

GYORGY KEPES

The MIT Years: 1945–1977

Paintings, photographic work,
environmental pieces, projects
at the
Center for Advanced Visual Studies

Hayden Gallery
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GYORGY KEPES

Kepes observed in 1944, two years before coming to M.I.T.:

"To grasp spatial relations and orient oneself in the metropolis of today . . . requires a new way of seeing . . . In each age of human history man was compelled to search for a temporary equilibrium in his conflicts with nature and his relations with other men, and thus created, through an organization of visual imagery, a symbolic order of his psychological and intellectual experiences."¹

Throughout his life Kepes has worked at maintaining the precarious balance between public obligation, which included his sense of responsibility to the science of his time, and the personal realm.

The ground of this continuity of personal and public expression is Kepes's passionate devotion to vision, the "language of vision" as a discipline of living, a paradigm for our whole response and responsibility to the outer and inner worlds, a process of interpretation, model-building, learning.

From the union made when men grasp nature with their senses there issues more than hard-won knowledge — the legacy from fishermen, hunters, herdsman and farmers upon which science builds. There come also qualities of heart that enable poets and artists to speak for so many of us when they celebrate nature's moods and creatures — qualities that have given science motivation and generative power.

Many victories of science today, in the setting of far-off regions of thought, space and time, are won without the vital nourishment of this deeper motivation. Over the last few centuries, it has ebbed away; and, quite correctly, we feel threatened by the loss of an important heritage. Not insignificantly, it has been over those same centuries that science and art, intellect and emotion, have come to be regarded as separate aspects of life whose mutual contact would only endanger the strength and clarity of each.

Yet history shows us that art and science, two basic human activities springing from a common love of nature, are interdependent. Each achieves stronger growth when the other is fertilized by the other.

¹Introduction, *Art in Science: A Portfolio of Scientific American Photographs*, New York: Scribner and Schuster, 1954.

Kepes's almost obsessive goal, and his special contribution, has been the recognition and display of the continuities between art and science. And this, in turn, grows from his need to maintain and explicate his own immediate relation with the sensed world, and to convey it in all possible forms of visual expression, dynamic as well as static.

Kepes early recognized that his commitment to the effective interaction of art and science would mean finding a personal key—a way of keeping a hold on social issues of disruption and alienation on the one hand, and the constructive values of rational understanding and sensibility on the other, within one coherent discipline.

He has tried to build a new public art, expressive of the real concerns of our time, incorporating the imagery and the tools of current science and technology. He developed a new scale of environmental art forms; and at the other end of the gamut, in latter years he has returned with intense commitment to personal, lyrical paintings. A review of Kepes's roots and connections, the intersection of his attitudes with artistic movements of his formative years, may help to understand the role he has played in furthering responses to the values of visual culture.

Kepes spent his early childhood in the Hungarian countryside where his father managed a large estate. He carried with him into later years this connection with peasant life and the land—the color, strength, dignity and beauty of peasants' music and art.

He came to Budapest in 1914 at age eight and studied painting with Istvan Csók from 1924 - 1928, at a time of social and artistic ferment. Still a student at the Academy of Art, he became affiliated with a group of culturally and socially revolutionary painters and poets gathered around the poet and painter Lajos Kassak. They were known as the Munka or "Work" Circle. It was among this group that Kepes became acquainted with the ideas and work of the Western avant-garde



TRANSYLVANIAN PEASANT CHILDREN 1932,
photograph by Gyorgy Kepes

and the Russian Futurists, Suprematists and Constructivists. The fervor of these advanced movements in Europe and Russia, their deep social commitment to a responsive, objective and inclusive art, were consistent with Kepes's developing outlook.

As Kassak and Moholy-Nagy had written in the revolutionary Hungarian magazine *MA* in 1922, "This is our century: technology, machine, Socialism. Make your peace with it. Shoulder its task. . . . The art of our time has to be fundamental, precise, above all, inclusive. It is the art of Constructivism."²

The Constructivists had incorporated into a social program the Cubist idea that vision consists of relationships: new messages in relationship to new means, new perspectives; a revolution of universal principles and fundamental forms, unburdened by the cultural baggage of the past, with its traditions and associations. But Kepes sought more, "an interconnected sense, the community of man and object" that he felt to be present in the folk art he loved:

"We felt, with Franz Marc, that 'the renewal should not be simply formal, but a rebirth of feeling.' We could not but agree with Kandinsky when he complained about 'the total loss of a mutual relationship between art and human society.' A note Bela Bartok made at the end of his life while living in America, expressed our own longing for a central core of values: 'The time I devoted to the collection of folk songs has been the finest part of my life . . . for I was permitted to witness the artistic manifestation of a still homogeneous but evidently vanishing social order.'"³

Kepes's idea was not to return to folk art as such, but to emulate some of its qualities: its accessibility, its applicability, its reflection of its milieu. Traditional painting was criticized by some Suprematists and Constructivists as "artistic work," — a vestige of romanticism with its "self-expression" and limited audience, nonutilitarian in its isolation from contemporary life. Photography and film were considered modern, urban, technological arts detached from traditional artistic styles and capable of reaching a broader public. Kepes felt then that painting was too anemic a medium for taking a social or political stand.

Around 1928-29, Kepes and some other members of Munka, among them Hegedus, Korniss, Trauner and Vajda, gave up painting to pursue photography, photomontage or photocollage, and film.⁴ The Dada photomontages of Hannah Höch and Raoul Hausmann, Max Ernst, as well as El Lissitzky's drawing and photocollage *Tatlin at Work* (1917) and *The Constructor* (1924), and Rodchenko's photocollage illustrations of some early publications of Mayakovsky's poems, all had an impact on Kepes and his friends and indicated to them new possibilities. Unexpected juxtapositions afforded by photocollage expressed Kepes's political and social intentions in his *In Memory of L.R.* (1929), an homage to the political martyr Rosa Luxemburg. Within a charged geometrical configuration the disintegrated body of the revolutionary, pictured in a photograph clipped from a magazine, is juxtaposed with a nude figure, while below is a photograph of a machine part — the whole set against a heavily textured earth-colored background.



HUNGARIAN PAST c. 1937, photogram

Has not our concern for the efficiency of the detail led to the neglect of the efficiency of the most important design, the design of man as an individual and as a member of society? It is a brutal paradox of our age that by concentrating all efforts on material products the very heart of all these achievements is neglected; the producing man, the active man, man's happiness, growth, and promise.

"Function in Modern Design," *Graphic Forms*, Cambridge, Ma: Harvard University Press, 1949, p. 6.

Kepes exhibited this and other works in a 1929 exhibition organized by the New Society of Visual Artists, the KUT, in Budapest. From 1936 there is a drawing of a segment of barbed wire crucifying a piece of bread, and a photomontage of bread and light — tactile reality and transcendent specter.

Kepes's photograms starting with his work in Budapest took their starting point from nature. These are direct records of processes taken on photosensitized surfaces, without a camera. The photogram, with its essentially abstract image, lies metaphorically between science and poetry: it is a dematerialized light recording of natural processes having close links with Kepes's later interest in scientific records. Only a few of Kepes's works from this period survived the war and his many moves in the 1930s, but the photocollages that do exist, and the photograms produced in this country, are among his best work. The political imagery of the photocollages, the subtle and exquisite play of light, form, and motion in the photograms, and the keen observation of detail and structure in the photographs taken together represent major aspects of his artistic personality: social consciousness, interest in the formal qualities of light and composition, and sensuousness of surface.

During his Budapest period, Kepes's commitment to social change had other avenues as well. He was a member of a group, a "working chorus," that toured factories reciting the poems of Lajos Kassak, under the leadership of Kassak's wife, Jolan Simon. One of them, "The Builders" (1917) as Kepes vaguely recalls it, included the lines, "We are not scientists, nor dreaming priests, nor military men. We are builders. We are the heroes of the Future." This was material for a new art of the people, a kind of urban contemporary "folk" art.

During the late 1920s and early 30s Kepes wanted, above all, to make a film. He saw in film, as he later wrote in *Language of Vision*, a vital medium for social beliefs. At the time, he viewed film as an artistic idiom in which to express his love for Hungarian folk art, music and landscape, a filmic equivalent to Bartok and Kodaly whom he greatly admired for the highly creative and innovative ways they drew on folk traditions. Kepes worked on a script about a popular figure in the national revolution of 1848, Rozsa Sandor, a kind of Hungarian Robin Hood. But in Budapest at that time it was virtually impossible to make a film. Even so, Kepes continued working on the script, collecting popular literature.

Laszlo Moholy-Nagy, originally a member of Kassak's group, was making films in Berlin, and in 1930, Kepes wrote asking to work with him. Moholy invited Kepes to join him, and from 1930 to 1937 they collaborated intermittently, first in Berlin and then in London. Kepes did marginal work on Moholy's film, "Black White and Gray," and had a major part in designing the stage for *Madame Butterfly* and Hindemith's *Hin und Zurück*.

In Berlin, Kepes's passionate interest in the developing social and aesthetic ideals had opportunities for an even greater scope. In addition to his new friendship with Moholy-Nagy, he came to know the Hungarian sculptor Laszlo Peri, the architect Walter Gropius and the filmmakers Vertoff and Dovzhenko who were admired

This dual impoverishment of our daily lives has gone unchecked but not unnoticed. Over a hundred years ago, John Ruskin complained. "It is the vainest of affectations to try to put beauty into shadows, while all real things that cast them are left in deformity and pain." All that has been lost from our daily existence — the common joys of the richness of the environment, the pleasure in making things, the tenderness of intimate moments, and above all the collective rituals punctuating the interfaces of life: christenings, weddings, funerals and the changes of the seasons — we only find in isolated works of art.

Introduction, *Hungarian Peasant Art* edited by Tamas Hofer and Edit Fel, Oxford: Oxford University Press, forthcoming.

And so let us understand that the issue is not functional design as such, that it is not just the "know how," but the "know why" and the "know what." The crux of the issue is not the mere physical principle, which is as old as nature and history, but the strength and scope of application in the concrete context of genuine human needs.

"Function in Modern Design," *Graphic Forms*, Cambridge, Ma.: Harvard University Press, 1949, pp. 5-6.

particularly for their ability to mobilize social imagination through the union of art and technology. In the larger realm of contemporary ideas Kepes was attracted especially to the confident futurism of Mayakovsky — that art is meaningful if it transforms the environment — and to the activist ideology of Tatlin rather than to the more formal concerns of Malevich.

During his brief subsequent period in London, from 1935 to 1937, through his friend J. J. Crowther, then a science writer of the *Manchester Guardian*, Kepes came into contact with some of the leading scientists in England — Bernal, Needham, Waddington, and Haldane. He felt as much excitement among these socially committed scientists as he had with Kassak's group and other artists. He also renewed his early interest in John Ruskin and William Morris and their vision of the artist's role in transforming the environment. He saw no necessary opposition as they did between the craft ethic and modern technology.

When Moholy was invited in 1937 to establish a New Bauhaus in Chicago, he asked Kepes to found the light and color department, the first of its kind in this country. Moholy wanted "to form a nucleus for an independent reliable educational center, where art, science, technology will be united into a creative pattern." This is one of the themes, with its antecedents in Munka, the Russian Wchutemas and the Bauhaus, that returned enriched and significantly developed by Kepes thirty years later in his aims for the Center for Advanced Visual Studies at M.I.T. In Kepes's light and color workshop in Chicago a variety of forms and techniques for visual elements were researched and related to their potential social and psychological impact. Kepes's purpose in these exercises was to increase understanding of visual organization using many media in different design contexts.

In January 1942, the Chicago Institute of Design (the restructured New Bauhaus) was certified by the Army as a school for the study of civilian camouflage, and Kepes set out to apply his theories of effective visual analyses to the problem of camouflage design. As part of his research, Kepes flew over Chicago at night to observe the light patterns. An earlier flight over Paris, seven years before, had elicited images of a large-scale urban art form. Now, in Chicago, during the war, he explored the possibilities of transforming the large-scale image of the city. To dislocate the night landmarks, he proposed to float on cables a network of lights that would hover over Lake Michigan so that the pattern would take on an apparent reality confusing to potential raiders. This camouflage research gave Kepes an extraordinary opportunity to envision the possibilities of an environmental art.

He developed the theme of the urban nightscape seventeen years later, when he designed a programmed light mural for the KLM office in New York.⁵ And in 1968 he planned and designed *The Night Landscape of the City* at the Fourteenth Triennale de Milano.

The substance and approach of Kepes's research and teaching in Chicago are reflected in his first book *Language of Vision*, written between 1939 and 1942 and published in 1944. The book, now in its thirteenth edition, has become a classic in

We are embedded in a "second nature," in a man-shaped environment which could not grow naturally because it was intercepted and twisted by one-sided economic considerations. The appearance of things no longer reveals their nature — images fake forms — forms cheat functions — functions are robbed of their natural sources — human needs. Urban landscapes, buildings with counterfeit insides and fake outsides, offices and factories, objects for use, the packaging of goods, the posters, the advertising in our newspapers, our clothes, our gestures, our physiognomy are without visual integrity. The world man has constructed is without sincerity, without scale, without cleanliness — twisted in space, without light and cowardly in color. It combines a mechanically precise pattern of the details within a formless whole. It is oppressive in its fake monumentality, it is degrading in its petty fawning manner of decorative face-lifting. Man, living in this false environment and injured emotionally and intellectually by the terrific odds of a chaotic society, cannot avoid having his sensibilities, the foundation of his creative faculty, impaired.

A man whose faculties are impaired narrows his world. He achieves a relative equilibrium in his environment only by artificially shrinking it in proportion to his difficulties. This impaired capacity is further characterized by lack of ability to make experience coherent. Today because this failing expresses itself as an inability to bring sensuous, emotional, and intellectual levels of experience to a single focus, a diffused image without cohesion prevents man's movements from one situation to another.

To bring direction and order to this formlessness we need to regain the health of our creative faculties, and not the least, of our visual sensibilities.

"The Importance of Order in Vision," *Building for Modern Man*, ed. by Thomas H. Creighton, Princeton, N.J.: Princeton University Press, 1949, pp. 88-90.

schools of art, design, and architecture and has had a great impact on ways of thinking, and on teaching and practicing design and photography.

Kepes's book was more accessible to American students than those produced by the Bauhaus. Both dealt with fundamental laws of spatial relations, light and color, but Kepes made design principles immediately applicable. His aim, as he states it in the introduction, is the motif that appears throughout his life and work:

"To establish an organic interconnection of the new frontiers of knowledge . . . the goal is a new vital structure-order. . . . The *Language of Vision*, optical communication, is one of the strongest potential means both to reunite man and his knowledge and to re-form man into an integrated being. . . . Visual communication is universal and international. . . . It can reinforce the static verbal concept with the sensory vitality of dynamic imagery. It can interpret the new understanding of the physical world and social events because dynamic interrelationships and interpenetration, which are significant of every advanced scientific understanding of today, are intrinsic idioms of the contemporary vehicles of visual communication: photography, motion pictures and television."⁶

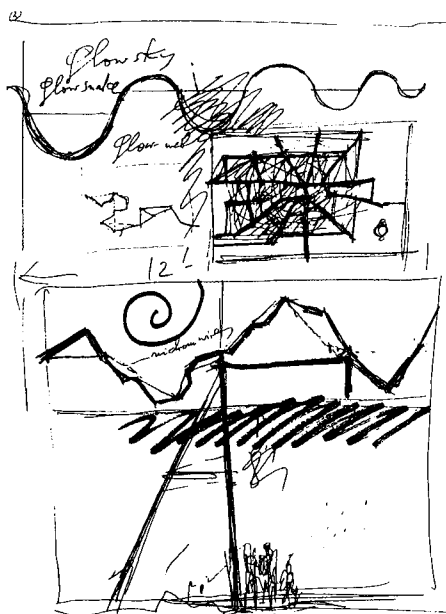
Kepes concluded that the language of vision involves the development of "dynamic iconography." He shows how film and design can be used rigorously to communicate needed knowledge. Kepes believes new combinations of visual elements affect feelings and perceptions, and he cites the structural connection of images in actual time sequence in film; the dynamic interaction of word and image in Apollinaire's ideograms and Miró's painting-poems; the coordination of actual three-dimensional units and pure plastic elements of lines and shape in photomontage. These combinative art forms have great potential for broadcasting social messages and could provide the components for a positive popular art, a modern version of the union between man and his environment, the integrated life, that Kepes admired in folk art. With the publication of *Language of Vision* Kepes's name became identified with an analytical and inclusive approach to design. He represented to many a second generation of Bauhaus-oriented artist/designers, even though his particular set of interests diverged from the Bauhaus aesthetic.

In 1945, Kepes was invited to establish a program in visual design at the School of Architecture and Planning at M.I.T. Kepes, with his experiments in new materials and methods of design, his systematic analysis of the language of vision, his interest in the collaborative possibilities between art and science, was an ideal choice to establish this new program. Up to this point, Kepes had been exposed to the general philosophy of science, but at M.I.T. he had the chance to move into the center of the real world of science and technology. He recalls arriving like a displaced person, with an intense need to extract meaning from his new milieu and relate it to his own work.

In Cambridge, Kepes became involved in a number of collaborative projects with architects, including Gropius, Wurster, Belluschi, and Koch. In the process of working on these commissions, he developed new techniques, materials and modes of display. In 1948-49, he and his wife Juliet Kepes designed a children's

Our great task is to bring man in scale again with the entire horizon of nature, so that he can sense it in all its wealth and promises, harmonies and mysteries. In ignorance and pride and by insecurity, we have severed ourselves from our broader background. We have to re-establish our bonds and recognize our loyalties on this all-inclusive level. Eastern philosophy and art had an age-old awareness that men lived most fully by opening themselves to the universal rhythm of nature. With deep insights, Eastern philosophers and artists responded to inner and outer correspondences and reached stages of wonderful tranquility. The artists of our century, groping for self-realization, for an inner freedom, for the true ecstasy of spontaneity, jealously followed the expressive intensity and spontaneity of oriental art. But they did so without recognizing that the freedom of oriental art grew from its recognition of the continuity between man and nature.

"Comments on Art," *New Knowledge in Human Values* ed. by Abraham H. Maslow, New York: Harper & Brothers, 1959, p. 91.



room using a variety of textures on the floor and phosphorescent light pattern on the ceiling, in an attempt to bring elements of the outdoors into the room in order to heighten sensory participation with the environment. Kepes explored the heretofore uncoded coding of scientific symbols and models as imagery for an urban art in his first large-scale outdoor mural of neon tubing for the Radio Shack, Boston, in 1951. He took an image from electronics — electromagnetic waves as seen on an oscilloscope — and through the medium of light made the work part of the urban nightscape. This kinetic mural is an example of Kepes's desire to make science more alien by integrating scientific elements into everyday aesthetic experience. He developed his ideas of urban imagery and symbolism in a study he co-directed with Kevin Lynch, his old friend from Chicago, from approximately 1954 to 1958 or "Perceptual Forms of the City." Lynch recalls: "Kepes was alive to everything I did and helped me to look." Their walks through cities and their exchanges of views were influential on Lynch in his books *The Image of the City*, and later *View from the Road*. Lynch's work continues their effort to find direct expressions of the cultural urban emblems and symbols. To Kepes, urban art forms have the potential for contemporary public art, if they are responsive to our needs.

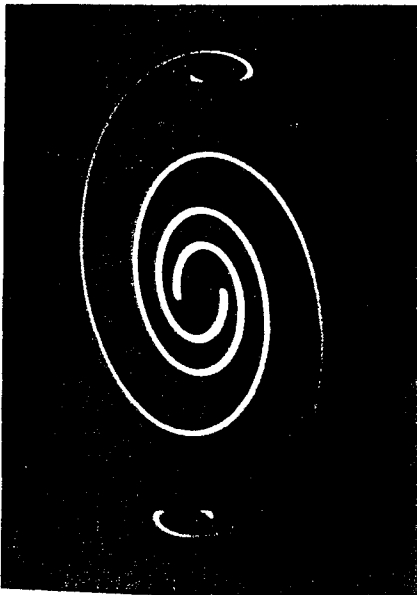
His contact with the scientists and engineers at M.I.T. also was seminal for his later work. In the late 1940s, Kepes participated in some of the weekly discussions on new developments in science, conducted by Norbert Wiener. The war had just ended recently and Kepes describes it as a jubilant and confident time, a period of major breakthroughs. Among the scientific concepts that affected him were Wiener's ideas on cybernetics and feedback systems and the work by Warren McCulloch and other neurophysiologists that supported the view that one's capacity to orient oneself is based on the ability of the neurological system to discern invariance in continuous transformation. Kepes can be seen to have adopted these ideas as metaphors: that the real task of art was to help people rediscover the invariant sense of potential harmony and fulfillment beneath the transformations of life; that art can be a feedback system of a society's image aspirations.

For Kepes science and technology could serve as models for public art in crucial ways: as a source of expanded imagery; as a dynamic way of thinking where the basic idioms are relationships, energies, processes and structural organization. Science and technology are "systematic, disciplined, collaborative approach to chosen objectives." The laboratory can be a model for a way of working in non-scientific fields as well. In applied science Kepes saw "models of dynamic interconnectedness and basic complementarity of disparate processes and systems — particularly in such fields as computer technology, electronics, and communication networks."¹⁷

From 1947 to 1952 Kepes collected visual material on scientific structure and imagery and in 1951 he organized "The New Landscape," an exhibition at the M. Hayden Gallery. Its subject was the "new frontiers of the visible world . . . until hidden from the unaided eye." Among the exhibits were photo and electron micrographs of biological forms and crystal structures and examples of structural

The obvious world that we know on the gross levels of sight, sound, taste and touch, can be connected with the subtle world revealed by our scientific instruments and devices. Seen together, aerial maps of river estuaries and road systems, feathers, fern leaves, branching blood vessels, nerve ganglia, electron micrographs of crystals and the tree-like patterns of electrical discharge-figures are connected, although they are vastly different in place, origin and scale. *Their similarity of form is by no means accidental. As patterns of energy-gathering and energy-distribution, they are similar graphs generated by similar processes.*

The New Landscape, Chicago: Paul Theobald and Co., 1956, p. 260.



OSCILLOSCOPE PATTERNS OF AN ANALOGUE COMPUTER, photograph from the *New Landscape* courtesy Marc Campbell

art and architectural works. In *The New Landscape in Art and Science* (1956), he published this material together with essays by such illustrious scientists and artists as Norbert Wiener, Fernand Léger, Jean Arp, and Walter Gropius. The exhibition and the book contributed significantly to the rapprochement of art and science, and prefigured the collaborative spirit of the group "Experiments in Art and Technology" (EAT) in the 1960s. According to Kepes what was needed were models of relatedness; art could aid science by providing it with new resources for visualization. Together, scientists and artists could work out new visual idioms.⁸

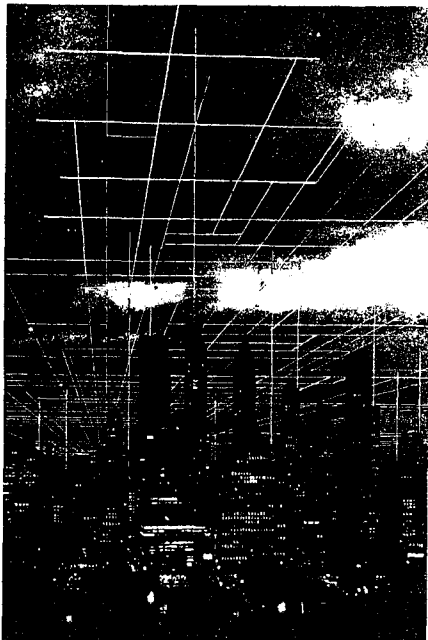
Kepes proceeded to organize seminars for graduate students in the School of Architecture on a range of subjects of mutual interest to scientists and artists: on structure in art and science, on the nature of motion, on signs, images, and symbols, and on other topics. These ideas came together in *Vision + Value*, the seven volume series devoted to the examination of problems common to science and the visual arts which took an essentially structuralist approach.⁹ The purpose of the series, Kepes wrote, is "to systematize our knowledge about the role of vision, to find competent methods to develop it, and to map the concrete territories where creative vision is to be applied."

As the complementarity of art and science is a central issue in Kepes's work, so light is his dominant means of exploration and expression. Every facet of his work, both public and private, is concerned with light—light as medium, as image and as symbol. In the various forms of light Kepes sees the promise of a new art. In his exhibition, "Light as a Creative Medium" at the Carpenter Center, Harvard, in 1965, he presented historical and contemporary examples. Kepes points to physical, physiological, symbolic, and spatial delineation by light and shade, translucency, transparency, specular reflection, and color production and induction.¹⁰

Almost all of Kepes's professional life came to focus in his plans for the Center for Advanced Visual Studies (CAVS), with the "creative use of light on a grand scale" as its organizing conception. Kepes's intention in founding the Center for Advanced Visual Studies was to provide a setting where artists and scientists would collaborate on projects, experimenting with new media and working toward an art of the environment. In his student days in Budapest, Kepes had been moved by Van Gogh's dream of a community of artists, and he himself had experienced the intensity, optimism and commitment of a cooperative venture of artists with a social mission in the Constructivist-oriented Munka. Though he was never a member of the Bauhaus, it was however, a significant model of communal effort between artists and artisans dedicated to developing a new aesthetic with societal ramifications. A similar spirit motivated the collaborative projects continued in the Chicago Institute of Design. In London, there was the friendship with scientists around Crowther. And there was Ruskin's and Morris's view of the artist's role in transforming the environment which Kepes has said influenced him in the formation of the Center. At M.I.T. there had been the formative experience of Wiener's seminars in new developments in science. There also were the meaningful exchanges with colleagues like Harold Edgerton, Kevin Lynch, Walter Rosenblith, Bruno Rossi and Cyril Smith and Cambridge friends such as Gerald Holton, I.A. Richards and



HIGH SPEED PHOTOGRAPH, 1948, by Gyorgy Kepes



LASER MAP FANTASY above Manhattan 1972, by Gyorgy Kepes

George Wald. Specific plans for the CAVS were first formulated in the fifties. In 1967 the Center opened. Kepes described its aims:

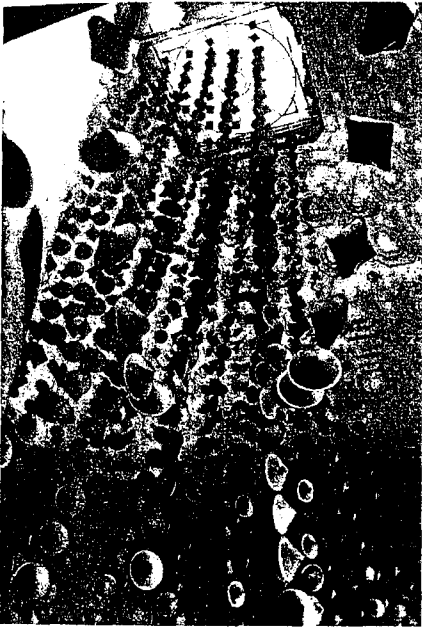
"The Fellows of the M.I.T. Center for Advanced Visual Studies, now engaged in preliminary exploration of a major project, recognize objectives similar to those of other collaborative groups: absorption of the new technology as an artistic medium; interaction of artists, scientists, engineers, and industry; the raising of the scale of work to the scale of the urban setting; media geared to all sensory modalities; incorporation of natural processes, such as cloud play, water flow, and the cyclic variations of light and weather; acceptance of the participation of 'spectators' in such a way that art becomes a confluence rather than a dialogue. But the work in the Center aims at more than exploitation of new technical potentials. It seeks, above all, to develop new objectives. These are envisioned as complementaries of both the private and the civic sector of art: intensifying the infra-individual world and at the same time developing networks of communication between individuals, and between the individual and the environment."¹¹

A publication at the dedication of the CAVS (1967) presents themes for collaborative projects in the "exploration and development of the fundamental creative principles necessary for an environmental light art." Among the initial projects, Kepes suggests the orchestration of the urban nightscape by "developing simulation devices of light patterns coupled to a computer," in order to achieve "creative use of kinetic light designs on an environmental scale."

Another related but more ambitious project was the development of a "monumental kinetic light form for the middle of Boston Harbor, to provide the urban environment with a focal hearth, a monumental gateway matched to the age of flight. Such a project would engage artists; structural, electronic, computer, and systems engineers; a city planner; psychologist and sociologist."¹²

Kepes proposed installing floating mirroring buoys in the harbor and a mile-long programmed luminous wall. Otto Piene, one of the first Fellows, and now the Center Director, designed an artificial rainbow for the project which was constructed four years later for the 1972 Munich Olympics. These works were intended to have a festive quality, "to compensate for the lost pageantry of nature," and to engender sense of group identity for the citizens of Boston. Kepes wished to introduce a "new aesthetic dimension of urban landscape through the controlled exploitation of the luminous accidental richness of the urban nightscape."¹³ The purpose of the Center's projects was to raise civic consciousness and to meet the need to bring into the cities nuclei of high experiences, form or pattern of sights and sounds.

"Art . . . without loss of personal vision — in point of fact through the expansion of such vision — is fast approaching the environmental scale and by its own inner dynamics as a craft becoming a collaborative enterprise involving science and engineering. . . . The focal expression of our corporate existence . . . may well take the shape of gigantic luminous forms celebrating our civic pride in our knowledge and high technological achievement: fountains of light, produced by projected sources of powerful artificial light."¹⁴



Acoustics exhibition 1949, Building 7 Lobby, Massachusetts Institute of Technology, Cambridge, executed by Robert B. Newman and Robert Bliss for Advanced Visual Studies course conducted by Gyorgy Kepes

We recognize interdependence as basic to a livable contemporary life. Thus, we do not believe in divorcing art from life, nor do we see the artist's activities as separate from the issues that trouble our contemporary society. Because of our belief in this interdependency, we contend that creative ideas in art play key roles in the shaping of our common life. To symbolize this conviction, our intention was to form, with a wide range of vital art works, an environmental community — one which, like a synergetic system, can exist only through the interconnected workings of its members. Our aim was to realize an exhibition as a totality and not merely an anthology of independent artistic statements, however rich they might be. But circumstances outside our control have kept us from accomplishing our aim.

Statement in connection with the cancellation of the X Bienal de Sao Paulo, July 1969

A particularly imaginative example of Kepes's environmental art is his proposal for a water purification process as a display feature that also serves as a symbolic form of man's attempt at collective self-regulation. Kepes compares this form of civic art to a Roman aqueduct. The plant could be thought of as a public monument, an immense, transparent, kinetic structure that would make the hydraulic processes visible: "... a contained, but legible ballet of water forcing through obstacles of filters, tinted and purified by chemicals, or moving sluggishly in intricate but legible patterns of transparent containers." He has also proposed "information beacons" or "data fountains" — high luminous columns that report on fluctuating levels of water, air, noise and pollution. These would result from the collaborative efforts of artists, scientists, sociologists, telecommunications engineers and multimedia experts.

Kepes's proposals were unlikely to be realized because of their scale and the complications of getting funding and approval from the various civic authorities. His projects evoke some of the fantasy and playfulness of the architect Scheerbarth who in 1914 in his *Glassarchitektur* envisaged aerial cities lifted by balloons and illuminated by a thousand colored spotlights, and railways tracking colored lights across the night countryside. Kepes has long been interested in Scheerbarth, although unlike this architect of fantasy, Kepes conceived his projects as feasible.

Though very few of the projects were realized, the Center communicated its goals through exhibitions of the associates' work, including individual pieces, maquettes and drawings for large-scale environmental art. "Explorations," an exhibition prepared by Kepes and the Fellows in 1968 for the Smithsonian International Art Program, was intended to look ahead "toward an art scaled to the expanding scientific-industrial urban world and revealing its latent richness." For this exhibition, with the help of architect/engineer William Wainwright, Kepes created a *Photoelastic Walk* composed of fluorescent lights and polarized screens which changed color when walked on. This work was a tentative model for a more massive version intended as an integral part of some future urban environment. In 1972-73 the Center prepared a traveling exhibition entitled "Multiple Interaction Team," based on a proposal by filmmaker Stan van der Beek and coordinated by Friedrich St. Florian. Kepes exhibited his *Flame Orchard*: a collaborative project with physicist William Walton, fellow artist Mauricio Bueno, and composer Paul Earls, who created sound patterns that activated and modulated flames of escaping gas. As Kepes described it:

"Contemporary man's strong response to a flickering candle flame or to the synesthetic choreography of the flames in a fireplace comes from deeper roots than a nostalgia for a simple past. The ever-changing free rich play of flames has a special message for man who lives in parcelled out spaces, regimented days and under frozen homogenized artificial illuminations. Flames link us with long forgotten primeval mysteries and offer us a crescendo of the moment by bringing wide ranges of sensuous modalities in a single alive focus."¹⁵

The use of archetypal elements and images — fire in *Flame Orchard*, water in the purification plant — mobilized by science and engineering becomes the basis of a

A similar collective vision born of pooled feelings, ideas, and knowledge is needed to realize another large-scale, potential form for which a demand is becoming open and urgent: mass play activity or choreographed expressive outlet. Men who live riveted to the television set or encapsulated in an office or automated factory have forgotten the joys of shared, happy action. A new pageantry is long overdue, a new collective, cooperative public focus through which the individual can sense the riches of his world more directly. There are signs in the contemporary artistic scene that suggest directions, or, at least, some idioms. Too many of these forms — happenings, psychedelic light plays, and related activities — are limited in depth and scope by the present-day mentality of frustration and by tools too primitive for realization. Even so, however, these forms contain seeds of a promising new range of relevant creative activities. We have prototypes, for example, of mass events in which the participants' uniquely felt kinesthetic experience is interwoven with shared surprise of joy in seeing and hearing themselves simultaneously in amplified dimensions on some audio-video display device.

The Center for Advanced Visual Studies, Cambridge, Mass.: Massachusetts Institute of Technology, Center for Advanced Visual Studies, 1967.

new "folk art," a "dynamic iconography" that responds both to our present lives and to our atavistic impulses. Instead of a dance on the village square, a pageant, or a costumed parade, the Center, with Otto Piene's leadership, develops large-scale celebrations derived from the forms of the city. Using new materials and reviving the old tradition of celebration, Kepes and his colleagues have striven to create a new imagery, a new collaborative spirit, not just between artist and scientist, but for the community at large. Vision becomes a means of giving form to a society that has become incomprehensible to itself. Kepes is trying to prepare the ground for a "folklore" to help us keep up with the technological advances that affect our lives and make new demands on our understanding.

Working on these collaborative ventures, Kepes needed to find a way to assimilate personally all the elements he was trying to incorporate into a social context. He found that he couldn't use scientific imagery independent of his artistic idioms: the artist needs to grasp the implications of science in his own terms. It was this confrontation with the new science and technology that led Kepes to return to painting. To visualize images on a public collective scale, it was necessary to keep his bearing through the medium of a personal and private vision. This he did in his painting. In 1952, shortly after he resumed painting, he wrote:

"I am searching for those low-energy experiences which, in their subdued scale, allow more embracing patterns of order. I am seeking affinities between my complete moments and the patterns of my surroundings and have found for myself new meaning for landscape. The tranquil, . . . rhythms of some age-old, commonplace experiences—sunset—a branch of tree—suggest for me the coherence and completeness so lacking in our urban industrialized chaos. By painting them I keep them to guide me to the rich potential values inherent in the new landscape of the scientific world."¹⁶

Kepes often cites the Greek myths of Daedalus and Antaeus, which he sees as paradigms of his own dual aspirations. Daedalus is the space explorer; he spans large distances, he dreams of flying. Antaeus, son of the mother goddess Gea, is renewed by staying home, on Earth. One can see Kepes's voyages and returns with mythic overtones. He makes photograms and light art — dematerialized forms — dreams of new media on an ever-expanding scale, and returns to his paintings with their earthy sand textures. He ventures out into the advanced world of science, returning for renewal to his Hungarian rural origins. He seeks the "complementary unity of opposites."

Within the paintings he plays out a parallel set of interactions. Typically, he paints a ground of undifferentiated earthlike texture in brown, black or olive green on which he locates a contained island of chromatic intensity and luminous energy. Kepes says that he seeks this type of interplay, "limited dimensions of dynamic activity set against a large inactive total."

Kepes wishes his diverse activities to be seen as part of an overall inclusive program to reconcile the opposites — at least in his own life — of personal and civic responsibility. He has divided his time between dreams of environmental public art and serene

To develop a vision which brings the inner and outer worlds together, we need common roots once more. We are like Antaeus of old, whose strength, ebbing whenever he lost contact with the Earth, his mother, became renewed each time he touched the ground. Spun out of our heads, science and art remain anemic and without root, and need strengthening contact with nature once again. The natural world remains the common basis for all of us, even though it is changed beyond recognition from the world of nature known to our fathers. It still starts for us where we come in contact with it — through our senses. Science has opened up resources for new sights and sounds, new tastes and textures. If we are to understand the new landscape, we need to touch it with our senses and build the images that will make it ours. For this we must remake our vision.

The New Landscape, Chicago: Paul Theobald and Co., 1956, p. 20.

It is a truism to say that the unresolved conflicts of today are reverberating both in the whole social landscape as well as within each individual. The individual is as much a battleground of the fight between the old and narrow and the potential new and richer as the group, the nation, or the global community. It is also equally true that the man-created world, the houses we build, the cities we plan, the machines or factories through which we produce the means of life, the scientific instruments which help us to read and thus use nature's energies are individually and together also scenes of the death struggle between old and new. But the transformation of the individual is, before all, where the restructuring must begin. His observation, his understanding, his sensibility are not only passive factors, but essential levers of social transformation.

"Scale, Structure, Rhythm," *Transformation* 1, no. 2 (1951) 67-68.

painting. He says he wishes now to focus on personal images, "lyric poetry whose theme is the combination of earthiness and luminousness of chromaticism."

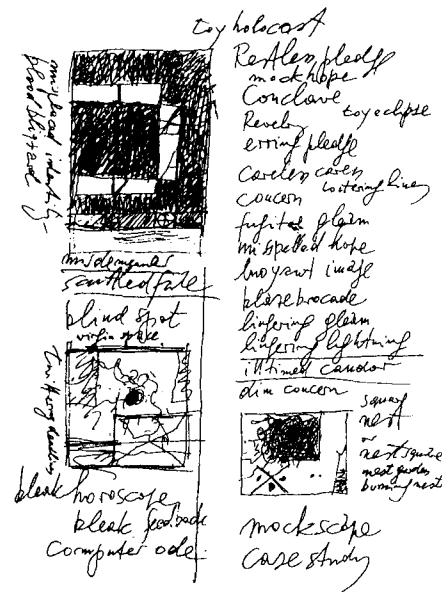
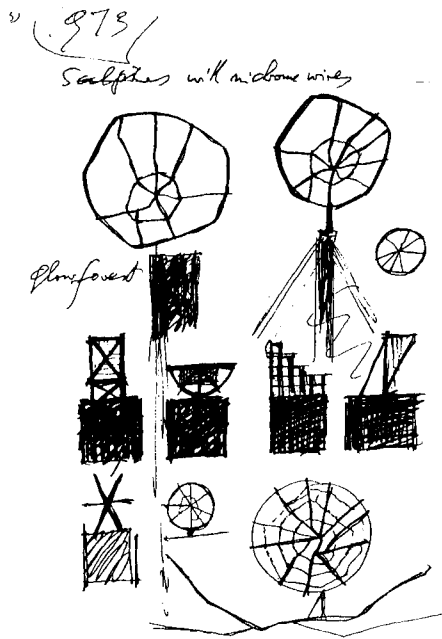
One of the first works Kepes did when he resumed painting was *Hand and Bread* (1951), recalling an earlier drawing of bread, barbed wire and a hand. The image of the hand evokes the memory of the camps, the war — a lean picture on a hungry theme set against a lugubrious background. The chromatic column on the side, recalling Delaunay, is a bright contrast. Kepes feels this painting is an important step in his evolution, a seed image: "a symbolic collage of social reality is contrasted with a symphonic chromatic element."

His paintings, beginning here and evolving toward works of greater chromatic and compositional beauty, are about relatedness and complementarities, the dialectic between nature and artifact, between images of chaos and order. In another age, Kepes might have been a romantic landscape painter, like Caspar David Friedrich, a visionary painter of forlorn and majestic landscapes. Friedrich's theme is the loneliness of man confronting the infinite expanse of nature. He attempts to bridge the chasm between the two. The connectedness to which Friedrich aspires is expressed in the image and metaphor of light, the encompassing atmosphere of transcendence. There are spiritual parallels with this way of perceiving the world in Kepes's work.

The variety of earthlike textures and tones that Kepes uses gives the impression of different perspectives: they might be either telescopic or microscopic views. At times one seems to be looking at a planet's surface simultaneously from afar and up close. Along with these literal surfaces, some of his paintings, like *Tender Space* (1959), evoke the sense of a landscape of memory, an inscape. In another, *Aerial Nightscape* (1959), the theme appears to be more representational, resembling flickering lights and shadows, as in the camouflage project, or seeming to forecast his proposals for celebratory urban nightscapes.

Kepes's painting doesn't belong to any specific art movement. If one could compare his intentions to any other painter's, it would be to Paul Klee's, whose attitude toward nature and growth processes made an impact on Kepes. Behind both their work there is a wealth of theory and experiments concerning spatial relations and color contrasts. In Kepes's work these elements are more metaphorical than theoretical, but both use rich color and calligraphic signs, though Kepes does so less frequently. Like Klee, Kepes gives us a highly coloristic nuanced version of the culture of materials, allowing personal references and associations to emerge from the line, color and space.

Kepes recalls from a meeting with Klee in 1935 that Klee described himself as "a gardener not a painter . . . who reads the needs of his plants and to keep them alive adds daily the needed nourishment — the proper colors, lines or textures." Kepes builds up the texture of his canvases by first drawing with plastic glue, onto which he sprinkles sand. The surface is then glazed with color, applied in part with a palette knife. It is by this means that the canvas comes to acquire an earth texture, an evocative ground for the organic shapes and luminous passages set upon or into it.



The paintings of the 1960s have the delicacy, even fragility, of their titles: *Descending Light*; *Garden of Light*; *Nature Patina*; *Silver Dew*; *Veil*; *Linescape*; *Glow Nest*; *Serene and Aloof*; *Metamorphosis*. Herbert Read has described Kepes's paintings as "pools of stillness, areas of entrancement." Typically, there is a contained area of fiery color, or of light, burgeoning out of a dry, brown ground. In the late 1960s more specific symbols or markings emerge, such as the arrows in *Glow Nest* and *Untitled*, while in the 1970s geometrical figures are set out more forcefully. In some he uses a grid of lines, behind which lie patterns and textures as in *Amethyst Stain* (1970). In works such as *Somber Circle* (1977), blues predominate, saturated tones against which are set sharply delineated forms or images. There is a recurrent theme of a circle of broken lines. Sometimes, Kepes introduces fragments of photographs, newspaper clippings, X-rays of a body, a crossword puzzle. *Glow Wheels* (1973), pictures two wheels, one balanced on top of the other, placed before a smoldering landscape that burns its way across the figuration — perhaps a metaphor for the balance of order, geometry and destruction. *Pythagoras Garden* (1977), contrasts a visual proof of universal geometric/mathematic relationship with the image of a garden that Kepes understands as "the symbolic systemless richness of the world, the organic vibration of color interaction." Against a vivid magenta/red/orange field is laid a rectangle, predominantly blue/green/brown, in which is centered the Pythagorean figure. A riot of color plays within the bounded areas.

Kepes has written about how an image can bridge inner and outer reality, and *Tender Lines* seems like such a work, its tracings like an aerially viewed landscape or like trails of thought, proceeding, sputtering out, picking up, spiraling in. And there are slight tracings, as in a force field. The new landscape in Kepes's painting is not science and technology, but the interface of inner and outer landscape as it aspects of vision.

Kepes' life and work form a complex unity — even a reconciliation of opposites has been at the forefront of various art movements without relinquishing what he values of the past. While he experiments with new media and the dematerialized forms of light, he reasserts the importance of earthly textures. He speaks of delights and organizes extravaganzas like *The Night Landscape in the City*. In a period when photography has gone from social commentary to a realism somewhat verging on the grotesque or to a democratic scanning of subject matter that redefines formal aesthetic composition, Kepes continues to uphold form and beauty. His recent photograms are lyric excursions into light and form relationships.

Though Kepes doesn't view his photography as a central concern, it is still a major part of his work, as mediator between eye and world, filtering and framing, an instrument of crystallization and transformation. Photography is a link between his painting and his technological and environmental art projects. Light, the essence of photography, is the common element of all Kepes's work.

From the G.K. notebooks

The eye is a predominant image, the camera's analogue is the eye's accomplishment. There is a photograph taken in Chicago in 1938 of *Juliet with a peacock feather*

Artists a generation before us recognized the need for a new frame of reference for their creative vision. They were dreaming of new creative ways to project their responses to the new vistas. Painters, photographers and film makers had been struggling to find valid new idioms with which to bring space and light into a living focus. Magnificent artistic statements were made with pigments on canvas or recorded with light on photosensitive film. Nevertheless, artists were frustrated and tantalized because the limits of their media narrowed and condensed the explosive range of the experiences. Needed were a new scale of tools and a new scale of setting. Only by accepting light as autonomous, as plastic luminosity that can be molded, shaped and formed with the same limitless plasticity as the clay in which sculptors model, could the artist hope to find a valid correspondence between his new scale of experience and his artistic expression of it. And only a spatial surrounding that is generous enough in scale to shelter the explosive, luminous tools could provide an adequate background. The isolated, sheltered, small space of a room at home or in a museum is suffocatingly narrow for the fluid power of light in action. The new, rich intensities of artificial light sources, if used creatively, must be woven into the bigger fabric of the night cityscape. The mirroring of the shop windows and the interpenetration of mobile vistas, with their continuous transformations of space and form, must be accepted as background for a creative figure shaped by the moving contours of actual lights.

"Creating with Light," *Art in America* 48 (Winter 1960): 82.

Excerpts selected by Gyorgy Kepes

Eye is superimposed on eye. There is a thematic play of forms and shadows in *Juliet in Shadow Cage* (1939), in which her head is placed within a three-dimensional frame. The frame casts a shadow on her face; her face casts a shadow on the background; her hair is both figure and shadow, contrasting with the geometric lines. This photograph appears simultaneously personal and structural. There are also some abstract studies of form and light, such as *Fluid Patterns* and *Optical Transformations*, both of 1942, *Magnetic Pattern* (1938), and *Calligraphic Light Play* (1948).

Nature is the source of Kepes's photographic images as well as his paintings. One might say that his work is about the four basic elements:

Earth:

his celebration of nature; the here and now; the sand ground of his paintings; earth materially and metaphorically

Air:

the mediating element for light

Fire:

a predominant image in his painting, and the theme of his project *Flame Orchard*; fire with all its primal associations — Prometheus, enlightenment, force, harnessed energy, potential destructiveness

Water:

the scene for urban celebrations; the water purification plant, his project for a water garden, the proposed gateway to Boston Harbor

Kepes conveys a poet's encounter with the visual elements of nature and science, giving a personal meaning to objective forces as do mythologies and folk tales.

Kepes is a visionary and seer of images. He envisioned ways for the potential unification of our response to nature through art and science. The need is as urgent as ever. What allows him to continue with the struggle is, as Sigfried Giedion has observed, "the confidence of [Kepes's] generation which felt called upon to heal the breach between the inner and outer reality."

Kepes has kept faith in that confidence. In Budapest, Chicago and Cambridge, he contributed to the creation of communities of shared vision. In order to sustain the cooperative collaboration of the last thirty years, he has found strength and renewal in the solitary introspection of painting.

Judith Wechsler

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