored the development of men's powers only in very few instances, and offered no opportunity to penetrate to the essential kernel of things and the individual himself. But – to tell the truth – no one concerned himself with this because no one could foresee its destructive results. Thus today neither education nor production springs from an inner urge, nor from an urge to make products which satisfy the requirements of one's self and those of society in a mutually complementary way.

Our modern system of production is imposed labor, mostly a mad pursuit, without plan in its social aspects, its motive is merely to squeeze out profits to their limit, in most cases a complete reversal of its original purpose.

Not only the working class finds itself in this position today; all those caught within the workings of the present economic system are basically just as badly off. At most there are slight degrees of difference. The chase after rewards in money and power influences the whole form of life today, even to the basic feelings of the individual. He thinks only of outward security, instead of concerning himself with his inner satisfaction. On top of all this there is the penning up of city dwellers in treeless barracks, the extreme contraction of living space. This cramping of living space is not only physical: city life has brought with it herding into barren buildings, without adequate open space.

But How About Technical Progress?

It might easily be judged from the foregoing remarks that present-day industrial production, and especially our technical progress, is to be condemned. In fact there are numerous writers and politicians who suggest this. They mix the effect with the cause. In the nineteenth century some people tried to make a right diagnosis but suggested a wrong therapy. Gottfried Semper declared in the 1850's, for example, that if iron ever was to be used in building it would have to be used (because of the static nature of iron) in a fashion of transparent spiderweb. But, he continued, architecture must be 'monumental', thus 'we never shall have an iron-architecture'. (!) A similar mistake was made by the Ruskin-Morris circle in the 1880's. They found that industrial mass production killed quality in craftsmanship. Their remedy was to kill the machine, go back to the handwork exclusively. They opposed machines so strongly that to deliver their hand-made products to London, they ran a horse coach parallel with the hated railway. In spite of this rebellion against the machine, technical progress is a factor of life which develops organically. It stands in reciprocal relation to the increase in the number of human beings. That is its real justification. Notwithstanding its manifold distortion by profit interests, the struggle for mere accumulation and the like, we can no longer think of life without such progress. It is an indispensable factor in raising the standard of life.

The possibilities of the machine – with its abundant production, its ingenious complexity on the one hand, its simplification on the other, has necessarily led to a mass production which has its own significance. The task of the machine – satisfaction of mass requirements – will in the future be held more and more clearly in mind. The true source of conflict between life and technical progress lies at this point. Not only the present economic system, but the process of production as well, calls for improvement from the ground up. Invention and systematization, planning, and social responsibility must be applied in increased measure to this end.

The common error today is that usually questions of efficiency are viewed from the technical and profit standpoint, without regard to organic considerations. The Taylor system, the conveyor belt and the like, remain mistakes as long as they turn man into a machine, without taking into account his biological requirements for work, recreation, and leisure.

Here the word 'biological' stands generally for laws of life which guarantee an organic development. If the meaning of 'biological' would be a conscious possession, it would prevent many people from activities of damaging influence. Children usually act in accordance with the biological laws. They refuse food when ill, they fall asleep when tired, they don't show courtesy when they are uninterested, etc. If today's civilization would allow more time to follow the biological rhythms, lives would be less hysterical and less often stranded.

In reality the basic biological needs are very simple. They may change and be deformed through social and technical processes. However, great care must be taken that their real significance should not be adulterated. This often happens through misunderstood luxury which may thwart the organic satisfaction of the biological needs. The oncoming generation has to create a culture which strengthens but the genuine biological functions.

Not Against Technical Progress, But With It

The solution lies accordingly not in working against technical advance, but in exploiting it for the benefit of all. Through technique man can be freed, if he finally realizes the purpose: a balanced life through free use of his liberated creative energies.

Only if it is clear to man that he has to crystallize his place as a productive unit in the community of mankind, will he come closer to a true understanding of the meaning of technical progress. For not the form, not the amazing technical process of production, should engage our real interest, but the sound planning of man's life. We are faced today with nothing less than the reconquest of the biological bases of human life. Only when we go back to these can we reach the maximum utilization of technical progress in the fields of physical culture, nutrition, housing and industry – a thoroughgoing rearrangement of our whole scheme of life. For even today it is currently believed that less importance than formerly needs to be attached to biological requirements, the motive power of life, thanks to our technically exact and calculable ways of dealing with them. It is thought that securing sleep by veronal and relieving pain by aspirin can keep pace with organic wear and tear. In this direction progress of civilization has brought along with it much beclouding of realities and grave danger. Apparent economies may easily deceive us. But technical progress should never be the goal, only the means.

Efforts Toward Reform

The creative human being knows, and suffers from the realization, that the deep values of life are being destroyed under pressure of money-making, competition, and trade mentality. He suffers from the purely material evaluation of his vitality, from the flattening out of his instincts, from the impairing of his biological balance.

And yet, although the present social structure is a thoroughly unsuitable medium for the balanced outlet of human capacities, in the private life of individuals some glimpses of a functional understanding have already appeared.

The intellectual advances in art, literature, the theater and the moving-picture in our time, and the various educational movements, have given important indications of this fact. Likewise the interest in physical culture and in recreation and leisure, and in systems of treatment by natural rather than chemical methods.

Such efforts, taken as a whole, portend a world which even today shows its initial stages at many points. But no small unit of this growth should be studied as an isolated fact. The relationship of the various members (science, art, economics, technical knowledge, educational methods) and their integration must be constantly clarified.

Not the Product, But Man, Is the End in View

Proceeding from such a basic readjustment, we may work out an individual plan of life with self-analysis as its background. Not the occupation, not the object to be manufactured, should be put in the foreground, but rather the recognition of man's organic functions. With this functional preparation, he can then pass on to action, to a life evolved from within. Thus we lay the organic basis for a system of production whose focal point is man, and not profit interests.

The Task for Education

Our educators have the task of co-ordinating the requirements of a normal development of human powers, laying the foundation for a balanced life even in the elementary school.

From Pestalozzi and Froebel up to the present time this problem has been in the foreground. The program extends from the kindergarten up to the university, from the single assignment up to the formation of the adult. We have sought to free the child's capacities in drawing and manual training, in language, in the plan of teaching as a whole. Czizek, Montessori, the Lichtwark school, Wendekreis, Worpsswede, Leitz in Ilsenburg, Wyneken in Wickersdorf, Heinrich Jacoby in Hellerau-Berlin, the Dalton system – country educational homes, work schools, experimental schools, etc., have in the last decade striven toward an organic structure of education for the child.

Nevertheless, the oncoming generation is even today turned over, for the most part, to the traditional branches of study, which supply information without clarifying its position in the environment and in society, nor its relationship to the material and content of its work.

The Bauhaus

The first Bauhaus, founded by Walter Gropius in 1919, attempted to meet this shortcoming, not placing 'subjects' at the head of its curriculum, but man, in his readiness to grasp the whole of life.

Although for reasons of convenience a division into terms was retained, the old concept and content of 'school' was discarded, and a community of work established. The powers latent in each individual were to be welded into a free collective body. Also the pattern of a community of students who learn 'not for school, but for life' had to be worked out and converted into a cross-section of full, organic, and adaptable living. Such a society implies practice in actual living. Its individual members have to learn to master not only themselves and their own powers, but also the living and working conditions of the environment. The foundation of the educational program of the Bauhaus, or, more appropriately, its working program, rested upon the recognition of this fact.

The first year was directed toward the development and enrichment of feeling, sensation and thought – especially for those young people who, in consequence of the usual childhood education, brought with them a sterile hoard of textbook information. Only after this first year of development and enrichment did the period of occupational training begin, based on free selection within the Bauhaus shops. During the period of occupational training the ultimate end still was: man was a whole. Man, who, if he but works from his biological center, when faced with all the material things of life, can again take his position with instinctive sureness, who does not allow himself to be intimidated by industry, the rush tempo, external evidences of an often misunderstood 'machine-culture'.

These are the principles behind the foundation of the Bauhaus in Dessau. We print below the curriculum of the New Bauhaus, as it worked in Chicago until a month ago.

Bauhaus Curriculum

The preliminary curriculum was divided into three parts:

- 1 The basic design shopwork.
- 2 Analytical and constructive drawing, modeling, photography.
- 3 Scientific subjects.

Basic Design Workshop

In the basic workshop the student learned the constructive handling of materials; wood, plywood, paper, plastics, rubber, cork, leather, textiles, metal, glass, clay, plasticine, plaster, and stone: their tactile values; structure; texture; surface effect and the use of their values in plane, in volume and in space. Henceforth the student became volume-, space- and kinetic-conscious.

In order to develop his auditory sense, he experimented with sound and built musical instruments.

He learned the subjective and objective qualities, the scientific testing of materials; the existence of the fourth dimension (time).

Drawing, Modeling, Photography

As he experimented he built, with small motors or other devices, toys, moving sculptures, spatial constructions, etc., and developed his sense for proportion, and penetrated his work with different and visual representation. He sketched by hand, and with photo-apparatus as well, in black and white and in color, and he worked in clay. Standard nature forms would be analyzed, and this analytical method led the student to the elementary forms, and later to the construction of these forms in relation to each other with the aim of free composition.

Scientific Subjects

The following scientific courses complemented shopwork and drawing:

- | | | | |
|---|-------------|---|-------------------|
| 1 | Geometry | } | Physical Sciences |
| 2 | Physics | | |
| 3 | Chemistry | | |
| 4 | Mathematics | } | Life Sciences |
| 5 | Biology | | |
| 6 | Physiology | | |
| 7 | Anatomy | | |

8 Intellectual integration.

In addition to these, the curriculum included brief surveys of:

- (a) Biotechnology – the system of conscious inventions (*e.g.* Edison).
- (b) Psychotechnique (ability testing).
- (c) Music.
- (d) Guest lectures on other subjects.
- (e) Lettering, writing (construction of letters, and printing types).
- (f) Light (as an instrument of visual notes, using lights as a new medium of expression); photography, film.
- (g) Visits to factories, newly constructed buildings, museums, exhibitions, theaters, etc.
- (h) Exhibitions (some assembled by the students, some by the faculty or others).

After the first half-year of the preliminary course the first examination was held in the form of a students' trial exhibition. After the second half-year a similar exhibition was held as the final examination in the preliminary course.

After passing the examination in the preliminary courses the student entered one of the specialized workshops.

Second and third years:

- 1 Wood, metal.
- 2 Textiles (weaving, dyeing, and fashion).
- 3 Color (murals, decorating, wallpaper).
- 4 Light (photography, film, typography, commercial arts).
- 5 Glass, clay, stone, plastics (modeling).
- 6 Display (theater, exposition architecture, window display).

Workshop, tools and machines, book-keeping and estimating, drawing, scientific subjects and elementary lectures in architecture (construction and statics), with final examination for diploma.

Fourth and fifth years:

Architecture, landscape architecture, town-planning, and scientific subjects. Educational problems, kindergarten, grade, high schools and colleges. Social services, hospitals, recreation, leisure, and hobby organization with additional thesis for the Bauhaus degree in architecture.

Focus, 1938, No. 2.

Space-Time and the Photographer

One of the great surprises for the students of photography must be the discovery that photography follows exactly the same trends as other creative forms of expression. It is dependent on present technical, scientific, sociological trends and their relationships. As these relationships are not obvious to everyone it will be necessary to make an analysis of this statement and show by examples what its meaning is. It may become clear then, that events and actions which form the pattern of our life are more interrelated than is usually taken for granted, and that it is misleading to see photography in its mechanical aspect and for its technological miracle alone. Such an analysis may also eliminate the rather passionate discussion whether photography is art or not. Namely, if photography shows the genuine formulation of the time-bound elements with its own means, then it is doing something-plus besides its mechanical aspect. Secondly, if the thesis of interrelation is valid, then photography is not only capable of being influenced by the other elements, but also has the potentiality to influence them. Thirdly, it may be proved that one can produce with photography the same content as with the other means of expression. Fourth, the range of rendering is dependent upon the human grasp, will, and skill.

The mechanical aspects of photography have already changed our technique of encompassing an object, its structure, texture and surface, and have brought us into a new relationship with light and space. But what can we do with these new experiences, how order and fit them into our life? This could be accomplished only through human initiative, thinking, and feeling built upon the new principle: integration. Integration is the attempt today to escape from the irresponsibilities of a strictly specialized existence. An early specialization leads to a mechanical perfection without the vitalizing experience of other fundamentals. Our specialist age is built upon a multiplicity of information pounded relentlessly into the individual by the daily press, magazine, radio and cinema. But tragically, the more he knows in this superficial way, the less he is able to understand, because he has not been taught to relate and integrate his casual and

scattered information. Photography too, without coordination with other fields, is nothing but one of these isolated information services.

Photography, as we usually speak of it, is taking photographs with the camera. One of the obvious results is the projection of space on a plane expressed with values of black and white and gray. But what is space? The answer to this question may show the potential value of photography towards integration with many other activities. One of the methods to explain space is to show how to articulate it. Every period in human culture has developed a spatial conception. Such space conceptions were utilized not only for shelter but also for play, dancing, fighting, in fact, for the domination of life in every detail. A new space conception originated mainly through new materials and constructions introduced by the industrial revolution. However, as the technology was derived from new scientific findings, physics, chemistry, biology, physiology, sociology, etc. – all these elements have to be considered in our new space conception too. We can say that this new space conception is the legitimate successor of a space tradition giving such poor results at present. In this way architecture (mentioned here as the most easily recognizable spatial expression) became more a juxtaposition of rooms than an articulation of space.

The history of articulated space is dependent on the grasp of the dimensions: one, two, three, and more.

The magnificence of the Egyptian temple could be comprehended by walking through a one-dimensional straight line, the Sphinx alley, toward its façade. Later, the Greek architect of the Parthenon designed the approach to the temple so that the visitors had to move around the colonnades toward the main entrance. In this way a two-dimensional approach was created. The Gothic cathedral articulated the inside most intriguingly. The spectator was set in the midst of related space cells of the naves, the choir, etc., and so was capable of a quick comprehension of their values. The Renaissance and the Baroque brought man in closer contact with the inside and the outside of the building. Architecture became a part of the landscape and the landscape was handled in relationship to the architecture. Photography can record these changes with reasonable accuracy and can help to reconstruct the spatial spirit of the past. In the last one hundred years one can find any number of photographs with congenial renderings and in the last two decades the spatial records gained much in consciousness of approach. Besides straight records, one can observe the attempt to show delicate space articulations which are often built up with elements in a vanishing point perspective; or with linear elements, as building structures, leafless trees; or with unsharp foreground and distinctly organized subdivisions towards the background.

In the age of balloons and airplanes, architecture can be viewed not only in front and from the sides, but also from above. So the bird's-eye view, and its opposites, the worm's and fish's-eye views become a daily experience. This fact introduces something extraordinary, almost indescribable, into our life. Architecture appears no longer as a static structure, but, if we think of it in terms of airplanes and motor cars, architecture must be linked with movement. This changes its entire aspect so that a new formal and structural congruence with the new element, *time*, becomes manifest. This brings a clearly recognizable difference between the experience of a pedestrian and a driver in viewing objects. For the motorcar driver, for example, distant objects are brought into relationships for which the pedestrian has yet no eye.

We all know that the appearance of any object changes when we move past it with speed. High speed makes it impossible to grasp insignificant details. So a new language of spatial orientation and communication is arising in which also photography takes an active part. Something similar can be observed in the advertising field, too, especially in poster making. In 1937 Jean Carlu, one of the best French poster designers, made an experiment. He mounted two posters on two conveyor belts which moved at different speeds. The poster by Toulouse-Lautrec, from around 1900, moved at eight miles per hour, approximately the speed of a horse and buggy. The other, a contemporary poster, moved at fifty miles per hour, the speed of an automobile. Both posters could be read easily. After this, Carlu accelerated the speed of the Toulouse-Lautrec poster up to fifty miles per hour, and at this speed the poster could be seen only as a blur. It is easy to realize the implications. A new viewpoint in the graphic arts is a natural consequence of this age of speed.

Speed itself can become the subject of a visual analysis. And here again the camera enters the field. We know of innumerable shots of quick motion, sport scenes, jumps, etc.; on the other hand we can observe unfolding buds, moving clouds taken at intervals; similarly the effect of

long exposures of moving objects, streets and merry-go-rounds. Professor Edgerton, of the Massachusetts Institute of Technology, made a new form of speed photographs with the help of a stroboscope. The relationship between the velocity of part movements gave him the clue to improvements on the actions of golfers, turbines, spinning wheels and various kinds of machinery. These pictures are the unusual records of juxtaposition of frozen part movements analyzable in each space-time unit. These speed photographs are of more recent date, but they are astonishingly similar to the Futuristic paintings, in fact, they are their exact repetition; e.g., the *Speed* by Balla 1913. Marcel Duchamp's well-known picture of 1912, *Nude Descending the Stairway*, shows also the same juxtaposition of frozen movement parts.

In 1900 the Futurists had already begun to emphasize movement, saying, 'The world's splendor has been enriched by a new beauty – the beauty of speed. We shall sing,' they continued, 'of the man at the steering wheel.' The Futurists' aim was to represent movement, and some of their old statements from 1912 still sound fresh and enlightening. For example, 'Who can still believe in the opacity of bodies, since our sharpened and multiplied sensitiveness has already penetrated the obscure manifestations of the medium? Why should we forget in our creations the doubled power of our sight, capable of giving results analogous to those of the X-rays?' Boccioni in *Power of the Street* projected such a double power of sight, such a fusion of the manifold elements of a street into one expressive representation.

The X-ray pictures, about which the Futurists spoke, are among the most outstanding space-time examples on the static plane. They give a transparent view of an opaque solid, the outside and inside of the structure. The passion for transparencies is one of the most spectacular features of our time. We might say, with pardonable enthusiasm, that structure becomes transparency and transparency manifests structure.

Cameraless pictures also are direct light diagrams recording the actions of light over a period of time, that is, the motion of light in space. Cameraless pictures, photograms, however, bring a completely new form of space articulation. It no longer has anything to do with the record of an existing space (or space-time) structure. This is usually created in the form of architecture from elements clearly circumscribed by their masses, lengths, widths, heights. Certainly these elements' masses and weights could be greatly simplified, the span of the openings enormously enlarged. Nevertheless they must be there to serve as the point of departure for the photographic record. The photogram for the first time produces space without existing space structure only by articulation on the plane with the advancing and with the radiating power of their contrasts and their sublime gradations. One suddenly becomes aware that here starts an invigorating investigation about the incoherent use of our rich resources. Technological ingenuity provides us with gigantic structures, factories and skyscrapers, but how we use them is shockingly anti-biological – resulting in wild city growth, elimination of vegetation, fresh air, and sunlight. To make bad worse, in the shadow of these modern buildings we thoughtlessly tolerate the slums and every bad condition that goes with them. So it seems that the most abstract experiment of space-time articulation carries a sensible relativity, if the right interpretation can be made. Such experiments may signalize a spatial order in which not single structural parts, or large spans of openings will play the important part, but the relationships of neighbor units, buildings and free areas, shelter and leisure, production and recreation; leading towards a biologically right living most probably through a right regional planning; towards a city-land unity. Such an architecture as a new type of space articulation will bring an even more advanced solution than the present pioneers' work. These pioneers already humanized the technological advances even if for a privileged layer. They use the new materials – glass, steel, reinforced concrete, plastics, and plywood – for dwelling purposes in the interest of a more functional and biological living. That this type of contemporary architecture is not yet accepted to a great extent, shows more the missing orientation of a tradition-bound public about their own requirements and benefits than a negative criticism of the new direction. The public accepts technical processes and new inventions more easily when they concern only details of the living standard. The acceptance becomes difficult if it seems to bring radical changes in traditional life habits. Of course many things, appearing first as gadgets or appliances, gain an enormous influence during one generation. Then it is usually too late to call for their elimination.

Our automobiles, trains, and airplanes, for example, can be viewed as mobile buildings and the fact is that this country has today 400,000 families living on wheels in trailers. These vehicles, mobile 'houses', will influence the coming architecture. We know already projects of moving houses, sanitariums for example, turning with the sun. The architecture of Frank Lloyd Wright, especially the strongly cantilevered house of Kaufmann's at Bear Run, shows more

similarity to an airplane than to traditional buildings. Another American architect, Paul Nelson, designed a 'suspended house' where the baths, bedrooms, and library were hanging down from the ceiling. With this kind of arrangement, Nelson gained an enormous free, columnless space inside the fenestration which he designated as the living room. To live in such a house would create the sensation of being in an airplane with an intensified relationship to one's surroundings.

These suggestions may be disturbing to a few people, who probably would be more aghast at the Utopian plan of Professor Bernal of Cambridge, England, to construct houses the walls of which are produced by compressed air, by rotating air streams. The walls would insulate perfectly. The question arises why one should live between stone walls when one could live under the blue sky between green trees with all the advantages of perfect insulation? There is already a house with glass walls by Marcel Breuer in Zurich where the garden grows right into the house through the wall. The trend in new architecture goes more and more in this direction. The buildings of contemporary architects with their undivided gigantic windows allow nature really to enter the house. Every Gropius, Van der Rohe, Neutra or Keck house clearly demonstrates this principle. Of course even the most modern, yet still static architecture is only a transitory step towards a future architecture of a kinetic character. Space-time is now the new basis on which the edifice of future thoughts and work should be built. Contemporary arts, rapid changes in our surroundings through inventions, motorization, radio, and television, electronic action, records of light phenomena, and speed, are helping us to sense its existence and significance.

Binding different space and time levels together, we shall find that reflections and transparent mirrorings of the passing traffic in the windows of motor cars or shops belong in the same category. In photographic rendering they usually appear as superimpositions. Mirroring means in this sense the changing aspects of vision, the sharpened identification of the inside and outside penetrations.

With this instrument of thought many other phenomena (dreams, for example) can be explained as space-time articulations. In dreams there is a characteristic blending of independent events into a coherent whole.

Superimposition of photographs, as frequently seen in motion pictures, can be used as the visual representational form of dreams, and in this way, as a space-time synonym.

The photomontage, a device often used in advertising, has a very similar technique. The cutting and assemblage of the parts is applied here on a static plane. The effect is that of a real scene, a synopsis of actions, produced by originally unrelated space and time elements juxtaposed and fused into a unity.

The acquaintance with these few attempts of a space-time visualization of which there are many more, may help to clarify the art of the motion picture. Motion pictures, more than anything else, fulfil the requirements of a space-time visual art. We can say that motion pictures can be used today even for very subtle articulation of space-time concepts.

A motion picture is the assemblage of numerous shots. In other words a film scene is 'cut' – glued together from different shots. Any film sequence may serve as an example:

- 1 A person enters Rockefeller Center, New York.
- 2 He speaks to an audience.
- 3 A hand throws a bottle (close up).
- 4 Bottle flies through the air and misses speaker.
- 5 Hand slaps face (close up).
- 6 Hand pounds head (close up).

This scene suggests that one person speaking in Rockefeller Center was attacked by a man throwing a bottle. This man was then slapped and counter-attacked. Well, the peculiarity of this film scene is that all the six shots belonging to it have been photographed at six different places – some even in Europe – at six separate times.

The power of assemblage, the quick fluidity of the action structure, which seems logically to perform this incident, creates the scene as a coherent space-time reality. This, however, never existed.

It takes considerable time to grasp this miracle of illusion when so exactly analyzed. But the fact is that everyone experiences it daily in the cinema and appreciates it as normal stimulus for the senses.

Something similar may happen when one travels. Movements can be perceived on different layers: e. g., Train A is moving from the station and meets Train B slowly moving from the

opposite direction. Through the windows of Train A one is watching Train B moving away and when occasionally the windows of the two crossing trains are in direct line one can glimpse beyond a street with cars and pedestrians moving in different directions. With these types of relationships we are constantly heading toward dynamic, kinetic representations of time-spatial existences. The time problem today is connected with the space problem, and it is presented to us with all the elements of knowledge of our period. It involves all our faculties in a re-orientation of kinetics, motion, light, speed. Constant changes of light, materials, energies, tensions, and positions, are here related in an understandable form. It stands for many things: integration; simultaneous penetration of inside and outside; conquest of the structure instead of the façade.

It is in our power to use this conception, and the photographer can be one of the main participants in this task. But he has to focus his attention on the facts which give an adequate record of the actions and ideas of his time. As he cannot do this without participating fully in life, consciously or intuitively his specialized field must be integrated with social reality. So naturally his visual selections will be colored by his attitude towards life. This relationship to society may have the power of rising to objective heights expressing the constructive framework of our civilization instead of drowning in the chaos of a million details. Then the photographer will bring to the masses a new and creative vision. This will be his social significance. For culture is not the work of a few outstanding people. To benefit society their theories have to penetrate into everybody's daily routine.

American Annual of Photography, 1943. Vol. LVII, No. 152

Design Potentialities

Contemporary design started in this country fifty or sixty years ago with the statement of Louis Sullivan: 'Form follows function.' This means that the function, which is the work an object is designed to do, is instrumental in shaping its form. Unfortunately Sullivan's words were not appreciated; his principle became dormant except in the work of Frank Lloyd Wright.

However, through the endeavors of the Bauhaus artists and their many colleagues in Europe, the idea of 'functionalism' became the keynote of the twenties, vitalizing thought and action. But – as usual – functionalism became a cheap commercial slogan, its original meaning blurred.

Today, it seems to be necessary to re-examine this functionalism in the light of present circumstances. In so doing we find that the statement 'form follows function' is profound if we apply it to phenomena occurring in nature where 'every process has its necessary form, which always results in functional forms. They follow the law of the shortest distance between two points; cooling occurs only on surfaces exposed to cooling; pressure only on points of pressure; tension on lines of tension; motion creates for itself forms of movement – for each energy there is a form of energy.' (Raoul Francé.)

Man has used functional suggestions of nature innumerable times. Many of our utensils, appliances, containers, tools, are based upon observations of nature. Nevertheless, 'form follows function' translated into the human technology falls very far short of the optimum, compared to nature's infinite number of applications, long tested by the trial and error method. Man tries his 'best,' but his results depend upon his limited knowledge and practice, his ability to reason and grasp. We often find that though for ages he has designed objects for 'function,' some of them were bulky, burdened with an excess of material and wasted labor, if compared with later developments. It is enough to look at a log cabin and a colonial house; or a primitive lumber stool and a finely articulated rococo chair. In these models, form did follow function, but the later models incorporated the changed technological processes meanwhile developed. In designing for human consumption we find that function is not only the work to be accomplished for a limited mechanical task, but must also fulfill biological, psychophysical and sociological requirements as well.

Form Follows Function as Well as Scientific and Technological Developments

New discoveries, new theories and the new techniques in scientific research brought industrial applications in all fields of production. Electricity, the gasoline and Diesel motors, motion pictures, color photography, radio, metallurgy, new alloys, chemurgy, plastics, airplane, electronics inevitably press toward change in design.

The history of the chair is a very revealing example.¹⁰ The functional justification of a chair is seating. Its form, however, depends upon the materials, tools and skills available in a certain period. The old craftsman had only one material suitable for a chair, wood. With that and a few hand tools, he did a very fine work. For example, the rococo chair with its carved, slender, curved legs, without elaborate bracing devices was a masterpiece of wood construction. It not only looked light but actually was light in weight. Our problem now, is to use present day materials and machines as capably as our ancestors used the limited means and tools at their command.

In addition to discovering new properties and uses of wood, the industrial revolution developed new materials, such as seamless steel tubing, plywood, and plastics, and with them new methods of production that used machines instead of hand tools. Today we can produce new chair forms, such as seats with two legs instead of the usual four, and in place of forty or fifty joints, four or none at all. Tomorrow there may be no legs needed, just a seat on a compressed air jet.*

Scientific research and testing substantiate such a suggestion, and even more daring ones based upon new sciences such as electronics. High frequency short-wave radio heating has already revolutionized the traditional glueing process, cut down assembly time and reduced the number of operations.

The plastic-molding industry inevitably presses toward new applications, too.

Established Paths of Thought

It appears then that the best designer is the person who knows all contemporary resources and can understand their trend most completely. This goal does not seem to be very difficult to attain – one would think that the present scientific and technological information would help to apply the potentialities at hand. This is, however, far from the truth. It took a hundred years, after we had plumbing in the kitchen, for the designer of the water kettle to exchange the small spout for a large one which can be held directly under the faucet without the need of taking off the lid. In spite of the new light source, electricity, most people live with ‘newly designed’ colonial oil lamps and baroque candelabras into which the electric bulbs are inserted. The heat-insulated handle of a flatiron shows a similar development. First the handle was covered with rags, then it was made from wood, first hand-carved, then turned on the lathe. *This* handle was then literally translated into plastics though it could have been designed without difficulty in accordance with the properties and mass production possibilities of the new material, which allow the design of a better insulating and handfitting handle as it was indeed discovered later. The same applies for the handles of tools which are today molded in plastics still imitating the traditional wood handles turned on the lathe.

There are many old forms which have no legitimate existence today, and the obvious conclusion is that it is extremely difficult to leave the established paths of thought, since mass production requirements applied to the fulfillment of the function could bring to the fore better, cheaper and more beautiful products. These goods could be fabricated more economically and quickly if redesigned according to the present production standards. It is tragic to see the helplessness of designers in some traditional fields which remain rather untouched by contemporary thinking.

The reason may be that since the nineties the cultural background and respectability of a family has been expressed by ‘conspicuous waste,’ such as period furniture and lighting fixtures which were imported from French and Scottish castles. Mass production followed this trend with cheap imitations. The result was price stagnation because the principles of mass production could not be well applied to design with the character of handicraft.

New Technology: The Age of Assemblage

The finest solutions in design usually came through new inventions where tradition did not hamper the freshness of approach, such as the steam engine, electric motor, telephone, radio

* There may arise difficulties as far as public acceptance of new design is concerned. The solid and sturdy plywood chairs made in the Institute of Design in Chicago looked so incredibly light that people at first hesitated to use them. A similar reaction retarded the general recognition of the first steel tube chair by Breuer. Of course, when it was accepted, it was often misused. Steel is a heat conductor. Breuer considered this and designed his chairs so that the human body did not touch the metal structure. The imitators copying only the appearance did not consider this important feature.

I recall another story also. In 1916 the police in Rotterdam, Holland, ordered an architect to place two columns under his cantilevered balcony, made from reinforced concrete, ‘even if they were made from cardboard.’ ‘The projection may frighten the public’ . . . was the argument.

and photocell. Their form had to be found through their function plus the technological processes available. The technology of the industrial revolution started out with the division of labor which led from simple assemblage forms to the conveyor belt and other mass production practices.

First, and for a rather long time, the idea of the assemblage prevailed. This was the age of the bolt, the rivet, and the screw. This method allowed the production of the most diversified goods from standard stock such as the angle iron, steel band, brass plate, gauged sheet, rod, tube, screw, bolt, hinge, caster, etc. Materials and semifinished products could be stored in great quantities. The production risk of ready made goods was small, since only as much was produced as sold.

Other Methods

Later, with the opening up of new markets, more goods were needed so quicker mass production methods were introduced. The methods of bolting, riveting, and screwing were followed by welding, casting, molding, shaping, stamping. Instead of the ribbands and profiles there came the seamless tube and corrugated and curved slabs. Curving of a flat sheet is a customary strengthening procedure, and curving it, like the eggshell, in all directions, is the most substantial structural manipulation we know. It achieves the advantages of a skeleton structure with the skin only.

Such designs were mainly developed by the motor car industry, especially when, after the dirigible, the airplane appeared, and kinetic studies and wind tunnel experiments were introduced. In mass production this technique could be utilized on a large scale because tooling and retooling, costly dies, new machines, expensive preparations could be amortized through the great number of units sold. The smoothly 'streamlined' body of a car is stamped today by one action from flat sheets of steel. It is a kind of steel egg, structurally sound and excellent in performance. The results of these studies were taken over by the designers of all goods from lather and cream mixers to ships, locomotives, cars and highways. Around 1930 a 'streamlining' fever swept indiscriminately over the designs of every type of goods. In the first moment this appeared to be exaggerated especially since in nature 'streamlining' implies a shape round which the medium streams so smoothly that resistance is at last practically *nil*; there only remains the slight 'skin-friction,' which can be reduced or minimized in various ways.*

Industrial streamlining was introduced originally for a more economical organization of objects moving with great speed and there was apparently no need to 'streamline' ashtrays and other static objects. Nevertheless the new form principle radiated into the production of every type of *goods*, mobile or static. This had its good reason. In streamlining sharp edges had to be smoothed down, consequently, casts, molds, stampings as well as finishes such as nickel and chromeplating, polishing, enameling, laquering and plastic molding could be more easily produced.

New Working Conditions

The social effects of this type of production are great. The new principle of design, creating *one-piece objects*, mass-produced by automatic action of the machine, will one day greatly reduce if not eliminate the assembly line. This would change the present working conditions in which fatigue of the worker, the restricted use of his manifold abilities have to be considered as a serious drawback.

The possible limitation of the division of labor on such an unhealthy scale may act as a fine incentive for the designer. He may see that it is essential to incorporate into his work more than skill and knowledge. To be a designer means not only to be a sensible manipulator of techniques, an analyst of the present production processes, but also to accept the social obligations connected with it. Thus design is dependent not alone on function, science and technological process, but upon social implications as well.

Social Implications

The relationship of employer and employee, unemployment, the requirements of a minimum

* 'No creature shows more perfect streamlining than a fur-seal swimming. Every curve is a *continuous* curve, the very ears and eye-slits and whiskers falling into the scheme, and the flippers folding close against the body.' (From Sir D'Arcy Wentworth Thompson, *On Growth and Form*, Cambridge, England: Cambridge University Press, 1942.)

subsistence, longevity, and dozens of others matters have changed our outlook on the social structure and with it our approach to design.

The higher living standard and the emancipation of women necessitated labor-saving devices, refrigerators, vacuum cleaners, and washing machines.

Research on matters of health preceded the greater hygiene – the bathroom as a standard unit. The intensity and exhausting quality of industrial work, the crowded dusty cities increased the importance of recreation and leisure. Sports, cinema, radio, television, travel, the community center, and the idea of the weekend belong in this category.

Economy of Production

Of course, many other elements have to be added to this analysis in order to see all of the components of a 'functional' design.

One of the most important among them is the requirement of distribution. Mass distribution caused changes on an unprecedented scale. The vast increase in the means of transportation, crating, knock-down furniture, tank cars and refrigeration of perishable goods, frozen foods, canning, mail-order houses, catalogs, price lists, advertising, sales agents brought about an incredible growth of the service industries. The considerations of mass production brought price reductions and greater competition. By millions of units the saving even of a fraction of the monetary unit meant a competitive advantage.

Cutting down fourteen drops of solder to thirteen – as did happen in one of the giant industrial plants, resulting in a yearly saving of 30,000 dollars, substantiates the requirements of economy of production. The same is valid for the different types of 'recoveries' as, for example, silver from photographic developer, formerly poured down the sink; tin from empty cans; grease from the housewives' pans for glycerine; sawdust for plastics, etc.

All this stimulated simplification of processes, economy or organization, elimination of waste, better packaging, safety measures, even new forms of rehabilitation. Notable achievements in this field were the Taylor System and Gilbreth's Scientific Motion Studies of workers.

They all manifested improvement in production.

The Artist's Role

The detailed analysis of the elements given in these pages seems to produce an unerring recipe for the new trends in design. Being informed of the scientific discoveries as well as the sociological trends; calculating the necessary requirements for function; knowing the techniques which can be applied to their realization, would imply that a design made on the basis of all this could not fall short of perfection.

The truth is that in spite of the possible definition of elements there remain imponderables which cannot easily be defined.

Of course we may rationalize these imponderables, since after the execution of a design all of its elements can be traced back to facts which are the subjects of conscious reasoning. The difficulty is only before the design is made, *before* the execution takes place. The reason is that sometimes there is a possibility of alternative design solutions.

Certain structural tasks could be solved in one or in another material or in several ways with one material. At present, a reinforced concrete column with a circular, hexagonal, pentagonal as well as square section would suffice for a building structure. Which should be chosen? Is a circular or a square dining table more functional? Electric or gas range? Fluorescent or incandescent light? China dish or glass? Window frames with horizontal or vertical divisions? Spiral stairways or straight ones? Tubular steel chairs with two or four legs? Low wing or high wing airplanes? And so on.

The answer comes from the intuition of the designer. His choices are not based upon interchangeable considerations of the single elements *per se* but the relationships which are created by the single elements as parts of an entity which produces the new meaning, the 'right' solution. The artist accomplishes this by insight, sensitivity. They are his guides for structure, proportion and form. They help him to evaluate, re-use or discard historical forms according to their technical, sociological and biological rightness. Not everything that we know or feel can be verbalized by a language which uses logic and reason as its main characteristics. A number of intuitive assurances may be expressed better by the artist. In this way, his influence is direct because his language infiltrates into the channels of emotion without needing to be consciously analyzed for rational contents. Many discoveries and new forms of the industrial

revolution were accepted in their esthetic potential because the artist's interpretation made their use legitimate.* However his abilities are not mystical. His genealogy can be traced.

The Avant Garde

Around 1920 the new artists discovered the excitement of a 'structure.' They looked with great enthusiasm at bridges, oil and radio towers, tunnels, spiral stairways, machinery, etc. It was the first time they were able to see the emotional and esthetic qualities of engineer structures which were the pure carriers of functional requirements. This introduced the period of simplification, later the complete purification, the stripping of decoration, deornamentation of goods, furniture and architecture. Losing its symbolic meaning, the ornament and its application turned a long time ago into empty decoration, producing a pseudo quality. The Impressionists and Cubists discovered the genuinely sensual and emotional quality of textures originating through the ingenious combination of tools and materials. This new generation was largely responsible for today's texture taking the place of ornaments and for the stabilization of the idea that machines can be understood as legitimate 'tools' of the artist and designer.

However, this new technology was so far the domain of the specialists. *The academic standards of higher education, the humanities, and a misinterpreted art history* turned the students away from the machine though they had to be conditioned to its significant forms, uses and potentialities. At the same time they needed information about the general upheaval which followed the quick spread of this new technology.

The work of the last two generations brought new knowledge and shaped constructive attitudes for a new life structure. The next step was to disseminate and put them to use. Education was the given vehicle.

Unfortunately, strictly vocational education aimed at nothing but quick breeding of specialists. There remained mainly, the synthetizing ability of the artist to condense ideologies visually or in other ways of sensorial transfer. Expressing them as emotional content, he could catch the spirit of an epoch in his work. But the artist himself did not know too much about the expediency of such an expression. His synthetizing power was formerly, so to speak, an automatic sequel to his work, the connotations of which ranged from illustrations to recording of events. For centuries what a painter had to express was not questioned. He had the whole realm to document passing events, phenomena, persons, incidents, objects, landscapes. Within the finality of this problem everything else was of secondary importance, namely, the organization of the expressive elements which today we consider as fundamental. But when photography seized upon the formerly primary task of painting, and documentation was taken over by the machine with an unprecedented precision, radically new orientation became necessary: a revision of the artist's task in order for him to hold a well-balanced course of responsible relationships between his abilities and the collective requirements of society; to generate group conscience based upon human potentialities; to find ways to adjust the mechanics of creative impulses and the forms of expression to the present technology. If one looks at the work of the best representatives, one finds in them the embodiment of a splendid knowledge of their metier and a profound will to spread the virtue of discrimination and balance. For the time being, they are only a few, often misunderstood. They are sometimes attacked and compelled to take refuge in catacombs, in order to preserve their pioneer efforts, share the common faith, and serve as a mutual audience.

There must be, naturally, a mental adjustment of the individual toward this changed world and nothing helps better to this adjustment than the understanding of its advantages. Even so the universal acceptance of the new trend in design, may take time as people without clear orientation are often confused by either sentiment or 'novelty' propaganda. The sentiment propaganda operates with the obsolete emotional means of the 'good old days' and the like. Novelty for the sake of novelty tries to create the illusion of new organic demands without serving real needs. It is usually an artificial stimulation of business. Such stunts can bring only

* In 1870 Édouard Manet, the head of the French Impressionists, offered to paint frescoes in the city hall depicting the 'beauty' of railway stations and market halls in Paris. The official opinion of that time saw in such technological matter only an esthetic nuisance. Manet's offer was *not* accepted. Even fifteen years later the same public opinion fought against the Eiffel Tower as the destroyer of the beautiful city.

S. Giedion reports about the revolutionary foresight of Horta, the Belgian architect, in his book *Space, Time, and Architecture* (Cambridge, Mass.: Harvard University Press, 1941). In 1895 Horta dared to expose to the eye the iron structure inside a private villa, considered then a sacrilege.

The Dadaists, especially Marcel Duchamp the painter, emphasized the beauty of 'ready made' objects such as clothing racks and the toilet bowl in the days of 1916, when it was derogatory for an artist to care for objects of daily routine.

shortlived success as they depend upon the elusiveness of fashion, which merely *simulates* organic changes. One remedy against this is the conscientious training of a new generation of producers, consumers and designers who have grasped the importance of the basic relationship of 'form and function.' In this spirit the Institute of Design, Chicago, tries to educate its students, by going back to the fundamentals and building up from there a new knowledge of the social and technological implications of design. The new generation of designers, who have gone through such a training, will be invulnerable against the temptations of fads, the easy way out of economic and social responsibilities.

From Paul Zucker (ed.), New Architecture and City Planning. New York, 1944, pp. 675–87.

Art in Industry

To design goods and architecture for mass production calls not only for engineers but also for artists. Art, the sphere of articulated intuition and feelings, is indispensable to a balanced life, indispensable to creative design.

The goal, however, is not to turn artists into designers or designers into artists; rather, to develop all the creative potentialities of the student by producing a rhythm between his individual biological capacities, the requirements of society, and the industrial milieu. We do not believe in trying to graft onto industry a re-created classical craftsman, artist, or artisan, but rather to educate a well-rounded individual who can function as an integrator of art and industry.

Technology is today as much a part of life as is metabolism. Art, science, and technology are merely parts of the sphere of the modern industrial designer, sociological, biological, and psychological elements are equally important factors. Therefore, not the designer-specialist but the man in toto, with all his vitality and potentialities, is the desideratum. Hence, although technological training must never be lost to sight, the modern designer is most successful to the extent that he functions as a healthy individual within the group rather than as a 'free' artist. Intellectual integration makes him more than a free artist. He learns, besides the mere esthetic means of expression, that all media must be articulated through a knowledge of relationships between the technology of materials, the tools of production and the proposed function of the article to be designed. He learns about the philosophy of design through analysis of the economics, buying habits, and tastes of different countries. He is aware of the changes shaping the economy of the United States through its greatly increased production capacity. He observes the increasing importance of foreign trade and realizes the need of a re-valuation of the theory of 'artificial obsolescence' – the frequent replacement of a product by a new 'design' before the product has become technically obsolete – which has been the principal force behind the design and production in recent years. While 'artificial obsolescence' may have been justified as an expediency to create prosperity in a self-sufficient country, this policy requires re-examination in relation to the growing competition of other export-conscious nations engaging in mass production.

As mass production increases, the role of the industrial designer becomes more and more important, in so far as he can look at an article dispassionately and be interested only in the optimum solution to the requirements of the problem. His contribution becomes greater in ratio to his ability to take an objective point of view of existing scientific, artistic, and technological processes as well as of the relationship of the product to the market – a point of view usually difficult for either the 'pure' artist or the manufacturer.

A properly trained industrial designer, then, serves industry not only as an artist creating an attractive product but also as a specialist in mass production. He is interested in shape and color – the 'looks' of the product – not for mere esthetic values but also as they are related to such factors as Function, Lower production costs leading to increased distribution, Greater consumer acceptance of advanced trends.

He is concerned, too, beyond mere esthetic values, with such elements as: Form, Assembly, Strength, Size, Weight as these are related to such utilitarian matters as – Packaging, Distribution, Sale, Economy of operation, Long life, Ease of cleaning, Accessibility for service and repairs.

In a word, industrial design is the intelligent, practical and skilled association of art with technology for the benefit of the people.

The functional approach, which has contributed so much to our physical comfort, is today no longer a revolutionary principle but an absolute standard for the modern industrial designer.

This approach is fully achieved only when the designer is trained to think simultaneously in terms of product, manufacturing processes, use, and user.

A visit to a few plants using industrial designers is perhaps as practical a way as any for telling the story of art in industry.

When a product is designed for function by a sensitive artist trained as an industrial designer along the lines described, harmony and proportion, a well-balanced organic appearance, will follow naturally.

In the commercial arts, design for display is a major factor. Planning of exhibitions, expositions, fairs, store displays, and display windows is being increasingly based on the principles of stage design. Here the display is considered as an active principle, where sound, word, color, rhythm, and form are supported by motion.

An example is offered in the application to display purposes by the U.S. Gypsum Company of an object which I developed originally as 'free' art. The device is a light display machine on which I worked between 1922 and 1930. This kinetic sculpture was constructed for automatic projection of hanging chiaroscuro (light-shadow) and luminous effects. It produces a great range of shadow interpenetrations and simultaneously intercepting patterns in a sequence of slow, flickering rhythm. The reflecting surfaces of the apparatus are discs made of polished metal slotted with regularly spaced perforations, and sheets of glass, celluloid, and screens of different materials. Some fifteen years after its completion, this machine was adapted as the foundation of a display by U.S. Gypsum. Thus is illustrated the thesis that a so-called 'abstract' artwork may be first produced as the result of intuitive forces and then adapted to industrial use. Of course there are many more cases in which products must be designed to fit a predetermined need.

The multitudinous needs of industry have indeed created an unprecedented demand for industrial designers. We have compiled a list of some 240 industries at present utilizing such designers, and this list is by no means exhaustive. Products range from airplanes to wallpaper, from fountain pens to exposition architecture, and involve such varied materials as wood, metal, stone, glass, clay, plastics, fabrics, and paper products. Within twenty years all large plants will be doing experimental work in their own design laboratories and no manufacturer will attempt to operate without the services of design consultants. As scientific research has been accepted as an integral part of industry, so will industrial design fight its way to full recognition.

Educational and other cultural institutions like the New York Museum of Modern Art and the Chicago Institute of Design are in the forefront of this task. The Museum with its contemporary exhibitions sensitizes the public to the new expressions, shapes, and forms of the Atomic Age, the Institute continually develops such new forms by devising new uses for old materials and old and new functions for new materials. Stone, glass, and clay on the one hand and plywood and plastics on the other are offering challenging opportunities for the immediate future.

2

By seeking the form appropriate to the physical qualities of the material and to the function it is to serve, many of the short-comings of the past can be avoided. In some instances this will be achieved by changing the characteristics of the materials through new combinations or processes, such as electroplating or laminating wood, and cutting and gluing by high-frequency heating.

I believe that just as the revolutionary change in furniture design of the recent past was effected by the introduction of the metal tube, so will the application of plywood offer astonishingly new forms of construction in the near future. Our graduate research workshops can be developed for innumerable tasks of this kind, from the creation of individual useful objects to completely furnished homes.

For example, since the kitchen became modernized in the United States and is shipped as a standardized packaged unit everywhere, it will be possible to design whole units for bedrooms, bathrooms, children's rooms, dining rooms, living rooms, and others. One development will be a grouping of these units with transportable and interchangeable walls and with matching wallpapers or color schemes.

The possibilities of the new plastics too, will stimulate thought in terms of contemporary design.

The all-plastic motor car has been a subject of frequent study by our students. Designs feature invisible bumpers, rubber fenders, pneumatic springs, rear or jet engine, balanced drive,

automatically shifting center of gravity, fluid drive, nitrogen-filled doughnut wheels. Plastic walls are stabilized and strengthened through appropriate integral curvature without a skeletal construction.

In textiles, weaving, dyeing, and textures are our concern. The ornament is dead and the investigation of new textures offers much promise. These form a background also for fashion and dress design in which more than mere pattern is involved.

Opportunities also offer for creating from new materials by new techniques completely new textiles of hitherto unknown texture and structure. Small units and individual motifs made over into patterns suitable for continuous mass production offer opportunities for experiment.

In all branches of design experiment in color is a most important element. Thus we manipulate color in every possible way, on flat and curved surfaces, incorporating every type of painting, such as easel painting and murals, decoration, frescoes, wallpaper design – executed by hand and by machines. Research in varnish and lacquer techniques, photo mural, and paint spraying is needed not only for the furniture and radio industries but also by many others.

Experiment with color can be both most stimulating to the student and of great practical value to industry.

The modern designer must ‘know his way around’ not only in the use of pigment but also in that of light. He learns to manipulate lenses, cameras, distortions, solarizations, reflections, space, texture, line and tone, in photography, the motion picture, light displays, and related subjects.

Limitations of space prevent extended discussion of one more vital area of industrial design, architecture, in which our students have simultaneous trainings.

Our period is yet backward in the industrial production of architecture which has formed the apex of every great culture. American industry builds automobiles, tractors, refrigerators, and radios in series, while a house – even a small one – is still a matter of individual planning. The modern manufacturing processes together with the new stimuli coming from the artist, must come to the rescue and bring about a complete change in our architecture in our spatial vision.

No doubt our future town planning will be largely dependent on the realization of this new type of prefabricated house, although at present we still lack adequate cooperation and synthesis of the appropriate sciences and technologies. Much work has yet to be done before we shall be able to formulate a logical and organized building progress, both for domestic and urban architecture.

Design, then, is not a matter of façade, of mere external appearance. Rather, it is the essence of products and institutions. It is indivisible. The internal and external characteristics of a dish, a chair, a table, a machine, or a city are not separable.

Training in design is training in appreciation of the essence of things. It is penetrating and comprehensive. It includes development of various skills in using materials, but goes far beyond that. It involves development of attitudes of flexibility and adaptability to meet all sorts of problems as they arise.

A designer trained to think with both penetration and scope will find solutions, not alone for problems arising in daily routine, or for development of better ways of production but also for all the problems of living and working together. There is design in family life, in labor relations, in city planning, in living together as civilized human beings. Ultimately all problems of design fuse together into one great problem of ‘design for living.’

If the artist is really to function in the modern world, he must feel himself a part of it, and to have this sense of social integration he must command the instruments and materials of that world. While such integration cannot be achieved solely by intellectual understanding, it certainly cannot be achieved without such understanding. Man is a thinking being whatever else he may be, and no integration is humanly complete which does not include his mind.

Our concern is with the unity of life. It is our belief that all the cultural phalanges at any time move abreast, though often ignorant of their common cultural front. We feel that the integration and interpretation of the characteristic human activities of the artist, scientist, and technologist is a general problem of all education which aims to be of vital contemporary significance, art education included.

A fresh outlook can come only through proper understanding of the machine and its function in relation to our biological needs, and to our instinctive psychological requirements far beyond mere physical comfort. Thus the artist must understand himself in relation to other human beings and to the group. All must cooperate – the scientist, the technician, and the artist – in order to find out which direction design should take – how it should be controlled, simplified,

or enriched in accordance with the psycho-biological needs of the individual and the group of today and with the needs of future generations.

The designer today has a political and sociological responsibility which is founded in mass-production. What he designs and how he designs it will influence the lives of millions of people. A good designer has to know where he came from historically and where we are going politically. The times of the ignorant specialist are over. It is up to industrial design organizations to stimulate this feeling of enhanced responsibility in a world of pre-fabricated values.

Arts and Architecture, 1947, Nos. 9–10.

Abstract of an Artist

The ordinary person is bewildered by contemporary art. The teaching of a distorted history of art, rooted in dogmatic definitions of what ought to constitute art, often prevents him from approaching new modes of expression. Anything which he finds difficult to understand makes him impatient and angry, sometimes even hostile. But there are ways of meeting the situation. The observer's emotional and intellectual interest can be stimulated so that he approaches the subject with a more positive attitude. He can be shown that without special preparation only a minority can follow new trends – mainly because the professional artist, through daily work with his material, acquires a superior understanding of his means, and is led to newer and newer formulations that supersede old standards. These findings are the result of an organic process, a growth in knowledge, experience, and intuition. This can hardly be matched by the layman. But the new formal solutions can act as catalysts for the few who, because of an inclination similar to that of the artist, react positively. Then, slowly and almost unnoticed, as if by a process of osmosis, the work of the new artist diffuses and penetrates through every phase of life. In from thirty to fifty years the process reaches a saturation point. The new form of expression has become part of civilization and the cycle will be renewed.

The process of diffusion may be accelerated. Intellectual preparation and criticism may undo dogmas. Though it is doubtful whether art can ever be fully 'explained,' it may be helpful to the reader to retrace my own development, and to show how my work in abstract art grew out of a gradual grasp of means and interrelations.

Seeming chaos. I did not begin as an abstract painter. Intimidated by the apparent chaos of contemporary painting, then represented by the fauves, cubists, expressionists, and futurists, I turned to 'solid' values, to the renaissance painters. I had no difficulty in 'understanding' them. Was I not prepared by novelists and biographers to appreciate their monumentality? Raphael's worldly madonnas, the heavenly smile of the Gioconda and her fine hands, the weighty dignity of Michelangelo – these were already interpreted by writers. We ordinarily like things which we understand, and we usually look for those things which we know by heart. They afford an agreeable reassurance, and confirm our education. It did not occur to me that beyond the illustration of a mythological and religious story, pictures must have other qualities. My eyes were not yet trained to see. My approach was more that of 'hearing' the picture's literary significance than of seeing form and visual elements. I was conscious neither of these fundamentals nor of the technique of execution. I would not have been able to distinguish between originals, copies, or fakes. Then came my discovery of Rembrandt, especially of his drawings. They seemed to be carried only by emotional force, radiating psychological depth and introverted suffering. Impressed by the startling discoveries of psychoanalysis, I found in Rembrandt a foreshadowing of a technique demonstrating this kind of knowledge. In addition, not having much experience in draftsmanship, but haunted by a desire for quick results, my own drawings seemed to have an affinity with Rembrandt's nervous sketches. The next step was Vincent van Gogh. Again, I was more attracted to his drawings than to his paintings. The analytical nature of his ink drawings and their peculiar texture taught me that line drawings ought not to be mixed with half tones; that one should try to express three-dimensional plastic quality by the unadulterated means of line; that the quality of a picture is not so much defined by the illusionistic rendering of nature as by the faithful use of the medium in new visual relations. (Since then I have learned that the artist may mix techniques; in fact, he can do whatever he pleases, providing he masters his means, and has something to express.)

The young painter passes beyond dilettantism, mere subconscious doodling and somnambulistic repetition of examples when he begins to discover problems for himself and then tries to solve them. To consciously work out such 'problems' does not constitute a danger, either

of losing the potentiality for future development, or emotional freshness. Anyway, the complexity of an expression is usually beyond conscious grasp. The conscious part is a small component, which helps to synthesize the elements, apart from the act of intuitive coordination.* Through my 'problem' of expressing everything only with lines I underwent an exciting experience, especially as I overemphasized the lines. In trying to express three-dimensionality, I used auxiliary lines in places where ordinarily no lines are used. The result was a complicated network of a peculiar spatial quality, applicable to new problems. For example, I could express with such a network the spherical roundness of the sky, like the inside of a ball. In the same way, I could render a nude with all the complicated compound curvatures of the body which the traditionally subtly flowing shadows, translated into half-tones, had had to define as organic plastic form. Suddenly I saw that this experiment with lines brought an emotional quality into the drawings which was entirely unintentional and unexpected, and of which I had not been aware before. I tried to analyze bodies, faces, landscapes with my 'lines,' but the results slipped out of my hand, went beyond the analytical intention. The drawings became a rhythmically articulated network of lines, *showing not so much objects as my excitement about them.*

This again cut a path into the jungle. I learned that the manner in which lines are related, not objects as such, carry the richer message. Van Gogh appeared in a new light. I grasped much better the 'meaning' of his curves and shapes. That I had a minor, but entirely personal problem in my work, taught me to recognize and even to look for other painters' problems. Edvard Munch, the Norwegian painter, Lajos Tihanyi, a Hungarian, Oscar Kokoschka, Egon Schiele, Franz Marc – all these appeared decipherable to me – or at least so I thought. I was very much affected by the discovery that, for them, nature was only a point of departure, and that the real importance had been shifted to their interpretive power. I now understood why they used unusual combinations of curved, straight and zigzagging lines. This was part of their language, based upon visual fundamentals. This was their way of speaking about their problems, their social consciousness, their individual happinesses and fears. Lines became diagrams of inner forces. With ecstasy I made a drawing; there were no objects, only lines, straight and curved. Wheels and bridges scattered on the sheet were the only shapes derived from nature. I called the drawing 'Build! Build!' ('Építs' is the Hungarian word for it). This was in 1917–1919.

From that time on I observed that lines could have a power beyond me, and that, if I wished to control them, I had to be careful not to use them to excess. This helped me to simplify my work. The fewer the lines, the less the opportunity for confusion.

Now, sensing a hidden law in their rich use of lines, I dared to examine cubist pictures. I also tried to become better acquainted with the futurists and expressionists.

Organization of the Picture Plane. Today I realize that at the time I was able to see in their work no more than the elements which I had already employed myself. But this was a most productive time of fermentation, a process of maturing. I became more courageous in listening to my own observations. I discovered that 'composition' is directed by an unconscious sense of order in regard to the relations of color, shape, position, etc., and often by a geometrical correspondence of elements. For example, some time ago, when painting a still life, I placed the objects on the ground, directly beneath the canvas. I thought I would be able to show them better in this position, to see more from above. At the same time I wanted to frame these objects with the two diagonal legs of the field easel. Thus I painted them to form a kind of a triangle. After finishing the picture, I observed that this triangle not only created a greater depth and dominated the composition, being a frame within a frame, but influenced my color scheme and the position of the colors, too. All the yellows, blues, and reds had been instinctively organized within small triangles. This helped me see the 'composition' of old and contemporary pictures with new eyes.

Bored by the old subject-matter, I looked for new subjects and themes. Glass and crystal, salt shaker, T-square, radiator, alcohol burner, semaphore, or iron construction appeared in my paintings – instead of apples, lobsters, and pears.

One day I found that my sketch for an oil painting did not carry out my intention. There were too many shapes pressed into a chaotic arrangement. I took scissors. Cutting away some parts of the drawing, and turning it at an angle of ninety degrees, I was satisfied. When the

* The intuitive is most accurately understood as a speeded-up, subconscious logic, parallel to conscious thought in all save its greater delicacy and fluidity. Usually the deeper meanings so often ascribed to the intuitive more properly belong to sensory apprehension. Here resides the ineffable. This kind of experience is fundamentally non-verbal but it is not inarticulate to the visual and other senses. Intuitive in the verbal universe is always potentially explicable. Intuitive in the plastic sense, in all the arts, including poetry, is a matter never, probably, capable of conscious verbalization.

remnants were pasted on a new sheet, the whole had little similarity to the still life which I had chosen as the point of departure. People, accustomed to naturalistic schemes, insisted that this 'still life,' mutilated and turned upside down, looked like a rider on a motorcycle. I protested, but basically I had a feeling of indescribable happiness, a feeling of the complete autonomy of action. It occurred to me that, if I could make such changes in a drawing, I could also decide with the same freedom the shapes and colors in my oil paintings. Suddenly I understood the *blue* faces and *blue* horses of the expressionists. How wonderfully simple! With this revelation I deliberately changed the color schemes of my 'still lifes,' and even went one step further. I eliminated the perspective employed in my former paintings. I simplified everything to geometrical shapes, flat unbroken colors, lemon yellow, vermilion, black, white – polar contrasts.

This event marked a turning point in my existence as a painter. That day I sensed more clearly than I can tell that I was on the way to solve that problem of painting with my own means. But what is a problem? Young students often believe that the artist's problem is something scholarly and enigmatic, beyond simple feeling and thinking. In reality, a problem, seen from the point of view of the worker, can be anything, from careful observation of an event, or of its smallest detail, to the deepest intellectual penetration of any subject. The task is to translate the 'problem' into a 'form' which can be comprehended and absorbed by the spectator. In those days color became my 'problem.' Color, which I had so far considered mainly for its illustrative possibilities, was transformed into a force loaded with potential space articulation and full of emotional qualities. I started out to clarify how different colors behave when organized in relation with each other. I made dozens of *collages* with colored paper strips.¹¹ Spending a holiday in the country, where from the hilltops I could see hundreds of small strips of land, I painted pictures with colored stripes in juxtaposition and called them 'acres.' I could have called them color compositions, but it was difficult to cut loose from the dogma that a painter is a painter only when he renders or interprets nature and that otherwise his paintings may be contemptuously labelled 'decoration.' Such conventions were all pervasive. Not recorded in books, they existed as an unwritten law by common agreement of professionals. It was forbidden, for example, to use black. 'Clear black,' it was said, 'does not exist in nature. It has to be produced from red, green and blue.' (Of course, this did not produce black at all, but only a kind of dirty mess.) 'One should never use a compass or a ruler. If one makes a circle, it should be made free-hand, but it must look as though it had been made by a compass.' I struggled hard against these arguments. One risked excommunication.

Influence of Machine Technology. In 1919, I lived in Vienna, lost among the depressed conformists of the postwar period. Coming from a farm in the agricultural center of Hungary, I was less intrigued with the baroque pompousness of the Austrian capital than with the highly developed technology of industrial Germany. I went to Berlin. Many of my paintings of that period show the influence of the industrial 'landscape' of Berlin. They were not projections of reality rendered with photographic eyes, but rather new structures, built up as my own version of machine technology, reassembled from the dismantled parts. Soon these dismantled parts appeared in my montage pictures. On my walks I found scrap machine parts, screws, bolts, mechanical devices. I fastened, glued and nailed them on wooden boards, combined with drawings and painting.* It seemed to me that in this way I could produce real spatial articulation, frontally and in profile, as well as more intense color effects. Light falling on the actual objects in the constructions made the colors appear more alive than any painted combination. I planned three-dimensional assemblages, constructions, executed in glass and metal. Flooded with light, I thought they would bring to the fore the most powerful color harmonies. In trying to sketch this type of 'glass architecture,' I hit upon the idea of transparency. This problem has occupied me for a long time.

The capacities of one man seldom allow the handling of more than one problem area. I suspect this is why my work since those days has been only a paraphrase of the original problem, light. I became interested in painting-with-light, not on the surface of canvas, but directly in space. Painting transparencies was the start. I painted as if colored light was projected on a screen, and other colored lights superimposed over it. I thought this effect could be enhanced by placing translucent screens of different shapes, one behind the other, and projecting the colored lights over each unit. Although at the time I was without the necessary

* Under the influence of cubist collages, Schwitters' 'Merz' painting and dadaism's brazen courage, I started out with my photomontages, too. This led me in the same period to the rediscovery of the technique of the photogram (cameraless photography).

skill and means, this idea was responsible, with some changes, for my later experiments with stage sets and with molded transparent plastics.

My 'transparent' pictures around 1921 became completely freed of elements reminiscent of nature. The liberation from the necessity to record was their genesis. I wanted to eliminate all factors which might disturb their clarity – in contrast, for example, with Kandinsky's paintings, which reminded me sometimes of an undersea world. My desire was to work with the peculiar characteristics of colors, with their pure relationships. I chose simple geometrical forms as a step towards such objectivity. I see today that this step was the logical continuation of the cubist paintings that I had admiringly studied. After my earlier experiments with black and white and colored strips, with related small and large areas of different colors, I found that the cubists, in their collages, had already touched upon such schemes. To me it was disturbing that the cubists had named such pictures 'Still Life with Mandolin', 'Head', or 'Nude'. Now I realize that their clinging to subject-matter was inevitable. First, because of the convention that every painting must be rooted in nature. Second, because new developments for them took place only step by step as a result of the disintegration of the original stimulus. Tearing apart the old visual conception, the cubist painters originated a new means of rendering, as well as a space articulation. The cubists hoped to develop a method to penetrate reality more thoroughly than had been possible with perspective-illusion. They had an intimation of the coming forceful visual monopoly of the movies, and tried to escape from it by all means. The principle of the motion picture was a new method of rendering three-dimensional reality. The film was able to show any object in space from many different sides in quick succession. The cubists began to produce such a rendering by 'looking around the corner,' and looking from above, from every side – invalidating the monocular vision of previous painters.

In the first place, the spectator's surprise came, to a great extent, from distortions of recognizable objects and from the wit with which these deviations from the habitual rendering of nature were used for a binocular characterization of the object. Besides the emotional upheaval caused by the startling extension of the traditional pictorial elements into a *new* vision, the distortions and strange transformations of well-known subject matter produced, in addition, an attack on all pictorial fixations originating in the renaissance. The analysis of the binocular vision in motion led the cubists to render objects with a multitude of details seen from every point of view. For this they employed a method of dissolving the whole shape into small geometric units, and saw to it that the multitude of elements did not destroy the original subject as an entity. To do this clearly, the cubists devised a method of having small shapes cast shadows within the large area of the original shape. A little painting of playing-cards by Braque in 1910 shows this method – which Cézanne had already employed in some of his watercolors. When playing-cards are lying flat, they do not cast shadows, but the more the cards are lifted, the more shadow they cast.

This phenomenon has been utilized in the third phase of cubism: all objects seemed to be flattened out; that is, they were simplified to their plane, elevation and section. In order to see them *from all sides*, as if one were to move around them, all these views were superimposed. But such superimpositions were rather difficult to disentangle. To differentiate between the multitude of the smaller shapes, which originated by crossing or overlapping each other, the cubists shaded either the edges or the corners of the small shapes while keeping the identity of the general theme. This departure was soon transformed into a genuine form of picture construction. There the fine shadings, similar to photographic halftones, light and dark planes, produced a new rhythm which stole the show from the original analytical intention of a better rendering of nature by a vision in motion. These paintings, especially the collages, created new rhythmic references between geometric and free shapes which were divorced almost entirely from their naturalistic origins and previous connotations, i.e., being parts of the object. This phase of the cubists' efforts, I believe, was the unconscious impetus for my own collage experiments.

The Function of the Artist. Art is the senses' grindstone, sharpening the eyes, the mind and the feelings. Art has an educational and formative ideological function, since not only the conscious but also the subconscious mind absorbs the social atmosphere which can be translated into art. The artist interprets ideas and concepts through his own media. Despite the indirectness of his statement, his work expresses allegiance to the few or many, to arrogance or humility, to the fixed or visionary. In this sense, he must take sides, must proclaim his stand and no true artist can escape this task. Otherwise his work would be no more than an exercise in skill. What art contains is not basically different from the content of our other utterances

but art attains its effect mainly by subconscious organization of its own means. If that were not so, all problems could be solved successfully through intellectual or verbal discourse alone.

The so-called 'unpolitical' approach to art is a fallacy. Politics is taken here, not in its party connotation, but as a way of realizing ideas for the benefit of the community. Such a *Weltanschauung* is transformed, in the arts, into an organized, felt form by the concrete means of the different modes of expression. This content can be generally grasped directly through the senses, on a subliminal level, without a conscious thinking process. Art may press for a socio-biological solution of problems just as energetically as social revolutionaries may press for political action. The difficulty is that few people are sensitive, and, at the same time, educated enough to receive the real message of art, whether contemporary or old. As a young painter I often had the feeling, when pasting my collages and painting my 'abstract' pictures, that I was throwing a message, sealed in a bottle, into the sea. It might take decades for someone to find and read it. I believed that abstract art not only registers contemporary problems, but projects a desirable future order, unhampered by any secondary meaning, which the customary departure from nature usually involves because of its inevitable connotations. Abstract art, I thought, creates new types of spatial relationships, new forms, new visual laws – basic and simple – as the visual counterpart to a more purposeful cooperative human society.

Objective Standards. My intention was not to demonstrate only individual inventions, but rather the standards of a new vision employing 'neutral' geometric forms. They should help, I thought, to emphasize the substance of relations, without being blurred by other elements. This was emphasized even more by my smooth, impersonal handling of pigment, renouncing all texture variations.*

This involved ascetic restraint, voluntary sacrifice of advantages which had become the privilege of every painter after impressionism, and, even more, after cubism. Rich variety of texture gave those pictures a quality of *peinture* which was highly valued by the connoisseur. Textures had a double function. They began the revolution which brought about the change from traditional illusionistic rendering to 'painting.' The new painting did not imitate nature, but translated its manifold appearances into direct visual experience. The primary intention was to produce the visual fundamentals of picture making. Visual, not literary, relationships were created within the picture. They were a testimonial to the imagination of the painter. After a period of wavering (since I loved the qualities of texture), I came to feel that textures personify individual values, and sometimes a hypertrophic ego; that the original need of translating nature into 'texture-formed' paintings did not exist after the abstract painters found a more direct and elementary way of picture-making. I gave up the use of textures.

This is the place where I may state paradoxically that, in contemporary art, often the most valuable part is not that which presents something new, but that which is missing. In other words, the spectator's delight may be derived partly from the artist's effort to eliminate the obsolete solutions of his predecessors. My desire was to go beyond vanity into the realm of objective validity, serving the public as an anonymous agent. An airbrush and spray gun, for example, can produce a smooth and impersonal surface treatment which is beyond the skill of the hand. I was not at all afraid to employ such tools in order to achieve machine-like perfection. I was not at all afraid of losing the 'personal touch,' so highly valued in previous painting. On the contrary, I even gave up signing my paintings. I put numbers and letters with the necessary data on the back of the canvas, as if they were cars, airplanes, or other industrial products. I could not find any argument against the wide distribution of works of art, even if turned out by mass production. The collector's naive desire for the unique can hardly be justified. It hampers the cultural potential of mass consumption. In the visual arts, we already have mass-produced engravings, wood-cuts, etc. My photographic experiments, especially photograms, helped to convince me that even the complete mechanization of technics may not constitute a menace to its essential creativeness. Compared to the process of creation, problems of execution are important only so far as the technique adopted – whether manual or mechanical – must be mastered. Camera work, photography, motion pictures, and other projective techniques clearly show this. It may happen that one day easel painting will have to capitulate to this radically mechanized visual expression. Manual painting may preserve its historical significance; sooner or later it will lose its exclusiveness. In an industrial age, the distinction between art and non-art, between manual craftsmanship and mechanical technology is no longer an absolute one. Neither painting nor photography, the motion pictures nor light-display can be any longer jealously separated from each other. In 1922 I ordered by telephone

* In the old Bauhaus we called this 'factice,' or 'surface treatment.'





224 The artist's mother in Paris in 1936



225 The artist's brother Ákos Nagy in Shanghai in 1926



226 Moholy-Nagy and his brother Jenő Nagy in Budapest in 1930

227 Moholy-Nagy and Ákos with the daily *Az Est*



Forradalmárok!

Az idő beteljesítet benneteket. Feleszméletek! És megteremtették a proletáriátus diktatórikus uralmát!
 A kommunista gazdasági rend immár alapjaiban fekszik előttek. De ahhoz, hogy tényleg és hibátlanul megvalósuljon, összes erőitekkel ennek a minden dologra egyformán legjobb gazdasági rendnek a megépítésében kell részt maradtéknékkül lélni magatokat.
 De a gazdasági forradalommal párhuzamosan mi, az új művészetek, az új morál, az új életformát jelentő kultúra történelmi és megalkuvást nem tűrő harcainak újabb és most már megsokszorozott hittel fátyázzuk életet az új ember szabad, monumentális életét! A kommunista kulturát!

Proletárok!
 A burzsoá testi kizsákmányolással együtt meg kell szüntetnünk a ledöntött kapitalizmust szolgáló burzsoá művészeteket a lelki kizsákmányolást.
 Ebben az új életrendben csak azok vállalkozhassanak a proletáriátus lelki újáépítésére. **akik eddig is vész, megragadt, szorongással börtönözött „fanatikus bolondjak”** voltak az új életrendnek.

Igen **MI**, fiatalok, a burzsoá sajtó és társadalmi hitogatói gazdaságának elszennvedői, akik egész életvitelünket élén hadatunk a lazadók!
 Követeljék tőlük helyüket az új kultúra megformálásában, meri jól tudjuk, hogy az új lelkeket csak az igényesség levő, **új utakra tanító és szorgalmazó**, aktív, világszemléletes művészetek teremthetik meg. Mert csak és egyedül akkor lesz hitos alapokon nyugvó az új élet, ha túl a gyomorkérdésen már a felszabadult emberi igényesség lesz a minden szembe minden veszedelemmel.

De döntetek el, vajjon azok, akik eddig a burzsoázia talpnyalói és szórákzórtó bohócái voltak, akik a bankarok drága lakberendezéseibezt utók becsukott szindarabjaikat és nyálkaszó „festményeket”, le egészen a néphittől és elmarkotizáló kuplékig, akik mindig a **lovó-igénytelenítés**, a megalkuvás, a mindig pillanatosság parnás és higiénikus országúti háziasodtak, akik végeredményben nem tudtak vagy nem akartak új életre, új hitre serkentő harcot kezdeni a komorságba esett proletárlélekbe, vajjon ezek **ma alkalmassak-e arra, hogy az új kulturát a proletáriátus elhozzák?**

S vajjon mi a biztosítéka annak, hogy ma már alkalmasak, ha tegnap még ép az ellenkezije volt igaz nek, és ha mégis, vajjon hogy fog kinéni a miénk után az **új kultúra**, amelyet ők akarnak megalkuvni, ők, akik az utolsó pillanatig utózatlan utasítottak el tőlük minden új és megalkuvás nélküli törekvést. Vigyázzatok! Ezek a ny-ko, ezermillió elváróbaikk most sietre átmázódnak magukat az új keresztény kommunizmusba.

Vigyázzatok! Ezek az emberek át akarják meneni a kapitalista kulturát!
 Mi, fiatal művészek, egő kiáltással tiltakozunk az új gazdaság ellen!
 Felétek kiáltunk!
 Forradalmár munkások, katonák, diákok!
 Követeljétek az új és szabó életetek nevében a burzsoá „művészetekkel” való végleges leszámolást!
 Mert **ők így követelték magatoknak a kenyér és bősé mellett a kulturát, mint testvesztést értéket!**
 Éljen a dolgozók szovjetköztársasága!
 Éljen a burzsoá művészetek ellen a forradalmi művészek diktatúrája!
 Éljen az új kultúra életben a felszabadult emberrel!

Aktivista művészek

- | | | |
|----------------|-----------------------|-------------------|
| Irodák: | Képzőművészek: | Színészek: |
| Barin Sándor | Borinyik Sándor | Péri László |
| Hecsei Iván | Gergely Sándor | Simon Jolán |
| Kahána Mózes | Mátia Teutsch János | Viktor Lajos |
| Kassák Lajos | Medgyes László | |
| Kudlák Lajos | Moholy-Nagy László | |
| Kádár László | Párizs Pál | |
| Marza János | Rathay György | |
| Reiter Róbert | Szongher Ferenc | |
| Szalpai Árpád | Uitz Béla | |
| Tyári László | | |
- Budapest 1919 március 25



Res. Nr. 452/20.

PERSONENBLATT

Personenblatt zum **A. K. Ost. Rev. Akt.** ...
 Nr. 2/21 Nr. 10922/17-Beitrag Nr. 7 von 18...

| | |
|---|--|
| 1. Vor- und Zunamen, eventuell Kuz. Name | Ladislav Moholy-Nagy |
| 2. Charge | Leutnant i. der Res. |
| 3. Grundbesitzverhältnisse | K. u. k. F. A. R. 132. |
| 4. Dienstverhältnisse | Reserv. |
| 5. Evidenzbehörde I. Instanz | /. |
| 6. Rang /: Datum und Nr.:/ | 1/II 1917 Nr. 996 |
| 7. Geburtsjahr | 1895 |
| 8. Religion | ref |
| 9. Nationalität | ung |
| 10. Sprachenkenntnisse | magyarul, németül |
| 11. Tauglichkeitsgrad | frontdiensttauglich |
| 12. Zivilberuf | Kunststauer |
| 13. Bisherige Dienstverwendung im Kriege (in grossen Zügen) | 1/2 1916 - 2/10 1917 Inflationsoffizier und Zugkommandant bei der K. u. k. F. A. R. Bt. 1/12, 2/12, 3/12 Bei der Ersatzkörper als Ausbildungsoffizier |
| 14. Auszeichnungen | Silberne Tapferkeitsmedaille Brosche des k. u. k. Infanterie-Regiments Nr. 132 K. u. k. |

- 230 Manifesto of the Activists. 1919
- 231 Moholy-Nagy's identity card from 1919
- 232 Moholy-Nagy and Franciska Clausen in Paris in 1925

Berlin 26/12

**KOLLEKTIV-
AUSSTELLUNG**

WALTER DEXEL
RALF VOLTMER
JOSEPH NEMES LAMPÉRTH
LÁSZLÓ MOHOLY-NAGY

GEMÄLDE
ZEICHNUNGEN

OKTOBER 1920

FRITZ GURLITT / BERLIN W
POTSDAMER STRASSE 113

DER STURM

Leitung: HERWARTH WALDEN

Februar 1922
Hundertfünfte Ausstellung

**MOHOLY-NAGY
PERI**

**GESAMTSCHAU
DES STURM**

STÄNDIGE KUNSTAUSSTELLUNG
BERLIN W 9 POTSDAMER STRASSE 134a
Geöffnet von 10—6 Uhr / Sonntags von 11—2 Uhr
Auf Wunsch Führung

DER STURM

DIREKTION: HERWARTH WALDEN

HUNDERTACHTUNDZWANZIGSTE
AUSSTELLUNG

**Moholy-Nagy
Hugo Scheiber**
Gewebe aus Alt-Peru
Sturm-Gesamtschau

Februar 1924

STÄNDIGE KUNSTAUSSTELLUNG
BERLIN W 9 / POTSDAMER STRASSE 134a
Geöffnet von 10—6 Uhr / Sonntags von 11—2 Uhr



233 Catalogue of Moholy-Nagy exhibition, 1920

234 Catalogue of Moholy-Nagy exhibition, 1922

235 Catalogue of Moholy-Nagy exhibition, 1924

236–237 Two details of Moholy-Nagy's exhibition in Berlin in 1924





238 Moholy-Nagy's works at the 1923 Weimar exhibition of the Bauhaus

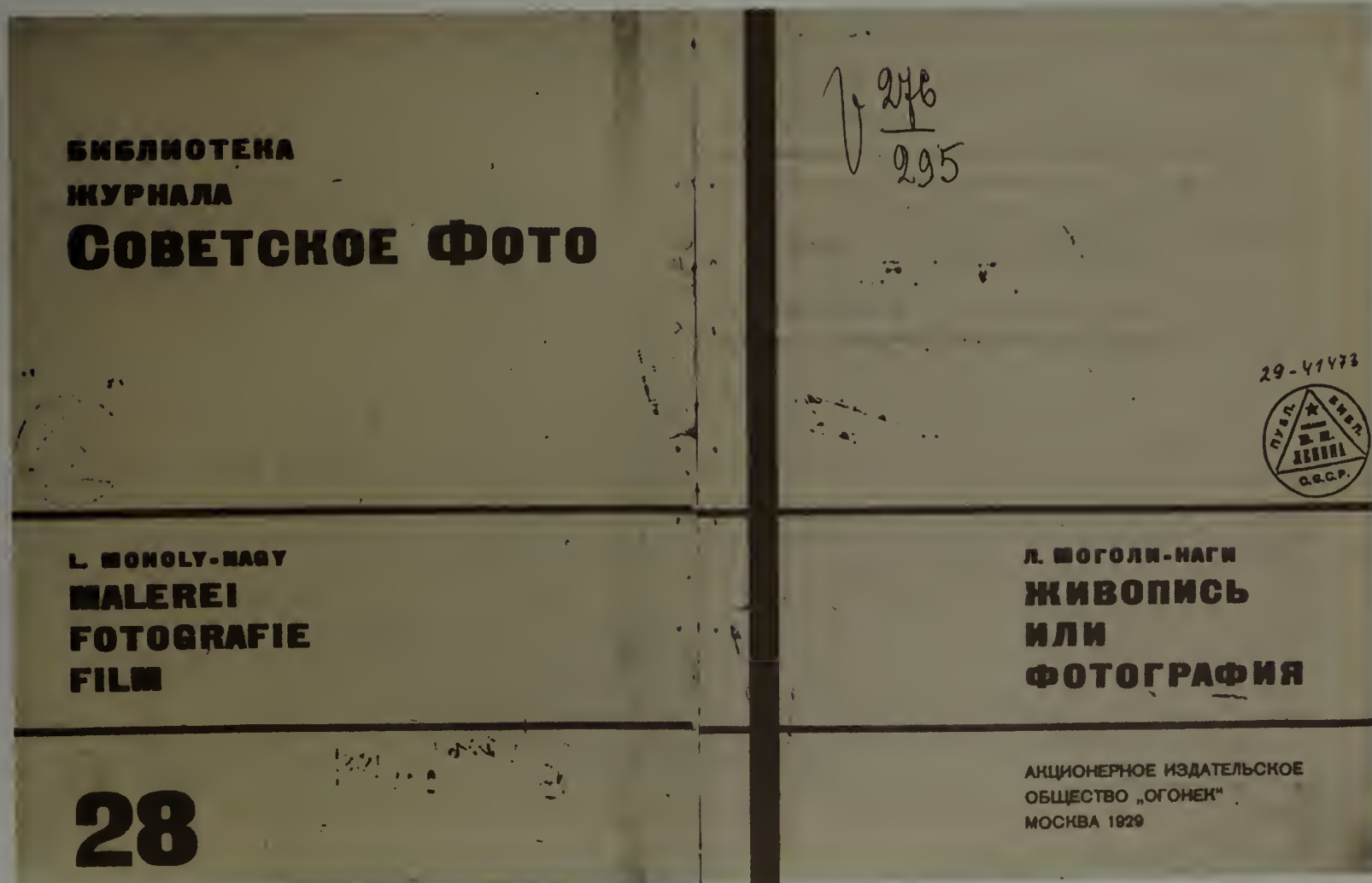
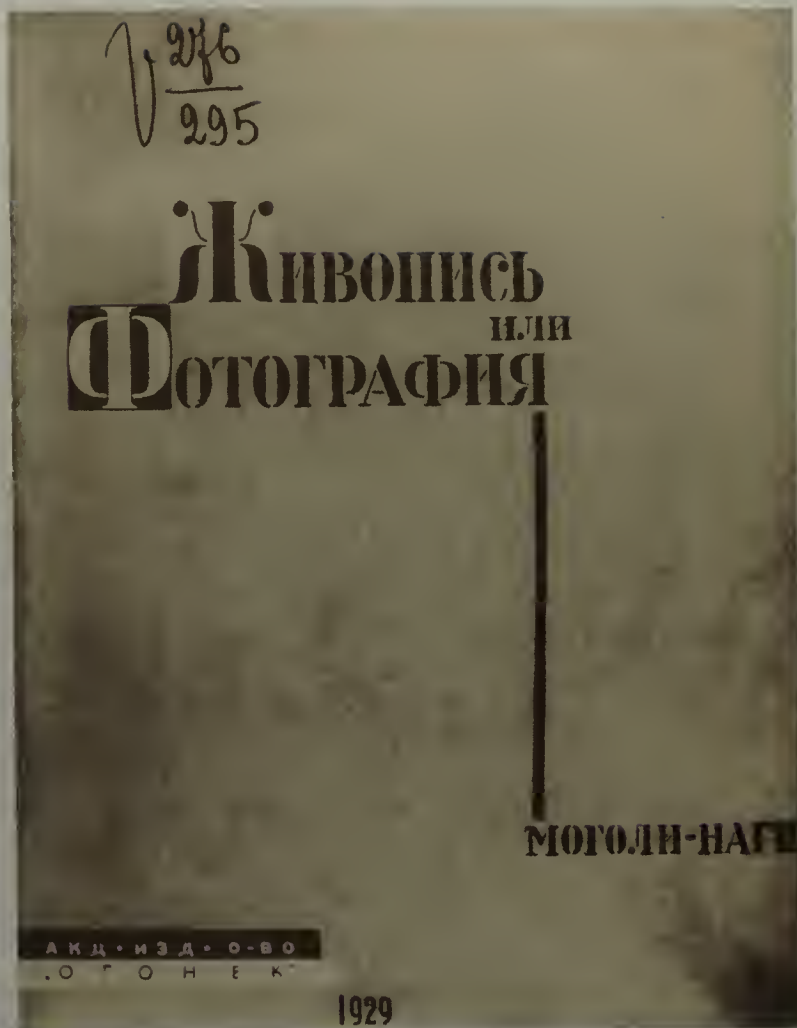
239 Moholy-Nagy's works at the 1926 exhibition of the Bauhaus

240-241 Moholy-Nagy's pictures at the exhibition in the Galerie Fides in Dresden in 1926




242 Moholy-Nagy's works in Paris at the exhibition of the Abstraction-Création group in 1934

243-244 Two details of the Brno exhibition of 1935



245-246 Cover and title-page of the Russian edition of *Painting, Photography, Film*, 1929

247-248 Moholy-Nagy's letter from the United States. 1937 August 27, ▷



HOTEL KNICKERBOCKER
 WALTON PLACE EAST OF MICHIGAN BOULEVARD
 C H I C A G O



1905, Prairie Ave
 Chicago, Illinois

1937 augusztus 27

Jenikém, talán hallottad, hogy mi amerikai
 hercolkodunk. (a familia jön sept végén)
 engem itt ^{meghívta} ~~hívta~~ a "the new Bauhaus
 american school of design" igazgatójával.
 az iskolát ketten 18 évnyi alatt meg, és persze
 őrállt az a dolgom, mert tanárokat kell
 alkalmaznom, levelező programokat, katalógusok,
 hirdetések, a szerkesztés és a debütál kell ki-
 dolgoznom. de mivel az csinálom, mert ezeket
 me lehet az utóbbi évek megfigyeléséig felkészít
 s azokat mindenki után végre megint csinálhatom
 egy koncentrált és érdekes történet. igen, ha
 sikerül, legyen "történet." persze ez nagy
 120 is jobb, ha nem is így nézzük - dolgozok.
 az mindenesetre nagy az alkalom és én
 egyelőre rózsánál cívem és látom a felhőtől
 kat.

ami a bostoni könyvtárolat is tovább
folytatja a jupiter-szal (ezt nem önjánlott erre
a 2 állásra) ő maga a harvard egyetemén
an architektúra tanára. én is őt hallgattam
utazom most per napra, a ^{hogy megbeszéljék, hogyan} ~~széles~~ ^{széles} ~~zötyögős~~
~~vezető, és az őt elkövetkező évek~~

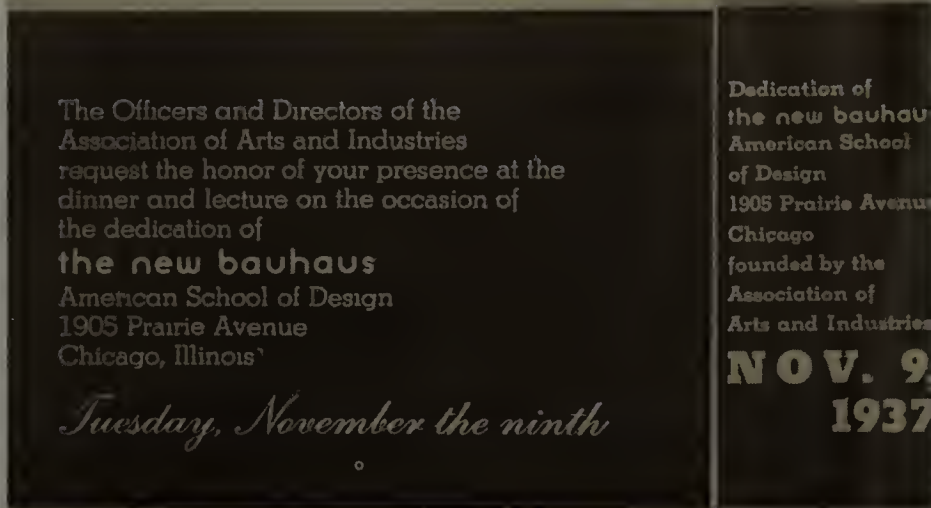
vez. meg az is, hogy más pár órája
indul. főmunkáid levelet kell megvárni a szobán
ment 5 hetes éjjel-nappal (újra-élesztés)
szal az iskolák elvégzése.

most már eljött ideje megmutatni a nagy
kiváncsi vagyok, hogy meg a ti szobát,
meg vagy-e elégedve új munkáddal is
tart-e a béke a koporsókkal.²

sókolom drága mannyd keret is öltet
sókollad lejed leventivel együtt
nem is őseid
ami

249 Invitation card to the opening of the New Bauhaus. 1937

250 Moholy-Nagy speaking about Picasso's *Guernica*. 1942







from a sign factory five paintings in porcelain enamel. I had the factory's color chart before me and I sketched my paintings on graph paper. At the other end of the telephone the factory supervisor had the same kind of paper, divided into squares. He took down the dictated shapes in the correct position. (It was like playing chess by correspondence.) One of the pictures was delivered in three different sizes, so that I could study the subtle differences in the color relations caused by the enlargement and reduction. True, these pictures did not have the virtue of the 'individual touch,' but my action was directed exactly against this over-emphasis. I often hear the criticism that, because of this want of the individual touch, my pictures are 'intellectual.' This is meant as a derogatory term, referring to a lack of emotional quality. But my belief is that mathematically harmonious shapes, executed precisely, are filled with emotional quality, and that they represent the perfect balance between feeling and intellect.

Colleagues. In 1922 the Russian artists, El Lissitzky, Ilya Ehrenburg and later Gabo, came to Berlin. They brought news of Malevich, Rodchenko and the movement called suprematism. The Dutch painter, Theo van Doesburg, told about Mondrian and neoplasticism; Matthew Josephson and Harold Loeb, the editors of 'Broom,' and the painter Lozovick, about the U.S.A. Then Archipenko, the sculptor, and Tristan Tzara and Hans Arp, both dadaists, visited us. Joseph Peters and Vantongerloo came from Belgium, and the architects Knud Lönberg-Holm from Denmark, J.J. Oud and C. van Eesteren from Holland, Frederick Kiesler from Vienna, and Walter Gropius from Weimar. Berlin was for a while the hub of the artistic efforts of Europe. *Der Sturm* of Herwarth Walden exhibited the pioneers of cubism, futurism, and abstract art and printed the work of the new poets. Already in Berlin were George Grosz, Kurt Schwitters and Raoul Hausmann, the German dadaists, the latter with tendencies to constructivism; also the revolutionary film producer, Viking Eggeling, worked there with his collaborator, Hans Richter. We often met to discuss painting and other problems. Out of these discussions developed the Constructivist Congress of 1922 in Weimar, manifestoes in the Hungarian review *MA*, of which I was then the Berlin representative, and exhibitions, all of which gave us greater assurance in regard to our work and future artistic prospects.

Sculptures and Mobiles. Meanwhile I made sculptures from wood, glass, nickel-plated metal and other materials. I started also to work on a light display machine, a space kaleidoscope which occupied me for many years. It was a mobile structure driven by an electric motor. In this experiment I tried to synthesize simple elements by a constant superimposition of their movements. For this reason most of the moving shapes were made transparent, through the use of plastics, glass, wire-mesh, latticework and perforated metal sheets. By coordination of such elements of motion I obtained results that were visually rich. For almost ten years I planned and battled for the realization of this mobile, and I thought that I had familiarized myself with all its possibilities. 'I knew by heart' what all the effects would be. But when the 'light-prop' was set in motion for the first time in a small mechanics shop in 1930, I felt like the sorcerer's apprentice. The mobile was so startling in its coordinated motions and space articulations of light and shadow sequences that I almost believed in magic. I learned much from this mobile for my later painting, photography, and motion pictures, as well as for architecture and industrial design. The mobile was designed mainly to see transparencies in action, but I was surprised to discover that shadows thrown on transparent and perforated screens produced new visual effects, a kind of interpenetration in fluid change. Also unexpected were the mirrorings of the moving plastic shapes on the highly polished nickel and chromium-plated surfaces. These surfaces, although opaque in reality, looked like transparent sheets when moving. In addition, some transparent wire-mesh flags, having been placed between differently shaped ground and ceiling planes, demonstrated powerful, irregular motion illusions.

Since I gave much time to this work, I found it somewhat depressing that, for most people, the beauty of such a mobile and its emotional penetration had not been revealed. Almost no one could grasp the technical wit or the future promise of the experiment. I had more luck with a motion picture, 'Light display – black and white and gray,' which I made from the mobile in 1930. There I tried to translate its action into photographic 'light' values.

Synthetic Materials. Simultaneously with the sculptures made from metal and glass, I turned toward the new industrial materials. I began to paint on aluminium, highly polished non-ferrous alloys, and on thermosetting and thermoplastics. If I had not been afraid that these latter materials were not permanent, I would never have painted on canvas again.

In working with these materials – uniformly colored, opaque or transparent plastics – I made discoveries which were instrumental in changing my painting technique. This had

inevitable repercussions on my thinking concerning light problems. To produce true, primary relationships, my former idea of an 'objective' painting, was not the only reason for my use of smooth flat surfaces. It was also nearest to the transition of light into color and color into light, something like an objective texture invention for a delicate and evasive medium. By producing real radiant light effects through transparent dyes on plastic and through other means, one has no need for translating light into color by painting with pigment.

Light painting had arrived and with it, the problem of texture reasserted itself.

Painting with Light. There has been in the past a period of light painting, that of stained-glass windows. There, direct and reflected light and the shadow of the framing combined with projected colored light into a fascinating visual unity. Our technology offers new possibilities, no less impressive, and without imitating the old techniques. At present the central problem of painting on transparent sheets is the reality of direct light effects. In my first experiments I learned that I must have a screen upon which the light effects of the painting could be projected. So I mounted the painted sheet several inches in front of plain white or light gray backgrounds. There I observed that solid shapes on transparent sheets cast solid shadows. To dissolve and articulate the heavy shadows one has to employ various means. There is a possibility of scratching the surface with fine lines of different density which throw shadows of varied gray values on the screen, similar to the fine gradations of grays in the photogram. To paint stripes similar to grill- or lattice-work, or to perforate solid surfaces, is another possibility. Such elements, if lighted, cast alternating shadow and light patterns on the background *behind* the painted surface. Upon these patterns the original painting is superimposed. If lighted from the side, the shapes of the original and its shadows appear shifted, creating a new relationship between the colors and their gray shadows. This intensifies considerably the effect of the usual shadowless paintings. It produces automatically a 'light texture,' especially if transparent dyes are used instead of pigments. The results, although very pleasing, bring some danger with them. The smooth perfection of the plastics, their light-flooded, sparkling planes, could easily lure one into an effective but decorative performance. I attempted to avoid this, especially when remembering my Louvre and Vatican visits, where I observed the 'master-pieces' of late Roman sculptors who tried to outdo each other by using expensive polished marbles, colored bronzes, precious stones, ebony and gold.

Though plastics are new materials, not thoroughly tested, I had the feeling that one has to work with them, in spite of the danger of pretty effects. It may take decades until we will really know the materials, and before we can develop a genuine technique to handle them. Even technical problems of painting on these new materials are yet unsolved. After doubtful experiments with industrial lacquers, which were not fast, I tried to paint with oil pigments on transparent sheets. In order to avoid the danger of the colors peeling off, I scratched hundreds and thousands of very fine lines into the plastic to be painted, hoping they would hold the pigment. I covered these engraved lines with oil paint which was held in and between the little crevices. I often painted on the front and back of the sheets too, so that my attempts to create space articulation by the relationships of receding and advancing colors were enhanced by the thickness of the sheet; that is, the real distance between the colors applied in front and in back. In addition I achieved differentiations in the appearance of the same color showing through or seen on the polished surfaces. The new material also needed a specific brush technique, which led to rather unexpected textures. Later, instead of covering and filling the fine engraved lines with a homogeneous color layer, I sometimes only rubbed color into them. By certain combinations of colored hair lines and their fine shadows, intensified, vibrating color effects appeared, an iridescence which I had admired so much in thin glass vessels buried thousands of years. Translated into oil pigment, Renoir was a great master of such effects. I felt happy to achieve a similar refinement in the handling of colors by simpler means. These new effects with their emotional content and spiritual aspirations can only be grasped, however, after their 'novelty' aspect has been overcome by serious consideration of the problem involved.

The work is still incipient and the possible combinations and discoveries, as for instance, the use of flaws and bubbles in the plastics, may lead to even more startling results. They may lead to kinetic light displays.

I often thought that my early transparent paintings were static phases of such light displays. In order to emphasize the kinetic nature of those paintings, I often repeated their central motives somewhat smaller or distorted within the same picture area. It seemed to me that with such repetition I achieved a new dynamic form of harmonious organization, not unlike the classical composition types which I had studied with great eagerness. In the past, symmetry,

the golden section, and the hexagram were employed and constructed mechanically by painters. I seemed to achieve a more delicate and sensitive solution of harmony and relationships by my attempts at repetition of the elements, and by changing the sizes of the units. I later observed that by placing the shapes intuitively throughout the picture area, I produced frequent correspondence of points. I connected these points with straight lines. They appeared not only mathematically balanced, but also created a spatial network, an unusual diagram of tensions. These diagrams acted also as symbols of motion. This became less obvious but more evident by painting on transparent plastics. On such paintings by using sunlight or a spotlight, I could produce a second picture either behind the original, in the form of parallel and slightly distorted shadows, or in the form of reflections on the opposite wall. If the picture was hung in a corner and lighted from the side somewhat, this reflection became very intense, producing a strongly distorted image. Such an image was exciting because it had a natural relationship with the original painting that could not be missed by anyone, and the repetition appeared not as a boring mechanical mirroring, but as a negative image. I could obtain distorted images in other ways too. For instance, I moved the sheet into a slanting position against the background. I could then change the shadow image at will and could move it sideways, up or down, depending upon the angle of the sheet and the movements of the light source. I could bend the plastics either convexly or concavely, then fasten them to the background. The shadow of such sheets produced a distorted image of the original painting. Similar effects were achieved when the observer moved in front of the painting. Also, I made paintings on celluloid sheets with a spiral binding. In these simple ways new types of moving pictures originated with ever changing shadows and reflections. My stage design, three-dimensional 'lantern slides,' and motion picture work grew out of the same interest, to 'paint with light.' I have had enough opportunity to make abstract motion pictures, black and white and in color, before that time and afterward, but I am convinced that without employing the new painters' experiments with light and color no adequate solution can be reached. In analyzing 'distortion,' in these days I find that during the last twenty-five years, since I began my abstract paintings, I did not paint any shape which was not the interpretation of the original departure, the strip, used in my first collages. By slight distortion, although I had not been conscious of it, I continuously changed this shape on each occasion believing that I was inventing something completely new.

Molding the plastics. The last step was the distortion of the flat plane itself. Thermoplastics, when heated, can be easily shaped. One day it occurred to me that by painting on flat plastic sheets, I neglected this essential property of the material. Thus I heated, bent, and twisted a transparent sheet after painting on it. With this manipulation I arrived at complex concave and convex shapes, rich compound curvatures which created a constantly changing relationship between the painted and engraved transparent planes and the background, resulting in a new type of 'related' distortions. The bends and curves made the plastics structurally more resistant to breakage. At the same time, the bends caught high lights. They could be made a part of the light compositions themselves. These could hardly be called painting or sculpture. However, the difficulty of naming these forms should not be held against them. During the last twenty-five years I have been often fascinated by phenomena not listed anywhere. Thus I did not worry very much about a name for this unknown version of a kind of sculpture-painting. For me they were 'space-modulators.' The distorted shapes of my 'modulators' produced spatial effects, not only through the curved surfaces which were either protruding or receding, but also through the lines flowing in all directions of the weather cock, formed by the thickness of the sheets themselves. Their edges produced space curves which, when combined with similarly curved wire of the same gauge as the thickness of the edges, could be blended into a complete row of space cells. They were partly made of transparent plastics, with emphasis on the edges, partly of wire and air 'walls,' which were 'more transparent' than transparency itself. These experiments can be seen as related to the spatial quality of endlessly bent tubular furniture. I liked these tubular structures and I had many ideas for their use in other structural and architectural experiments. I tried to achieve similar effects with painting on canvas. There the free 'motion' forward and backward of color prepared a new type of spatial perception. This was in clear opposition to the renaissance method of producing illusionistic space by the illusionistic relationships of volumes. In this way my experiments seemed to become a part of the general tendencies of contemporary painters. Many of us have departed from the old canons and obsolete conventions, to a new space articulation, trying to define intuitively and to satisfy more adequately the specific need of our time for a vision in motion.

Chicago, 1944

2 DOCUMENTS

Reminiscences of Jenő Nagy, brother of László Moholy-Nagy¹²

Mohol, sitting on the bank of the Tisza, was a very rich village with a population of seven or eight thousand, divided into two sections, the Hungarian and the Serbian. The dividing line was the main street, named Gránicz (border); the side falling to the railway was inhabited by the Hungarians. In the centre of the village – where the population was mixed – well, our uncle Guszti's house stood in this central section, he was the only lawyer active in the village. He was trusted by Hungarians and by Serbs alike. We went to elementary school in this village. When I finished elementary school and was enrolled in secondary school, I had to leave Mohol. So I was in no position to learn anything about Laci's [i. e. László's] school life in the elementary.

We lived at Uncle Guszti's. At the beginning he lived in a rather modest house, and I remember well a hunchback law clerk called Dusan; I learnt a few Serb words from him. Uncle Guszti spoke the Serb language well. Later, the village doctor, a very talented man, I remember him well, Doctor Varró by name, passed away and his widow put the house on sale, and that was the house which Uncle Guszti bought. He ran a great house. I still remember that house; the roses in the courtyard, the stone-paved court with a wood-planked carriage way. In the right wing of the house there were law offices, and in a building attached to it were the kitchen and the servants' quarters. Our rooms – everybody had his own room – opened from an L-shaped gangway. Uncle Guszti never married anybody, he might have been sick, but this he never mentioned to us. He had a beautiful library room one was able to snake into and read those books which were forbidden to read, because you could find everything in them that was not supposed to be spoken of in company (like Pallas's *Encyclopedia*), but besides these, there were many art books, illustrated with lots of pictures, in the library.

Uncle Guszti was a well-travelled man. We found this out only afterwards – he was searching for a cure for his secret malady. From 1907 on I lived in Germany, and came home in 1911 or in 1912, when Uncle Guszti died. You can deduce from this that Laci and I spent very little time together in our childhood. When I was in elementary school, he was too small, and when he entered secondary school, I was abroad.

So the previous years are missing, for we then were living scattered all over.

Laci moved to Budapest, into the apartment at No. 25 Keleti Károly Street, at the end of 1912. I have a lacuna here, I am just raking my brain in vain. From my Keleti Károly Street apartment I used to go to my rowing training, therefore I was not home from work before late in the evening, and I left home in the morning very early.

A trustworthy caretaker looked after us. For more than a year, three of us brothers lived at 12, Mészáros Street. Ákos was two years younger than Laci and much younger than me (there was a four and a half year difference in age between me and Laci). We lived on 150 Koronas, a sum I received and handled, the rest came from a loan that we got against the war bond bought with our inheritance, so I managed to get hold of some of our inheritance. We loved each other very much, but each of us kept different company. Laci had sought out the company of writers mostly, at that time he did not even dabble in painting. [. . .]

A great many girls used to visit him in Mészáros Street, whom he used to paint. I have seen those pictures which represented women, both dressed and nudes. Most of these girls came from the Galileo Circle, from the Anker Palace, where Laci used to go, I dare say, almost every day.

It was on May the First of 1919 that I met his friends. Béla Zsolt, Iván Hevesy, the Kner boy, Laci and I, and perhaps Imre Bach too were present at this meeting. May the First was a payday, I had money on me, the artists borrowed twenty Koronas from me. Next to the Amusement Park was the Palm Garden, the summer café of the Casino de Paris; I remember, after that we walked all the way down Andrásy Avenue at dawn.

When we were strapped for money, I told him, 'Why don't you make pictures like Fülöp László or some other likely contemporary painter does, paintings that you can sell?' To which he said, 'I know that I draw well. Such stuff other people all over the world have done much better than I ever could. If I am driven to do it, I could paint pictures that sell. But I want to do something new, something that nobody has ever done before.' But all this took place after he had returned from the front, and when he had already given up his literary experiments. After all, as we know, Hevesy had sharply questioned his literary abilities. But, as was to be

seen later, it was his friendship with Endre Ady that made a lasting influence on the formation of his outlook and of his thinking, progressive in its spirit. Tears were in his eyes, when I told him that Ady was no more. I think that company, which had been held together by the magical presence of Ady and by his principles, maintained even during his grave sickness, dissolved after his death. Those friends of Ady who are still alive today surely remember that young man who was so receptive of anything new; for example Zsófia Dénes, and perhaps there are some others too – we only have to look around a bit.

To study drawing, he went to Róbert Berény, to Andrásy Avenue. And he spent all his money on art books, he had at least thirty or forty books, a few of them I still have here today (*Klassiker der Kunst in Gesamtausgaben*. Deutscher Verlagsanstalt, Stuttgart–Leipzig, 1906). He especially loved Rembrandt, Holbein, Memling. And Van Gogh.

When he left, he had already at least 15 to 20 large-size drawings. What happened to those I don't know.

The two small and the bigger *Landscapes* were exhibited in the Nemzeti Szalon, and I think that he also sold some paintings there. Beforehand he was racking his brain what kind of pricetag he should put on the paintings. He painted those especially for the exhibition at the Salon. Later he gave Ady the *Hills of Buda* as a gift, for he loved it very much. In the December of 1918 and in January, during a whole month he visited the Adys daily. One day he came home saying: 'I am going to take the large painting off the wall, I am not going to let Márffy have it.' And he brought the painting home. I have managed to save that one, I don't know how; I am sure I liked that one as I did also some of his other smaller paintings.

Laci went abroad, Ákos stayed in the Soviet Union, I was never to see him again; the last time we went out to picnic to Visegrád-Nagymaros-Dömös I photographed him standing in a large field full of flowers. What has become of him? I don't know.

I got married and the Mézáros Street ménage was dissolved. Perhaps this was the occasion when I took the paintings with me. There were a lot of other pictures too, what happened to them I don't know. I remember one painting – these were not of avant-garde type as yet, but their composition was already something quite extraordinary; they had a hold on me, since I still remember some individual gestures even today. [. . .]

The assassination of Francis Ferdinand, the Crown Prince, was followed by diplomatic manoeuvrings that lasted for about thirty days. Mobilization took place at the end of July, but then the mobilization order was restricted to fully trained reservists. The war broke out and Laci was called up in the autumn, only after the new draft order had been introduced, but among those who were called up first. He was assigned to the artillery, and left for the front as an ensign.

By the way, I must remark that I, his brother, never received one single illustrated postcard from Laci, which only shows that he sent his drawings, in place of writing, only to connoisseurs.

Laci had attracted attention in the army as a graphic artist with his maps which were beautifully executed and they were such a great success with the general staff that they were sent up to the Arsenal in Vienna.

By the October of 1918 he was promoted first lieutenant of the artillery. He was decorated with the Bronze Medal of Valour, and the Karl Company Cross. The blanket in his picture entitled *Portrait of the Artist's Brother* representing me is his own horseblanket which he brought home from the front. That blanket has stayed for a long time in the family. [. . .]

Laci met Iván Hevesy at the University. Although they did not study the same subject, both of them attended the same seminar of Professor László Négyessy. Laci wrote a poem to Hevesy's sister. (Hevesy still has this poem.) Later Laci wrote for the *Jelenkor* which was edited by Hevesy. Then they fell out with each other. When later the Hevesys visited Berlin, Laci gave them a cool reception. Back home, in the thirties, they made up a little. [. . .]

During the war, from the front, Laci had sent about, more or less, three hundred and twenty postcards to Hevesy; whatever he wanted to communicate he expressed by drawing; these were the ones Hevesy criticized.

Their making peace could be regarded as rather sincere, because during his sojourn at home they met several times.

Sending these illustrated postcards demonstrated that Laci was expecting some guidance from Hevesy. But Hevesy's criticism did not satisfy Laci. [. . .]

I would like to single out Laci's political orientation, at least as far as I knew it. Certainly, his feelings were progressive. And so were those of his friends, Uitz, Bortnyik, Lampérth, Béla Balázs, Kner, Artúr Bach and Dr Imre Bach, and of those many nameless young people with whom he met daily in the Galileo Circle. All this and his late, reverential relationship with Ady

point to this fact. Some say that he was not accepted into the Communist Party; these people don't know anything about the situation of that time. Anybody – excluding those who were exploiters, bourgeois—who went up to the Party after March 21, and wanted to join, was accepted. I am writing this on the basis of my personal experience. I got a membership card right there and then. They had written the data in a ledger book with duplicating carbon, and they just tore out the original. And after the Vyx Memorandum, even those who were not a hundred per cent communists became communists. Laci was progressively oriented. [. . .]

He painted many pictures during the Commune. A lot of models, especially women, visited his apartment. Where can his pictures be now? I don't know. Where his valuable art library disappeared to, I don't know that either. He used to spend all his money on buying art books. Rembrandt, Michelangelo, Raphael, Cézanne, he had them all, in large album-sized books. He was getting ready for the exhibition at Nemzeti Szalon. He went out into the countryside a lot. Those paintings which he had done in Óbuda and Csillaghegy, he sent to the exhibition.

Interview, 25 October 1975

Moholy-Nagy's Letter to Artúr Bach¹³

2 July 1918

My Dear Artúrka,

Yesterday I was up at *Béla Uitz's* place, where I have seen a few wonderful paintings, and I made some inquiries concerning their prices.

I have chosen three paintings (the sketches of which, drawn by me and not by Uitz, are attached here).

The oil painting No. 1: I am totally enchanted by it. If you come up and see it, you too will be taken by it. He fixed its price at 800 Koronas.

No. 2 is a picture painted in ink and brown oil. (My sketch of this, and that of No. 3, are not that good, I had to do them quickly.) A sitting woman, a child is leaning into her lap, and she is fumbling around in his hair. This is priced 500 by him. I must note that I have seen a much more beautiful and more complete ink-painting of the same genre at the frame shop. A woman sewing. I liked that a great deal better. Its price is 800 K.*

No. 3 is a small landscape in oil. The best of last year's crop of Uitz. This is priced at 500 K.

When you come here, you will see a great many paintings, mostly executed in ink and brown oil. Presently he wants to solve his problem in these works.

I believe that in the case of your buying more paintings, he is going to give you a little discount – poor fellow, he needs the money real bad.

With kisses

Laci

* This you ought to buy by all means. I must note that it comes out very well against a yellow wall, because its tones are of blueish hues. Blue and yellow are complementary colours.

Published in: László Péter, 'Moholy-Nagy pályakezdéséhez'.

Tiszatáj, 1971, No. 11, pp. 1039–1097.

Excerpt from Moholy-Nagy's Diary¹⁴

(15 May 1919)

During the war, but more strongly even now, I feel my responsibility toward society. My conscience asks incessantly: is it right to become a painter in times of social revolution? May I claim for myself the privilege of art when all men are needed to solve the problems of sheer survival?

Art and reality have had nothing in common during the last hundred years. The personal satisfaction of creating art has added nothing to the happiness of the masses.

I have had many talks with men and women on my long train trips. I have seen what is needed beyond food. I have finally learned to grasp what is biological happiness in its complete meaning. And I know now that if I unfold my best talents in the way suited best to them – if

I try to grasp the meaning of this, my life, sincerely and thoroughly – then I'm doing right in becoming a painter. It is my gift to project my vitality, my building power, through light, color, form. I can give *life* as a painter.

Published in: Sibyl Moholy-Nagy, Moholy-Nagy: Experiment in Totality. New York, 1950, p. 12.

Gyula Juhász on the Young Moholy-Nagy¹⁵

We must state that until now no art of such European significance and of European value like this, which is crowded now in this modest atelier in Szeged, had ever manifested itself in our city. One can see here the strong and courageous results of the purest and most serious artistic aspirations of today, and those who have a feeling and sensitivity for an artistic value of high level, should tip their hat to such an artistic integrity, talent and courage.

Szeged és Vidéke, 31 October 1919

No doubt, in order to understand these works of new spirit and form, one needs new eyes, a new soul; old snobbery and hypocrisy do not help here, nor does knowledge of the Classical and Romanticist Schools; Naturalist and Impressionist dogmas don't give us any guidance either. Because this is new art – and we are using the term in its most noble and truest meaning – which leaves Impressionism behind. [...] The soul of a new emerging world levitates in this young, strong and courageous art; these lines, colours, these substances and forms establish a brotherly kinship with that as yet not clearly defined but already self-manifested, lively and powerful art which levitates in the music of Béla Bartók, and which sings in the free verses of Walt Whitman and which, no doubt, will renew the artistic tone of the Earth as radically as Pericles' age or the Renaissance had done.

Délmagyarország, 4 November 1919

Moholy-Nagy's first letter from abroad

My Dearest Uncle Bély and Family,

Regrettably, I did not have a chance to greet the family in person on the occasion of my brother Jenő's wedding, but from far, from here, with strong love and affection I am greeting you all.

I hope that within a short time I will have a chance to give an account, in the warmth of personal communication, of those human feelings which, beyond and over the ties of friendship, grow out of the bonds of family kinship. Until then, my Dear Uncle I am asking you to keep my memory lovingly and me in your love.

Heartfelt greetings to all of you from your relative,

Laci Nagy

8 December 1919

Letter in the possession of Levente Nagy

Moholy-Nagy Arrives in Berlin (1920)

Being almost penniless, he had to work his way across eastern Germany as a letterer and sign painter. As soon as he had enough money for a railroad ticket, he would take a slow train to the next large town. On this journey he picked up a severe case of 'flu' which was decimating the German population in the winter of 1920. Racked with fever he arrived at a Berlin hotel, and collapsed in the lobby when the clerk wouldn't take him in. A young pedagogue, Reinhold Schairer, found him there. He and his wife cared for the sick anonymous stranger as part of their rehabilitation work for veterans of the First World War. Without their devotion, Moholy would never have survived this crisis. His gratitude is expressed in his portrait of Doctor Schairer. It was his last representational drawing.

After his recovery he found an empty attic in Berlin's western section, and with the help of some Quaker rations, established himself as a painter who now tried to translate the form relationships of the collages and the superimpositions and transparencies of the water colors on canvas.

Sibyl Moholy-Nagy, Moholy-Nagy: Experiment in Totality. New York, 1950, pp. 17–18.

Moholy-Nagy's Marriage

I made Moholy-Nagy's acquaintance in April 1920. Following a spell of strenuous work during the winter in a bookshop in Hamburg, Lies Fuchs, a colleague of mine, and I, longing for the spring, went for a walking tour of Lüneburg Heath. We finally travelled to Berlin, planning to call on a friend whose name was Friedrich Vorwerk. We found him in the company of a young Hungarian, László (not Lajos) Moholy-Nagy, who had arrived in Berlin in mid-winter. He was first looked after by Reinhold and Gerda Schairer, both Quakers, and subsequently entrusted to the care of Vorwerk, one of their group, who rented a room for him in the boarding-house where he stayed himself. For a few months we stayed at the boarding-house. Then we took furnished rooms in Witzlebenstrasse, Charlottenburg, in the flat of a civil servant and his wife. On January 18, 1921, often quoted as 1922, we were married at the local Registry Office. In the following year we moved to a studio flat in Lützowstrasse, Berlin.

Lucia Moholy, Moholy-Nagy: Marginal Notes.
Krefeld, 1972, p. 51.

Moholy-Nagy's letter to Iván Hevesy¹⁶

Berlin, 5 April 1920

[. . .] I was in Vienna for *c.* six weeks. As a matter of fact, I was rotting there, since it seems to me that nobody was able to do anything else but the same. By now the whole *MA* is there. They were planning an art on a family basis all the time, and to publish a periodical, but nobody was willing to risk his own [money], so perhaps the thing is being postponed even today. [. . .] Kemény too has arrived. Lately Kassák regards me as someone strongly attached to him, however, on the basis of the Timeo Danaos principle I just like to be here, and not in his vicinity. Tihanyi was my dear good man in Vienna. I spent a great deal of time in his company, I really got to love him, deeply. You wrote that one should break with all past rotten etc. I think the central problem is that you have to be a better man than those working before you. The expression itself will be *different* by this. For example, there are Van Gogh, Kokoschka, Picasso (Tihanyi in our case), with their individual systems (they are all crazy), but who is to say that their craziness (systems) are worse than our collective craziness (our system)? With their different, more intensive nerve-lines, they can only irritate and excite us, but to influence us the way Cézanne did they cannot. Or do you think we can discard Cézanne? Or should we? Or is it worth while doing that? The achievements of the cubists, of the futurists (their tossing out of everything was, in reality, not quite that) were degraded in the hands of the epigones into a desperate impotency. In the latest exhibition of the Sturm, a man called Kurt Schwitters is exhibiting pictures made from newspaper articles, luggage labels, hair and hoops. What's the point? Are these painterly problems? Aside from this, it is not even new. 10–12 years earlier, in the exhibition of the Salon des Independants, there were innumerable things similar to his. This is a total decline and not a new beginning. Yes, I too feel that one has to produce something *different*, different from what has been produced until today; however, the only way this could be made possible is if I am *different* from those who had been working before me. [. . .] There are a few who work for the cause itself, unlike these [the Hungarians in Vienna] who are making a sanctuary and a taboo out of their work and out of themselves too. [. . .] I think he [Tihanyi] is going to make good here, since with the exception of Kokoschka, who has already become an idol, the Germans do not have one single decent painter. The expressionism, which is really becoming a matter of recipe and technique, has just started to exert its influence, now when it has just become bankrupt. [. . .]

Art life is cliquish here too. Herwarth Walden has become a millionaire, he has a splendid painting collection, which he got free, and topping all this he is affecting the airs of a prince. If you want to talk to him, you have to make an appointment with his secretary first, and while you are visiting his collection, they announce your name loudly as it would be announced by the lackey, etcetera, etcetera. Just as a Dadaist journal correctly stated: He is enriching and decorating his financial genius with plundered intellectual rags, and art serves him as a disguise in making money. Now that he has money, he divorced himself (financially) from the Sturm, and Sturm pays even less than before. The exhibitions became weaker. [. . .]

*Letter in the Documentation Centre of the Art History Research Group
of the Hungarian Academy of Sciences, Budapest, MKCs-C.-I. 52/35.*

Moholy-Nagy's letter to Iván Hevesy

26 May 1921, Berlin, Charlottenburg

[. . .] 'It is exasperating that you are so susceptible to every kind of influence'. [. . .] Yes, this was perhaps valid in the past, when I was still a receptacle of a man. When I did not say a word or think a thought, for example, if not under your influence. But that was at a time when with an unbelievable thirst for knowledge I woke up to the emptiness of the previous years. You had to evoke the possibility of individual thinking in me, so I could be somebody, a personality [. . .]

If you too could have been breathing a different air for a year, like I did, you would request, after having received that photograph, the rest of them, and would not put your head into the sand [. . .] As for my other things, let me say this much, there is not a trace of alien influence to be found in my work; on the contrary, today, in May 1921, I stand alone in the whole European – let alone in the Hungarian – painting. One day you too are going to realize this.

What *MA* is doing is the best which can be published in Hungarian today. 'One should spit on it'? Did you see the Archipenko issue, with its 15 illustrations? Can you suggest something better than that? Or perhaps you would favour the publication of a new monograph on Manet, *today, in Hungary*, where no contact of any kind has been found with the new as yet? Would this be your suggestion, I should call it well-poisoning. [. . .]

However, notwithstanding these, 'you too will climb out of these stylistic trends' without me ever having called them the last throes of bourgeois decadence. Or, even worse, formalism with no ethical stance.

Who needs labels here?

Ivan, Ivan, where are you?

Today we are very far apart. (It is strange for me to tell this to you, because it was me who always wanted to get closer to you.) However – and I have taken a note of this – (and ever more so, because I am standing so alone, all by myself in painting), I have very little communication with other people too.

Letter in the Documentation Centre of the Art History Research Group of the Hungarian Academy of Sciences, Budapest. MKCs–C.–I. 52/37.

Moholy-Nagy's letter to Lajos Kassák¹⁷

22 February 1922, Lützow-Strasse, Berlin

Dear Lajos Kassák,

Here I am sending a few Russian photographs (6). We are going to send the article in a couple of days. First we have to translate it from Russian into Hungarian.

The article was written by Ilya Ehrenburg. A Russian book was just published now by *Helikon* Verlag. It is an interesting book, in the next few days I am sending you this one too.

I could not as yet have sent you the *L'Esprit nouveau* [the French periodical] since – although I have already sent them all the numbers of the previous year's series as exchange copies – they failed to send their numbers. If I have to wait much longer for them, I am going to put in a complaint and request concerning them. Somehow I will be able to settle this issue.

Re Tatlin: in processing the monument for the 3rd International, care must be taken *to erase* those lines which start out from the upper left corner of the photograph.

I have not as yet received the Puni Number.

Otherwise, there is no news. We are waiting for the spring, then, at least you don't have to heat. Your last two portfolios don't even compare with that material which was in the pictorial architecture portfolio. I don't like these, the pictorial architectural stuff was very beautiful. What are Uitz, Bortnyik doing?

I am waiting for your answer concerning the matter with Klee.

And you also became very silent concerning the date of the publication of the anthology, although they are bothering me here a lot, and there is no lack of nasty looks.

I have also asked you at least 4–5 times, what are you going to select from my material for the anthology?

My heartfelt greetings to all of you,

Moholy-Nagy

It seems to me that we have to give up on having the Hausmann cliché.

Letter in the possession of Gábor Mezei

At Work in the 1920s

Sophie Lissitzky-Küppers:

After work he [Lissitzky] met with his friends, either in the Romanisches Café or in the studio of László Moholy-Nagy, whose wife Lucia was a clever woman who took a great interest in her husband's theoretical work and helped him a great deal. Raoul Hausmann, Hannah Höch, Hans Richter and Werner Gräff (who was at that time a young motor mechanic) used to congregate in the studio. They had discussions, made plans, took up all new ideas eagerly and worked on them, each according to his particular talent. Lissitzky always used his unerring pencil to demonstrate any idea put forward by him.

*Sophie Lissitzky-Küppers, El Lissitzky:
Life, Letters, Texts. London, 1968, p. 26.*

El Lissitzky:

A short time ago it was possible to see the Hungarians there. Due to the impact of the Russian Revolution, their art developed through our influence. Moholy-Nagy transcended German Expressionism and is attempting to arrive at construction. From the worn-out, Medusa-like non-objectivity of the Germans, the pure geometry of Moholy and Péri emerges. They go over into space and into the material from the painted constructions on canvas.

Veshch, Objet, Gegenstand, 1922/3.

Hans Richter:

The *MA* publicized the names of two young Hungarian artists who were searching for a home in Berlin: Péri and Moholy. Although their works are less revolutionary as compared to the exhibited Russian pieces, they still were on equal plane and bore witness to that total transformation of art which unfolded in this agricultural part of the disintegrated Danube-Monarchy.

*Foreword to the Catalogue of the
Exhibition Avantgarde Osteuropa.
Berlin, 1967. p. 21.*

El Lissitzky:

Locarno, 2 March 1924

If Moholy had not elaborated the publication plans in the Bauhaus,¹⁸ I would advise them to include, in the section 'Variety, Circus, Theatre', a piece on Church Theatricals – and I don't just mean the Catholic church. We shall do that another time in *Merz*. Only, he is not to blabber too much about it for the time being . . .

*Sophie Lissitzky-Küppers,
Op. cit. p. 40.*

El Lissitzky:

16 May 1924

. . . When you write to Moholy, please not much about me. Regarding the little book on typography,¹⁹ write him that I am busy just now with something quite different. But it is possible that I will also manage to fit this in. I should like to know the format of the publication – or best of all, see what has already been published. In any case I will collect material (for the illustrations). Therefore ask Kurtchen to cut out for me some pages from his periodicals which are characteristic examples of typography (especially from the early dadaist literature).

Sophie Lissitzky-Küppers, Op. cit. p. 50.

El Lissitzky:

16 October 1924

...By the way, I was told that Moholy is also preparing a book on 1914–24,²⁰ in which everything before 1920 is treated as mere fertilizer for the Bauhaus, which then accomplishes everything and surpasses all that has gone before. Jolly little idea, what? Scurrilous, sculdug-gery!

Sophie Lissitzky-Küppers, Op. cit. p. 53.

El Lissitzky:

Moscow, 15 September 1925

... Well now ... regarding the Man Ray photos.

I thought that Moholy would be more careful after the remarks by Kemény in *Kunstblatt* and *G* and would only deal privately with stuff he has filched, but he is getting brazen.²¹ Here are the facts for you:

1 1921–2. When I went to Berlin and met Hausmann in Moholy's studio, it was decided to publish a periodical. I made out its programme dealing with *productive*, not reproductive, achievements. At that time Moholy still had no *special subject*, I drew his attention to *photography*. He was just preparing his first exhibition for *Der Sturm*. Neither Hausmann nor I took him seriously. At our next meeting Hausmann showed us some cuttings from American periodicals about optophonetics. There were *two abstract* photos among them, to which I drew Moholy's attention. I am not sure whether they were by Man Ray, because his name was not yet known to any of us.

2 Spring 1922. Dada Conference in Weimar. Tzara tells about the *Champs délicieux*. Subsequently displayed a few pages in Berlin and Moholy was extremely interested in their style of production and got all possible information out of Tzara.

3 In the meantime, in 1922–3, he had got to know Loeb, and acquired further knowledge. He went to these people and saw the photos by Man Ray because they were preparing an issue. Moholy did a series of 'abstract photos'!

4 When the issue was being put together, Moholy suppressed the things by Man Ray (after all he was far away ... in Paris), and he soon got rid of Loeb-Josephson. From Man Ray's photos he selected those which did not too strongly resemble his. Then he spiked the article by Man Ray, and himself cooked up an intellectual hotchpotch of all our slogans. And thus he feigned an achievement. Losovik, who was the translator for *Broom* and also translated Moholy's writing, told me all this. Neither Loeb nor Josephson, Losovik nor I thought any more about it: for it is in fact the same thing as saying that Richter discovered the abstract film.

5 In *Das Kunstblatt* (current year of issue, first appearing here) Harold Loeb saw an article 'Photographie ohne Apparat', with four illustrations, where the subject is very lucidly dealt with.

So you have the witnesses – Hausmann, Tzara, Losovik, Loeb, Lissitzky – but they are not required at all. One should look at the work itself. Moholy wanted to demonstrate to us that Man Ray is a dadaist: objects, no representation of light, etc. But Moholy created an abstract light-pattern. The *artistic merit* of the discovery is something completely created by Man Ray. He reaches the point of perversity in his complete abstraction of light. The underlying theme is both eccentric and American. There you have something of merit, and it has character too, even in its weaknesses, because it is alive.

What has Moholy contributed to it? Light? It has been left in the air. Painting? Moholy doesn't know the first thing about that. Theme? Where is that to be found? In order to concentrate, you've got to have a focal point. Character? That's the mask they always hide behind. It's idiotic of me to be taking this Moholy business so seriously, but this plagiarism is already getting to be too bare-faced.

Sophie Lissitzky-Küppers, Op. cit. pp. 66–7.

Aurél Bernáth: A letter from Berlin²²

January, 1923

Moholy Nagy received me cordially. Of his paintings – well, my God – of those I cannot say anything good. Glass architecture. Imagine one hundred canvases – for he has at least that many – and as if they would have been painted, all hundred of them, with beautiful colours but in glass. Only the forms are varied. If you have looked at all hundred of them, I can assure you that you are going to leave with a unified impression of the lot. Not one offers more than any other. Of course, all this can be easily stuffed full with a theory. Especially with that theory according to which these paintings are the braille readings of the new form. Ultimately, however, all this degenerates into a routine play. After all I had seen the way he works: he does four of them in one sitting and does not stop until he is finished with the fifth. That is the moment when I really feel desperate, since he is dancing around them as if they would be the expressions of the communist world view. If the world could be saved this way, that would be a real easy way to do it. [. . .]

Next day there was a big meeting of Hungarians at Moholy's. Komját, Rosinger, Péri, Kállai, Székely – some with their wives. The discussion was on Constructivism and about resurrecting the periodical *Egység*. Full of bellowing asinities, the discussion sometimes took interesting turns. What is important: Komját wants to publish the periodical anew on a much wider basis and here, but regarding painting, he doesn't want himself to be tied down to Moholy-Nagy. During the discussion it became clear that he and Rosinger as well are fed up with it; neither their bodies nor their souls are willing to take it any longer.

*Aurél Bernáth, Utak Pannóniából.
Budapest, 1960, pp. 362–363.*

Excerpt from an Obituary Notice by Paul Citroën, Pupil of Moholy-Nagy's

Like a strong eager dog, Moholy burst into the Bauhaus circle, ferreting out with unfailing scent the still unsolved, still tradition-bound problems in order to attack them. The most conspicuous difference between him and the older teachers was a lack of the typically German dignity and remoteness prevalent among the older 'Masters' as all Bauhaus teachers were called. He never asked what was the impression he made, or whether what he had to suggest would affect anyone's ego. He knew neither toga nor cothurnus in his relationship to students, and when first he was often mistaken for a student, he was delighted.

We who had been already several years at the Bauhaus were often sceptical of so much innovation, aware of intrigues, jealousies, personal advantages; and we certainly never did any work if there was the slightest danger that anyone else might get credit for it. Moholy was totally uninfluenced by these modifications of our enthusiasm. There never lived anyone more devoted to an objective cause. His high opinion of the importance of the Bauhaus remained unimpaired, and he devoted himself to it with such fervor that we started to discuss his possible collapse. But as a newcomer he got no credit. Many of us used him for our own advantage and burdened him with tasks we ourselves should have solved. But, with the smiling enthusiasm of a child, Moholy accepted all demands, and his vitality seemed unlimited.

*Sibyl Moholy-Nagy, Moholy-Nagy: Experiment in Totality.
Cambridge, Mass., 1950, pp. 39–41.*

Moholy-Nagy's letter to Alexander Rodchenko

László Moholy-Nagy

Weimar /State Bauhaus

18 December 1923

Dear and esteemed Comrade Rodchenko, we are planning to publish a series of brochures which will deal with current issues of today.

The relatively ephemeral format of the brochure permits us to have a lively and eventful programme that would cover every creative field; besides this it will give us a chance to have various specialists to tackle each individual problem, in a manner that would make it possible to generate smaller discussions.

I thought the first publication would be a discussion of 'Constructivism'. Although the term here, in Germany, became very well known in recent times, very few people have a clear idea of its meaning. Therefore we would be very happy if you could explain your own or perhaps the Russian interpretation in general pertaining to this question, in a short article.

We sorely miss the co-operation of our Russian comrades (those who are living in Russia), and we are not quite sure that statements made and positions taken up by Lissitzky and Gabo, who are known here, are representative of the opinion of all the Russian artists.

For this very reason we would like it if your opinion would not be limited to just the problem of Constructivism, but if you could select some particular problems for discussion and definition from the tentative programme here attached.

It would bring us extremely close to our goal – which is to give a summary of all that is contemporary – if you could ask other estimable comrades to co-operate with us and could stimulate them to write articles.

Thus we could hope to have some comprehensive and cohesive picture from Russia, instead of occasional news and individual incursions. We would like to have the articles in German and look forward to receiving your quick answer.

With cordial greetings, Your
László Moholy-Nagy

A tentative programme for a series of brochures

- 1 Discussion: Constructivism
- 2 The new life-construction
- 3 On new creation (specific issues)
- 4 On new creation (in general)
- 5 Photography
Film, new film-scripts
- 6 New advertising (typography and film too)
- 7 New issues of education
- 8 Constructive biology
Prospects of the development towards a new medical science (natural and institutional healing)
- 9 Review of currently published periodicals
Suggestions for a new correct periodical
- 10 A survey of our age (1908–1923)
- 11 Specific political issues
- 12 Specific economic issues
- 13 Specific scientific issues
- 14 Specific technical issues
- 15 Specific issues of art
- 16 Organization (as one of the most important issues)
- 17 Art and propaganda
- 18 Architecture and painting
- 19 America and Europe
Americanism and Europeanism; American problems
- 20 The relationship between continents
Constructive geography
- 21 The Far and Near East (treasure-house of the world)
- 22 Music. Mechanical speech and game-machines
Electric shows
Synthesis of sound, light, form, movement and scents.
Theatre, circus.
- 23 Architecture (city, private, ship etc. construction)
- 24 Problems of glass and other materials as pertaining to new physics and chemistry
- 25 The workshop work of the arts painting
construction with various materials
- 26 The literature of individual languages: Russian
peoples: German
Hungarian
French
American etc.

- World language
- Constructive philology (Jespersen, Scheffels)
- 27 Religion, philosophy, metaphysics
- 28 The origins of modern creative movements

- in Italy
- in France
- in Russia
- in the Netherlands etc.

29 New inventions (of practical functions)

30 Utopia

Naturally we are expecting suggestions and writings from all those who are standing on the principles of *today*.

L. Moholy-Nagy

Weimar

State Bauhaus

Published in Hungarian in:

Katalin Bakos, 'Moholy-Nagy László 1923-as,

Alekszandr Rodcsenkóhoz írt levele.' Ars Hungarica, 1977/2.

Telephone Pictures

In 1920 Richard Huelsenbeck published the *Dada-Almanach*.²³ Whether Moholy-Nagy, just arrived in Berlin, read the book, I am unable to say. Judging by the state of affairs in general and his poverty and language difficulties in particular, it appears doubtful. He may thus have been unfamiliar with the thesis of the Dadaists, who claimed that a good painter must be able to order his pictures by telephone and have them carried out by a cabinet-maker. This thesis, reflecting the spirit of the time, might, even though subconsciously, have been potentially effective in Moholy-Nagy's mind when, in 1922, shortly before – not after – his appointment to the Bauhaus, he began thinking of ways and means finally leading up to his enamel pictures.

Having embraced Constructivism as his artistic creed, he was anxious to find out in what way the effects of colour were dependent on the size of a painting. He thought the best way to solve the problem was by studying, side by side, several paintings of different sizes, but of identical colours and composition. His efforts were soon to reveal that manual methods were not equal to the experiment, not even when compasses, colour charts and graph paper were used. Taking the view that industrial methods might be employed to serve artistic needs, he made enquiries in the appropriate quarters and soon found an enamel factory willing to produce the panels he wanted. The foreman, having received accurate instructions relating to colours, measurements and other particulars, promised to execute the order with the utmost care and precision. Moholy-Nagy, in spite of his natural gifts for confidence and optimism, was tense with impatience and expectation for a few weeks to come.

When the panels, carried out in an enamel technique on a metal base, among them three different sizes of identical colours and composition, were finally delivered, Moholy-Nagy was satisfied, more than satisfied: he was enthusiastic. His wishes had been complied with, his ideas had taken on tangible form, his self-assurance had received a new uplift. His buoyancy exceeded all bounds. I had not seen him in a comparably exalted state for a long time. It did not surprise me, therefore, when, overcome by emotion, he exclaimed – I distinctly remember the timbre of his voice on this occasion – 'I might even have done it over the telephone!'

Sibyl Moholy-Nagy, Moholy-Nagy: Experiment in Totality.

Cambridge, Mass., 1950, pp. 43–44.

69, 70

Alfred Kemény: Comments

In the March issue of *Das Kunstblatt*, Paul F. Schmidt wrote in his article on Constructivism that Suprematism is 'principally represented by Moholy-Nagy'. On the contrary, it must be noted that Moholy-Nagy has nothing to do with Suprematism. Suprematism is the lifework of the Russian artist Malevich and belongs among the most significant artistic movements of today. Suprematism has attained a maximum of creative potential, of the inherent necessity of creation; Moholy-Nagy has achieved a minimum of creative potentiality and one sees in his work the maximum of non-creative aesthetics, of external and contrived sterility. It is worth

noting that Moholy, who thus far has employed Constructivism for objectively unwarranted self-promotion, now, in 1924, makes his appearance as a Suprematist, whereas genuine Suprematism in Russia came to an end once and for all in 1919. Moholy, however, who is eclectic and derivative, has a similarly insignificant role within the essential outcome of new Constructivist art as within Suprematism. Competent Constructivists fulfil the present-day requirements of the age of technology and the demands of the times, which compels them to achieve economy and precision. Moholy merely represents the outward organization-fetishism of a poor intellect – without economy and precision.

'Bemerkungen'. *Das Kunstblatt*, 1924, No. 6.

Moholy-Nagy's letter to the Editor of *Das Kunstblatt*

Weimar, 1 July 1924

Dear Mr Westheim:

In the last number of your *Kunstblatt*, Alfred Kemény takes issue with an article by Paul F. Schmidt in which I am characterized as a representative of Suprematism. Kemény uses this classification, which, by the way, was used by Schmidt without my knowledge, to accuse me of eclecticism, plagiarism, and self-promotion under false creative pretenses. He analyses my 'sterility,' the lack of 'economy' and precision in my work, and the 'general incompetency of my artistic efforts'. But this is irrelevant to what I have to say.

Kemény was once my closest friend and co-fighter in the days of the Hungarian MA movement. For purely personal reasons he has become a bitter enemy who vents his anger through public denunciation of my painting. Returning from a visit to Russia only two years ago, in 1922, he wrote that only the work of Péri and myself among the young generation could compare with the maximum achievement of Russian art.

But I am totally uninterested in whether or not Mr Kemény questions my originality; whether he or anyone else labels me Suprematist, Constructivist, Functionalist, etc. Many years ago, at the very beginning of my life as an artist, some comrades and I warned in an article in *MA* against these catchwords. Classifications are born by accident, through a journalistic quip or a bourgeois invective. The living force of artistic development changes the meaning of the term without giving the artist a chance to protest his false identity.

Kemény states that I have 'contributed nothing to the task of finding for our time a visual expression commensurate with its technological and economic urgencies.' It is not for me to decide this, nor am I interested in the decision. My work at the Bauhaus is concerned with translating my concept of contemporaneity into form and word. This is so big a task that it leaves me no time to worry about its interpretation from without. Whatever the quality of my oil paintings and my sculptures might be, I am satisfied that I am given the privilege – rare to anyone – to translate revolution into material reality. Compared to this task, the fiddling of Kemény and others about priorities is quite irrelevant. A few years from now the selective principle of quality will decide upon our endeavours, and no catchwords or personal enmities will influence this selection.

Sincerely yours,
Moholy-Nagy

Sibyl Moholy-Nagy, Moholy-Nagy: Experiment in Totality.
Cambridge, Mass., 1950, pp. 43–44.

Moholy-Nagy's letter to Antal Németh²⁴

18 July 1924

My very esteemed Sir,

As you can see I have faithfully answered every question of your questionnaire, although, while doing it, I was constantly thinking that it could be somewhat difficult to glean any meaningful information from the answers without knowing the person who answered them.

And then not every question was penetrating enough to get to the heart of the matter.

I for one would ask these questions by all means:

How do you relate to the artists and the art of the past?

How do you relate to the present?

I was born on the Great Plain, in 1895. My educational background: gymnasium [secondary school], and I have completed the course requirements in the law school of the university.

I have been drawing since I was 6 or 7 years old, and I started to write poetry when I was 12. I wanted to become a writer, and regarded Dostoevski as 'the writer'. I made colour crayon sketches during the war. Mostly on postcards. A friend of mine, to whom I sent a few of them as greetings, was absolutely enchanted by them. The praise made me feel good. My drawing practices, which until then just helped to pass the time, became more regular. After I was wounded and came home, I gave up on my literary aspirations. In the evenings I visited a free art school of life drawing, in the daytime I was drawing feverishly landscapes, figures, portraits. The regular exhibitions of *MA* and its intellectual movement of decisive importance became the criterion of my work. My conversations and discussions with Nemes-Lampérth and Uitz cleared up some of my misconceptions and completed my imperfect ideas.

In this period I spent all my money on art books and I was studying their illustrations all the time. I studied the old masters, the new ones, whatever came into my hand. Until 1920 my works were experimentations under the influence of the *MA*. It was from 1920 on that the individual character of my painting, sculpture and of other works started to evolve.

My intellectual development was first influenced decisively by *Nyugat*. Later the *MA* movement influenced me and so did Western Europe's enormously significant cultural potential and civilizational structures, eye-openers for a Hungarian; these make a Romantic sliding back into the culture of the past as well as the nationalistic separation from those factors which shape the world today virtually impossible.

Answers to theoretical questions.

Right now, if in a state of great emotional upheaval I cannot work. However, I doubt if anything could influence the direction that my work has taken or my views concerning art and creation. [...] However, it happened many a time that I was compelled to re-evaluate a so-called 'ugly' colour as harmonious in its interrelationships with other colours. In such a case the motive of employing an 'ugly' colour can of course be controlled. Most of the time, however, I arrive at a work-problem and its realization without having had any outside impetus that would lend itself to analysis.

[...] Out of the fifteen to twenty basic relationships of a work, I can control, consciously interrelate with each other, or manage to arrange, only five or ten at the most.

Let us say that the conscious raising of a work-problem leads to the solution of that problem. By the time the work is finished, it turns out (perhaps) that by focusing on the basic problem, two or three other problems, which had been raised only by accident, were solved too.

The work of the artist can only be positive if it leads to *new* recognition. The problem of an interrelationship, waiting to be solved in an intuitive or conscious way, forces every artist to try his best to achieve a result. Subjectively, of course, it is conceivable that the *new* just springs out, *without problematics*, from the creator, but objectively the possibility of creating anything *new* is rooted in time.

If that set pattern of order which is expressed in the artist's work can trigger the same dormant sense of order in the spectator (in receptive man) to move into action, then the work of art fulfils its function.

My goal is to create contemporary works, in our time.

Moholy-Nagy

*Letter in the Documentation Centre
of the Art History Research Group
of the Hungarian Academy of Sciences,
Budapest. MDK-C-I. 10/611.*

Malevich's letter to Moholy-Nagy²⁵

12 April 1927

Dear Moholy-Nagy,

I have received your invitation to take part in a discussion about the article in *10* and having learnt its contents, I see that it deals primarily with defending painting, but not with the juxtaposition of photography with the latter.

There is an interesting passage in this article concerning me, in which I am in some way found guilty of holding heretical views on painting, and consequently on Art, and on the transfer to the mechanical type of production of plastic phenomena. I hereby make haste to deny the misunderstandings that have crept in. I have never supported and approved the dead mechanical glazed photographic objective and have never written in my theory against painting, on

the contrary, I have always upheld the painterly beginning as one of the elements of Art, as a complete plastic sensation of the painterly world, of course I insist on non-objective painting as such.

If the author feels that in my present works painting can be perceived, in other words an element of Art, this is proof that the sensations conveyed by Suprematist elements cannot be conveyed in any other way but through the prism of Art, which he understands as painting; but here I must mention that there is no painting in Suprematist elements, for under the name of painting I understand something else, i.e. the painting of Cézanne and the first stage of Cubism. The element of Suprematist planes is different, but we are not talking now about painting, but only about a method of Art, a spiritually organic means of conveying various sensations. And if it will be possible to convey the same sensations by the photographic method, then photography will become a similar technical medium such as the brush, the pencil, nothing more.

The question raised by the author of the article on photography and art would be meaningless at any other time, but it is obvious that the author has noticed at present a movement as though against painting, against Art. It is true that there cannot be smoke without fire; materialisation, mechanisation, 'lithographisation', 'photographisation', simplification, – are being put forward mainly by the Constructivists, and this is truly dangerous, inasmuch as the machine cannot express spiritual sensations, cannot be considered a good medium, when both brush and pencil are superlative to it in a technical sense, for through them various sensations can flow in all their force.

For the upholders of photomechanisation the printed square Suprematist plane (cf. the journal Merz) is enough, but for me this is a dead element and whatever montages may exist of photographed elements – as such they will be dead for Art; the contents of Art embrace various non-objective sensations and through them I keep in complete contact with the world.

With reference to texture: from my point of view it is irrelevant if observed in isolation, for it is not an aim in itself, but can be viewed only in the light of 'the spiritual excitation of the soul' as says the author of the article, I would add to this, that any excitation of the soul is produced by some sensations and is the direct result of that and takes on an appropriate texture.

Further on the author writes that 'thanks to the specific texture painterly visions of *lofty spirituality* fall immediately into the realm of the material concept of reality.' I should certainly argue this position, such a realm of material reality does not exist for me, only sensations outside the reality of their own conceptual world exist for me.

In this way, says the author, is created the intensity of inspiration; or, it is created because there exists a discrepancy between the painterly means and ideological aims with regard to their essential meaning and the means of their realisation.

With the New Art this point of view has become obsolete, for New Art is non-ideological, non-objective; to-day Art exists only as such, but intensity is not excluded, the intensity that depends on various sensations.

Regarding the fact that the author thinks that 'the more the surface of a picture abounds in types of texture, the more obvious is the inspired formative course of the painterly process', I doubt this very much, for the latter depends not on the number of different textures, but only on the most economical juxtaposition of contrasting moments in the latter.

Thus photography and cinema from my point of view are only technical new media, which painters must utilise, as in the past they used and even now they use bristle brushes, and graphite, and paint. They must become similar sensation-conductors as the pencil, charcoal and the brush.

If you are interested in my letter and find an answer to your questions you may publish the whole letter or some ideas I have noted down.

Kasimir Malevich

*Published in: Troels Andersen,
K.S. Malevich. The Artist, Infinity, Suprematism.
Unpublished writings 1913–1933.
Vol. IV. Borgen Vorlag, Copenhagen, 1978, pp. 157–159.*

Rodchenko on Moholy-Nagy's Photographs

The *Sovietskoye Foto* asked me to participate in the work of the periodical. I made a visit to the editorial office and asked them: 'Don't I owe your commission to the fact that you have

seen Moholy-Nagy's book?' 'That's right, yes, you owe it to that,' they answered. 'Moreover, we even have published some of his photographs in an issue, but then we thought we too have our leftist artists.'²⁶ *Sovietskoye Foto* likes especially those of my works which had appeared in the *Lef*. When I bring them new ones, they are received with silence.

Novi Lef, 1927, No. 6, p. 152

Moholy-Nagy's letter to Ulrich Hösel²⁷

11 January 1928

Dear Mr Hösel,

Please forgive us for answering your letter of December 22, 1927 only now. During the holidays, in the absence of colleagues competent in this field, response could not be given to your suggestions. Only after their return from a longer trip may we get back to your letter.

We kindly thank you for inviting us to take part with our photographic works at the *Pressa*.

Unfortunately, the Bauhaus, lacking the necessary financial resources, has so far been unable to establish a department of photography. All photographic and similar works were made on the private initiative of those who created them.

Since we would be most happy to establish in our institute a photography studio, we readily undertake to install an up-to-date photographic exhibition studio at the *Pressa*, should the necessary financial resources be placed at our disposal in the form of gifts or monetary means, on condition that the exhibition studio would then pass into our ownership after the close of the exhibition as a gift of the *Pressa* and the industry. Should this proposal be not feasible, we may organize a photographic exhibition in your establishment from the best works of our colleagues, if you would cover our financial expenses. (The exhibits might include: enlargements of cameraless photographs, photoplastics, photomontages and photographs taken with camera.) Naturally, our condition is that we ourselves also design, furnish and equip the room.

If these tentative proposals are agreeable to you, we would be more than willing to submit detailed suggestions. The most suitable, of course, would be if personal talks could be conducted in this matter, and we at Dessau will be glad to be of service. Given certain conditions, it is also possible that Mr Moholy-Nagy contact you in person.

Yours respectfully,

M-N.

*Draft of a letter in typescript.
Property of Hattula Moholy-Nagy*

Moholy-Nagy's Letter of Resignation to the Meisterrat of the Bauhaus

For the Bauhaus begins now a time of stabilization conditioned by the length of its existence. As a consequence of the growing scarcity of money, it is demanded that it be productive, efficient – today more than ever.

Even though human and pedagogical considerations are not eliminated intentionally, they suffer because of this stabilization. Among the students, this reorientation is noticeable in their increased demand for technical skill and practical training above anything else.

Basically one can't object if human power wants to measure itself on the object, the trade. This belongs essentially to the Bauhaus program. But one must see the danger of losing equilibrium, and meet it. As soon as creating an object becomes a specialty, and work becomes trade, the process of education loses all vitality. There must be room for teaching the basic ideas which keep human content alert and vital. For this we fought and for this we exhausted ourselves. I can no longer keep up with the stronger and stronger tendency toward trade specialization in the workshops.

We are now in danger of becoming what we as revolutionaries opposed: a vocational training school which evaluates only the final achievement and overlooks the development of the whole man. For him there remains no time, no money, no space, no concession. I can't afford a continuation on this specialized, purely objective and efficient basis— either productively or humanly. I trained myself in five years for a specialty, the Metal Workshop, but I could do

this only by also giving all my human reserves. I shall have to resign if this demand for specialization becomes more intense. The spirit of construction for which I and others gave all we had – and gave it gladly – has been replaced by a tendency toward application. My realm was the construction of school and man. Under a program of increased technology I can continue only if I have a technical expert as my aide. For economic reasons this will never be possible. There is always money for only one of the two. I exerted great effort over these years to make the expert unnecessary. I can't give more than I gave so far; therefore I have to relinquish my place to him. I am infinitely sad about this. It is a turn toward the negative – away from the original, the consciously willed, character of the Bauhaus.

The school today swims no longer against the current. It tries to fall in line. This is what weakens the power of the unit. Community spirit is replaced by individual competition, and the question arises whether the existence of a creative group is only possible on the basis of opposition to the *status quo*. It remains to be seen how efficient will be the decision to work only for efficient results. Perhaps there will be a new fruitful period. Perhaps it is the beginning of the end.

Published in: Sibyl Moholy-Nagy, Moholy-Nagy. Experiment in Totality. New York, 1950, pp. 46–47.²⁸

Dialogue between a Well-meaning Critic and a Representative of the Bauhaus, Weimar-Dessau²⁹

1928 (?)

This is how a well-meaning critic sees the development of the Bauhaus:

During the first phase at Weimar, the Bauhaus started with a kind of programme which today seems to be outdated and which already at its inception was considered outdated: namely, the programme of revival and refinement of the handicrafts and of a communal life similar to free-masonry.

The actual productive period followed only later: the investigation of form and function, material and purpose; the refinement of house building, of forms for functional objects and ornaments; the refinement of thinking and of ways of life.

Results: clear, rational forms –
materially and technically carefully considered working-methods –
development of human qualities –
increased pedagogical values of collective work –
beginnings of a sensitivity for social questions.

This was the beginning of the Dessau and the Weimar period.

To a certain degree, a valuable period had ended when the Bauhaus living-quarters and the school buildings were completed.

The Bauhaus undertook to perform a task for which time was ripe. It gave the decisive impetus to a transformation of types of housing and, concurrently, the ways of life. This work began to show its external effect; it became visible both in the industrial products and in public taste. The matter gained momentum and would have continued – with or without the Bauhaus.

The Bauhaus fulfilled its laboratory purpose: it encouraged industrial development.

An outsider, however, could not have detected the end of this phase. The Bauhaus continued its work in much the same manner. They attempted to 'stabilize' earlier results.

(‘Stabilization’ is always dangerous since it signals the lack of new blood supply.)

So far, the Bauhaus was attacked only by its enemies; now even its friends are beginning to pass judgments. Within itself, this is a healthy process. The criticism of the Bauhaus members themselves is also a good thing. Covertly or overtly, the social utilization of the achievements attained became imperative.

Yet the leadership of the Bauhaus did not listen to this criticism. They could not have acknowledged this, owing in part to their public financial obligations. But they did not even truly feel the legality of the judgments.

Critically assessing, the following matters should have been weighed and considered:

Work should have been concluded with the consideration that particular results had been obtained and a type of work finished which cannot be further continued. It should have been stated that within the construction of houses and in matters pertaining to it, certain bases for reorientation had been created. For any further development of the necessary social aspects of these results, a public institute of a capitalist state cannot assume responsibility.

The aim of our experimental work was not to produce objects which could only be purchased by the rich, for today this is indeed the case. On the contrary, we want standard products for common use.

Since, however, there are economic obstacles impeding our path, we have to relinquish our future work, in fact, suspend it until an appropriate time presents itself for a new universal orientation.

On the basis of rational understanding, what H[annes] M[eyer] is now saying should have been stated previously. That which is obscured by economic prosperity or personal motives, could still have been regarded back then as a sound stand taken with clear-sighted judgment.

They could also have clearly elaborated what the truly positive results of the Bauhaus activities were; whereas today, H. M., in his statements, in a certain demagogue manner, pushes into the background even the dynamic years of work done at the Bauhaus, its results and also its incentives.

Since all this was neglected then, the people at the Bauhaus now have jeopardized themselves by being labelled as overly cautious, as though it greatly matters for them what their connections are with the authorities and with the rich, or are even thought to be secret reactionaries.

What H. M. says is *not correct*, but this is still not reason enough to assert that it is entirely incorrect. This is why the standpoint cannot be formulated in just a few words.

If we wish to do something to counter the attacks of H. M., we must not go into details, but rather let us consider the essence:

It must be explained that historical changes do not have only one centre of gravity. There are people whose efforts are most effective in particular segments of a field. Thus, the Bauhaus has also chosen for itself a particular sphere, so that it could be effective there, and has encouraged its members to exercise their energies in the field of housing construction and in objects made for general use. What has not been said out loud thus far should be voiced: 'Our products have become objects of luxury, accessible only to a few and we regret this. This was not our intent. Nevertheless, we do hope that from the inspirations of the Bauhaus, such results will come forth as will be useful to a new social order. We believe that the intellectual energy, organizational and pedagogical work which we invested in a particular area will still be able to find its appropriate place within the great overall process of social transformation.

'We are convinced that the foundation of the so-called "formalistic" revolution is that type of intellectual process which in its effect may far surpass the "formalistic" element, once the products are properly utilized.'

The representative of the Bauhaus at Weimar-Dessau replies:

It is an error to judge the beginnings of the Bauhaus as negative. The start does not decisively determine further development; it may be steered by sheer momentum into an entirely different direction.

It would be a mistake to say that after the Dessau buildings had been completed the Bauhaus lost something from its liveliness. On the contrary: it was only then that its real activity began. Students became teachers – big struggles were fought, as a result of which the Architectural Department was established and Hannes Meyer was invited as Chairman.

It would be a mistake to assert that the Bauhaus leadership resisted all types of criticism. Gropius always listened to every criticism; in fact, he often went so far as to invite people to the Bauhaus whose views were opposed to the Institute.

Actually, Gropius left himself open to every form of criticism to the extent that, because of this particular characteristic of his, many Bauhaus members accused him of 'impressionability'.

It would be a mistake to say that we should have withdrawn from the scene with a manifesto. We did not at all feel that the work of the Bauhaus was completed, there was still an enormous amount left undone: the projects with which we were involved had still not yet reached the intended state. We did not even work out a well-furnished living-room – a living-room which is as satisfactory and standard as a bathroom or a toilet today.

It is an error to believe that any object is realized immediately in its most adequate form. On the contrary: it has to go through a long developmental process before arriving there. Ten years is a short time for such plans.

Furthermore, it must also be noted that work within the Bauhaus was not purely of a laboratory nature; it was also pedagogical. The Bauhaus as a *new type of school* was of utmost importance.

The student of the Bauhaus – at least during the Weimar period – was freed of the dependence on his parents within a few months; as soon as he began his apprenticeship in the workshop, he received a modest hourly wage for his work.

The situation which arose was that after all the student was learning, yet he still did not have to pay for it; on the contrary, he was paid instead. Though still a student, he was permitted to participate in difficult experimental works; from the start, he was initiated into the central Bauhaus activity. From the point of view of the Institute: difficult modelling works were done primarily by apprentices who furthermore received a wage. In spite of all this, the Bauhaus was required to manufacture a surplus as well. In short, it worked under most extreme, contradictory conditions.

Additional contradictions: in the long run, the central experimental function of the Bauhaus fulfilled a social purpose, namely, the development of prototypes of general validity, to be mass-produced by industry. However, in the initial phases of modelling, these were so expensive that only a few rich people were able to buy them. The purpose of the criticized 'production of luxury items' was entirely different; the luxury product itself was merely an intermediate link which was to further development towards becoming an object of everyday use.

The interjection of the critic:

Could not this course of development have been shortened if some members of the workshops were sent to work in factories, so that there they would be able to learn thoroughly the working process? Would it not have been more useful also for the apprentices if they had first been acquainted with the working process and not at once forced into working in modelling?

Answer:

We sought to establish working connections with industry, and though industry presented rather serious obstacles, in numerous cases we actually accomplished them. For example an extraordinary prosperity resulted in the weaver's workshop when some people went over to work in textile mills, dyeing-factories, etc., and later returned to the Bauhaus.

It would be an error to say that, after having recognized that his 'mission was finished', Gropius should have handed over the directorship to someone else who would have been more suitable for the development of the social aspect of the issues. For Gropius, above anyone else, is best suited to direct such a task. He is flexible, at the same time he has all the qualities of a leader, and it would be unfair to doubt his commitment to social issues of our times. One must not boast, as H. M. does, about the cheap housing construction, since we had previously already surpassed the level of low-cost standards.

Objection:

Is a worker able to afford as down-payment the 1000 Marks?

Answer:

If we consider the sum of 1000 Marks as a loan, the apartments are still inexpensive.

Objection:

May a worker obtain a loan?

Answer:

In my opinion, the purpose of the whole thing is for H. M. to alienate his predecessor, to a certain extent his rival, from the proletariat.

The critic:

If the artists wish to establish contact or believe that they do have contacts with the proletariat, while at the same time, some from those same circles doubt this, then why do they not discuss this whole situation directly with each other?

Answer:

The reason is that within politically-oriented persons a particular preconception exists according to which they are able to manage without the so-called 'intellectuals'; for they deny the importance of intellectual work, and they forget that their whole revolution would be impossible without intellectual work.

Those who attack us most vehemently, those with whom we should attempt to reason, were mostly intellectuals themselves, yet they are much less tolerant and understanding than others in these questions. In short, such a discussion would end with our establishing that we are thinking differently and because of this are unable to understand each other.

The critic:

Impossible! For those who *really* have a common goal *must* be able to understand each other!

*'unterhaltung zwischen einem wohlgesinnten kritiker
und einem vertreter des bauhauses weimar-dessau.'*

Original typescript in the possession of Hattula Moholy-Nagy

1 *The Rebellion of Fishermen* (in Brittany), based on a film story by Ehrenburg.

The life of the fishermen of sardines depends on the price policy of the heads of trusts.

Strike.

Fishing.

The factory refuses to accept the catch.

The fishermen sail out in the hope of marketing the catch elsewhere.

Storm. Shipwreck.

The wives of the sinking fishermen rebel, they want to destroy the factory. Meanwhile, the fishermen are rescued by the guards of the lighthouse.

Outbursts of joy. In the meantime, the gendarmes occupy the factory: the following day work continues in the factory under their supervision.

The script (silent version) is completed, also the props and the budget estimates, so that filming could begin immediately. It is easily adaptable for the sound film.

The manuscript was originally purchased by the Prometheus Society (Schalito).

2 *From Saturday to Monday*. The issue of days of rest, of vacation, holidays and Sundays. Weekend in the big city.

Obstinate struggle for the compensation of the working-time. People mostly expend their energy in finding the appropriate method. Behind the scenes of the 'entertainment industry' controlled by a few, there rests the life of the miserable proletariat.

The purpose: The well-spent and balanced week. A normal day without any strain exertion. Spiritual and physical harmony. The hard road leading there. Sport- and club collectives.

3 *Cement* (based on the novel by Gladkov) or *Laktosoy*: the building of a new factory with the participation of the entire community. In spite of the utmost individual efforts the factory is not working efficiently. Specialists are lacking and those from the factory try to find specialists. Arrival of the contracted engineers.

Specialists without dynamics.

Stratagem of the workers and factory women to stimulate them to do enthusiastic work. Parallel to this are the internal difficulties of the community. Repeated failures. Apathy.

An external evaluative tour of a committee. Exchange of men and experiences.

The work moves along smoothly. [. . .]

4 Temporary proposal for the film *Berlin's Stomach*, or *The Stomach of a Big City*.

The film intends to depict different yet interlocking scenes:

1 The resources of a big city. Immense contrast between the volume of accumulated goods and the insignificant buying power of the populous classes.

2 The way in which different food supplies, the various parts of slaughtered cattle reach the consumer.

3 Contrast between city and country, peasant and proletarian.

4 Optimistic solution to the city's problem contrasting peasant selfishness with collective proletarian solidarity.

The subject offers an opportunity for numerous situations not treated thus far in film to be presented:

Birth of animals in the village, major animal transports, the arrival of fruit and vegetable supplies into the city. The organization of slaughter-houses and other plants for public supply. Market-halls. Canning factories etc. Presentation of the social situation from the point of view of nutrition.

Draft of a script completed.

Sound film.

5 *Theatre film* (sound film), the preparation of a stage performance, the realization and effectiveness of the concept, the sequence of the simultaneous rehearsals and performance. The purpose of this film is to clarify the boundary problems existing between the film and the theatre.

6 *The Feverish House*. Cross-section of a tenement house. The social milieu. Prevailing conditions. Consequences. Insight into possibilities of their prevention during a court hearing.

7 *A film on unemployment*. Zero-two-zero-zero-seven.

8 *The Life of a Street*. The duration of two years.

9 *Painters during summer and things they are unable to see*.

10 A few themes for comedies:

'Once a Chicken, Always a Chicken'

'Everyone Has a Bee in his Bonnet', etc.

'ton- und stummfilmvorschläge.' Handwritten note from the bequest of the artist
in the possession of Hattula Moholy-Nagy. No date. After 1928

László Moholy-Nagy: Marseille

It is so terribly hot one might think that even the streets would melt. And yet the masses of people still flow endlessly to and fro down the wide Cannebière. The streetcars are ringing, the cars are congesting and amidst them is a funeral procession passing slowly down towards the old harbour. The coffin is carried by six women, the hearse is decorated with special artificial flowers made of gauze and with sacred relics, of the type you can find only in the countryside, to honour the Virgin Mary and on the Feasts of Holy Communion. Struggling and shoving along in the traffic, the mourners dressed in black advance in a procession in the scorching heat of the sun.

Down in the harbour, everyone who is not required by an urgent job to keep busy and moving lies on a wooden plank in the water or on the shore. Dazzled by the sunshine, with eyes closed, they doze through the hours of noon. Boats by the hundreds are rocking and there, above them all floats and radiates the famous Pont Transporteur. Inexhaustible, to and fro, from one shore to the other, it makes its way across and strangers admire and value it for its beauty. This suspended bridge is truly a wonder of technical precision and elegance. The fine-lined steel structure supporting on its long steel beams the 'wandering' bridge is a remarkably attractive sight, and time and time again it is a delight to see as the slightly rocking and swaying suspended vessel crowded with people once again begins its crossing above the water to the opposite side.

The heat of noon becomes so intense that, with a somewhat wobbly head, one staggers home, sits in a shady café and spends the two hottest hours observing people passing by. In fact, the people of Marseille are not attractive, there hardly exists one who does not seem to have some sort of a moral or other flaw imprinted on his face. There does not seem to be one without an occasional scar around his ear or eye informing of past conflicts. It is natural that a seaport is the meeting-ground for all types of people from all walks of life, who, having ruined their lives in other cities, attempt once again to try their fortune here. However, the girls do have a nice way of walking and their hips are attractive and perhaps it is precisely in the most scorching heat that the city reveals its most authentic features, for people are far too languid to maintain self-control.

*German manuscript in the possession of Hattula Moholy-Nagy.
No date. Around 1929*

In Answer to your Interview

- 1 What should you most like to do, to know, to be? (In case you are not satisfied.)
- 2 Why wouldn't you change places with any other human being?
- 3 What do you look forward to?
- 4 What do you fear most from the future?
- 5 What has been the happiest moment of your life? The unhappiest? (If you care to tell.)
- 6 What do you consider your weakest characteristics? Your strongest? What do you like most about yourself? Dislike most?
- 7 What things do you really like? Dislike? (Nature, people, ideas, objects, etc. Answer in a phrase or a page, as you will.)
- 8 What is your attitude toward art today?
- 9 What is your world view? (Are you a reasonable being in a reasonable scheme?)
- 10 Why do you go on living?

When I was a school-boy, in the Latin hour, we used to pass around secretly a 'confession-book' . . . in it each one had to answer truthfully certain questions. The most important questions were usually the following:

Do you believe that friendship can exist between man and woman?

Are you in love?

Where did you meet her?

Each chose for this purpose a pseudonym: Apollo, Hephaistos, 'Lederstrumpf' – 'Dowegofarther' was chosen by one.

In that confession-book we all lied in chorus.

This memory still makes me happy; the world is a ball; the questions of the confession-book again roll around to me. I shall rise to my heights – a chance to lie. One thing however I know today better than in my school-days; if I now wish to lie, it is because I am still unripe.

1 I am a Hungarian and besides Hungarian I know only German. But I should like to know French, English, Italian, and Spanish. Then I should be at home everywhere.

2 When I was a child I thought that I was a king's son, who had been exchanged for another, but who later would come into his own. Today I know that one is what one is . . . chicken stays chicken . . . I am satisfied with my fate. More, I am happy to be as I am. What could I do if I were better than I am? My failings give me impetus in the fight, they sharpen my effort.

3 What do I expect? That some time I will be able to comprehend society, social relations, the relation of individuals to the mass better than I do today. Till now I have been guided in this largely by my feelings. But this feeling is much duller today than formerly, when I really had pangs of conscience if I took a good drink or rode in an automobile.

4 Subjective! That out of gratitude, out of mistaken kindness, I can be forced to make concessions. I know the feeling of being good out of weakness: to let things drag on, in order not to give pain to another, although that other has long since known that all was ended.

Objective! That men will again make war instead of working on themselves.

5 I was still a small boy when a friend pressed into my hand a paper in which my first printed poem appeared. – I am in general quite happy; but when one wishes really to get at something, has it been that childish ambition or an incident of the war? That is a whole novel, but I will make it short: It was in a retreat, after a never-ending march over soaked ground, mud to the knees, face beaten by wind and hail, half blind, every step more falling than advancing, I could go no farther. I was left behind in the dark, on the open field alone, without strength. Suddenly my horse appeared: I wept and kissed him overcome with joy.

I have never, strictly speaking, been deeply unhappy. Of course I have been very very sad, once when I was able to overcome my jealousy through the recognition of it.

6 It is difficult for me to make up my mind not to want to please everyone. My strongest characteristic: that I am optimistic. I like most about myself that I can be happy; the least; that I have a tendency to become a fanatic.

7 To be clean inside and out. I like least, people who cannot stand me.

8 I do not believe so much in art as in mankind. Every man reveals himself; much of it is art.

9 I find the actual world scheme, in respect of the social system, most incomprehensible and gruesome. I have slowly formed the opinion that, seen in perspective, everything develops organically. This does not necessarily mean that one can accept the present system without opposition.

10 I live because it makes me enormously happy to live.

Little Review, May 1929

Moholy-Nagy's letter to Sonia Delaunay³¹

Charlottenburg, 27 March 1930

Dear Mrs. Delaunay,

Since I was away on a lecturing-tour, I am only now able to respond to your kind letter. Thank you very much for your cordial invitation to take part in your exhibition in Paris. I would gladly accept, had I not already made prior commitments to Gropius, who is High Commissioner of a German exhibition organized by the German Werkbund on commission by the Foreign Office. This exhibition will be put up in the Grand Palais within the framework of the exhibition of the Société des Artistes Décorateurs as its German section.

During my visit to Switzerland, Arp told me that a number of the modern artists of Paris declared war on this Société. In answer to the statement that it would be a pity if in this situation Gropius decided to arrange an exhibition precisely there, I said what I am now saying to you: Gropius knew nothing of the internal struggles of the Parisian artists, nor can he take any notice of it now, since the Werkbund Exhibition is an official exhibition of the German Reich, for the invitation and its acceptance materialized through the Foreign Office.

In 1925, Germany was officially invited to participate in the International Exhibition of 1925, but Germany refused this, so that this present exhibition is the first since the war to be arranged by Germany in France on official invitation.

I hope that during my next opportunity to visit Paris I will be able to call on you. Please extend my warmest regards to your husband.

Moholy-Nagy

Letter, written in German, in the bequest of Sonia Delaunay

Moholy-Nagy's letter to Tibor Déry³²

Berlin, 19 November 1930

My Dear Old Boy, I have long ago submitted your novel to Ullstein's where I have been told that fantastic novels don't sell very well, right now it is the social novel which does. I believe it. People are always interested in those things which don't spring any surprises on them and just blankly register with them. Besides this they have made much fuss about the presentation of the manuscript. Doesn't matter, if only they'd been reading it! I telephoned them this morning asking what is going on with the thing. They were begging my pardon, they haven't got to it as yet. Next week I am going to harass them again a little bit.

I have discussed your play with someone (I liked it *very* much, so much that if I were a director I would bring it to stage by myself); unfortunately I have left the play too with my trusty Ullstein-man so that he could form a better impression of you – thus, at this moment, I cannot do more than speak of it, if occasion presents itself, to a few people. Couldn't you send another one-act play at least (in German – perchance, but very perchance, in Hungarian) so I could pass it on with the other one.

I am sending my love to you irresponsible writer; pity you couldn't unfold something. So, I see, I have to make the belly of the city.

Bye-bye, my dear old fellow, and I wish from my heart that I could manage to do something in furthering your cause.

Moholy-Nagy

Letter in the bequest of Tibor Déry

Moholy-Nagy's letter to Herbert Read³³

Berlin, 24 January 1934

Dear Professor Read:

Last night I clipped this review of your book from the newspaper, and I thought that it is high time to thank you for your lovely tender Christmas greeting. Then came your good letter; and all I can say in reply is that I am full of admiration for the English accomplishment in writing letters. They are always concise, full of communication, and yet never without a personal charm, so that one is inclined to take every compliment seriously. It gave me immediately a positive mood.

Otherwise this sort of mood has totally vanished here. We are more sad than gay, and we have good reasons. The situation of the arts around us is devastating and sterile. One vegetates in total isolation, persuaded by newspaper propaganda that there is no longer any place for any other form of expression than the emptiest phraseology. No wonder that one can barely bring oneself to assert one's influence, even in the smallest circle. One is forced into an insane solipsism.

It is therefore a great joy to know that you exist and that you are a friend; and that you share the opinions of the small group of us who are here in isolation.

I thank you for the return of the photos and your recommendation to the Mayor Gallery. I hope – I hope around Easter to return for a longer stay to London.

Warmest greetings to you, your dear wife, Ben Nicholson, Barbara Hepworth, and Miss Braunfels.

Yours

M-N.

Published in: Richard Kostelanetz, Moholy-Nagy. 1970, pp. 18–19.

Moholy-Nagy's letter to Máriusz Rabinovszky³⁴

Amsterdam, 27 June 1934

Dear Master Rabinovszky,

I was very happy to receive your letter and naturally I am willing to be at your service, especially

since I so often feel guilty for visiting home so infrequently.

Only the deadline has to be extended a little. This means that I have to be allowed to send the materials around the end of July.

After the peace and quiet of the last few months, I am faced with so much that I am barely able to cope with all the work. At present, I have an exhibition in Paris and one in Zürich at the Kunsthaus, in Amsterdam a large commissioned work, from Czechoslovakia an offer to publish a separate M-N issue (also recent works), and so on.

I spend most of my time on airplanes and trains (this letter is written here, too) sometimes I feel I am boasting. So, then, at the end of July. Would you agree?

[In the margin.]

Respectfully sending my warmest regards to everyone – please extend my respect to Mr Majovszky, though I am unknown to him.

Yours sincerely,

László Moholy-Nagy

*Original in the Documentation Centre of the Art History Research Group
of the Hungarian Academy of Sciences.
Budapest. MKCS-C-I. 64/2.*

Moholy-Nagy's letter to Jenő Nagy

1937 August 27

My address

The New Bauhaus

1905, Prairie Ave

Chicago, Illinois

My dear Jenőke, perhaps you've heard that we moved to America. (The family is coming over at the end of September.) I was invited here to be Director of 'the new bauhaus american school of design'. We shall open the school on 18 October, and needless to say there's no end in sight as far as work is concerned, for I have to find teachers and work out an educational program, catalogue, advertisements – a thousand small details of organization. But I like doing it because it makes sense. After the hectic, disjointed work of the last years, at last I can concentrate on some worthy business again. Yes, if I'm successful, the effort will be history. Of course this is a big word and we'd better not look at the matter this way. Anyway, it's a great opportunity, and for the time being I see the possibilities in a rosy light.

Gropius and I are continuing with the Bauhaus book series (it was he who recommended me for the job). He himself is now Professor of Architecture at Harvard University. In fact, I'm just going to visit him for a couple of days to talk the matter over. The train is bumpy, which explains my illegible handwriting. And also I have been writing for a couple of hours now. I have heaps of letters to answer, because for the last five weeks I have been working for the school just about day and night.

But I have written enough about myself. I am eager to know how things are going with you, whether you are satisfied with your new job and whether the truce with the pilferers still lasts.

I kiss your dear Mancy's hand and embrace and kiss you and Levente

Your loving brother

Laci

Moholy-Nagy's letter to Sándor Bortnyik³⁵

Chicago, 24 January 1939

My dear Bortnyik:

Many thanks for your nice letter concerning *Kner Albert*. Meanwhile his four books arrived, and I am delighted with them. They are most marvelous productions, and I am convinced of his talents. However, I would not be able for the time being to help him except to give him introductions, as the New Bauhaus after a year of excellent educational work had to close because the sponsors lost their money in the stock market. I have not received my salary since last June.

The professors who were engaged, arrived and were stranded in New York, and I have to use all my abilities to restore our position. After half a year of excitement and litigation, we are now ready to open a new school, but without sponsors. The teachers and myself have to take the economical risk which means that we perhaps do not pay salaries to anybody.

I hope because of the great enthusiasm of my teachers and students that we shall succeed, but I am certain that this first year will mean a great strain on us all.

Please tell Kner that he should be confident. This country is so large, so vast that every talented man with a sincere wish to work can be used one day. And tell him, too, that when he is in the States, he should write me or come to me if in the vicinity of Chicago, and I shall do everything in order to open for him some doors in his profession.

Your letter was a wonderful sign of good friendship and human interest toward him. This shows me that he soon will find other friends as well.

I am sending you some publications which may be interesting for you and I greet you with kindest regards,

Cordially yours,
L. Moholy-Nagy

*Original, written in English,
in the Documentation Centre of the Art History Research Group
of the Hungarian Academy of Sciences, Budapest.*

Moholy-Nagy's letter to Gyula Pap³⁶ *Chicago, 4 March 1939*

Dear Pap:

I am very sorry that I did not answer your letter of January before this time but it came at during the busiest moments of organizing the new School of Design. Now that the most difficult work is over, I am not quite so busy.

We had a terrible time after a year of splendid work of the New Bauhaus. The Association which sponsored the New Bauhaus lost their money in the stock market and the school could not open in September as scheduled. Now, after a pause of half a year, we organized our new school and are most happy to have done so. We have forty four students and expect more by the next term.

Our faculty unfortunately do not get any salary for the time being because we want the school to have excellent equipment and the security of running expenses. Because of this situation, I am not able to engage you but I will be very glad to give you any recommendation, if you need it.

With best regards,
Yours sincerely,
L. Moholy-Nagy

*Original, written in English,
in the Documentation Centre of the Art History Research Group
of the Hungarian Academy of Sciences, Budapest.*

Moholy-Nagy's letter to Nikolaus Pevsner *8 March 1943*

[. . .] We started a new school with the modest and colorless name of 'School of Design', but with the great enthusiasm of my collaborators and a number of students who remained with us. For a full year none of us received any salary and after the first year, when we received a grant from the Carnegie Corporation of New York, we gave very modest compensation to some of the teachers. That we exist today and have good standing is something like a miracle.

The fact behind this is the conviction of the people connected with it that we are doing useful job trying to create a nucleus for a future education. This education is more general in its scope than a limited vocational training. In fact, it is valid for anyone in any profession whether he be a lawyer, doctor, designer or architect. We now operate on the basis of tuition fees and sometimes grants from the Carnegie and Rockefeller Foundations and donations from friends, which so far has sustained us on a minimum budget. We have had a great help from an enlightened industrialist who is interested in modern advertising and modern production methods.

As you know the program of our School is set up for designers and architects with the integration of art, science and technology. I am convinced that a balanced education in intellectual and emotional matters is the main requirement, which means that all our students have the time to work on free art problems besides on scientific and technological matters. For practical reasons, however, we officially emphasise at present more the scientific and technological approach, as with such meagre budget situation we constantly have to prove with practical products that we are worthy of support. Of course we do everything to encourage art work and the students are occupied quite a bit with the free arts, in the form of lectures and visits to exhibitions etc. This gives us a good lead to future problems, which the independent artist can express, without hindrances of a utilitarian nature. In one point I think we differ somewhat from the Bauhaus and this is in the incorporation of science into our curriculum, with some philosophy, intellectual integration, etc. [. . .]

So our efforts are for the time being taken, at best, for nothing but novelties, and our attempts to rejuvenate the furniture industry here, which is perhaps the most conservative group, are not yet acknowledged even as a fad. However, through our success with the wood spring experiments (of which we have made a motion picture), a large furniture manufacturer is interested in our bent wood solutions. This type of furniture can be seen as a forerunner of a simplified and healthier design, having the potentialities of replacing the over-stuffed upholstered furniture. [. . .] I am sometimes sorry that I have to give so much time and energy to administrative details because this is clearly a waste, but I have the feeling that I have to stick to it in order to show that with a new methodology it may be possible to increase the potentialities of education for the artist, scientist and engineer. Basically I am very happy, optimistic, but I have no illusions. [. . .]

*Original, written in English, in the possession
of Bauhaus-Archiv, West Berlin.*

Moholy-Nagy's letter to Jenő Nagy

Chicago, 10 December 1945

My dear Jenő, now that the mail service has been restored, I am eager to pick up our correspondence. For the time being this is difficult for me to do, since I am still sick – this is the fourth week that I am under treatment – for two weeks I was hospitalized (with leukemia, this is the disease of having overwhelmingly too many white blood cells, which diminish the necessary number of the red blood cells) – I have almost kicked the bucket – we are hoping that I will get safely over this plague – right now I am receiving intensive X-ray treatment – in short, for a couple of weeks the family was living in fear.

I am happy that Józsi Fischer is heading the reconstruction. He is an excellent architect and I hope that he is going to be permitted to do his best and that he doesn't have to make too many mistakes.

We heard with great satisfaction that Levente is attending the University of Technology. Our daughters, 12 and 10, are still far even from graduating. Sibyl has a new book published in the last months, the 'children's children'. It is about a German family, the story of the children's children from the Napoleonic wars up to Hitler. Those who have read it appreciate it greatly. For the last four years I too was engaged in book writing. It is coming out at the beginning of the next year, 'Vision in motion' ['látás mozgásban'], or something like that. I want you to write something about yourself, what do you do, what is your job, also about Mancsi, Levente*, Laci, Frida, so we could learn something about you. On behalf of everybody

kissing you all,
your Laci

* I hope he is diligently learning English.

In the possession of Levente Nagy

Moholy-Nagy's letter to Jenő Nagy

Chicago, 11 April 1946

[. . .] The 'Institute of Design', which, as you know, I am director of, is developing very nicely. However, like every good school here, this too is forced to rely on the support given by industry and private persons. It is impossible to maintain it on income coming from tuitions. This is

the reason why I am not getting any salaries this year – I gave that as a gift to the school, and we are living on income coming from the sales of my paintings and from private design contracts. I am the designer of the Parker Pencil Corporation (perhaps you have already seen a new '51' fountain pen) and year before last I was designing modern railroad cars.

My book entitled 'New Vision' appeared in a new edition in the last weeks, and I am to receive a couple of hundred dollars from this too, and my new big book, 'Vision in Motion' will be published in a couple of months. I am hoping to get something out of that too. This is how we live – as I have already mentioned – von der Hand in den Mund. [. . .]

In the possession of Levente Nagy

Moholy-Nagy's letter to Jenő Nagy

Chicago, 21 May 1946

My dearest ones,

This is just a short one so that I could mail it in time. Right now I am working on a big book of mine, 'Vision in Motion' (látás mozgásban – or something like that in translation). I hope it will be published in a couple of months. I have been writing it for eight years – and in the last four, doing it with considerable diligence. It will run to 368 pages with 450 illustrations.

Embracing you
with love
your Laci

In the possession of Levente Nagy

Moholy-Nagy's letter to Jenő Nagy

23 June 1946

Venti, this is a new stamp.

Right now, during the summer we are here on this small ranch that the Board of Directors Walter P. Paepcke, Chairman of the Board of Directors, President, Container Corporation of America gave us. Our address is still Chicago. The Post Office will forward everything here.

Dear Family, Manczi, Jenő, Venti!

Your letters mailed in Br. arrived here in a week. We rejoiced over Manczi's report and were delighted a great deal by the three little photos of the villa at Balatonföldvár. Who was its architect? Seems to me that a good modern fellow took care of it. This reminds me that for some months now I have been wanting to write to Józsi Fischer. I keep an eye on what he is doing, although I have but scant information about it. Since I couldn't get down to writing him, will you please just visit him or call him up and give him my greetings and tell him: whatever he is in need of, he only has to write to me.

Tell him that just in these last days the two Szyrkus, the excellent Warsaw architects were giving lectures on the rebuilding of Warsaw in the School. Excellent men and magnificent city-builders. I hope that he is in contact with them. It is worthwhile to do that. They, the Szyrkus, are going home through London and Switzerland back to Warsaw. Fischer should also tell you what happened to Farkas Molnár (somebody told me that he was killed by a bomb), also what happened to Bierbauer and the others.

We are greatly annoyed by the fact that, with the exception of one small package, nothing has reached you as yet. It is not only the money wasted that I mind, but I am thinking of the joy the arrival of these small items would have caused, which has now changed into bitterness. Here we don't know what could be done. Sibyl sent you 4 packages, 2 went to Laci, and we have sent three through the Church Alliance of the Reformed Church. Sibyl sent the tennis balls in cans. We just hope that during the long trip and during this long time the things stayed preserved. There is no significant change in my health. I only have to watch out that I do not exert myself.

Kissing you all,
your Laci

632 N Dearborn Chicago 10. (This is a new house, built in 1883, which we bought for the school.)

In the possession of Levente Nagy

Moholy-Nagy's last letter to Levente Nagy

Chicago, 5 September 1946

My Dear Venti,
here are a couple of stamps, perhaps
you can use them.
Here, Fall is approaching
in a few days we'll be going
back to Chicago. This was a wonderful summer.
The children, healthy and tanned,
arrived from camp, and all of us
are embracing you,
your Laci

on the 5th of September, 1946
I am all right.

In the possession of Levente Nagy

Xanti Schawinsky's letter to Sibyl Moholy-Nagy³⁷

25 August 1948

dear sybil:
here i am sending a few recollections of our great mo; they are of various color just as they came to my mind, and without claim to be of value for your purpose. if you want to have more actual tales, i believe that rittweger and marian brandt are good sources. for me, mo was always one of the closest pals, dependable in his human warmth without fail, and though we did not have too much time to spend together or talk, i always felt i knew him 'like the inside of my own hand'. i was his student during my first term at the bauhaus and i owe him a stirring introduction into contemporary problems, and i loved him from the first, and always. if you need some snapshots of the dessau time, i like to send them to you. just a few, that's all i have.
with best wishes and regards, to all of you,
yours,
Xanti Schawinsky
august 25, 1948

[. . .] Moholy boldly cut his way through every language and in fact achieved a remarkable virtuosity in both German and English. His Hungarian accent in French or in any other language was proverbial. If the Bauhaus members wished to be funny, they imitated Moholy. Once, when in one of the preliminary courses he demonstrated the horror vacui temples of the Egyptians, he pointed out the separate entrances of the priests and of the worshippers: this here is the entrance for the priests and this one for the 'creditors' [instead of the 'faithful', in German: Gläubiger vs. Gläubige]. On another occasion, instead of 'Frauenhüte' [lady's hat] he said 'Frauenhüter' [lady's protector]. The most difficult situation was in 1935 in La Sarraz, where Gropius was just in the process of giving him an English lesson; however, French was spoken at the table. So when Moholy wanted to say something he had to translate his Hungarian thought into German, which still would have been the easiest for him, but then he had to re-think it into English (being a Londoner at this time, this primarily preoccupied him) and finally had to express himself in French. The result: utter despair, since meanwhile a completely new thought got conveyed. An entire collection of grammatical mistakes could be compiled. Gropius knows a lot of them. Several of them have become classic.

It seems though that in German his thoughts went quicker than in English. Some of his German writings are almost incomprehensible, their wording is so complicated that 'moholisch' has become a new term in the German vocabulary, just like 'faustisch'.

If new materials were enumerated, it was proverbially done in the manner of Moholy. In Weimar (1923-25), they were mainly hard rubber, nickel, glass and plastics. If these new materials were mentioned in the Bauhaus, it was as usual imitated in Moholy's accent.

In spite of his many-sided educational activities, his publicizing work and his general activities, he painted almost every day. In Weimar and Dessau, Lucia often sat during this time

in the studio. It was said that she made sure that he would paint diligently. Lucia was a serious individual who was rarely seen laughing. Moholy's photography obviously relied in part on her technical assistance. She worked in the dark room instead of him and I believe that to a certain extent it is to her credit that Moholy became a world-famous photographer. Most of the important photographs were made during this time.

In Lucia's home, smoking was not permitted. Once I could hardly resist the temptation and was just about to light a cigarette; nevertheless, after striking the match, I abandoned the idea. A few minutes later Lucia came downstairs, sniffed the air and asked indignantly: who smoked here?

In Ascona, from the serious Moholy suddenly popped out a cheerful bon vivant; he cooked chicken paprika and gulyás for the whole group (Gropius, Pia, Schifra, Bruno, Herbert, Breuer, Giedion, Filippo and the ladies accompanying them). But I cannot remember him drinking wine, from which all of us duly got fairly tipsy. These dinner parties usually had a good atmosphere. Later, we made excursions into the mountains with Ellen, ate in caves and even improvised theatre performances. Moholy played with a ball, swam in Lago Maggiore, took part in all sorts of fun with which we spent our time, and he quickly transformed from an intellectual into a muscular athlete. Although for reasons unknown to me, I actually never tapped him for money, his readiness to help was well known. The Nazi domination provided numerous occasions for this. Moholy helped people who were persecuted and in the most dangerous situations sheltered some of them in a room adjoining his studio in Kaiserdamm. He gave his clothes to those who fled across the border. It goes without saying that he was a reliable fellow in all situations – everyone knew this.

His enemies hated him particularly because of jealousy or because they suffered from a persecution complex thinking that Moholy had stolen their ideas. In particular Albers, who came up rather slowly with his ideas and wrote with difficulty; he was angry at Moholy when he thought that his ideas were publicized by Moholy. Schmidtchen and Bayer were also suspicious of this and sometimes a dispute surfaced. Only a natural scientist could clarify the historical priority. Gropius protected Moholy most rigidly, since – as he said – the important thing was that new ideas were fostered instead of having them mould in the drawer. Moholy always thought of the movement as a whole and perhaps did not always take seriously the author of a keyword. Thus, once I showed him a chair by Albers and told him that here Albers had constructed a chair which had only eight joints instead of the usual thirty-six. Soon after, Moholy made a 'jointless' chair. My own idea with respect to a new educational theatre first appeared in the writings of Moholy. Naturally, I, too, was surprised but certainly could not take it the wrong way.

When Moholy came to Marion in the summer of 1937, where Pius, Bayer, Breuer and I spent a few weeks together, we met and received him in great style at the railway station. He showed us his new program – which he had worked out in Chicago – with the stipulation that we evaluate it and give him advice since we were, as he said, his most intimate friends. After having read the vast program, it became obvious that it went far beyond the possible limitations and our modest teaching staff could not tackle this at all. Silence. Then Gropius as the senior began to speak and voiced this general critical impression. To this Moholy replied: Dear friends, this cannot be changed, for it is already printed.

Moholy was a fine dancer of the *Csárdás* and performed the most elaborate figures if he managed to meet a Hungarian woman at a Bauhaus Ball. I often had the occasion to observe him from the stand of a small band as he danced with utmost attention and enthusiasm the *Schuhplatter*, though he was somewhat unsteady with the foxtrot, the shimmy and the lindy-hop. He was never absent from a banquet, but while his imagination in everything always wandered far ahead of him, he maintained his own formal attire usually within the limits of cool objectivity.

As a result of his metalwork, Otto Rittweger was in very close contact with Mo and knows wonderful stories about him. He was fond of him, but occasionally was willing to ridicule him and imitated him remarkably. Marianne Brandt also knew Mo from the Weimar and Dessau period in connection with the Workshop activities and I am certain she could tell many stories. As is well known, Mo took over the Workshop of Paul Klee and directed it from transfigured samovars to lamps and other more functional projects. Klee obviously felt that he was relieved from a heavy responsibility and most certainly should have been happy to hand over the Workshop to Moholy. Gerhardt admitted that he could never truly forgive Gropius for hiring Moholy and since he was unable to accept the Moholy era, he disappeared from the scene and transferred the Pottery Workshop near the vicinity of Halle.

The publication of the *Bühnen Buch*, which seemingly gave priority to Moholy over Schlemmer, caused a great uproar. Schlemmer was considered a real genius of the stage and generally it was taken badly that the colour clichés were not reserved for him. Otherwise, everyone received with gratitude and hope Moholy's publications in the *Bauhausbücher* which perhaps would never have come into existence without him.

Xanti Schawinsky

In the possession of Hattula Moholy-Nagy

3 CONTEMPORARY CRITICISM

Ernő Kállai: Moholy-Nagy

In the extremes of its adventures, Moholy-Nagy's art reaches out on the borders of Cubism and Dadaism, and by organically uniting these opposite poles, he heralds the world of contemporary man who has managed to subjugate the machines.

Speaking purely in terms of form, he constructs either concentric or eccentric systems of forms or tries to interlink these opposing entities.

In the case of those works, in the monumentality of the few masses which are distanced so as to suggest inevitability, a strong will and elementary laws manifest themselves. In his use of the landscape motifs of the railway tracks, for example by the projection of the tremendous diagonal of a factory chimney leaning left, the leaning, resting forces, forces pressing tensed into vertical, are gathered into a compact architecture of form. Details of bridges and architectural structures, having lost all their utilitarian references and practical functions, freely elevate themselves into a self-willed order, an existence meaningful in itself. In another picture, based on a white horizontal stripe, with an almost organic vitality, the form swings and leaps into a slender vertical. This is all discipline of form, self-awareness, and pride, a totally new and individual manifestation of the modern constructive style, which is devoid of the sometimes dangerously short-changing form and colour-splitting and space-complicating of the more differentiated Western Cubism. Colours develop themselves into form through their strong contrasts, through their brutal clashing with each other; the articulations of the form are of the most simple kind possible, and that space, which was left empty for a *tabula rasa*, constitutes a single, wide abstract wall behind the form, on which the artist's credo concerning the future-shaping power of man's civilizing activity is written up with lapidary laconicism.

However, Moholy-Nagy is not only a monumental lord and master-builder of contemporary life and of form, but with a naive admiration of the eternal-primitive child-barbarian, and with his raving joy too, he is also an ecstatic admirer of this life. In other people's hands Dadaism serves as a murderous weapon of moral and social criticism. The exultation over a million possibilities of forms and motion which only the metropolis and modern technology can create, the sudden discovery of a new world and the dancing laughing youth of a vision totally open to the universe: all these are there in Moholy-Nagy's art.

Semaphores of joys, forms and colours are standing on all points of space.

Freshly felt surprises and perspectives of gravitational pulls of manifold directions, of the many and of the many kinds, spring up from everywhere. Total geometrical abstractions as well as pieces, numbers, letters and realistically represented objects or fragments of objects picked from the primary reality proliferate in Moholy-Nagy's eccentric pictures.

This is a cosmic harmony, nonetheless it has not been kindled by a Futurist Romanticism and, still yet, these works, despite of all their divergences, form, after all, a perfectly intelligible system of absolutely interdependent units.

Anarchy is getting perceptibly arranged into a system of unified law. Although still not with the centralism of the self-containing architectonic structures, the pieces are coalescing into cohesive units, replacing the exploded conglomerate forms. Structures, still open, but set into motion from sharper defined and closer interrelated centres, emerge. Here, the mechanism of the modern machine and its kinetic system has been converted into art through the process of a fruitful coalescence of central and eccentric pictorial factors with the creative principles connecting with Dadaism and Cubism.

This fusion without inner contradictions of the style forming and negating trends of modern art gives Moholy-Nagy a chance to elevate his paintings on the terms of their own forms to

the level of vision. His art, after all, maintains a close link with its own well-defined objective territory. But in his relatedness to reality he is not satisfied with pointing out that meaning which is already present, although more or less hidden, in our senseless, chaotic age.

Just as the anarchistic manifestations of Moholy-Nagy's art mean neither the rejection nor the approval of the all-destroying selfish instinct of the bourgeois free enterprise. Over problematical features of the present, Moholy-Nagy proclaims law and liberty which throw light on the perspectives of the infinite future.

MA, 1921, No. 9, p. 119.

Gábor Gaál: Lajos Kassák – László Moholy-Nagy, 'Buch neuer Künstler'*

It is easier to pass through the eye of a needle than to take a standpoint on this issue. Anyway, taking any standpoint lost its meaning a long time ago. One can say that it is futile to define Archipenko or, as a matter of fact, anybody else too, since we have a different Archipenko today, we will have a quite different one tomorrow, and he is quite different right at this moment. Where did you take a position, concerning whom, on whose behalf? It is a futile business. Life is 'evolutionary and revolutionary', says Lajos Kassák, and at the end of his introductory essay he settles down in favour of constructivity. This is something which could be defined in the following way: 'The machine as art', or 'The structure as art *an sich*.' Is this what Kassák is going to say the day after tomorrow? I am not quite sure about that. Who do you love? What side do you belong to? Who is the person and object in front of which you have stopped, whom and which you have totally absorbed into your own world, outside of whom and which everything is different, alien, and spiritually divergent from you? You cannot belong to everybody and everything, you cannot change yourself continuously and all the time, because if you do, then you will never exist in any time or in any space. 'We have to bring motion to a balanced stance, this is the way we can achieve form,' says Kassák, and this anthology proves only that there is no balance, no stopping at anything. The works brought together in this collection were produced in less than ten years; however, on its pages centuries rage. At the beginning of the volume it is as if we were still walking on earth: man still lives, his fate is dark and mysterious, his soul is like a will-o'-the-wisp . . . at the end of the volume it is as if art had vanished from earth, only the geometric line speaks, and what he is saying is extremely anaemic. What is going on here? According to Kassák this is development. But no creative element disappears in the course of a development proper. How could it happen that what is art at the beginning of the book is nothing else at its end but a product serving some practical purpose, for example, a cinematograph? And if this were the situation, why should it be art? Because it could be produced in a factory? How could you speak of a development here? These entities are *toto genere* different from each other. And if the machine is the proper expression of our present technological age, just as the cathedral was of the Middle Ages, why should constructivity be the goal or the fulfilment of the development of art, when it is the prime, self-evident criterion of every real work of art, so much so, that it should not even be mentioned? How could the principles of constructivity and architecturality be made the criteria of any creative standpoint, when these have always been indispensable necessities, accompanying the creative act? And where will this constant problem-mongering lead us? This theory symposium, which serves up a revision of the whole creation of the world in ten tomes whenever it discusses a painting or some other work of art. This anthology speaks for itself. It speaks, although very laconically, in a way which does not serve its own purposes the best, it speaks in a secretive way even to its own initiated. We concur with the judgment of launching the German-language edition without explanatory notes. Perhaps readers there are better informed. In its present form, this after all valuable collection will help to generate more antagonism than educating assimilation. And one more thing: the inclusion of more Hungarian artists – and I am thinking especially of the latest achievements of Béla Uitz – in a stronger and more representative manner, would have only helped this publication which, in many respects, could only be called a collection of errors.

'Kassák Lajos – Moholy-Nagy László: Új művészek könyve.' *Jövő*, 1922, p. 249.

* Verlag I. Fischer, Vienna, 1922.

Eckart von Sydow: Hanover – Exhibition Review

An extensive collection of paintings, watercolours and graphic works by the Hungarian Moholy-Nagy – invited recently to be a Master of Weimar's Bauhaus – is shown as the highlight of the April-May Exhibition of the Kestner Society. This present exhibition is supported by the intense interest evoked by the exhibition organized by Der Sturm recently. Undoubtedly, we are dealing here with one of the most characteristic and colourful personalities of the so-called Constructivists: the liveliness of the colours, which in itself is already also decorative, is not restricted either by uncertainty or hesitation. Without a frame, depending only on themselves, there float in front of the dark or light surface of the background forceful but graceful, organically emerging forms, conveying an unexpected multiplicity of linear and coloured relationships. The colours themselves are so thoroughly saturated and intensified by an active eruptive force, and are so intimately imbued by emotion and intellect, that in spite of the obviously accentuated abstract quality of the painterly work, the inner meaning – emotion transformed into form – becomes distinct. Hovering before our eyes are the eternal but independent symbols of humanism governed from within. From their clear and brilliantly glowing colours emanates a glorified freedom. It would be interesting to examine how – without betraying its own essence – the modern desire for totality so paradoxically utilizes precisely the language of Abstract art. If this mystery is to be explained by expecting from Abstraction a totally definite character and in the ethical sense an invincible effect without contextually proclaiming ethical requirements, then with Moholy-Nagy this theory would meet with the most spectacular confirmation and actualization. – The main attraction of this exhibition is represented by the coloured works; however, the otherwise high-quality woodcuts are not as powerful as the very beautiful paintings and watercolours. – From the art historical point of view, the position of Moholy-Nagy should be set between Kandinsky and Lissitzky. The basically emotional nature of the aged Russian is transformed here into serene purity, and within the stricter sense of expression, his decorative subjectivism crystallizes into a stricter, more universal validity. This, however, is the conscious orientation of Lissitzky's explicit preparation of his art.

'Hannover – Ausstellungsrevue.' Der Cicerone, 1923, p. 485.

Erich Wiese: Moholy-Nagy, Constructions – Six Lithographs

A peasant room and an engineering office might give an idea of the distance between the art of Martel Schwichtenberg and Moholy-Nagy. Where there is construction, the heart has no role, unless it is drumming to the rhythm of the machine. The phenomenon of the construction is registered by the eye and is rated positively or negatively by the viewer's sense of balance. For all three dimensions, in short, for the spatial dimension (to the concept belongs also the value of light!), the viewer utilizes this feeling of balance even when it does not pertain to Constructivist *sculpture*. To be more precise, in the case of Constructivist works, this attitude pertains *only* to the evaluation of constructive (mathematic, 'geometrical') forms. One deals here with easily surveyable types of forms, narrowed down to and restricted within an experimental sphere. One may also examine other works of art from another non-geometrical constructed formal point of view of balance, but then, deviating from the construction itself, this will not be the only single point of view. Why this limitation? Is Constructivist creation entirely a function of the intellect, 'does it already have nothing to do with Art'? – This is certainly not the case. Constructivism may be regarded as the systematic development of Cubism, and it is perhaps only precisely as a result of this limitation that it is able to completely fulfil that mission which was assumed by Cubism: the emphasis on artistic conscience as opposed to both the planal and spatial stabilization of the work of art, in addition, the intensification of its innate organic nature and rhythm originating from the basic point of reference. We have had enough of the external disguise which left nothing but emptiness behind itself. The intent was to base this phenomenon on its function, in other words: to vitalize it. Tranquillity is not equivalent to Death, it may also be Life itself. Thus, perhaps from the experience gained from Constructivism, a new style may emerge with more modern inherent laws. If one approaches the work of Moholy-Nagy from this aspect – provided that a direct path to understanding it is not feasible – personal comprehension of the experience itself will not be excluded. Yet much remains unsolved, the purpose is not always visible: however, there are living organisms already

supporting it. The extent of their existing intensity thus far was principally felt in those Bauhaus exhibition halls where the works of Moholy-Nagy were displayed.

'Moholy-Nagy: Konstruktionen – 6 Litographien, Kestnermappe.'
Der Cicerone, 1923, p. 891.

Ernő Kállai: László Moholy-Nagy

The line of development leading from Cézanne through Picasso, Braque and Gleizes to Constructivism is also at the same time a process: the artistic self-realization of the scientifically-intellectually, technically-economically oriented man of our age. In Cézanne this man still allowed that Nature flourish in its organic exuberance, although the skeleton of his elementary stereometric forms visibly pierced through everywhere the soft cover of sensuous empathy and plastic representation. Cézanne tried to bring Impressionism to the same level of stability and monumentality as ancient art with the help of the architectonic laws of solid geometry. Yet the stability, impenetrable density and compactness of old, classic tectonics were unacceptable for this modern artist, ever since the image of Nature, through the good services of Impressionism, has become a volatile distillation of optical regularities. In place of these relationships Cézanne did not offer new types of essence, he merely structured them more consciously and exactly. From this time onwards, painting has been no passive recipient of external impressions; this was replaced by a more active and self-assured attitude of man towards nature, towards objectively existing matters. Modern man has become over-sensitive and extremely mobile; yet his mind is still master over material reality. For the bourgeois, property, the strict and objective order and reality of his narrower or wider environment, meant a firm justification and qualification of his own existence. This relationship was loosened and destroyed by the press, telegraphy and telephone, the railway and the steamship; modern urban life generated an increasing social and ideological disruption. Besides this, there was the scientific – physical and psychological – perception of the contingency and relativity of everything that exists and happens. This led to the most lucid and excellent minds searching for ways of stimulating the creative energies of their own personality. There was a given space where all activities of life could assert themselves and where one could feel directly the pulse of creative processes. The turning away from the solid materiality of the external world and the fluid, relative and contradictory nature of modern consciousness have by necessity resulted in the cessation of every real social community. So grotesquely bourgeois in his ambitions, Cézanne was actually an eccentric and an individualist, whose art was not the least appropriate to the socially expected ceremonial and pathetic representation, to commonplaces. Communal relationships ought to have displayed a structure visible and tangible for everyone; yet they have become mere functions of fragile, finely meshed relationships. The carriers of these relationships, the abstract spatial elements, were not empirical facts but fictitious constructions which originated from the need for self-expression of the intellectually victorious, egocentric mind. This is why the abstraction of Cézanne follows basically an opposite path to archaic geometry. For example, the geometry of Egyptian art aimed at stiffening the mobile, changing and many-faceted reality of life in the name of the Absolute, the Eternal, the One. Cézanne – although not overlooking the solidity and constancy of ancient art – perceived various, infinitely fine layers when changing merely optical relations of Impressionism into solid geometry. He could not have done otherwise. His forms had to remain fragile and loose, according to the sensitivity of modern man. While starting from the exact emotional and expressive needs of consciousness he was able to understand by logic the loopholes and connecting elements of a loosened architectonics, the disintegration of material realities became all the more visible behind the veil of Impressionistic optics and the naturalistic, organic creation of forms.

As a result, art entered on a path where there was no stopping and no returning. Cubism drew the conclusions. At first, it wanted to connect the experimentations of subjectively expressive, intellectually differentiated creative art with the representation of three-dimensional, objective reality. However, the esotericism of these experiments cautioned self-control. According to its subjective-individualistic character, Cubism could not reach beyond partial surfaces of structure, and within these layers objective reality was broken into fragments and dissolved. Though its intellectual discipline distinguishes it from the boundless and uncontrolled handling of colour and lack of structure of Expressionism, nevertheless it remains egocentric, ideologically and socially tenuous. The last remnants of an egocentric consciousness are shown by the natural duality of space and form, which are treated by Cubism as mutually limiting, equivalent components, while they are deprived of all real, material and organic plasticity and totality. This circumstance, the fact that Picasso and Braque still know the

personal sensual attraction of the painter's manual work, are doubtless what connect the Cubism of these artists back, through Cézanne, to the old bourgeois art. Gleizes went even farther; he cleaned the surfaces of his recent pictures from all sensorial impulsivity and created an objectivity of engineering precision. The duality of space and form is still present in his pictures in the two telescoped pictorial components. This last ray reminiscent of the real world, however, is overshadowed a hundred times by the force of barely restrainable dynamism of spatial and formal relationships: of the egocentric consciousness. In the pictures of Gleizes the soaring straight lines and the wide curves owe their force to the fact that their creator is no longer influenced by the emotional tenderness and intimacy of Braque or Picasso. Consciously and stridently they say yes to our age, which is characterized by the largest-scale technical-economic and scientific-intellectual organization. It is the spirit of our modern civilization, divested of practical utilitarian aims, which assumes artistic form in Gleizes' pictures.

This sharp, clean objectivity is purely conscious, a purely open glance towards geometrically exact light- and kinetic orbits. This art is no longer vaguely groping, it is no longer attached to fragments of the soul and sensuality. It is not a culture of the 'interior', which collapses or fades at the slightest contact with the public. On the contrary. It is nurtured by the regulated and controlled current of motion of huge metropolises, the dynamism of Paris, Berlin, New York and London – whirling, rushing, uncontrollably expanding and multiplying.

It was necessary to show this line of development which in modern European art began with Cézanne, because from this point there is but a single step to the Constructivism of Moholy-Nagy. Certainly it was not useless to look at the logical and historical antecedents before beginning the first detailed analysis of this artistic trend.

In Moholy-Nagy's works one is confronted with the same modern, technically-economically and scientifically-intellectually motivated objectivity as is seen in the work of Gleizes. However, Moholy-Nagy freed himself even of those elements of objective structure which were still present as organically interdependent factors in the pictorial world of Cubism, in the duality of space and form. The loosening of the closed space initiated by Cubism through the total dissolution of the duality of space and form resulted in an unconditional predominance of space over form, which from this point remained only a crossing and steering-point of spatial energies. This space was not born of a concentrated and resolute work. It was the result of that ingenious observation whereby each section of a picture may be dissolved in the unrestrained, surging dynamism of interrelationships. However, the man of Constructivist art perceives himself as being in a new enclosure. This man wants to be more than an accidental constellation of innumerable determinants. The desire and intent of the Constructivist artist is not to be a manipulated and assembled product, but to be a mover and an elementary beginning, a start. For this reason his essential artistic expression cannot fall apart and cannot be lost in an intricate network of spatial components and relationships, but appears as a strictly dominant concentrated form, either as standing uninjured by the polyp's tentacles of space or floating away. This intact form is not a new version of the bourgeois-individualistic and idealistic fine arts, which intended to reproduce reality in order to strengthen and solidify within the bourgeois a sense of individual self-assertion and power. The Constructivist form is not a documentary recording of the existing world but the expression of a necessity to be elementally creative, incessantly initiatory and to reveal unlimited perspectives.

This is true also of Moholy-Nagy. The works of this artist present closed, compact, complete, exact, precisely delineated and regularly corresponding forms, whose dynamism unfolds on a perfectly neutral surface of the picture, in a space free of obstacles and controls (incentives). The intellectually exact and precise perception of Albert Gleizes sprang from a realization: his material (the present life and the forms of today) has to be built according to the laws of maximum clarity, simplicity and economy, from the base. This reconstruction is represented by Gleizes and the other Cubists; they reflect their restless, disintegrating and torn age. They are bound by the mass of mutually intersecting energies of fragments and questionable things. Moholy-Nagy the Constructivist is fascinated by the energies, the rhythm and technical power of new life. He presents the picture of a consciously planned equilibrium which is no longer accidental. All his works are demonstrative references to this equilibrium, and, in addition, in each one he proclaims the predominance of clear conscience over anything that is instinctively or competitively prolific.

It is not a senescent, arid rationalism which determines the precision of these creations, but a juvenile and merry happiness caused by the emerging beauty and the liberating strength of the perspective of life. He who is unable to sense this ardent belief in the Utopian, redeeming

mission of the intellect and he who is unable to emphathize purposefully, as a primary attitude to life, will only comprehend the vitality of Moholy-Nagy's art as downgraded to mere planar exercises and physical colour experiments. Yet, what a tremendous momentum penetrates here those upward-thrusting straight lines and dynamic curves, what a security the rising and falling vertical lines radiate; what firm determination is manifest in the piercing of the planes and what vigorous tension in the contrast of elementary colour and material values.

Moholy-Nagy experiences the intellectually governed consciousness and its domain extending over technology, transport, industrial and public health organization, city-planning and the domination over Nature as a world of infinite possibilities leading to newer and newer miracles. Because of this, his forms are floating and finely articulated, the layers of colours are transparent and the structure of the picture is gradually relieved of all burdens. There was a period for Moholy-Nagy when his works were imbued with the experience of statics of architectural severity. These forms were only partly fixed in concrete expansion. Yet they appeared still too heavy for the artist. In his latest works without exception one sees all types of the diagonal swinging of every articulation and configuration. While in the earlier works one sensed still a certain pathos of the upward thrust and the stability of the kind of equilibrium we are accustomed to on earth, his latest pictures convey a sense of unrestrained floating. Their equipoise is rooted in the compensation of numerous spatial motions intersecting each other and contradictory; this is momentary, and the next moment it may be replaced by an entirely different situation. The mere forms of the individual configurations are such that they are capable of establishing variable moving, free relations. The effect of dematerialized tension is increased by the elongated rods, the barely perceptible lines and the delicately applied light colours. Nevertheless, a structure of complete and clearly definable forms is organized here within the picture. Their correlations are so strongly differentiated that even between the nearest poles of tension a rich life may be generated. As usual in Constructivism, one sees also in the geometric order of Moholy-Nagy's works that abstraction emerges not from the variability and dissimilarity of concrete reality, as the wisdom of the elders did. An energetic and euphoric aspiration for expansion gives tension to the form and establishes the manifold variations, divisions and combinations. At the same time it prevents his art from submerging into the contemplative spheres of the subconscious of fate and character.

It may probably result from the dialectics of development that while in Cubism the concatenation of spatial and formal relations was problematic, Constructivism is already one-sided: the world organized is either spatial (Stijl group, the Hungarian Péri) or formal (Suprematism, Lissitzky, Moholy-Nagy). The fact that Moholy-Nagy, with a determination so characteristic of him, has turned towards a rhythmically refined and richly animated formation, and towards a brilliant colour-scale, may certainly be regarded as a Hungarian heritage.

This easily animated, sensually joyful character protests against extremely rigid and finite constraints. Consequently, easel painting for Moholy-Nagy is by no means an obsolete remnant of bygone times as in the eyes of several other Constructivists. Naturally, that architectonic unity for which Constructivist art strives cannot be established either by easel painting or relief. With the help of uniform colours and industrial materials (for example: iron, glass, nickel etc.) Moholy-Nagy succeeded in organizing a comprehensive and animated reality from geometric forms. Thus, with architecture he established such a formal and structural unity, which even without any ornaments is a vital creation beyond its practical purpose – and simultaneously is precise, economical, and also true to the material. It is totally unnecessary to elevate at all costs this architectonic unity to the pathos of monumental wall-painting. However, Constructivism today does not yet have the opportunities to co-operate directly with architecture. The Constructivist easel paintings of Lissitzky, Moholy-Nagy, Doesburg etc. originated as emergency measures, or connecting solutions. Their works may also be regarded as sketches of wall-paintings, consequently as preparatory stages for the organizational integration of space on a free plane placed in the architectonic space (Doesburg). The easel painting may also be perceived as a springboard to the cinematographic picture (Hans Richter, Viking Eggeling). Finally, easel painting may also be considered as faint glimpses anticipating projected sheaves of coloured light beams into a wide space irrespective of all architectonic limitations, in fact even its interplay devoid of background. Both in theory and in practice, Moholy-Nagy has studied this possibility. Many constructions consisting of semi-transparent, overlapping forms deal with the problem of light displays projected into a free space.

Beyond the economic question, the realization of these projects is merely a mathematical-technical matter. All the works of Moholy-Nagy carry this feature of intellectual discipline and

mathematical precision. The artist arrived in a logical manner at the idea that industrial materials should be integrated into the creative process and be made into forms. It is wonderful how he managed to elevate to such a degree of beauty and intensity the material-sensory qualities of iron, glass, wood and nickel by the various combinations of these materials. In this respect his best works thus far are the reliefs. In view of an abundance of materiality, his plastic works are less satisfactory for they cannot entirely get rid of structure and real space.

The exact form and the intended use of industrial materials lead to the mass production of series of pictures, first of all to the enamel pictures. This is indeed the boldest advance towards the dethroning and the secularization of art and towards its integration into the spontaneously flowing everyday life of the widest masses. The picture, with its full expressive power, is just as mobile and just as easily accessible as a book or a daily newspaper – this is an unpredictably effective social idea of cultural significance. Adolph Behne very appropriately pointed out that contrast where this healthy idea is confronted with the snobbish craftiness of collecting original pieces and of private art trade. The collectivity of a picture manufactured in series lies in the fact that one may take it home, may store or exchange it like a gramophone record. This is why it is perfectly free of pathos, and from the point of view of the future is a vital and living idea. In fact, the whole life-work of Moholy-Nagy is entirely removed from pathos, lacking in convulsive concentrations, in attacks against idealisms, swearing and promises, nor does he dispense orders suggesting authority. The art of Moholy-Nagy is much rather the division, deduction and counterbalance of free rhythms. That law of harmonious construction which combines the single parts into an indivisible whole results from the fact that the undiminished energies of the elements are ready to be mutually combined and complemented by one another. This is indeed an exhilarating desire for the possible, sound decentralization of collective spirit and communal life.

'Ladislav Moholy-Nagy.' *Jahrbuch der Jungen Kunst, 1924*

A. Fyodorov-Davidov: Foreword to the Russian edition of 'Painting, Photography, Film'³⁸

The editorial board of *Sovietskoye Foto*

The little booklets, published in the series of the 'Library of the *Sovietskoye Foto*', are written and prepared for beginners and advanced intermediate amateur photographers, most of them members of photo clubs.

This book by Moholy-Nagy, a German leftist artist, is different from the books the library has hitherto published, and – one should be forewarned – only a narrow circle of amateur photographers will be able to understand it. Nevertheless, the *Sovietskoye Foto* deemed it useful, for several reasons, to publish this book too, especially in a form that follows the original German edition in its artistic typography and layout.

The function of photographic representation in technology, information, public education, individual and collective life, is becoming more and more significant. The specific features of photography as a tool of cognition and of expression emerge increasingly sharply and this makes photography definitely an autonomous territory with its own technical and aesthetic laws. Individual students of the problem, starting out from different directions, have all come to the common conclusion that photography is the art of the present, as opposed to painting which is the art of the past. This problem is still waiting for its final solution, which will be reached only by the employment of the science of our age, dialectical materialism. Such works as Moholy-Nagy's book, which we are now handing over to the reader, should be used as one step towards facilitating the solution of this problem.

In the international technical literature of photography such a work as this occurs only rarely. There are but few writers in the capitalist West who are able to step on the road which leads to the analysis of photography as a socially and economically determined art; but since their thinking lacks the equipment of the tools of Marxism-Leninism, their thinking is bound to lead to false directions and to faulty experimental little jerks; moreover, they are enmeshed in a tangle of overestimated values of vulgar utilitarianism, of the remnants of idealism, and of 'biological-ontological causes'.

All these failings are present in Moholy-Nagy's work too. Nevertheless, its publication for the use of the Soviet reader is justified, since Moholy-Nagy tries to discover and define

photography's own language as the language of an art; second, he does this in the context of the state of modern technology and of its impact on the psychological constitution of modern man. This is far from being materialism, but it deserves, nonetheless, our attention.

At the same time the reader will be able to familiarize himself with the newest trends in the field of photography in the West. Although the book is laconic and complex, if its expositions, made more intelligible by the copious illustrations, encourage the reader to further search and investigation, the publication of this book could be regarded as well justified.

Introduction by the editor of the translation

Photography is spreading in an ever widening circle among the workers, and it is becoming one of the most important forms of spontaneously active artistic activity for the masses. The number of workers' photo clubs is on the increase and as they become stronger photography is beginning to gain an important position in the movement aimed at informing the worker. This development creates a substantial interest in its possibilities and in the achievements of Western photography. The practice of photography could owe its development on the one hand to being close to life, to the fact that it is easy to understand even by a wide public, to never having severed its ties with artistic representation and practical (scientific, journalistic) documentation – and on the other hand, its great possibilities spur us on to try to learn its essential features and to compare its artistic possibilities with those of other branches of art. Moreover, today the problem of photography as an art form is further sharpened and activated by the present crisis of painting.

The Soviet photographer has practically no place to go for answers to the questions he is interested in. In his conscious search for new forms of expression and new approaches to the objects of the outside world, the Soviet photographer cannot be satisfied with those traditional concepts according to which 'the artistic' is equivalent to the imitation of painterly methods. The special literature dealing with photography is basically of a technical nature, textbookish in character, and it does not shed light on the aesthetic problems of photography.

Moholy-Nagy's book, in this sense, could make very profitable reading for our readers. It has several flaws, ideological – we will speak of those later – as well as presentational in nature. The fact that its mode of expression is relatively difficult to understand belongs to the latter. The translator and the editor of the book have tried to make the language of the author a little bit easier to understand, but the text of the book, even in this form, requires very attentive reading. However, the work invested in its understanding will definitely bring a fair return.

Moholy-Nagy is a German leftist artist who, like our Rodchenko, came to photography from his experimentation with 'Cubo-Futurism' and transferred its achievements and main problems to the field of photography. Moholy-Nagy, this restless and witty innovator, tries to make a break in the mechanical workings of the camera, to make it more lively, and to convert the camera into an obedient tool of the creative conceptions of the photographer. His propositions and experiences, which he discusses in a wide framework of problems, and his examination of the polygraphical achievements and possibilities of photography, outside the context of the film, will undoubtedly widen the horizons of our readers and encourage them to be fruitfully inventive. A rich body of illustrations, made up of Moholy-Nagy's photographs, makes the experiences and proposals presented here more easily accessible.

Beside these so-called practical, 'applied' problems, the book also discusses such ideological-theoretical issues as the relationship between photography and painting, and the meaning of photography as an art. The basic thesis of Moholy-Nagy's proposition is that the representational possibilities of painting are no longer capable of satisfying those newly arisen needs which were created, in the wake of and through the development of technology, by the quickening pace of life and by the tremendous spatial and material expansion of the content of culture. 'Man's interest, striving to know the world in its totality, aroused a new need in him, a new need of connecting himself – at every moment, in every situation – into its current.' The newspaper, with its own technology (the telegraph, the radio, the rotary press), the illustrated magazines which use the same technology, the cinema all satisfy these aims. But the painted picture, which is inherently static, subjective and individualistic, cannot. 'It is a surprising fact that today's painter of "genius" possesses very little scientific knowledge in comparison with the "unimaginative" technician, and this is the painting which claims to be the sole representative of fine art, and which holds photography inert, mechanical. This is entirely false, since the basis of painting is not to be found in its representational character (in certain periods it could have been and was non-representational), and being representational does not exhaust the meaning of painting. On the contrary, the precise mechanical processes of photography and

of the film are incomparably better functioning tools of *representation* than the manual procedures of representational painting hitherto known.' Moholy-Nagy's other idea, according to which the mechanical character of photography does not exclude it from being a form of fine art, is absolutely correct too. '... alongside the creative intellectual process of the genesis of the work the problem of its materialization is important only in so far as its technical procedures should be totally mastered. However, it does not matter at all in what kind of a manner – whether personally, or by substituted work, manually or mechanically – the work was executed.' We must add to this that the requirement that a work of art should be manually produced is predetermined by a certain class aesthetics, that it came about because of the break between the artist and technology and the general process of production of material goods, and that it is a characteristic of bourgeois society. This break is the product of the commodity and monetary economy, and with the death of capitalist society it too will cease to exist. It is characteristic that at the dawn of the bourgeois society, they did not hold such views of art as this. For example, Leonardo kept dreaming of producing painting by mechanical means. This is, of course, Utopia, which, conversely, Moholy-Nagy tries to resurrect absolutely in vain in his chapter entitled 'The Domestic Pinacotheca'. The painting is always an individual phenomenon, a manually crafted product, and it can only exist as such.

But as the concept of art is wider than the concept of painting, so the characteristic methods (manual work) of the production of painting do not necessarily apply to the other branches of fine art. In particular, the purely mechanical production of art, the fact that works of art could be mass-produced and reproduced, might make an art viable for the coming socialist society, which will be based on a well-developed industry.

Moholy-Nagy's demonstration of how photography and film widen and enrich the functions of our organs, enrich the system of our reactions, our own empirical-physical cognition of the world and our practical self-orientation in it, is one of the valuable parts of his book. He is absolutely right in stating that, generally, every kind of art creates new relationships between known and hitherto unknown optical, acoustical and other functional phenomena and forces the human sensory organs to perceive and register them, thereby enriching them. Naturally, the role art plays in human society cannot be reduced to merely biological significance; moreover, art performs even its biological function through its social function – at least, it does in developed societies. Nevertheless the social-biological significance of art is determined and, to a certain degree, this is where the aesthetical meaning of its formal structure lies – and this stands for the structure of photography and film, too.

The attentive reader most probably will recognize the major flaws of the methodology of Moholy-Nagy's book, namely, that he has failed to discuss the issues from a sociological point of view, and ignored the issues from a class-conscious point of view. The lack of class-oriented analysis is a specific ideology in itself. Moholy-Nagy is a representative of bourgeois thinking and this unavoidably puts on him a stamp of limited thinking. Although he is asking the right questions in the right way, he is unable to come to their correct solutions, because without the help of sociological analysis they cannot be achieved, and because these solutions would lead him to revolutionary conclusions within the framework of the given group of questions.

Moholy-Nagy correctly states that although technique is a very important factor in the evolution of art, it is not the only and most important one – then he thinks that he discovered this factor in biology, which in turn leads him to erroneous deductions, especially as applied to the future of easel painting.

Moholy-Nagy tries to delineate the two spheres of photography and of painting respectively by giving the representational function to the former while reducing the latter to mere colour constructions. He is absolutely correct in interpreting the essential features of the evolution of painting – that its aspects of form were born out of its actual representational tasks and characteristics – and its survival and transformation from the prime mover of the evolution of the colour construction into its main hindrance, but then he cannot work up his courage to make the logical deduction: that easel painting is doomed to die out.

This situation arises because he artificially selects colour construction, only one element of the complex conglomerate of painting, as important and traces it back to a biological-ontological first cause. And since man's biological constitution has remained more or less unchanged from his beginnings, the foundation of painting remained, consequently, the same. However, he does not realize that he is committing the same logical error as those who refuse to accept the artistic significance of photography. He too identifies one possible kind of colour construction (painting) with colour construction in general. The perception of and need for colour construction is indeed one of the properties of man's biological nature and therefore colour

construction is eternal. However, the various forms of satisfying this need could freely replace each other, since this process is sociologically and not biologically determined. 'It is inherent in human nature that he has aesthetic taste and ideas. And his environment will determine the materialization of his possibilities.' (Plekhanov.) Characteristically, when Moholy-Nagy himself is posing the problem on a practical-production level – and not on an abstract-biological level – he comes to the conclusion that painting will be replaced by photography and the representation of colour combinations will be replaced by a veritable play of materials of various colours: the functional application of a wide variety of building materials – concrete, steel, nickel, artificial materials, etc. – can equivocally define the colour scheme of the room and of the whole architecture. Of course, painting a room is not identical with painting a picture.

I have already mentioned how Utopian are those concepts of Moholy-Nagy which state that 'with the aid of machine production, with the aid of exact mechanical and technical instruments and processes (spray-guns, enamelled metal, stencilling) we can today free ourselves from the domination of the individual hand-made piece and its market value. Such a picture will obviously not be used as it is today as a piece of lifeless room-decoration but will probably be kept in compartments on shelves or "domestic picture-galleries" and brought out only when it is really needed.' These 'paintings' will not really be paintings, because the meaning of a painting is that it hangs on a wall and decorates the room. His reference to Japan does not stand up to criticism since the Japanese 'kakemono' and 'makimono' have nothing to do with European painting. Moreover, with Japan becoming a capitalist state, the traditional Japanese forms are being pushed out by European bourgeois painting. Moholy-Nagy does not take into account that easel painting is a product not only of determined conditions of artistic production but of determined conditions of artistic consumption too. Painting is produced mostly for the individual bourgeois and petit-bourgeois apartment. Its 'chamber' character, its closed structure, its relative immobility, its uniqueness and its individuality stem from this fact. This is why painting is still here to stay as a dominant form of art, since the bourgeois individualism of 'existence' and of 'consciousness' is still dominant and because 'men still club each other to death and they still haven't realized why and how they are living and the politicians are still unable to see that the earth is one unified entity'. At best, Moholy-Nagy is nothing but a member of the petit-bourgeois radical intelligentsia. He has no clear notion of the relationship between the inevitable demise of capitalist society and the complete revaluation of its culture in the framework of the conditions of building a socialist society. However, he has already understood what a unifying role progressive technology and its artistic equivalent, progressive 'technological' art, play in destroying the basis of the bourgeois society.

From this abstract-biologism dominant in his evaluation of social phenomena stems Moholy-Nagy's other fault, his formalism. His effort to preserve painting – which lost its social function when it lost its representational character – leads him to the proclamation of non-objective painting as the pure, 'absolute' form of painting. 'The real content of colour creation was always embedded in these interrelationships [i.e. pure forms – F. D.] . . . The divergences in the paintings of various ages could only be grasped as a temporary form-metamorphosis of the same phenomenon.' By drawing a faulty analogy with music (which is, according to him, 'pure' and contains only emotions), he is reducing the function of painting to the satisfaction of pure emotions, as if human emotions could exist independently from man's social attitudes and intellectual capacities. We find this same formalism, based on his concept of the so-called immutable biological laws of taste, in his experimental constructions, too. This can be especially detected in his chapter called 'Typophoto'. Moholy-Nagy set up some very interesting goals 'that those possibilities of the subjective character of the existence of typography which are capable of generating new effects should be brought in to participate in the work and it should not be used just as an objective tool fashionably, as it was until now'. However, he has no chance whatsoever of solving this problem in a practical way. The reason for his failure here, just as in his chapter dealing with his experimentations with new film projection, is that he has no definite practical-functional goals in front of him. This is nothing but experimentation for experimentation's sake, searching for a new form for the sake of the form itself; at most this is a search for a new emotional expressional power, but not for the satisfaction of some real social need.

This, of course, does not mean that experimentation could not be utilized to achieve practical goals, or that experimentation would not be determined by those social needs which influence the artist but of which the artist remains unaware. The heart of the matter is the fact that his petit-bourgeois ideology prevents the artist from attending to these social needs.

And yet even Moholy-Nagy himself indicates that technology and the new forms of art brought forth by technology are themselves the products of these new needs. After all, he notes that photography was a prisoner of painting until now, and that it has just started to liberate itself from the influence of painting. The question is: what determined this imprisonment and what caused its present liberation?

Moholy-Nagy is unable to give an answer to these questions. In order to do that, he should have conducted a social-economic analysis of the phenomena of art. If he had done that, he would have understood that every new form is born out of the realization of the most economical artistic execution of a given social or social-ideological task in life (in the context of the current state of technology and of the existing conditions). And if this were so, then experimentations being currently conducted in the field of photography, film and typophoto should be channelled to the requirements of our immediate future tasks. This kind of asking the right question could only be made possible on the basis of our Marxist world view and its realization too could be made possible only under our own conditions. For the time being, Western photography is superior to ours in many respects; however, the real conditions for its development, which will revolutionize its own representational methods as well as the representational methods of art in general, exist only in our own photography. If the problem of the new form is not just a problem of the new technology but of its serving new needs, then its utilization by the working class is of paramount importance. That is why the problems of mass amateur photography and of the worker reporter's photography and, similarly, the phenomena stemming from the cultural organization of the dictatorship of the proletariat are so important, and why we must interpret the route for the development of photography – which is one of the seed-beds of the fine arts of the present as well as of the future – in the correct way. However, even though all these questions have emerged during the course of our discussion of Moholy-Nagy's book, their solution shall be the task of another work.

Moscow, 1929

Máriusz Rabinovszky: The Photographer Man: On László Moholy-Nagy's photographs

When the photographer realized that he is not a craftsman but an artist, in his highest vision there appeared before his eyes a portrait which was 'like a Rembrandt', a street scene 'like a Brangwyn', a landscape which was almost 'like a Corot'. The 'objective', the lens, was forced to obey the pictorial will of the photographer. Its edge had been artificially dulled. And whatever remained as a result of the objective character of the lens was eliminated by all sorts of complicated processes requiring extraordinary patience and technical expertise during the course of printing. This is how those certain 'pictorial' effects were born which seem to have elevated the photographer-craftsman into the ranks of the artists.

Actually, the effort to achieve pictorial *sfumato*, a continuous interpenetrating liquidity of forms, was able to establish these effects of the pictorial art only in some borderline cases. There were some prints produced with very complicated processes which approached the character of the aquatint. The other 'pictorial' photo-experimentations look, at best, like photographs of a painting or an engraving, and never like a painting or an engraving itself. If we were to consider it thoroughly, we would realize that of all the graphic techniques it is the aquatint which utilizes mechanical (chemical) procedures in an extreme degree in order to achieve its goals; small wonder, then, that it is the aquatint which, in its effects, borders on that kind of photographic procedure that eliminates the 'objective lens' effect to an extreme degree, and which has to make use of the tricks of graphic and manual intervention in their most elaborate forms.

Essentially, however, 'painterly' photography should be evaluated as a truly erroneous tendency. It is based on the same faulty deduction as the iron cast that tries to suggest the effect of a carving, the marble-like gypsum, or plaster which imitates flagstone. This is the very reason why painterly photography had to become bankrupt. True, its bankruptcy is not yet self-evident in all respects, because its faithful followers are still supporting it, or it has made some forced compromises with the new trends of photography.

Photography is carried out by a machine. Is it, then, machine-produced?

In any case, it is a representation of reality. However, in any case, it does not match man's experience of reality. The lens of the camera does not see the way the lens of the human eye

does. Its vision is more tactile than man's with one eye, and in the case of a stereoscopic shot it reflects reality in a more tactile manner than man can do with both his eyes. The lens of the machine, therefore, has a tendency to produce a heightened sharpness. A heightened sharpness even in the case of a small object. A man, even with the best of vision, cannot see as many details as the camera. (The photograph, for this very reason, can be enlarged according to wish.) The camera sees colour in a different way: it transposes it into light-values, it translates colour into the scale of black and white. Besides this, however, it distorts the proportion of colours, and even with the most careful handling of procedures it falsifies the relationship between cold and warm colours. It interprets perspective with the application of an extreme logic, it magnifies what is close with mathematical precision, it shrinks the size of what is distant, because it sees everything in one view, not like man who has to refocus his vision all the time, and whose eyes always wander from object to object. Then there is another important aspect: man, when he is looking at something, relates to things: he always makes selections, eliminating certain objects, and he does this by the conscious or unconscious use of the treasure of his experiences. He thinks that he sees a cowherd in that cluster of small white dots, the expression in the tiny wrinkles of a face, and so unifies and completes the image. The lens of the machine, however, cannot be bribed. It does not interpret dots and lines, and does not have even the smallest respect for the individual character of the object; it does not store any experience, and it is devoid of any a priori and heuristic connotations, references. So the 'objectivity' of the machine measured in terms of human experience is not that 'objective'. And the very manner in which man utilizes the objective lens of the camera almost always amounts to a modification of its vision to the human point of view, to 'subjectivity'. Then, behind the camera there is the man, and man employs the camera to serve his own special viewpoints. But no matter how strongly man tries to adapt the camera, he still cannot make it see exactly the way he does, at least he has not so far been able to force it to do so. The principle of painterly photography was to de-mechanize the machine and, because after reaching a certain limit the machine resisted this process, man tried to humanize the work of the machine by manual means.

The new photography starts out from a different point of view and is willing to render unto the machine the things which are the machine's. Or to put it another way: man helps the camera to 'act out' fully its own tendencies, perhaps because he respects the camera a little bit, while he wants, secretly, to learn new possibilities of human vision from the camera. What man is really excited about is exactly the very fact that a camera has a different vision, different from his; this activates the object in a perspective never dreamed of; it can lend the edge of immortality to an ephemerally mobile object, it can aggrandize the insignificant, enhance its importance, it can also lend monumentality to the small and can make the great look small, and finally it can falsify and distort proportions into the fantastical.

This is why the camera excites the fantasy of contemporary man, because it re-evaluates values and by doing this opens up new, unexplored territories for man to experience.

So while the 'painterly' trend of photography wanted to foist the human vision in some fashion on to the camera, the new photography wants those effects that particularly belong to the camera to come into full play; it is keen, in every way, on the camera developing its own peculiarities, on the camera 'acting out' its individual tendencies: if it wanted to create a sharpness, let the edges be even sharper, if it distorted, then let it distort the object even more strongly, if it produces altered proportions, then let it increase the degree of their alteration, if it wanted to play, let it play as fantastically as it wants to. The camera should follow the dictates of its own 'nature', and should do as well as 'it pleases'.

It is a platitude that we are living in the period of the 'new objectivity'. And like all other platitudes, this one is false too. It is not the 'faithful rendering of reality' which excites our fantasy in the new style of photography, but rather that radically new and, from the human point of view, anything but 'objective' way of seeing. In the case of a modern photograph it is the transcendental experience which startles us: the reality which we are accustomed to is still carrying its usual criteria but it is seen in a totally different, radically new shape.

Among the people experimenting with the camera, László Moholy-Nagy is one of the most interesting and could be counted among the pioneers of the field, an artist who, through the Bauhaus movement, is organically tied into the streams of modern trends.

In Germany Moholy-Nagy's name is well recognized and carries a certain weight; here, at home, until now only a small circle followed his many-faceted activities with attention. On this occasion, it is Moholy-Nagy the photographer who will be introduced. In this introduction we will limit the discussion to certain kinds of photographs: Moholy-Nagy has experimented a

great deal with 'non-objective' photography or – we may say – with a photography that was 'abstract in its effect'. For the moment we have to be content with the discussion of a few of his 'realistic' photographs. They are excellent and characteristic examples of the new photographic vision.

Photo of a beach with footprints. There are small black people on the planks of the outdoor café chattering away, and there is a footprint, with all its corporeality. The footprint, this insignificant and passing emanation of man, becomes monumental at once, and it gains a terrible stability, importance and solidity. It is a nerve-tingling experience to see how these people are turning their backs with an unsensing apathy on their footprints, which by now become more substantial than the men themselves, gaining an almost historic significance as set against the insignificance of man. Here, it is not the man who is alive, nor the object (the sand), but man's imprint on the object: and this imprint assumes an individuality, the nothing gains the concreteness of something, in face of which two of its main components, the sand and man, are dwarfed into negligible and weightless quantities. It is a splendid irreality achieved with the tools of reality.

Man in a fishing net. Lazy rings of rope hanging down, rope-piles, knotted threads of the net, shreds of the net resting in the sun. Light and shadow teaming up with the rope: it is confusingly complex. Still-life in the sunlight. And this is the still-life into which a man has inserted himself. Ridiculous is the shyness with which the man refuses to acknowledge the presence of the rope, of the sun, of this strange still-life, of the existence of the objects in their own right. The presentation of this duality – of a man being absorbed in his own humanity and of the object being absorbed in being an object – this unbridgeable contradiction in the closest interrelationship, is another such experience which only the camera can enable man to see in this particular form of tension.

Sunbathing girl. There never was such a grimace in reality. In reality there is a movement, the uninterrupted, whole movement: here, you have a segment of the movement frozen, taken out of time. It is the most flabbergasting irreality based on the pure fact that one single segment had detached itself from the flow of reality and this segment now appears, endowed with all the signs of stability and permanence, in front of us. As the evanescence of the blinking grimace, which cannot become an experience all by itself, becomes an experience triggering a permanent phenomenon, so the sand gains a broad corporeality with the help of the sun resting on it, and so does the hair a seaweedy knottiness. The sunbathing and the beach scene, eschewing an erotic interpretation that they generally lend themselves to, and which has been so bountifully exploited, appear here in a rather daring satirical interpretation. The way the camera slices through the body is especially ironically cruel. In the background there is an amorphous piece of a body, stretching itself out lazily, while in the lower left part of the foreground there is a part of a head with a slice of an auricle. How could it have come into anybody's mind to try to see this way if the camera had not come to show him the way? Has not everybody been shocked by such an interpretation of reality, by the way in which the camera mercilessly runs through the human body, dissecting what is alive as if indicating how groundless is the view of other people as many individual organic units, and pointing to the possibility of a non-human view of the world, according to which the unity of man as an individual is nothing but a fiction. A photograph with such a compositional cut reminds us to what an extent a machine, left alone to its own devices, can disregard the organic unity of man, with what kind of randomness a runaway locomotive cuts its way through a mass of humanity, cutting off a head here, a leg there. This 'impartiality', we may say, is the 'moral standpoint of the machine'.

A panorama from the mast of a sailing boat. Why an overview? Does this make the picture look more realistic or was this view chosen because it is surprisingly unusual? The wavy body of the sea: it is a wall. On this wall a flat boat is swimming, trailing its own jib. When the seas are stormy and a wave hits the boat sideways, for seconds the passenger sees the whole mirror of the sea spread out in front of him. This overview shot, of course, does not look so menacing, since the smooth surface of the water, the sail, the life raft, the whiteness of the dresses give the picture a sunlit character, but its magic lies in being very unusual, in the well-known real elements emerging in such an unrealistic perspective in front of us.

Café in a bird's-eye view perspective. I am interested in this photograph for different reasons. The

tendency of this shot is evident: contrasting the technological construction of the iron grid of the radio tower soaring up in the sky with the spread of the haphazard still-life down in the deep. Man's new proud joy of the life-affirming achievement of new technology manifests itself in this picture. However, this shot is not Constructivist by any means; on the contrary, it indicates those strongly romantic tendencies of the artistic current which calls itself Constructivism. The steel beams are sinking into the depths in an unreal fashion and there is no way of knowing where they disappear above our heads. Their construction cannot be identified in any way. The daring foreshortening totally reverses the dimensions and denies us the perception of their very technological structure. The picture that spreads itself out under us reveals a rich medley of things for us – their immobility, in spite of their ordered distribution – instead of the planned constructed character of the things. Had this not been the intention of the photographer, he would have failed to capture the phantomlike gliding of the shadows across and on the table and on the street. Again, a link has been established between the well-known realistic elements and those which are unusual, fantastic, surreal.

- 75 And, finally: the *Picture of concrete tubes*. Once the thesis according to which everything that exists in reality must be beautiful was revolutionary and bold. It was called 'realism' and juxtaposed to Romanticism. The random cluster of concrete pipes, a beat-up tube in the foreground, a worn-out stick of a fence in the background, the trampled-on weed sprinkled all over the ground: and all of this represented in a photograph: can we imagine a more intensive degree of 'Realism'? And despite all this, this realism is so intense, filled with such a craving for reality, that this craving overcomes realism and creates a Romantic image. Pipes of concrete? No! These are heroized tubes. What I usually see from above, I now see from below, and I see the pipe system growing above and over my head. Should this be regarded as the boasting fetish-worship of the man of technology? No, this is the indestructible wish of man to humanize everything, which pays his respects even to the dirty-grey pipes, and makes them shine for a second in the rays of sun enveloping everything. He almost personalizes the subjects of his picture; this is not a dead load of weight which has been rolled down on this lot, but a convocation of a school of concrete pipes, a flock of concrete pipes grazing here. The more consciously the photographer artist brings out the compositional rhythm from the accidental elements of the given reality (and in the case of this photograph, his intention to do that is evident) the farther he gets from 'objectivity' and the more he is humanizing his subject.

Instead of 'new objectivity', let us call this new photography new pananimism, and then perhaps we will get nearer to the truth.

Romanticism loves to wear disguises. The reality of the photograph, which seems to be so unshakeable in its objectivity, is in fact a disguise for a more active and more masculine Romanticism. Thus it is a document and it unveils our age, whose spiritual dynamics is anything but phalansterian.

'A fényképező ember.' Magyar Művészet, 1930, pp. 641–646.

Gábor Gaál: Everyone is Talented

I read a book which radiates living wisdom.

The book was published in German. Its title, *Von Material zu Architektur* (From Material to Architecture), is quite forbidding. At first glance, one would think that the author is going to discuss details in depth. In the meantime, however, it becomes clear that what the author is speaking of is nothing else but the absolute whole. Professional secrets are the last thing which awaits the reader here, just the contrary: the author's subject is a question which is anti-professionalist, claiming everybody's interest, all-sided with the all-sidedness of a jack-of-all-trades, unbelievably new, the most ancient and simple and, at the same time, the most forgotten question. The problem lies herein: that contemporary man, working and active in thousands of various fields of life, is not whole. His education today, his professional training and the cluster of life now fragmented into thousands of diverse tightly structured forms make the individual a man of one single calling, to such an extent that he no longer dares to venture outside the territories he has grown accustomed to. Today, by necessity, every man is a specialist. He is not the man of the whole of life, he is only a man of a peculiar part, a segment of life. He is the 'segmental man', the author says, and he is not a whole man, although in the depths of his healthy instincts there is a constant craving and desire for a completely whole humanity. According to the author this desire is so strong that its forcible suppression is the

very source of that permanent depression and unhappiness which pervades the working man today, no matter what field he is working in. Nobody is satisfied with his work. And this is only natural. The constant one-sided activity of the segmental man cannot satisfy the whole man. As a consequence, a permanent dissatisfaction sets in. Man lives in the compartmentalized segments of his specialized profession just as he would in a maze of underground prison cells. Going against the grain of the biological and psychological desires of his youth, the chosen calling or profession will weigh down on him like a terrible burden all his life, thus the dissatisfaction he feels about his profession becomes permanent. Man is a prisoner of his work and his life and he is sick of it. This is the cause of that epidemic of neurasthenia which is neither diagnosed nor treated by the doctors, although man clearly feels that the innermost values of his life are being destroyed. Albeit . . .

Albeit, the much disparaged ancient primitive man was a totally different human being, he was whole. Man living in a primitive environment remains whole even today, because, forced by the context of his life he is hunter, craftsman, builder and doctor in one person, in contrast to the frightening one-sidedness of modern man. For the all-sided primitive man everything represents a field of work, therefore the whole area of his activities is free. Every new field of work opens up for him a new field of experience which he explores with the biologically invigorating good feeling of inner security. In contrast to this how different is the life of our contemporary man today. He lives in the prison of his profession, so stunted by it, so buried in it that his profession ceases to be a source of experience for him. He has no original experiences of alternate, different fields, he lacks a second orientation. His professional knowledge and specialization have erased the possible brave approaches of his instincts and functions towards other fields of application. His specialization blocks the way to the expansion of all his energies. Man as a *homo faber*, that is an active being, is unable to live up to his potential as would be necessary to achieve a feeling of biological well-being. That is why our man is weak, insecure, and unhappy. He lacks organic security. He will never be able to reach down to the inner core of his self, so he will not be able to put to use those diverse, constantly tensing forces which are inherent in his organism. Throughout his life he sits in front of the same desk or lathe, prisoner of the same work, all the time, although a host of creative powers lie dormant in him. Therefore, he is really like a plant which has been uprooted from his life-giving soil. That vitality which makes a healthy life whole, through which he should have channelled the flow of his activities, has dried out of him.

Naturally, the author very clearly explains the reasons why this is so. But I am going to skip this part of his reasoning, since this exposition is not the most important and original part of his book, and I will deal rather with the crucially significant deduction on which his ensuing chain of ideas is based. Namely, this is what the author says:

Everyone is talented because every healthy man has a capacity to develop the creative energies founded in his nature. Those otherwise unexpected achievements which occur in everyone's life are the proof of this truth. This is demonstrated by the fact that originally everyone was able to absorb sensory experiences deriving from the objective world and to work an order out of these experiences. To explain it a little bit further: this means that everyone could potentially become an active, practising musician, painter, sculptor or architect, just as everyone, when speaking, becomes an 'orator'. In saying this, of course, we do not mean to state that everyone could become an artist, but only that when he has a chance to do work which is in tune with his organic structure and flows from his inner life, then anyone is able to reach unexpectedly high levels of achievement. If the chance of his vitality, instincts and the outside world converging on one point were to offer itself to him.

What should we do about this, the reader asks.

And the answer is: since the specialized 'segmental' training of today's man is unavoidable, it is important that even after having had this training, the whole man should not wither away. The segmental man should be rooted in the whole man who is, in turn, organically planted into the universality of life, and by this we also mean that man should not seek only those entities (money, power, and other trappings) which provide him with material security but should strive to attain his inner security too. This can only be achieved if not the object but man himself and a way of life based on his inner structures is the goal of the work.

And now, after having discussed the dominant idea of the book in very general terms, let us make some notes on its author. First of all, we should tell that although the book was published in German (by Albert Lange, Munich), its author is Hungarian. Second, he is a whole man truly after his book. He is an all-sided man, with a streak of the jack-of-all-trades in him. When young he started out as a poet of some expressive power. But even then he used to draw.

Then he disappeared for a while, just in order to re-emerge a few years later as a professor of the German state-supported Bauhaus in Dessau. From then on he appeared in the most various fields of art, working as a painter, architect, photographer, inventor, industrial designer, and in recent years, pushed into the forefront of Europe's wide recognition, he is working as a scenic designer. With this book he makes his debut as a philosopher.

His name is László Moholy-Nagy.

'Mindenki tehetséges.' Keleti Újság, 1930. 23. 02.

Siegfried Giedion: László Moholy-Nagy Foreword to the special issue of Telehor

Zürich, 1935

The Position in 1935

More than a third of the present century lies behind us. A retrospective glance shows us that at approximately the same period in the preceding century all the problems which were destined to determine the evolution of art up to and beyond its close had already manifested themselves.

Notwithstanding that the conditions of today differ entirely from those a hundred years ago, it is still possible to predict the general trend of future development. Such a prediction is based, not on mere guess-work, but on a critical estimation of the prognostic significance of the aims which have informed the technique of painters during the last three decades.

A Long Phase is Ahead of Us

Although the various movements in art that are of prime importance for us to-day may differ in origin, they are nevertheless inspired by a common aim: to bridge the fatal rift between reality and sensibility which the 19th century had tolerated, and indeed encouraged. The urge behind all of them is the attempt to give an emotive content to the new sense of reality born of modern science and industry; and thereby restore the basic unity of all human experience. Neither temporary confusion nor momentary retrogression must blind us to the fact that we are witnessing the opening phase of what is bound to be a prolonged period in the evolution of art.

All these new tendencies in art have one thing in common: they seek to penetrate beyond its purely formal aspects. Each in its own way is striving to create emotive symbols proper to our new conception of life and thus hopes to regain the power of contributing to the task of reshaping the modern world we live in. In other words they are all bent on restoring that essential reciprocity between art and life. The methods by which this transformation of our visual perception could be attained were discovered in the decade 1909–1923 (the war-years being naturally considered as inoperative, although developments were not entirely suspended during that interregnum).

In most intellectual centres new movements began to emerge, all of which recognised in their several ways that the old conceptions of the three-dimensionality of space (perspective) and the naturalistic reproduction of objects that had held undisputed sway since the Renaissance were inadequate for our new projection of the visible world. This advance will in all probability prove as decisive for the future as did the revolution in art which bears that name for the epoch immediately preceding our own.

Berlin in 1920

Like most other large capitals, Berlin was a focus of artistic activity about the year 1920 for those imbued with the desire to enlarge the field of our optical perceptions. Most of the new movements in art were then coming to the fore there, although as a rule in relative obscurity; and many young artists who were unknown and without influence were beginning to reach maturity.

There were working in Berlin at that time, among others, the dadaist Kurt Schwitters, George Grosz, Raoul Hausmann, Hannah Höch; the Swedish film-experimentalist, Viking Eggeling, who laid the foundations of the abstract film; the Russian Constructivists Lissitzki and Gabó, and the Russian sculptor Archipenko; the Hungarians Moholy-Nagy and Péri; the Dutch architect Oud, Van Eesteren, and Doesburg; the Italian painter Prampolini; the Danish

architect Lönbergholm: and the editors of the American paper 'Broom'. One of the most important studios in which these people were continually meeting was that of Moholy-Nagy.

The emotive values latent in modern industry and in the realities of modern life in general were lost on the townsman in much the same way as the peasant of previous ages was irresponsive to the emotional appeal of the landscape. A steel bridge, an airplane-hangar, or the mechanical equipment of a modern factory is as a rule far more stirring to the imagination of those who do not see such things every day of their lives. It is not surprising, therefore, that most of the pioneers of the new vision hailed from agricultural countries with little industry of their own. Thus the Constructivists came from Russia or Hungary. That great innovator Picasso spent his youth remote from the big towns; and it was only after he moved to Paris that he was able to vitalize his consciousness of our age with the qualities he derived from the Moorish tradition of Spain. He it was who bridged the gulf between the last great cultural epoch that had found expression in abstract forms and modern civilisation.

Coming from the outskirts of civilisation, the Russian and Hungarian Constructivists similarly brought fresh energy to the problem of interpreting the realities of today.

L. Moholy-Nagy

The Hungarians occupy an intermediate position between the volcanic energy and Slav fantasy of a Russian like Lissitzki and the purified tonal and plane harmonies of a Dutchman like Mondrian. Among them was László Moholy-Nagy. This young painter had begun his career as a contributor to the Activist paper published in Budapest called 'Ma', whose aims were resumed in 'das Buch neuer Künstler' (Vienna, 1922), which he wrote in collaboration with Kassák. In 'Ma' a small group of young Hungarians had succeeded in giving a far more precise and coherent expression to their consciousness of our age than the Berlin artistic circles of that day, which were still fettered by Expressionism. 'Ma' was, in fact, working on parallel lines to 'L'esprit nouveau', in which Corbusier and Ozenfant had been revealing the interdependence of painting, sculpture and the technique of modern industry. After being wounded in the war, Moholy-Nagy came to Berlin in 1920. The paintings and sculpture he exhibited there so much impressed Walter Gropius that he appointed Moholy-Nagy to the staff of the Bauhaus in the spring of 1923. This appointment proved of cardinal importance for Moholy-Nagy's evolution, since it offered the fullest scope to his gifts as a teacher.

The lasting value of what the Bauhaus achieved was due to its success in evolving a new systematic method of art training based on recent discoveries in painting. All the most advanced artists in Germany were either attached to the Bauhaus or in close and regular contact with it.

The Bauhaus in 1923

After Itten left the Bauhaus, Moholy-Nagy was put in charge of the beginners' course there, where he had the responsibility of preparing young students for the training they were about to embark on; and (on the strength of his metal sculpture) of the metallurgical workshop as well. It was only natural that Moholy-Nagy's preoccupation with various problems connected with light should have led him to make practical experiments with various types of lamps. The manifold activities of the Bauhaus were coordinated by the comprehensive discipline of architecture; and architecture, no less than these more specialized branches of design, obviously called for direct contact with industry. Thus the short step from a purely educational investigation of the new concept of optics to active collaboration in the technical improvement of lamp-manufacture was only a logical sequence of events.

The Beginners' Course of the Bauhaus

Moholy-Nagy's book 'Von Material zu Architektur', which contains his lectures on the basic theories of the Bauhaus teaching during the period 1923-28 (Bauhaus-bücher No. 14, Munich, 1929; also published by Harcourt, Brace and Co. New York, under the title of 'The New Vision'), explains the method he adopted. It was due to Moholy's influence that all new movements based on fresh advances in technique were thoroughly investigated and embodied in the curriculum, in order to open the student's eyes - for instance - to the entirely new effects in material that are implied in Picasso's collages and only waiting to be discerned. The close concatenation between the artistic evolution of our age and the occult forces of the Zeitgeist which permeate our daily lives has rarely been so impressively demonstrated as in this book.

Problems of Light and Colour

From his earliest articles in 'Ma', Moholy-Nagy's contribution has been characterized by a persistent endeavour to fathom the creative potentialities of light and colour. All the same he has always been eager to apply his discoveries to the practical problems of life. There is hardly any field of artistic creation that Moholy-Nagy has not investigated. In many of them his influence has proved authoritative. His exhibitions, typographical work, publicity lay-outs, light-displays and stage-sets ('The Tales of Hoffmann', 1929; 'Madame Butterfly', 1931; and Piscator's 'Kaufmann von Berlin', 1931) amply substantiate this claim.

Photography, Film

Moholy-Nagy has exercised a decisive influence on photography, where he has systematised its potentialities and in some directions actually extended its scope. From the first he recognised that light in itself must be regarded as a medium of form. It is from this angle that his whole preoccupation with photography and the film should be judged. Moholy-Nagy saw that photography offered the possibility of expanding the existing limits of natural reproduction, and that in spite of its imperfections the camera was a means of increasing the range and precision of visual perception (i.e. in the arresting of movement, bird's-eye and worm's-eye views, etc.). I well remember how, during a holiday we spent together at Belle-Ile-en-Mer in 1925, Moholy-Nagy consistently ignored the usual perspectives and took all his snapshots upwards or downwards. A few years later the surprising artistic effects of foreshortening and of converging vertical lines had become part of the stock-in-trade of every up-to-date photographer. In 'Malerei, Fotografie, Film' (Bauhaus-bücher No. VIII. Munich, 1925) Moholy-Nagy developed many stimulating suggestions, and defined the whole province of creative work in light-sensitive media, from ordinary to camera-less photography (which enables the concrete shapes of objects to be disintegrated into gradations of light and shade), and reflectional light-displays to photo-montage and the films 'Dynamik der Grossstadt' 1921; 'Marseilles Vieux Port' 1929; 'Lichtspiel Schwarz-Weiss-Grau' 1931; 'Grossstadtzigeuner' 1932; 'Kongress für Neues Bauen', Athens 1933.

Moholy-Nagy's painting is the vital thread linking all his manifold activities. There is no break in its development proceeding in a consistent line from his first publications up to the present day. Nor is this all, for today he is feeling the need to resort more and more to this spontaneous fixation of artistic vision.

These pictures with their clear, optimistic attitude are the harbingers of that long-term development, for which a few hundred people dispersed throughout the modern world are today preparing the foundations.

The Vital Significance of Modern Art

The selection of any one single artist for separate study cannot hope to indicate the creative strength of our age, since this resides paramountly in its manifold manifestations, which despite their diversity share the same fundamental consciousness of modern civilization. Nevertheless, the editor of this review was right in choosing Moholy-Nagy as an outstanding example, since his work serves as an admirable reminder to the public that the basic laws of abstract – i.e. non-representational – art have their root in the bed-rock of contemporary realities.

Telehor, Brno, 1936, Nos. 1–2, pp. 27–29.

František Kalivoda:

Postscript to the special issue of Telehor

Brno, 1936

It was my aim in editing the present issue of this journal to indicate the progress of visual art and the perspectives of its future development. For it is the basic programme of this periodical to discuss the problems of modern art and to indicate the precise connections existing between its various categories and, in particular, between the spheres of painting, photography and film.

To demonstrate the underlying unity of all the arts, I could do no better than select the rich and many-sided work of one artist, L. Moholy-Nagy, whose versatility can scarcely be rivalled among his fellow artists of to-day. But it was not my aim to present his monograph (such a task would greatly exceed the limits of a small volume like the present one, for which Siegfried Giedion's introduction must suffice as a short biographical summary). We confined ourselves, therefore, to the discussion of a special problem figuring prominently in Moholy-Nagy's work: the problem of light, which, in view of new technical possibilities, will undoubtedly be the most

decisive artistic problem of the next few decades, if not centuries. The increasing preoccupation with this problem is clearly discernible in the painting of the nineteenth and early twentieth centuries. And it would be a mistake to discuss modern painting only in terms of its conception of space, which is merely a specialised aspect of a wider problem. No doubt, the study of light also served to reveal its specific space-time functions, but it is time that we recognised the essentially synthetic qualities of light itself. Abstract painting is therefore our starting point. Light must inevitably become increasingly prominent as a medium of artistic creation.

In our opinion the painters of to-day have an important educational responsibility: for painting proper is a training both for the artist and the public. Yet it can be no more than a transitional phase, leading to new and higher forms of expression. The art of the future will be abstract art. The 'story' type of films, in vogue at present, for example, will become pointless as soon as the problems of social organisation they deal with have been solved. Then – with other spheres of abstract art – the abstract film will come into its own. That is why the achievements of the pioneers are so important. They point towards the future.

Moholy's paintings and drawings can be regarded as first sketches for a whole number of abstract films. They might even be looked upon as their essential units (even where they happened to have been oil-paintings originally). The abstract film-artist of to-day can find valuable suggestions not merely in these paintings, but also in a whole new sphere of technical and artistic achievement. Thus cameraless photography, the photogramme, announces a new form of abstract film. Moholy's photogrammes are sections of abstract films. Moholy also raises the problem of reflected light display, both in the open air and indoors.

It is unfortunately true that the problems of abstract art are today still widely misunderstood. Abstract art has been put into practice by socialism. We are far from denying the necessity that an active revolutionary art should contribute to the new forms of a new social and economic order. But it must be clearly understood that though art of this type may have propaganda value, it cannot initiate a new period of art, and is only a transient episode. It does not, on the whole, advance the development of art, or at best it only does so indirectly by assisting in bringing about a social change. The future of art lies with the vanguard which today is striving to create new forms of expression, and continuing its experimental work, conscious of its aim and undeterred by technical difficulties.

After returning from the USSR Mart Stam (Amsterdam) recounted a characteristic experience of his. He had prepared plans for the construction of the new industrial city Magnitogorsk. As usual, the workers had the final word in the matter. 'Your scheme is excellent', one of them said after prolonged and serious discussion, 'yet, something is missing. I was once in Berlin and walked along the Friedrichstrasse at night. You know, the vast facades with their dark shadows set off by coloured illuminated advertisements – that was beautiful. And that is what your scheme lacks. I want to see something of Friedrichstrasse in Magnitogorsk.' When Mart Stam told this story his audience smiled. They talked of the reactionary emotions of this Russian workman; they said that in spite of the victory of state socialism he was hankering after things he envied in capitalist countries. Be that as it may, the Soviet worker was fully justified. He examined the plans for a new town with their ingenious organisation of dwelling and working areas, and recreational centres. Yet his requirements were not fully satisfied by his material needs. The socialist worker wants also to bring his creative and cultural needs into close connection with them. He was fascinated by the effective, but chaotic advertising displays of the Friedrichstrasse, because he was instinctively envisaging light-displays in the open air. Naturally a new socialist town can have no use whatever for a pandemonium of illuminated advertisements, typical of a capitalist city. But the desire of a people to give vent to its cultural energies, the desire for light displays in the open air, is entirely legitimate and will have to be satisfied. Light displays, as projected by Moholy, would immediately assume practical significance under such social conditions. Everything suggested by Moholy in these pages: the demand for new visual experiences, such as reflected light-frescoes, the need to perfect the technique of flood-lighting, cloud-projection and indoor lighting displays can hardly fail to prove of cardinal importance in the art of the future.

Telehor, Brno, 1936, Nos. 1–2, pp. 45–46.

Walter Gropius: László Moholy-Nagy

When in 1922 I first met Moholy-Nagy, his art made such a strong impression on me that I arranged for his teaching appointment to the Bauhaus in Weimar, the art institute founded and

led by me. I was not disappointed in him. Moholy-Nagy became one of my most active collaborators in our efforts to develop the Institute, and his participation in the creative work of the Bauhaus left everlasting traces. I had to mention the Bauhaus, because its wide range of possibilities of artistic work might have especially attracted and even impregnated his many-sided, receptive talent. New thoughts were streaming from him, and out of this abundance of ideas grew and matured the fruits of his work at the Institute and the fruits of his own individual development.

Those who may believe that Moholy-Nagy's wide range of activities, in the fields of photography, stage design, art, film, typography, and advertising, dissipated the power of Moholy-Nagy the painter, are mistaken. All his successful activities in these territories were after all nothing but necessary diversions conducted so that he could move up to conquer new conceptions of space in painting. Wherein lies, in my opinion, the true potential of Moholy-Nagy. He has succeeded in telescoping his divergent and many-sided interests in the creation of paintings, and managed to create a new particularly unique artistic unity within the space of the painting. The meaning of the spatial problem in painting is perhaps unintelligible for the uninitiated; therefore, perhaps, I may be permitted to say a few explanatory words concerning the significance of abstract art, all, of course, according to my interpretation of it.

The task of the leading abstract artists could be made better understood by employing an example borrowed from music. It is well known that a musical work, a musical composition, just like a painting, consists of content and of form. The form, however, is only partially the artist's creation, since, in order to make his musical inventions understandable at all for other people, the artist has to make use of the counterpoint, which is nothing but a common convention by the help of which the material of the sounds is distributed into certain regulated intervals of sounds. These contrapuntal regulations, scales, harmonic rules are different depending on the various periods and peoples, but they change only very slowly, and in historical processes which are independent of individuals.

In olden times the visual arts too had similarly exact contrapuntal regulations pertaining to the rendering of space. The academies, instead of preserving and further developing these laws, had lost these principles – and art had started to decline. This is the point of time at which the abstract artists – among them Moholy-Nagy whom I regard as a significant innovator – intervened in order to establish some new principles in creating pictorial space.

This is the new counterpoint: the new vision is their greatest act. In the history of painting the representational content has been relegated to the background in favour of the more significant spatial conceptions. Let us imagine what a long distance painting had to travel until it was able to reproduce those depth-perspectives which were inherent in our own physiology of vision and in our natural sight in the space of the painting, which, of course, is regarded today as an artistic achievement left behind us long ago. This has been enriched by completely new problems today, by the problems of the fourth dimension, and of simultaneity; ideas which were alien to the thought of past ages, but which enrich our own sense of space today. The artist has premonitions of new discoveries. Today even science speaks of the fourth dimension of space, or, to be more precise, of the introduction of the element of time into space. As early as before the war we met with the experiment of the Futurists who wanted to bring the feature of motion, that is a process taking place in time, into the stable painting. Let us think, for example, of the well-known painting by Delaunay, the *Eiffel Tower*, which tries to reproduce the spatial sensations of man travelling in the lift of the Eiffel Tower, that is, it wants to reproduce a sequence of spatial impressions.

The road travelled from this point to Moholy-Nagy's painting, to the conquest of the space-phenomenon, is a long one. Moholy-Nagy realized early that we could understand, grasp space only through the introduction of light. The sum of his work is nothing but a fight of gigantic dimensions to prepare the acceptance of a new vision. He tries to expand the limits of painting, and by the introduction of new technical means he is upgrading the intensity of light in the painting, that is, he brings it closer to the intensity of natural light.

Observing and recording light with the lens of the camera and of the film-camera from every possible visual angle, and assimilating spatial impressions from the bird's-eye view and from the worm's-eye view – all these exercises have helped Moholy-Nagy to create a new conception of space. In his own words: 'The new creation of space means the interweaving of the fabrics of various space-elements which most of the time are anchored in the infinite and despite this fact, they have a well-determinable relation to each other. This is a never ceasing interplay of forces.'

These lines fit Moholy-Nagy's visual creation well indeed. To be convinced about it, how-

ever, one has to have a personal encounter with these works. The very best, that is the message of the artist's intentions emanating from his paintings, cannot be expressed by words. Painting could always be understood only by those who can approach a painting with the open sensitivity of a child that knows no prejudice. Those who are looking for the anecdote in Moholy-Nagy's paintings will not find it. The beauty of the colour, the form and the light will give us a sense of the new vision with which Moholy-Nagy and some of his contemporaries are enriching the world today.

Korunk, 1937, pp. 244–246.

Walter Gropius: László Moholy-Nagy (1895–1946)

[. . .] It is twenty-four years since I met Moholy in Berlin. He was then twenty-seven years old. His vitality and his work in action made a deep impression on me. I offered him right away a chair in the Bauhaus which was then in its fourth year of existence. From then on the two of us have been very close in our mutual relations, taking continuous interest in each work and life. The Bauhaus and what it has achieved cannot be thought of without bringing back into one's mind the fiery spirit of Moholy, the great stimulator. His greatest effort as an artist was devoted to the conquest of space, and he commanded his genius to venture into all realms of science and art to unriddle the phenomenon of space. In painting, sculpture, and architecture, in theatre and industrial design, in photography and film, in advertising and typography, he constantly strove to interpret space in its relation to time, that is, motion in space. We see that at all times he was successful as a thinker and inventor, as a writer and teacher. That seems almost to be too vast a field for one man to till, but this abundant versatility was uniquely his. With his power of imagination he kept this tremendous variety of interest in balance. His vision took brilliant shortcuts synchronizing his observations into a consistent whole, for he felt today's danger of over-specialization which leads to fallacies. Constantly developing new ideas he managed to keep himself in a stage of unbiased curiosity from where a fresh point of view could originate. With a shrewd sense of observation he investigated everything that came his way, taking nothing for granted, but using his acute sense for the organic. Many of us will remember his peculiar freshness when he was facing a new problem in his art. With the attitude of an unprejudiced happy child at play he surprised us by the directness of his intuitive approach. Here, I believe, was the source of his priceless quality as an educator, namely his never-ceasing power to stimulate and to carry away the other fellow in his own enthusiasm. What better can true education achieve than setting the students' minds in motion by that contagious magic? His work, I know, will gain in time, when weaker eyes will have learned to see through his, and his students will carry his shining lamp into the future.

*From his eulogy at the funeral of Moholy-Nagy, November, 1946
Collection of the Société Anonyme,
Museum of Modern Art, Yale University Art Gallery, 1950*

NOTES

1 I. e. *Akaszott Ember* (The Hanged Man), later re-named *Ék* (Wedge), a Hungarian periodical published in Vienna in 1922–23. In 1924, its editor, Sándor Barta, joined the Communist Party, and the periodical merged into *Egység* (Unity), also published in Vienna and Berlin by Hungarian émigrés. All three periodicals represent artistic interpretations more traditional than those of the avant-garde *MA*. The article cited by Moholy-Nagy appeared in the second issue of *Akaszott Ember*.

2 Ernő (Ernst) Kállai (1890–1954), aesthete and critic, member of the Bauhaus and a spokesman of Hungarian and international avant-garde art and literature.

Alfréd Kemény (Durus) (1895–1945), art critic and aesthete, who after the fall of the Hungarian Republic of Councils in 1919, lived in Vienna and Berlin, and later, between 1935 and 1937, was Secretary of the International Office of Revolutionary Artists in the Soviet Union.

László Péri (1899–1967), painter and sculptor. From 1921 he lived in Berlin; in 1933 emigrated to London.

Egység (Unity), a Hungarian periodical published in Vienna and Berlin between 1922 and 1924, co-edited by the poet Aladár Komját and the painter Béla Uitz. A mouthpiece of the communist émigrés in Vienna, the views on art and artistic policies expressed in it were contrary to those of *MA*. The *Manifesto* published herein primarily reflects the views of Kemény.

3 Moholy-Nagy formulates here for the first time his own specific concepts about the expansion of artistic resources, the analogy existing between phonograph and photography, etc. He makes reference to the avant-garde films of Ruttmann and to Wilfred's *Clavilux*. An improved version of the latter is the light-colour organ of Sándor László, the conception of which was known and greatly respected by Moholy-Nagy. (Cf. 'New Film Experiments', p. 319)

4 The authenticity of Moholy-Nagy's photograms, and of his ideas expressed in this article, was strongly doubted by El Lissitzky (1890–1941). This great figure of Russian Constructivism, who was active in Germany between 1921 and 1928, was personally affected by this matter (cf. extract from a letter to his wife, p. 391). Should Lissitzky's standpoint be still exaggerated, it seems probable that Moholy-Nagy adopted the idea of the photogram rather from Christian Schad. Lucia Moholy also makes reference to this (cf. *Marginal Notes*). According to the recollection of Lucia Moholy, Moholy-Nagy himself did not really care for laboratory work and rather entrusted it to his wife. (Oral statement by Lucia Moholy.)

5 The article, published in *i 10*, 1927, No. 4., discussed a new type of fundamental relationship existing between painting and photography. Contributors to the debate included, among others, Adolf Behne, Kandinsky, and Kassák. (See: *Bauhaus Fotografie*. Edition Marzona, Düsseldorf, 1982, pp. 138–141)

6 The structure mentioned was designed by Moholy-Nagy and executed in 1930, with the help of engineer István Sebők, by Allgemeine Elektrizitätsgesellschaft (AEG). It was first displayed in Paris in 1930 at the

exhibition arranged by the Deutscher Werkbund. This is the exhibition to which Moholy-Nagy refers in his letter to Sonia Delaunay (see p. 404).

7 This article refers to the debate on painting vs. photography written of earlier by Moholy-Nagy in *i 10*. Here too he repeats his often voiced view that the illiterate of the future will be those ignorant of photography.

8 The essay refers back to the views expressed in 'Production-Reproduction' and 'New Form in Music. Potentialities of the Phonograph' (see p. 289 and 291 respectively).

9 The eminent Czech avant-garde architect, František Kalivoda, made possible an exhibition for Moholy-Nagy in Brno. As editor of the review *Telehor* (its title, meaning 'television set', originates from Moholy-Nagy), he devoted an entire issue to Moholy-Nagy; it amounts to a volume of essays both as regards content and illustrations. The letter written to Kalivoda refers to the debate on painting vs. photography, which in 1927 was published in several issues of the review *i 10*.

10 Moholy-Nagy sets forth the history of the chair also in his book entitled *Vision in Motion*.

11 The collages mentioned could only have been made after 1920; that is, already during Moholy-Nagy's stay in Berlin, presumably under the influence of Kurt Schwitters. In a letter written earlier to Hevesy (see p. 388), he denounced the works of Schwitters. Lucia Moholy also emphasizes that the influence of Schwitters could only have reached him once in Germany (see p. 394). In his letter written to Hevesy (see p. 388) Moholy-Nagy stated that he spent only six weeks in Vienna, which period supposedly coincided with the end of the year between 1919–1920. From another letter written also to Hevesy, it becomes evident that, although he supported *MA*, he preferred being at a distance from Kassák rather than in his vicinity. Although he maintained contacts with those Hungarian émigrés opposed to Kassák, his harsh remark is not justified.

The three-dimensional assemblages which he mentions here he also began making while in Berlin; during his short and hectic stay in Vienna he would not have had the opportunity.

12 In 1919, as a hyphenated name, the artist began to use with 'Nagy' the village name of Mohol (now in Yugoslavia). Not much is known about his parents. His father, Lipót Weiss, once a steward on the Latinovits estate, emigrated before Moholy-Nagy started school. A photograph taken in 1936 preserves the fine features of his aging mother, Karolina Stein (see plate 224). The artist's younger brother, Ákos Nagy, went to the Soviet Union during the First World War; he stayed and died there, never having met his family again. His widow still lives in Moscow.

Iván Hevesy (1893–1966), aesthete, critic, was Moholy-Nagy's most important intellectual supporter in Hungary, and a fatherly friend. In *Jelenkor*, which he edited he published Moholy-Nagy's first – and rather

weak – writings. Hevesy did not much value the illustrated postcards sent him by Moholy-Nagy from the front; he maintained that Moholy-Nagy should have returned to his writing. His interest in the avant-garde, his vast knowledge of European arts, including film, exerted a strong influence on Moholy-Nagy. However, as is clear from the letters of Moholy-Nagy to Hevesy, after Moholy-Nagy left Hungary they drifted apart. Moholy-Nagy adopted the latest trends with exceptional speed, in which Hevesy, who stayed in Hungary, could not and would not follow him intellectually. In 1928, when they met again in Berlin, Moholy-Nagy was experiencing a difficult period of his life: he had just resigned from the Bauhaus. In 1930 Moholy-Nagy visited Budapest, where he was received with great acclaim. It was also easier in Hungary to be relaxed with Iván Hevesy, as the most controversial issues of the avant-garde were already obsolete.

13 His letter to his friend Artúr Bach, a bank-clerk in Szeged, is the only available source concerning the relationship in Hungary between Moholy-Nagy, an Activist at the onset of his career, and Béla Uitz (1887–1970), the leading figure of Hungarian Activism. The paths of the two artists separated in emigration; Uitz strongly criticized Moholy-Nagy's activities. Nevertheless Moholy-Nagy contributed his writings to the periodical *Egység*, edited by Uitz and Aladár Komját. (Cf. Éva Bajkay, *Uitz*. Budapest, 1974; also: 'Manifesto', p. 288)

14 Moholy-Nagy's diary was once in the possession of Sibyl Moholy-Nagy; its present whereabouts is unknown. The entry quoted was written in Hungarian. Unfortunately, the documents and statements published by Sibyl Moholy-Nagy, particularly those connected with the years spent in Europe, are not always incontestable.

15 Moholy-Nagy met the poet Gyula Juhász (1883–1937) while a student in Szeged and for a long time respected him as his master, especially since he also began his artistic career as a writer. All along Juhász always supported him with counsel, and was the first to write about him on the occasion of Moholy-Nagy's first – and only – exhibition in Hungary (in Szeged) in his life. In addition to their mutual friendship, Juhász's avid interest and excellent judgment in fine arts as well as his leftist stance were instrumental in their relationship. No information is available on ties after 1920. (Cf. László Péter, 'Moholy-Nagy pályakezdéséhez'. *Tiszatáj*, 1971, No. 11; also László Péter, 'The Young Years of Moholy-Nagy'. *The New Hungarian Quarterly*, 1972, No. 46.)

16 The letter clearly shows that at this time Moholy-Nagy was still bound by those conceptions and ideals (Cézanne, Van Gogh, Picasso, Tihanyi, etc.) brought from home, and as yet did not recognize the significance of Schwitters. Nevertheless, Schwitters was to exert great influence on him, which is already visible in the collages, drawings and constructions of 1921–22. In 1922, *Der Sturm*, which he so disliked earlier, arranged for Moholy-Nagy an exhibition which for the first time truly focused attention on him.

As further exhibitions show, even during the Bauhaus period he maintained good relationships with Herwarth Walden, editor of the periodical.

17 Lajos Kassák (1897–1967), poet and painter, editor of several internationally recognized periodicals, was the leading figure of the Hungarian avant-garde.

Three of the photographs mentioned by Moholy-Nagy in this letter (those of Rozanova, Malevich, and one construction from Vitebsk, together with the envelope) survived; the rest was published in *MA*. 1922, No. 2–3. The photograph of Tatlin's Monument of the 3rd International was published as an illustration to Punin's article 'Tatlin üvegtornya' [Tatlin's Glass Tower] in *MA*, 1922, Nos. 5–6.

18 Probably he refers to the volume of the Bauhausbücher edited by Moholy-Nagy, *Die Bühne im Bauhaus*, whose authors were Schlemmer, Farkas Molnár and Moholy-Nagy.

19 El Lissitzky probably refers to the Bauhausbücher edited by Moholy-Nagy, in which El Lissitzky was also commissioned to write a book on typography.

20 The reference by El Lissitzky is probably to Moholy-Nagy's book entitled *Malerei, Fotografie, Film* which was published in 1925 in the Bauhausbücher series.

21 Kemény's article cited by El Lissitzky appeared in *Der Kunstblatt*, 1924, No. 6. (see p. 394). Lissitzky remarks that Moholy-Nagy still did not have a profession in 1921–23, which applies as much to himself as to any other contemporary avant-garde artist. In all probability, it was Lucia Moholy who, as early as 1920, directed his attention to photography and also helped him master the technique. When preparing for his second exhibition in Germany in 1922 he already had the opportunity to become familiar with the photograms of Man Ray, Christian Schad, and others. He certainly did not invent the technique, but by 1922 was among those employing it most successfully. El Lissitzky's evaluation of the article published in *Broom* (see 'Light – A Medium of Plastic Expression', p. 292) clearly shows signs of prejudice. It seems quite likely, however, that Moholy-Nagy tried to gain prominence over Man Ray.

22 Aurél Bernáth (1895–1982), Hungarian painter, lived in Berlin between 1923 and 1926, painted expressionist pictures.

23 The *Dada-Almanach* (Berlin, 1920, p. 89), edited by Richard Huelsenbeck, contains a passage which might be regarded as the theoretical antecedent of Moholy-Nagy's pictures.

24 Antal Németh (b. 1903), journalist, art and theatre critic, distributed in 1924 a questionnaire to Hungarian artists. Moholy-Nagy's answers to these questions avoid all stereotypes and reveal more about his inner development and individuality as an artist than do any other writings of his. An interview published in *The Little Review* (see p. 403), and also 'Abstract of an Artist' (see p. 360), reveal similar personal aspects.

25 The painter Kasimir Malevich (1878–1935), founder of Russian Suprematism, was an outstanding figure of modern art. His letter refers to the debate launched in 1927 by Kállai's article entitled 'Painting and Photo-

graphy' in *i 10*. The discussion elicited several responses, thus also one by Moholy-Nagy (see p. 301), who did not publish Malevich's letter. In early 1927, they personally met in Berlin, where they discussed Malevich's book to be published in the Bauhausbücher series (*Suprematismus: Die gegenstandslose Welt*), the manuscript of which Moholy-Nagy considerably condensed. It is likely that both the personal meeting and the debate in *i 10* might have resulted in alienating rather than bringing them closer.

26 The outstanding Soviet Constructivist artist Alexander Rodchenko (1891–1956) was quite familiar with the work of Moholy-Nagy; an inscribed copy of *Malerei, Fotografie, Film* was found in his library. Moholy-Nagy's work was recognized in the Soviet Union, though with reservation, and his book was published in Russian in 1929 (cf. Fyodorov–Davidov's Foreword, p. 418). This explains why *Sovietskoye Foto* accused Rodchenko of plagiarism, when in reality Rodchenko's photographs were made earlier.

27 The letter refers to *Pressa*, an exhibition of typophotos organized in 1928 in Cologne.

28 The original document is in the possession of Hattula Moholy-Nagy.

29 In this imaginary dialogue, the 'well-meaning' critic is possibly a fictitious person, while the representative of the Bauhaus at Weimar-Dessau is most likely Moholy-Nagy himself. The person bearing the initials H. M. must certainly be Hannes Meyer, who assumed directorship of the Bauhaus in 1928 and with whose views and activities Moholy-Nagy and Marcel Breuer, among others, could not agree. This document sheds light on inner tensions and conflicting attitudes among members of the Bauhaus. The purpose of the dialogue is not exactly known, nor is the identity of the author established. The document is in the possession of Hattula Moholy-Nagy.

30 None of these projects materialized.

31 Sonia Delaunay (1885–1980) was a French painter and designer of Russian extraction.

Moholy-Nagy's *Light-Space Modulator* was first displayed in 1930 in the Grand Palais, Paris, at an exhibition arranged by the Deutscher Werkbund. (Cf. 'Light-Space Modulator for an Electric Stage', p. 310)

32 Tibor Déry (1894–1979), eminent Hungarian novelist.

33 Herbert Read (1893–1968), British art historian, authority on modern art.

34 Máriusz Rabinovszky (1895–1953), art historian and aesthete, presumably invited Moholy-Nagy to give a lecture in Budapest. Among the exhibitions mentioned in the letter, the one in Paris was arranged in 1934 by Abstraction-Création, the one in Brno by Kalivoda, who also published in 1936 the special issue of *Telehor* devoted to Moholy-Nagy.

35 Sándor Bortnyik (1893–1977), painter, member of Kassák's circle during the late 1920s, established in 1928 a private school in Budapest called Műhely [Workshop], also referred to as the 'Hungarian Bauhaus'.

36 Gyula Pap (b. 1899), painter, between 1920 and 1923 a student at the Bauhaus.

37 The painter and graphic artist Xanti Schawinsky (b. 1904) studied at the Bauhaus and later belonged to the circle of friends of Moholy-Nagy and Gropius. Ascona, mentioned in his letter, was a summer meeting-place for avant-garde artists in the late 1920s. Of the persons mentioned, Bruno is most likely Bruno Taut, Herbert is Herbert Bayer, Ellen is Ellen Frank, Moholy-Nagy's love in the late 1920s. 'Bühnenbuch' is the book on the theatre of the Bauhaus edited and written in part by Moholy-Nagy.

38 A. Fyodorov-Davidov was a well-known Soviet art historian who was primarily concerned with 20th-century art as well as photography. At the given time he was Director of the Tretyakov Gallery in Moscow and arranged Malevich's last one-man show there in 1929. The foreword to the catalogue for Malevich's exhibition reflects the influence of Moholy-Nagy's book *Malerei, Fotografie, Film*.

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LÁSZLÓ MOHOLY-NAGY (1895-1946) was one of the most versatile artists of the twentieth century; but unlike those polymaths whose activities are practiced at the expense of profundity, he made highly significant contributions to the visual arts in everything he did. He was the dominant theoretician of the Bauhaus during its most prosperous era; his Constructivist/Suprematist paintings are among the finest achievements in European art of the twenties; he was a pioneer in kinetic sculpture; and his photographs, photograms and photoplastics led the way in exploring the full potential of photo reproduction. And even these were not the limit of his interests, for he also made films, designed scenery and costumes, and excelled in commercial graphics and exhibition design.

Krisztina Passuth's kaleidoscopic picture of the man and his work examines in detail the various stages of his career, from Hungary and Kassák's Activist circle during the First World War to Germany and the Bauhaus, from England in the 1930s to America and the foundation of the New Bauhaus in Chicago.

The many facets of his career were linked not only by a process of inner development but also by his prolific work as educator and writer on the arts, zealously advocating in the widest possible circles the importance of an innovative and experimental approach. This role is recorded through a wide selection of Moholy-Nagy's writings, and the book also contains extracts from his own letters, diaries and reminiscences, critical commentaries on his work and a comprehensive bibliography. With over 250 illustrations drawn from all phases of his work, the result is an impressive retrospective of an artist who has had a profound influence on how we see – and what we see.

KRISZTINA PASSUTH has worked in Budapest in both the Hungarian National Gallery and the Museum of Fine Arts, where she was head of the department of modern art. In 1978 she assisted in the organization of the "Paris – Berlin" exhibition at the Pompidou Centre in Paris and her many publications on twentieth-century art include *De Chirico* (1973) and *Schwitters* (1979).

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