

Time and Space in the Work of László Moholy-Nagy

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László Moholy-Nagy took the role of the artist seriously, believing that “art is the most complex, vitalizing, and civilizing of human actions,” and that the artist in each era “disentangles the most essential strands of existence from the... chaotic complexities of actuality, and weaves them into an emotional fabric of compelling validity, characteristic of himself as well as of his epoch.”¹ Throughout his career, Moholy thought deeply about what kind of art would be best and most appropriate for the world in which he lived. His ideas infused his work in all media. His art can be understood more completely when it is seen within the context of the concepts the artist consciously sought to express.

Underlying the creation of all Moholy’s mature works were his ideas about the time-space nature of our world. He believed we are

heading toward a kinetic, time-spatial existence; toward an awareness of the forces plus their relationships which define all life and of which we had no previous knowledge and for which we have as yet no exact terminology... Space-time stands for many things: relativity of motion and its measurement, integration, simultaneous grasp of the inside and outside, revelation of the structure instead of the facade. It also stands for a new vision concerning materials, energies, tensions, and their social implications.²

Because Moholy held that the “space-time experience is... a biological function of every person,” essential as one of “the laws of life which guarantee an organic development,”³ he felt it to be imperative that each of us develop a new way of seeing if we were to exist fully in this new era. Moholy wrote at length about this quality as “vision in motion... simultaneous grasp... creative performance—seeing, feeling and thinking in relationship and not as a series of isolated phenomena.”⁴

For Moholy, it was the artist who would create the visual works that could train people to experience the world in this new way. He exhorted his students in Europe and America to join him in research to produce the forms of art that would best embody this “vision in motion,” believing that such works should use new technology and materials, because these were especially suited to translating the modern time-space experience into art.⁵ Compositionally, the new art would draw on the ways our time-space perceptions have been expanded as our eyes, ears, sense of balance and equilibrium have been increasingly exposed to experiences in speeding cars, trains, and planes, and through x-ray cameras, telescopes, microscopes and the like. Eventually, the artist’s research would develop “a genuine space system, a dictionary for space relationships, as we have today our colour system or as we have our sound system for musical composition.”⁶ It was to the development of this visual space system that Moholy devoted his life and his art.

Moholy studied the history of the artistic representation of space and time in art to better understand the ways in which its image in our age differed from that of earlier times. From early in his career, Moholy felt that the complexities of our own age could best be expressed in a non-objective (i.e. non-mimetic) art employing a visual system of spatial organization developed by artists as they did research into “the specific psycho-physical role of each colour value,” the effects of various types of lighting, and the expressive potential of new materials and compositional devices.⁷

Moholy felt that space-time art was to be based on research into human perception. He wrote of the importance of an understanding of how we grasp “the dimensions: one, two, three, and more” of space-time. He particularly stressed the need for an understanding of how we perceive *space*—through the sounds that reach our ears, the cues that stir our kinaesthetic body senses, and the sights that meet our eyes. The kinaesthetic experiences he noted as coming to us through “motion, balance, and horizontal, vertical, diagonal, jumps, [...] circles, curves, windings (spiral stairways),” and the visual information through “wide perspectives, surfaces meeting and cutting one another, corners, moving objects with intervals between them... [and] layering [that binds] different space and time levels together.”⁸

His second wife Sibil reports that when Moholy described his aesthetic ideas aloud he often used a gesture in which “he crossed his spread fingers in the form of a grill... the most characteristic expression of his drive toward integration.”⁹ The interwoven layered

strips that this image conveyed emerged early in Moholy's art: "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... strip, used in my first collages."¹⁰ (illustration 1)

Chief among the devices Moholy used to represent the simultaneity of modern space-time was transparency, which implies the layered inside-outside space of x-rays and glass architecture, and also suggests light passing through surfaces. For Moholy, light and shadow were essential components in the artistic expression of time-space. Light had a special significance for the artist from early in his life when he wrote: "Light, ordering Light... Light, total Light, creates the total man... Space, time, material—are they one with Light?"¹¹ He believed that light was a natural medium for modern art: "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."¹²

But mastering the medium of light meant mastering the medium of darkness too, because Moholy saw that "All human life has its shadow. Without it, it stops being human."¹³ In his abstract work, Moholy's techniques for modulating light included painting on reflective metal and on layers of transparent plastic, bending plastic sheets into three-dimensional forms, and designing sculptural pieces especially to exploit the kinetic possibilities of shifting light and shadow. Moholy saw this new art as indicative of "a trend away from... [the mere] pigmentation of surfaces toward a kinetic 'light painting.' The problem" writes Moholy, "is only how to control [the effects of] these coloured 'light paintings' with the same precision as the painter of yesterday controlled the effects of his pigments."¹⁴

Moholy called his works in this mode "light modulators." He created light modulator paintings, relief paintings, sculptures, and stage sets to exploit the ways in which the changes wrought by shifting light and shadow could express "vision in motion." And he persistently stalked structures and objects which modulated light with both still and movie cameras, expressing his appreciation of the human face as "the best-known of all light modulators."¹⁵

For Moholy, photography ("writing with light") was particularly suited to expressing space-time "vision in motion." Black-and-white camera photography could capture the real interdependence of light and shadow, and the transparent layering found by shooting pictures through glass surfaces or capturing reflections could be augmented by superimposing two or more images. Photographs of all sorts could

teach much about the nature of “light texture” as well as revealing new spatial relationships if taken from a bird’s eye, worm’s eye, or other unusual angle of vision.¹⁶ True photographic space-time relationships must echo actual human perception. Not only is our world unevenly lit, but things appear to us with differing sharpness:

How rarely does one actually see in sharp focus! There is an interplay of advancing and receding forms in every movement. One of them is always ‘out of focus.’ And from the corners of our eyes we are conscious of shadowy objects and anticipated faces. The invariably sharp focus of the commercial camera... creates a shadowless world... Vision becomes two-dimensional.¹⁷

Such flattening was antithetical to developing “vision in motion.” In his photographic and cinematographic work, Moholy strove to embrace the rich panoply of optical texture that is a part of everyday experience.

Perhaps the purest use of light, shadow, and focus to express the space-time of “vision in motion” was in his photograms.¹⁸ In these images he carefully manipulated lights shining through, and shadows cast from various objects onto the photo-sensitive paper. The results were two-dimensional images that create the illusion of three-dimensional space through the employment of compositional devices found in his other abstract works such as layering, transparency, spatial cues, and chiaroscuro.¹⁹ He felt the photogram to be “a diagrammatic record of the motion of light translated into black and white and grey values [that] can lead to a grasp of the new types of spatial relationships and spatial rendering.” The “hidden world” revealed by the photogram’s reversals of light and dark inspired Moholy to experiment with negative prints of his conventional photographs and portions of his films.²⁰

In his photography, his sculpture, and his theatre set design, Moholy often used mirroring, varying degrees of focus, and strong chiaroscuro effects to reveal new patterns of time-space relationship. His camera found subjects that incorporated these features. His photograms were created to include them. The character of the metals and plastics he chose for his “light modulator” sculptures and paintings emphasized these qualities. His sets for operatic productions like *Tales of Hoffmann* (Berlin, 1929) and *Madame Butterfly* (Berlin, 1930) were constructed so that changes in light significantly transformed the appearance of the stage:

[For *Tales of Hoffmann*] Moholy created imaginary spaces through mere scaffolding which could be set into flowing motion. Light and color effects corresponded to musical-dramatic sequences... [For *Madame Butterfly*, a] rotating scaffolding created constantly new space-effects through light and color projections on the stage horizon.²¹

Later in his life, it was Moholy's careful control of light and shadow patterning that made legible the complex effects of simultaneity in the images he produced in all media.

Moholy incorporated the effects of motion and time in space in all his works, most often translating "vision in motion" into non-kinetic pieces. He used *actual* motion in some three-dimensional pieces and in his films. The most complex of Moholy's motion sculptures was the *Lichtrequisit einer elektrischen Bühne*. (*Light Display Machine*—also known in English as the *Light-Space-Modulator* or the *Light Prop*). (illustration 2) Moholy worked on the design for this device from 1922 until 1930. He intended it to operate within an ambience of shifting coloured light beams which would create an ever-changing display of light and shadow: "The moving sculpture had 140 light bulbs connected with a drum contact. This was arranged so that within a two-minute turning period, various colored and colorless spotlights were switched on, creating a light display on the inside walls of a cube."²² At the time Moholy began work on the machine, he was teaching at the Bauhaus, and there he was but one of several people experimenting independently with a moving light apparatus. But his *Light Display Machine* differed from the works of his Bauhaus colleagues. Their inventions were designed to project shifting shapes of coloured light onto a screen, while Moholy's was conceived so as to fill a volume of space with the moving physical shapes of the sculpture, in addition to the light beams and shadows projected through its forms.

Moholy never managed to achieve his ambitions to create kinetic pieces with:

hand-controlled or automatic systems of powerful light generators enabling the artist to flood the air—vast halls, or reflectors,... fog, gaseous materials or clouds, with brilliant visions of multicolored light... [or] 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.²³

But a “performance” of his *Light Display Machine* must have given a taste of what that vision might have been like had it been fulfilled.

The relationships between all of the things Moholy found important to space-time “vision in motion” could be explored with particular freedom using a motion picture camera. For him motion pictures would always “more than anything else, fulfill the requirements of space-time accentuated visual art.”²⁴ He attempted to explore these possibilities in a series of experimental films. When Moholy and Sibyl were working on one of his films in 1930, he told her: “I’m not thinking in chronological terms. At least not in the accepted sense. The rhythm of this film has to come from the light—it has to have a light-chronology.”²⁵

In all his films this “light chronology” was developed through patterns of light and dark—in the live-action films this was supplemented by all of his other space-time devices. In addition he created a different sort of simultaneous vision by linking objects from disparate environments through their visual juxtaposition.

Before he made his first film, Moholy was already working out the ways all of this would operate cinematically. The graphically-designed “typophoto” pages of his first film script, *A Nagyváros dinamikája* (Dynamics of the Metropolis, published in the 15 September 1924 issue of *Ma*), incorporate shifts in scale and visual texture, and an a-linear flow of “subject” accomplished through jump-cuts and idea-paired juxtapositions, as well as through patterns of motion within the frames of each page. Each of these qualities found their place in Moholy’s realized films. An unrealized dream was to have a special theatre with simultaneous multiple projections of varied images.

Restricted finances and logistics limited his personal cinema work to eight short films. The first five were personal projects, carried out essentially on his own. *Berliner Stilleben* (Berlin Still Life, 1926) and *Marseille vieux port* (Marseilles Old Port, 1929) were experimental time-space city portraits. *Lichtspiel Schwarz-weiss-grau* (Lightplay Black-White-Gray, 1930) was a visual experiment in chiaroscuro time-space relationships; a ballet of light created using the *Light Display Machine*, and shot so as to intensify the mirroring, juxtaposition, and spatial layering effects of the device. (He also extended the ideas of the *Light Display Machine* in special light-space effects he designed for Alexander Korda and H. G. Wells’ 1936 production *The Shape of Things to Come*—but only a few of them found their way into the finished film). *Tönendes ABC* (Sound ABC, 1932), was Moholy’s lone attempt to pursue some of his ideas about an

appropriate acoustical language for cinema. This film has been lost, but Sibyl Moholy-Nagy described it as having had patterns scratched directly onto the sound track, which were also filmed and projected as the visual imagery—a tantalizing forerunner of similar effects employed in the films of the Canadian animator Norman McLaren. *Zigeuner* (Gypsies, 1932) depicted life in a community existing apart from, yet within the bourgeois world of Weimar Berlin.

This group of five films constituted Moholy's research into how his space-time ideas could be translated into the medium of the motion picture. When Sibyl asked him why he did these films outside the commercial film production arena he replied: "Who will work on problems of focus and motion, cutting, simultaneity and all that, if it is not ourselves?"²⁶

Viewing Moholy's *Marseilles*, *Berlin*, and *Gypsy* films is a curious experience. Missing is the unity of subject-matter our movie-going has led us to expect in documentary films. In its place is a rapid cascade of glimpses into details of life in the particular environments depicted. Footage from separate scenes is intercut in segments so short that two or more subjects merge in our mind—an effective alternate cinematic technique for simultaneity. A viewer carries away from a showing of one of these films a lingering sense of place and culture tied to strongly remembered sights, people and actions. The effect resembles the way one remembers a place from a tourist visit, when new sights become memorable in the way they are filtered through our individual physical, mental, and emotional states. At its best, Moholy's cinematic style speaks through the physical world to the psychological time-space of the viewer.

The abrupt multiple cuts help to build the "light chronology" of each film. *Marseille vieux port*, for example, begins in the open and bright spaces of the more affluent parts of town. We move from a view seen through a second-floor window—the artist's hotel, perhaps—to the pavement, where the camera reveals patterns of motion in the streets and cafés, the town square, in shop window reflections, and as seen through the windows of a bus and several cars. Gradually we "find" the waters of the port and the *transponder* "bridge" which carried people from the new part of town to the older. Then, magically, we become enmeshed in the moving patterns of the high tower-ferry *transponder* as it moves across, over moored small craft and sparkling water to the more ancient, poorer section of town. There the "shadow" part of life dominates, alleviated only by occasional flashes of light. Finally we are back on the quay after a rainstorm, and then we move away from the city on a boat, where

waves and ships move past the city pier. In the final scene of the film, there is a blend of light and shadow as gulls wheel over darkened water. (illustration 3)

Moholy took his still camera as well as his cinema camera to Marseilles. Some of his most oft-published photographs are of compositions also found in the movie. Several of these images—like the shot near the film’s beginning taken through the second-story window—reappear on the pages of a book of contact prints which Moholy probably assembled in 1937, on the eve of his departure for the United States. Sixty-nine pages from this contact book (which initially had at least 160 pages) survive in the collection of the artist’s daughter Hattula Moholy-Nagy. Moholy may have compiled the contact book partly to provide a compact catalogue of his photographic work to show people in America, but the pages are no more like the usual photographer’s reference contact book than Moholy’s city films are like the usual documentary.

It seems that the artist assembled all the images he wanted to take with him, and that then he could not resist making an a-logical space-time composition on the blank pages. Moholy’s camera used cut film and produced loose contact prints, which he could freely arrange in any order. And the orderings he chose were varied. As contact book page 102 shows, he did not feel compelled to stick to shots of one subject, or one time, on one page. (illustration 4) Here the Marseilles window and a rooftop “easel” that turns up later in the Marseilles film, join photographs taken on Moholy’s Scandinavian trip of 1930. On this page, as elsewhere, we see that he preferred a vertical format for his photographs, though he did take horizontal pictures occasionally. These he upended on the pages of the contact book, so that the pictures and residual surface of the page as a whole combine to form a kind of window grid through which we see spatial patterns of light and dark. It is the production of this chiaroscuro pattern that seems to have been Moholy’s impellent motive for the placement of the images on each page. This suggests that he saw each page as a compositional exercise in its own right. A recurrent pattern employed in these compositional exercises is analogous to one which Moholy repeatedly uses in the Marseilles film: Dark, upright forms flank a lighter strip in the centre, in which a darker band zig-zags through the space from the top of the page (or screen) to its bottom.

In the contact book, as in his photography, drawing, painting, collages, prints, cinema, set design, commercial art and industrial design, Moholy pursued the expression of twentieth century space-

time with "vision in motion." As Sibyl Moholy-Nagy wrote: for László Moholy-Nagy, "seeing was a philosophy of life."²⁷

Notes

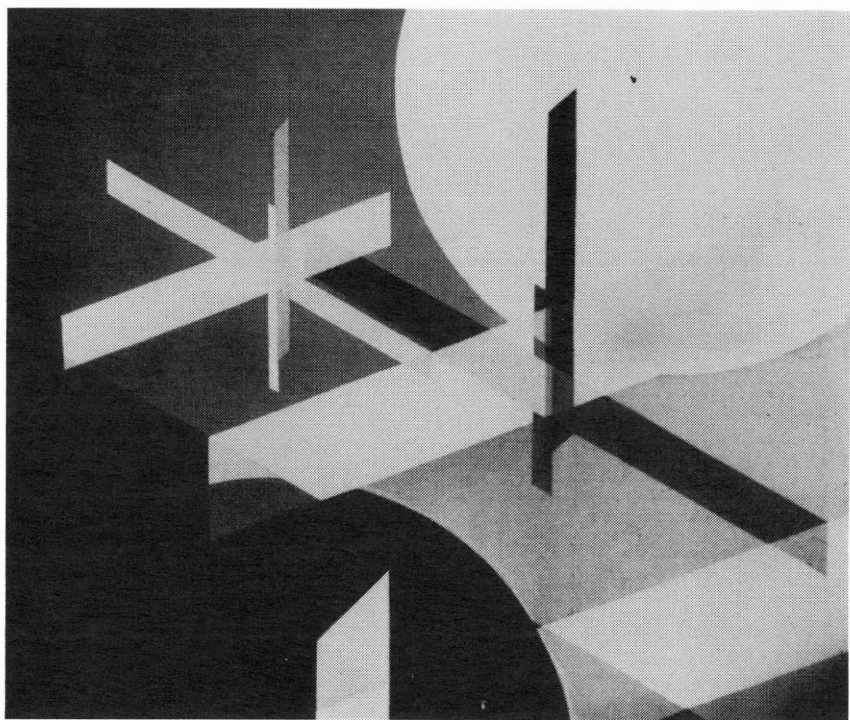
All the photos were supplied through the courtesy of Hattula Moholy-Nagy.

1. László Moholy-Nagy, *Vision in Motion* (Chicago: Paul Theobald and Company, 1969), pp. 11 and 28.
2. *Ibid.*, p. 268.
3. *Ibid.*, pp. 9 and 34.
4. *Ibid.*, pp. 1-2.
5. See especially: Moholy-Nagy, "Directness of the Mind: Detours of Technology," *Bauhaus I* (1926), reprinted in Richard Kostelanetz, ed., *Moholy-Nagy* (NY: Praeger Publishers, 1970), pp. 187-188; and *Vision in Motion*, passim.
6. Moholy-Nagy, "The New Bauhaus and Space Relationships," *American Architect and Architecture*, vol. 151 (December, 1937), reprinted in Kostelanetz, p. 104.
7. Moholy-Nagy, "Subject Without Art," *The Studio*, vol. 12, no. 239 (4 November 1936), reprinted in Kostelanetz, p. 43.
8. Moholy-Nagy, "Space-Time and the Photographer," *American Annual of Photography* (1942), reprinted in Kostelanetz, p. 59; Moholy-Nagy, "The New Bauhaus and Space Relationships," Kostelanetz, p. 107; and "Space-Time and The Photographer," Kostelanetz, p. 62.
9. Sibyl Moholy-Nagy, *Moholy-Nagy, Experiment in Totality* (Cambridge, Ma., The MIT Press, 1969), p. 60.
10. László Moholy-Nagy, "Abstract of an Artist," written in 1944, published in *The New Vision and Abstract of an Artist* (New York: George Wittenborn, Inc., 1947), p. 86.
11. Moholy-Nagy, untitled poem written early in 1917, printed in Sibyl Moholy-Nagy, *Moholy-Nagy*, p. 11.
12. László Moholy-Nagy, "Letter to Fra. Kalivoda," written in 1934, originally published in *Telehor* (Brno, 1936), reprinted in Kostelanetz, p. 37.
13. Sibyl Moholy-Nagy, *Moholy-Nagy*, p. 83.
14. László Moholy-Nagy, *Vision in Motion*, p. 252.
15. Moholy-Nagy, "Make a Light Modulator," *Minicam*, vol. 3, no. 7 (March 1940), reprinted in Kostelanetz, p. 99.
16. Moholy-Nagy, *Vision in Motion*, pp. 173, 178, and 252.
17. Sibyl Moholy-Nagy, *Moholy-Nagy*, p. 83.
18. Photograms are photographic images made without the use of a camera. The works are produced by exposing light-sensitive paper directly to light sources, usually in the darkroom.
19. László Moholy-Nagy, "Space-Time and The Photographer," Kostelanetz, p. 61.
20. Moholy-Nagy, *Vision in Motion*, pp. 188 and 197.
21. Hans Curjel, "Excerpt from Moholy-Nagy and the Theater," *Du*, 24 (November 1964), translated from the German by Sibyl Moholy-Nagy and reprinted in Kostelanetz, p. 94.
22. László Moholy-Nagy, *Vision in Motion*, p. 238, caption for figure 235.
23. Moholy-Nagy, "Letter to Fra. Kalivoda," Kostelanetz, p. 37.
24. Moholy-Nagy, *Vision in Motion*, p. 271.
25. Sibyl Moholy-Nagy, *Moholy-Nagy*, p. 69.

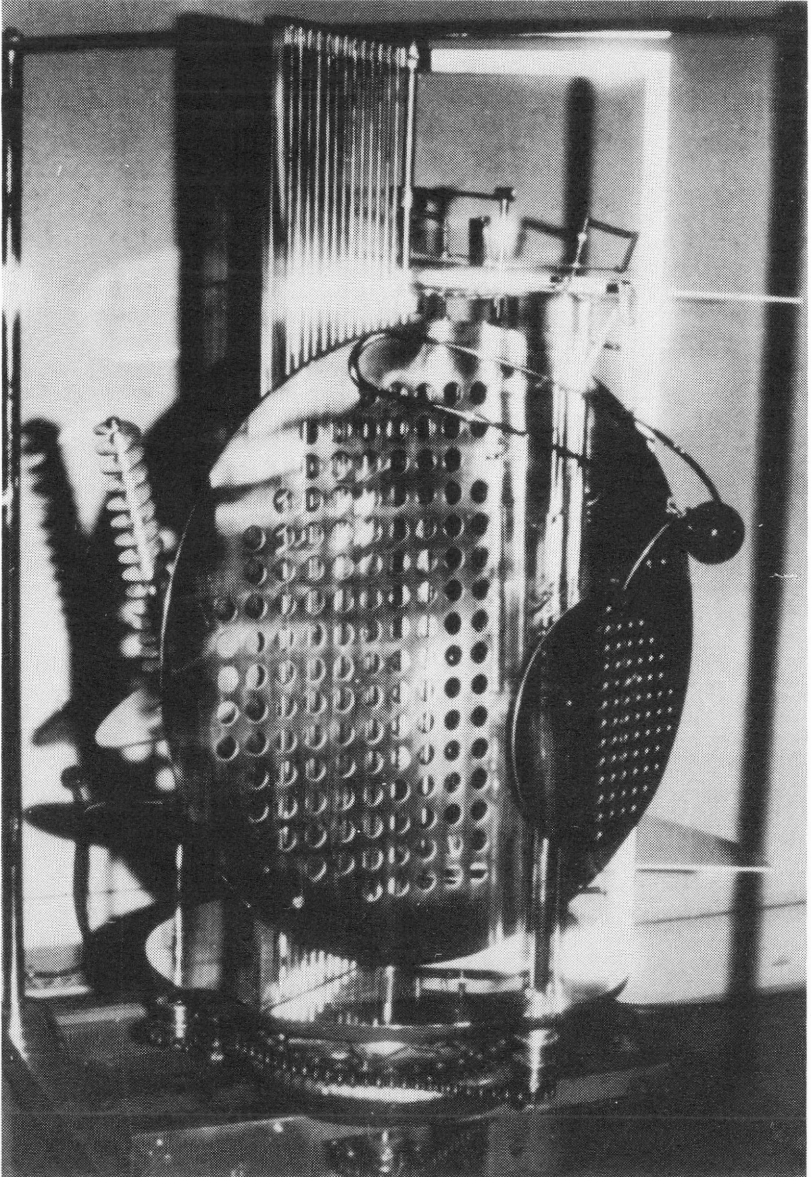
26. *Ibid.*, p. 79. For a variety of reasons Moholy's later films were less experimental. His sixth film, misleadingly titled *Architektenkongress Athen* (Architects' Congress, Athens) is a personally-produced record of the memorable 1933 CIAM (Congres Internationaux d'Architecture Moderne) conference, held aboard a ship sailing round-trip from Marseilles to Athens, after the prospective Greek hosts (under pressure from Nazi Germany) cancelled plans to hold the assembly in the "cradle of democracy." The time-space possibilities of a meeting aboard ship may have prevented the kind of free-wheeling investigation of psychological and physical space that Moholy undertook in his urban films, for the conference film is more even in tone and in rhythm, and less varied in composition and montage than the earlier works.

Moholy's two final films were made to commission in England. *Life of a Lobster* (1935) explores the life of lobster fishers and their prey, while *The New Architecture at the London Zoo* (1936) is a visual tour through the new, prize-winning structures in that establishment. Passages in each film show Moholy's time-space cinema language at its most powerful. The overall structure of each British film is less inventive than his early independent cinema work, however. This was perhaps the result of tastes and concepts dictated by those who were paying the production bills.

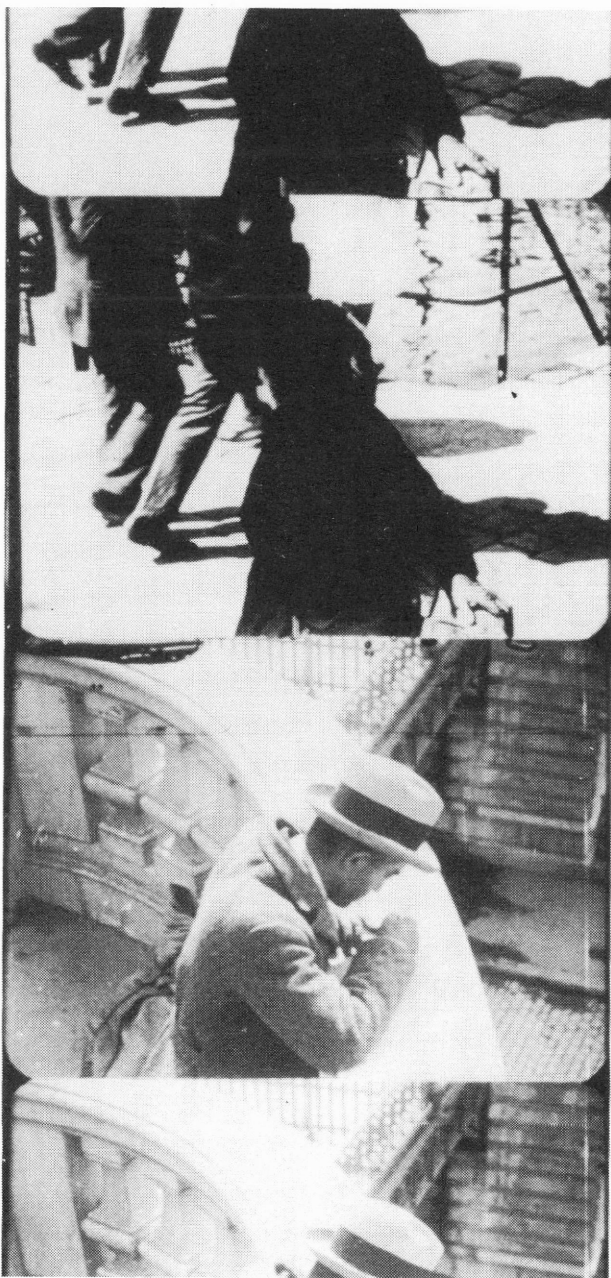
27. Sibyl Moholy-Nagy, *Moholy-Nagy*, p. 62.



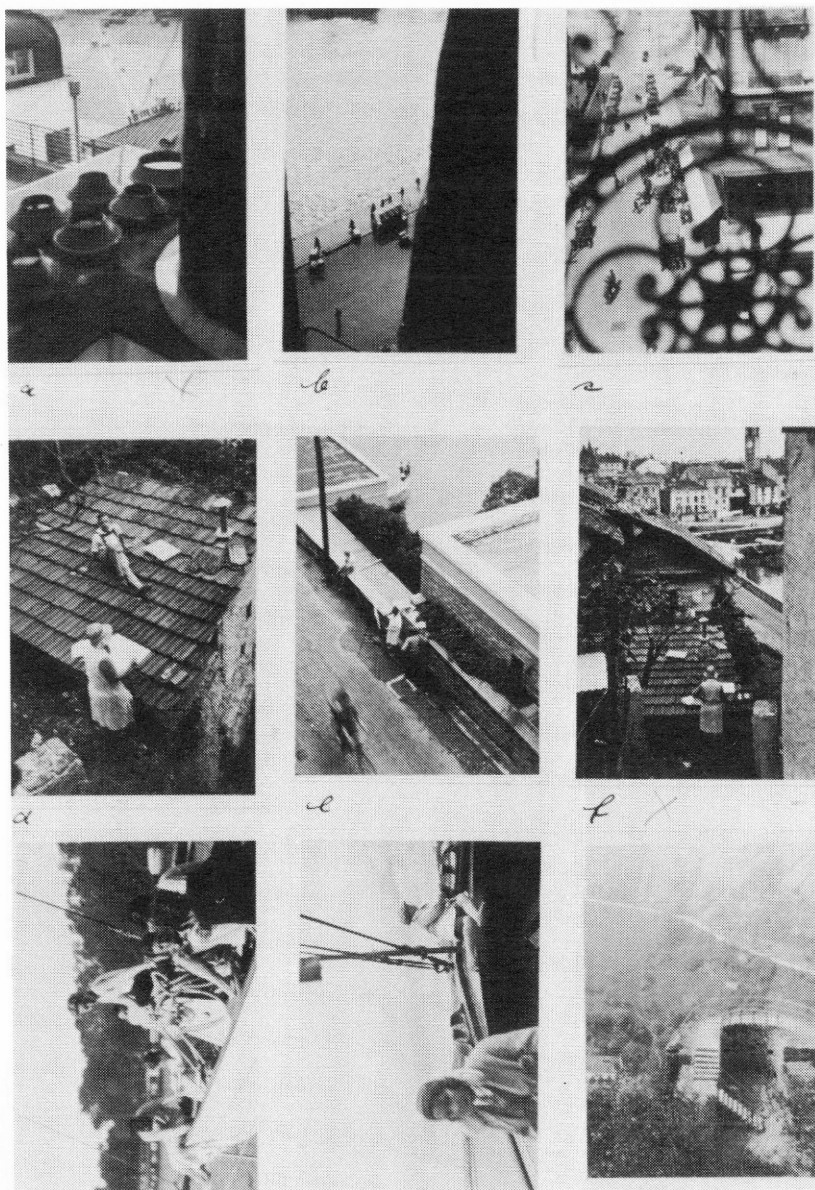
1. *Z VIII*, 1924, oil on canvas, 114 X 132 cm. (Nationalgalerie Staatliche Museen, West Berlin).



2. *Lichtrequisit einer elektrischen Bühne* (Light Display Machine), 1922-1930, wood, glass, metals, 151 X 70 X 70 cm. (Busch-Reisinger Museum, Harvard University, Cambridge Ma.)



3. Four frames at edit point from the film *Marseille vieux port*, 1929.



4. Page numbered 102 from contact book, c. 1937, sheet of mounted contact photographs (Collection Hattula Moholy-Nagy).