CENTER SCREEN

Enclosed is a series poster which includes the program in which your film was presented. We are also enclosing copies of any press reviews/notices that may have been obtained for the program. If you need original copies, please let us know.

Thank you.

Cordially,

Jane F. Garabedian
Assistant Director

CENTER SCREEN

These clippings for ELECTRONIC ANIMATION are being sent out to you later than usual so that we could include a recent June '82 article from the New Boston Review.

Jane Garabedian

Boston Review

CHALLENGES FOR THE
CREATIVE MIND

COMPUTERS

in Art, Music,

Education, Psychology, Philosophy

Computer Art or Artifice?

David Rollow

In an old industrial loft building on Fort Point, on the Boston waterfront, a new company has recently finished installing a computer system called Logo on an Apple microcomputer. Not long ago, I spent some time at Logo Systems learning how to draw pictures on a video display screen by typing instructions into the computer. Logo on an Apple puts into the hands of the average high school student a computer with which it is possible to draw pictures. More important, with this system it is possible to create programs that produce images. The images are not of very high resolution—the Apple's video display has less detail than a television screen—but Logo is very flexible. You can start doing interesting things with it in less than half an hour. A skeptic when I sat down, I went home impressed. All I had done was make a bright triangular spot at center screen (known as a "turtle") do cartwheels, move back and forth, and describe curves, trailing phosphorescent clouds of glory everywhere it went.

It is one thing to be impressed by a diverting afternoon's doodling with Logo; it is quite another to accept the idea that computer graphics systems (Logo and its cousins) can become a new medium of artistic expression. But, accept it or not, the idea is upon us. There are now people who call themselves computer artists and what they do is being called computer art.

Computer art. The simple conjunction of the two words makes me think of Lautreamont's famous definition of surrealism—"the gratuitous encounter of a sewing machine and a bicycle." While there is nothing gratuitous about most computer systems (at least on their own terms), the connection of computers and art has something persistently surreal about it. But why? Artists have always rushed to exploit technology. Why not the computer?

Maybe it is just the newness of the computer that makes its use in art seem odd. Or maybe there is a deeper reason for uneasiness. After all, computers seem so unalterably scientific. Does the artistic use of computers threaten an encroachment of science onto art's privileged ground? Or is it the nature of the computer itself that threatens? Although computers may be tools, in principle no different than the painter's brush or the sculptor's chisel, they seem capable of becoming much more than tools. It should be reassuring that in my recent tour around the rarified world of Boston's computer artists, I saw nothing that could be called art produced by an unaided computer. There is no computer art produced without the intervention of human agency, and it would be a misconception to suppose that anything of the sort exists. Still, the specter of computer-generated art haunts the enterprise, as though the use of computers in art somehow risks the ultimate usurpation, where the computer has replaced the artist it is supposed to serve and art has lost its place as a last refuge for the uniquely human.

It is impossible to know whether these are just dreams without knowing more about the computer and its artistic capacity. Perhaps the easiest way to think of this capacity is as a means for translating numbers into pictures. A computer graphics system ordinarily consists of a computer hooked up to some type of video display tube. An image is created when the phosphor-coated screen is disturbed by a beam of electrons fired at it from an electron gun located at the back of the tube—just as in a television set. The orientation of the electron beam can be controlled by two numbers: X, specifying the horizontal position of the beam, and Y, specifying its vertical position. Thus, any point of light on the screen can be described by values for X and Y and a complete picture can be described by a list of values for X and Y, which, in effect, direct the electron gun to paint a picture on the screen by moving from one point to another. The computer can be used either to store pictures in its memory as a set of X and Y values, or to calculate a picture by executing a program that generates X and Y values. Computer graphics languages like Logo relieve some of the tedium of drawing pictures in terms of X and Y by allowing the user to build powerful procedures for creating an image piece by piece instead of point by point. Once such a procedure is created it can be saved, copied, and modified at will. Some of the most powerful effects are achievable by reapplying simple procedures over and over again to transform a picture previously created and stored in computer memory, as, for example, when the picture of an object is rotated by applying a procedure for matrix multiplication to the stored X and Y values specifying a picture. Although Logo-like systems protect the user from many of the mathematical details, it is important to remember that whatever computer artists do, they must have some way of specifying the numbers that govern computer images. Often, but not always, this will involve writing a computer program.

The kind of image the computer is best suited to producing, at present, is very regular. Programs that make use of the same procedures repeatedly are the norm: the computer is good at tasks that are repetitive and hence

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"Computer art. The simple conjunction of the two words makes me think of Lautreamont's famous definition of surrealism—'the gratuitous encounter of a sewing machine and a bicycle.'"

tedious to execute. At Logo I asked a programmer friend of mine who draws whether he thought of using a computer to draw realistic pictures. "Probably not," he said. "It would be too cumbersome. I don't see the point of doing it." (That should stand as a warning to any artists who are reading this piece: If you are looking for a computer pen or paintbrush, you may not like what you find, at least not if you like to draw.)
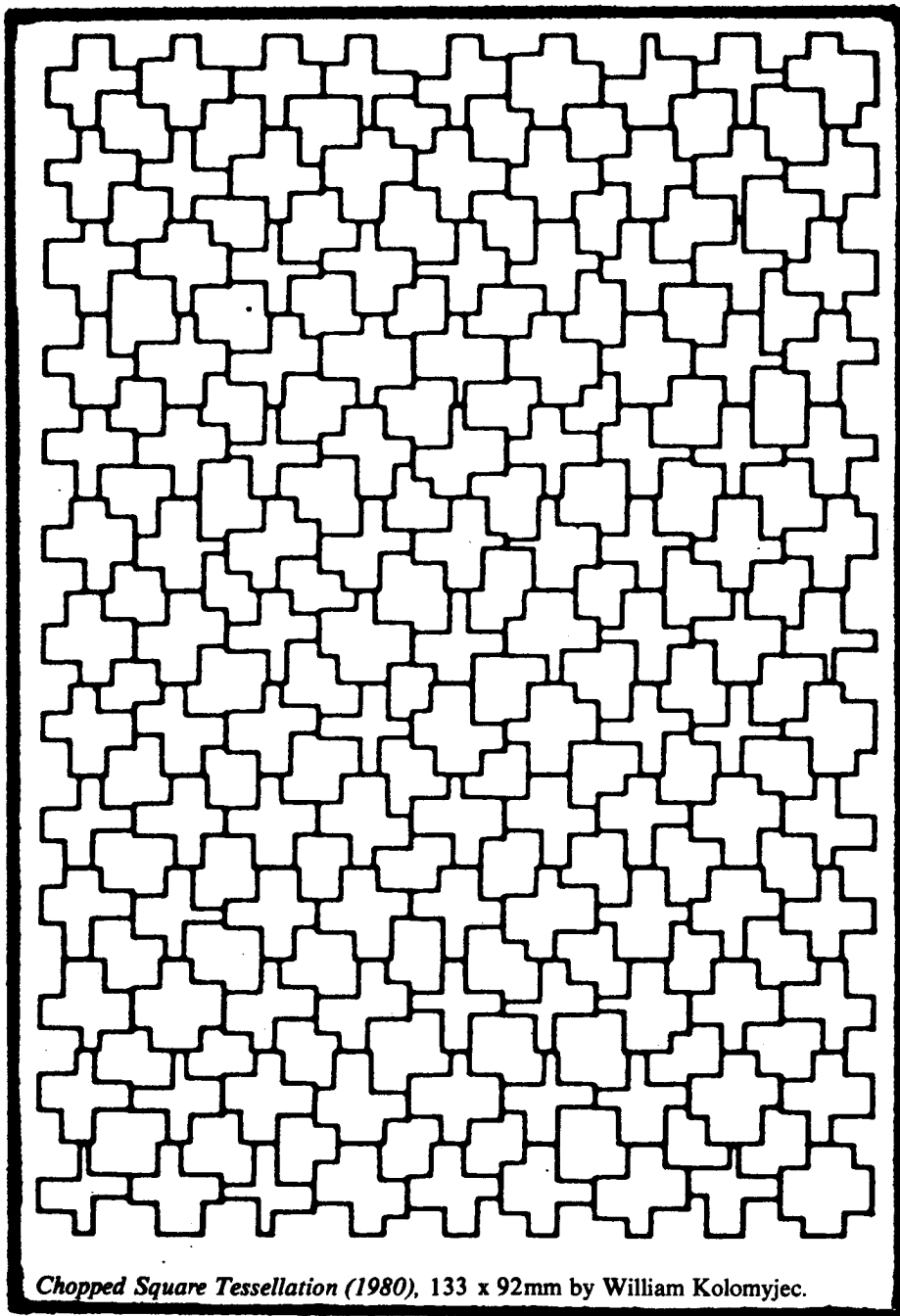
Broadly speaking there are two kinds of computer-produced image: static and moving. What's intriguing is that on close examination the distinction falls apart: The image on a graphics display screen must be "refreshed" between thirty and sixty times a second, to prevent flickering. So much work is involved in putting a static image on a display screen, it's tempting to say, that you might as well go ahead and make it move. To put the same thing in another light, the computer is so well adapted to doing things over and over that the tedious work of making mobile images—animation—is significantly reduced. Perhaps that is why much of what is currently available from the would-be computer artist consists of computer-animated films. A fair estimate of the state of the art in computer animation could be made from a Center Screen show that filled three recent evenings this spring at Harvard University. Several of the films shown were of almost no aesthetic value—there was even a brief clip from a flight simulation showing a jumbo jet taxiing down a runway—but there were good reasons for looking at nearly all of them.

A dichotomy that has always been present in visual art seems to be present in computer animation as well: Some of the work was of interest solely because of the difficulty of making it, while other work emphasized aesthetic concerns. On one side there is the everlasting confusion of art and technique, attractive to many computer scientists because they are interested in well-defined skills. On the other side there is the notion of art as an experience the work offers the audience. The art-as-skill side of this dichotomy is repre-

sented by a film called *Adam,* by T. J. O'Donnell and Arthur Olson. It opens with a circle within which a schematic figure is outlined, a sort of mechanical-drawing rendition of da Vinci's man-the-measure drawing. The two-dimensional figure steps out of the circle and becomes three-dimensional in a perspectively accurate three-dimensional world, where it goes for a walk. Limbs and body look like aircraft fuselages and flashlight batteries. The figure walks in an oddly bodiless way, since no gravity resists his muscles,
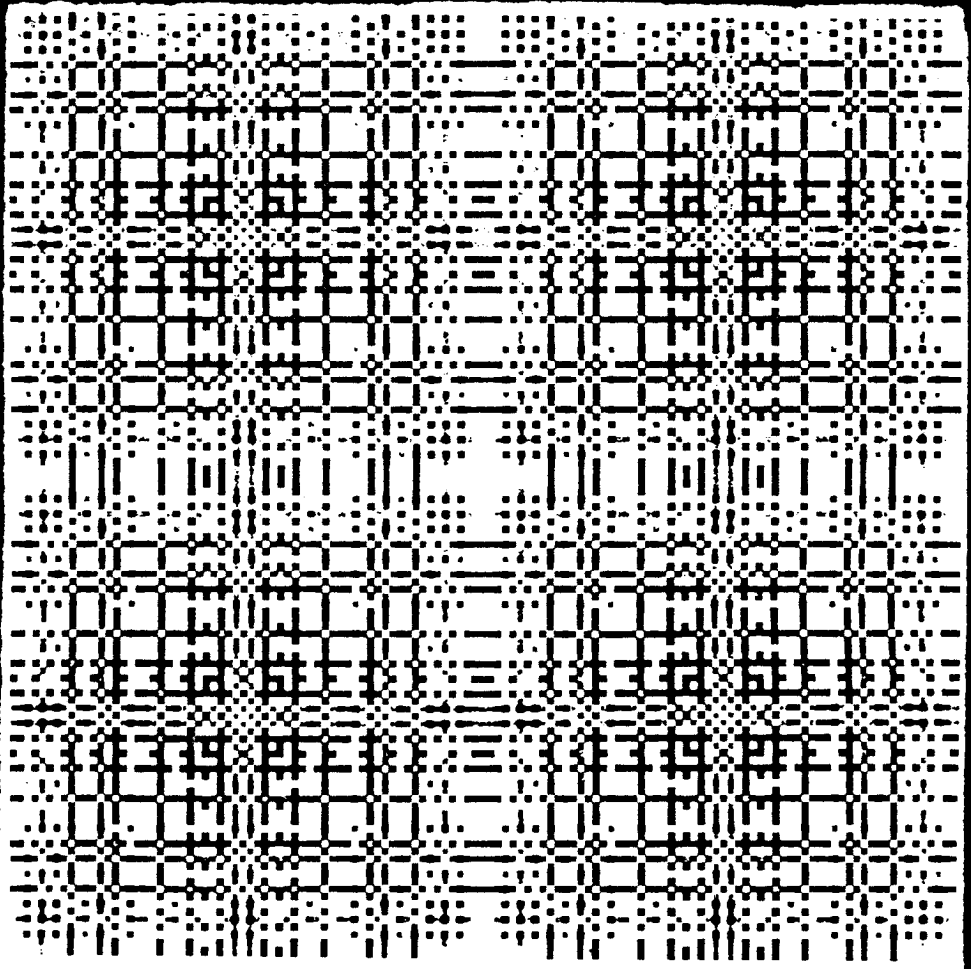
and his world is friction-free. The image, we are told, is an animation of Edward Muybridge's sequential photographs of a man walking, but much has been lost in the translation. Well, who am I to complain about the absence of any dynamism in the figure? The accomplishment is astonishing! That's just the point: The "beauty" of this film, if it is beautiful, is all technical.

Another film impressive for its technical accomplishment on several levels

Chopped Square Tessellation (1980), 133 x 92mm by William Kolomyjec.

$Z = X^4 + Y^4$ *1980* by Herbert Franke and Ernst Triendl.

was Jim Blinn's *Voyager,* simulating the visit of Voyager 1 to Jupiter and its moons. This work was done at the Jet Propulsion Lab, and it takes the transmissions from the satellite and puts them together in a single continuous film. I should be grateful, but I felt you had to have been there. The film has no overall rhythm, and shows no concern for its visual impact on the audience beyond the wow of the picture of the planet and its moons.

Two other films were an experience of an entirely different order: *Two Space* and *3/78* by the computer artist Larry Cuba. *Two Space* consists of austere black-and-white images, the screen subdivided by a cellular grid through which dots of light in strings like beads dance in various symmetrical patterns, translations, mirrorings, rotations. The tessellation dissolves into swarms of dots that interlace with retinal after-images, some in color—Cuba says that the extreme black and white contrast is what produces the illusion of color in the eye—and figure-ground reversals. The rhythm of the pattern is strongly related to the Javanese gamelan music on the soundtrack. The second film,

3/78, uses the same basic device of white dots on black, but with greater sophistication and control than displayed by *Two Space.* There is no sense of watching tiling patterns carried out for the sake of going through all the changes. The figures are more geometric. The transformations are more exciting. A single line metamorphoses into a melon shape, one square becomes a series that tumbles gracefully across the screen.

Both films have clear affinities with certain styles of abstract film and painting, especially the "pattern" painting of recent years. Cuba's strongest declared affinity is with the work of two film-makers, Jordan Belfen and Oscar Fischinger. Cuba would prefer his films to be seen in the context of abstract animation, rather than computer animation. Asked what painters he admires, Cuba gives a rapid response that seems suggestive. "Al Held. Sol Lewitt. And the Constructivists." His reference to the Russian painters is significant, because his films fall squarely into the constructivist branch of modernism (as distinct from the expressionist branch). The static constructions, paintings, and

drawings of Sol Lewitt, for example, demonstrate precisely the same concerns as Cuba's films.

After the last screening, I asked Cuba what he thought it meant to be a computer artist. He laughed. "I'm an artist because I say I am." Cuba is a slightly built, intense man in his thirties who laughs easily. "It's the artist who says it's art. The museums and the critics who act as the arbiters tend to forget that. And most people depend on them to say what art is." But people associate computers with science, I suggested, and it seems odd, somehow frightening, that computers might have something to do with art. "That can only come from misconceptions about computers," he said. "Maybe you're not supposed to get art from a machine, like a camera, for instance. Does that mean that Ansel Adams isn't an artist? When people talk about technology and art, they think of the latest, least familiar technology. But all art is based on technology. A pencil is technology."

One difficulty for many people is that in both photography and computer animation we can't point to the unique object that is the work itself. Even after the sardonic researches of Marcel Duchamp and his kin, most of us expect the art work to be a unique, handmade object in which the artist has, through work over time, invested his spirit. But what is invested in computers is thought to be mind, not spirit, and the object is nowhere to be found. Today's artists have separated themselves so far from virtuoso effects that they work obsessively at eliminating all signs of personal handiwork, at the overthrow of the object status of the art work, at dispensing with the requirement that an art work must be executed in order to be realized. It need only be planned—or, in the case of work by magicians like Robert Irwin, the artist need only have a perceptual experience of his own and try to direct others toward it.
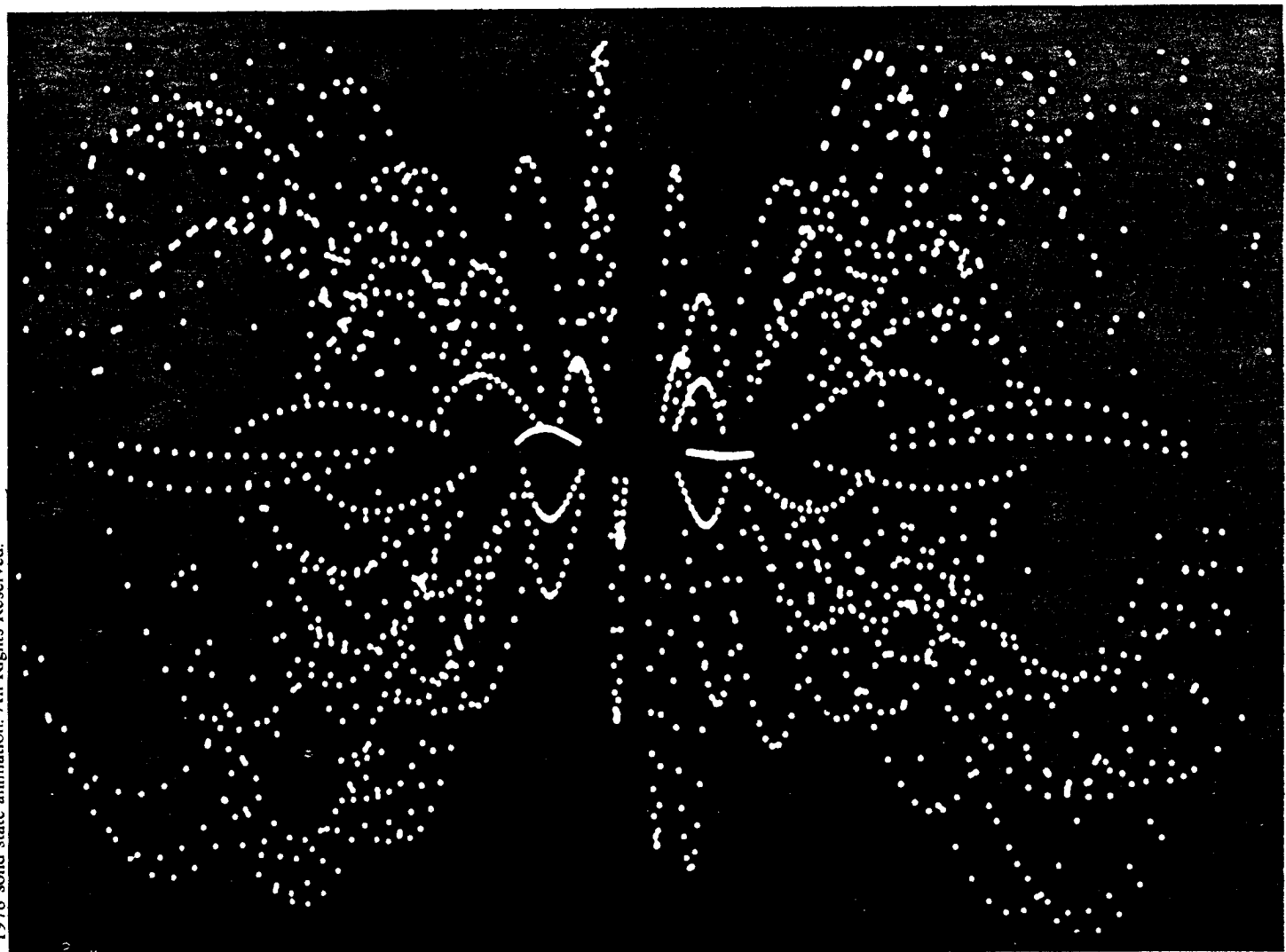
Many people doing work in computer graphics today are not artists at all. I asked Cuba if he thought there was any difference between scientists and artists. "Computer scientists produce tools, artists produce works," he said. Without in any way denying the value of this tool-building, which will eventually make a great storehouse of graphic images available to anyone who wants to use them, Cuba is at pains to disassociate himself from this engineering orientation. He is not using the computer to mimic or preserve the traces of handiwork. Computer graphics systems do exist—so-called "paint-brush programs"—designed to reproduce gesture. His work, he says, is technically primitive by comparison. He is interested in putting certain expressive qualities into his work—above all, the serenely elegant movements of patterns inspired by mathematics. "If the basis of your work is mathematics, gesture isn't important." He points out that using language involves being

bound up in a particular world view, while forms derived from mathematics are spiritually universal, the way music can be. Cuba's work resembles choreography. The experience, as always in film, is perception over time, but Cuba's films are free of narrative content. It is motion in itself that Cuba thinks is the most important thing the computer adds to art.

One of the interesting things about computers is that, like art, they challenge and sometimes confuse old, very familiar human boundaries. "No other human artifact responds to an outside stimulus," said my friend at Logo. "No other human artifact can interact with humans." Computers print messages on the video screen, for instance, and ask you questions, say unexpected things, call you by name, do different things according to how you respond. This *is* an interaction. It is the imitation of a dialogue. The sense you have is of dealing with a power—a genie or a splendid valet. "No general ever had such obedient troops, no prince such

loyal subjects," a computer artist told me. What happens in such statements as these, however, is a kind of unwitting metaphorical transfer: What are ordinarily regarded as the attributes of person, and thus part of a total human experience, are *transferred* to computers, or rather to computer programs. The program is said to react, respond, interact, act—and before we are aware of the shift in meaning, we find our artist engaged in earnest conversation with the forms of his imagination, with a machine, as if he were talking to a stone. Computers, or computer programs, don't *do,* they imitate doing. They don't act, they imitate action. In many cases the imitation is so effective that we cease to see it as figurative.

Artists have always confronted us with this problem: It was the boast of the painter Zeuxis that his paintings were so convincing that birds attempted to eat the fruit on the trees he painted. So too the claim of Orpheus, the original poet, whose song silenced

birds and brought stones to tears. Behind both these myths is a central myth about art, that it rivals or even surpasses nature. Orpheus shamed the birds, Zeuxis made fools of them. The birds in these stories are the audience—ourselves—deceived by an imitation.

◆

The ancestry of the digital computer shows a close, if little appreciated, relation to art that ought to make us question still further its seeming opposition to aesthetic values. The computer's mythic father was Charles Babbage, a nineteenth-century inventor who daydreamed of automating the logarithm tables and spent much of his adult life designing a machine he called the Analytical Engine—a machine that was never built, but which laid down in its design the fundamental principles of today's digital computers. Babbage, as Hugh Kenner points out in his entertaining book, *The Counterfeitors*, was a twentieth-century man of sense in the post-romantic nineteenth century. But he was also fascinated by the mechanical ducks and flute-playing automata of the century before, the mechanical dolls that are so ominously prominent in the stories of E.T.A. Hoffmann. Babbage as a child saw in the home of a man named Merlin (believe it or not) a mechanical ballerina made of silver. "This lady attitudinized in a most fascinating manner," Babbage wrote. "Her eyes were full of imagination, and irresistible." In old age, he bought the ruined silver lady and restored her to working condition.

From the standpoint of the historian of the arts, this anecdote places Babbage clearly in the line of artificers that began with Hephaistos and Daedalus and continued through clockmakers to the architects and engineers of present-day America—a somewhat suspect, arcane, semi-magical kind of artist, if

indeed an artist of any kind. It may be said that the computer descends from automata like the silver lady. Kenner reminds us that the analytical engine "was to have taken instructions from punched cards borrowed from the Jacquard loom, which Jacquard in turn had developed while restoring a loom devised (after principles taken from a clockwork flautist) by Vaucanson." Vaucanson, the builder of the original mechanical duck!

Babbage's collaborator and apologist was "the only daughter of the house and heart" of Lord Byron, the romantically named Lady Ada Augusta Lovelace, after whom a computer language has been named in recent years. Of the resemblance of Babbage's great engine to the Jacquard loom, Ada wrote, "We may aptly say that the analytical engine weaves algebraic patterns just as the Jacquard loom weaves flowers and leaves." Now, after the passage of a century, computers are getting good at reproducing the kind of visual patterns those looms were weaving when Babbage appropriated their punched cards for his algebraic loom. One form of computer-aided "art" we can all look forward to is the design of new plaids. Some very *odd* plaids, probably.

◆

The question whether a computer could, in principle, make art, looks a lot like the question whether a computer could, in principle, think.

The computer's great power comes from three principles: repetition, contraction, and generality, and the greatest of these is generality. The power of repetition is the computer's ability to do the same thing over and over indefinitely, and also to change what it does, little by little, so that when the cycle of repetition ends, what you started with emerges completely transformed. The principle of contraction

permits you to give any program for carrying out a particular task a name. Then, whenever you need to perform that task you can simply start it up by invoking its name (a little like "open-sesame" but without the magic). Repetition and contraction can be combined: you can repeatedly run a given program to accomplish a big job bit by bit.

Finally, the power of generality is that the computer manipulates symbols with which it can imitate any kind of object or activity that can be formulated as a set of rules. Generality is the greatest of these three principles because our intelligence is general, and this apparent (if misleading) similarity gives people the idea that computers might some day be autonomously intelligent, the way humans are—that is, as we say, "able to think for themselves." As others writing in this issue point out, computers possess—*or imitate the possession of*—characteristics very like some of ours. They are goal-oriented, purposive, they comprise many interconnected systems, they are capable of interaction, and they manipulate symbols. But, you say, it's all just a simulation, right? Well, isn't that exactly what we do? Don't we simulate the world to ourselves constantly? Worse, don't we simulate ourselves to ourselves? This line of thought demonstrates one thing that is unnerving—and for many people chilling—about computers: They confront us with the difficulty of distinguishing the real from the pretend. (Ah, but so does art! so does art!)

About thirty years ago the English mathematician Alan Turing proposed that we translate the question of computer intelligence into a game, now usually called the Turing Test. In a simplified version, the game runs this way: Two players are linked by teletype in a long-distance conversation. It is one player's task to decide, by means of asking any question or playing any conversational trick he likes, whether

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the other player is a human being or a computer. Turing proposed that if computers could be designed to consistently fool human beings in this game, then there would be no justification for continuing to deny that computers can think.

The real beauty of Turing's parable—for it is a parable—lies not in its providing criteria for recognizing machine intelligence but in its demonstrating the difficulty of recognizing human intelligence. He spoke wryly of "the polite convention that humans think." We will do well to keep in mind that to ask whether a machine thinks is not to ask whether it is human; still less is it to ask whether humans are machines. As with thought, so too with art. In principle, a computer can be programmed to write programs—even complex programs such as those that produce graphic displays. If—and it is a big if—in the future, computers got so good at writing graphics programs that we began to find it difficult to distinguish graphic displays produced by computer-generated programs from those displays produced by hand-written programs, then would we have to grant that computers had become artists? As Woody Allen said, "If you act like an artist, they'll treat you like one." ■

David Rollow writes fiction and works with Computer Solutions in Newton, Massachusetts.
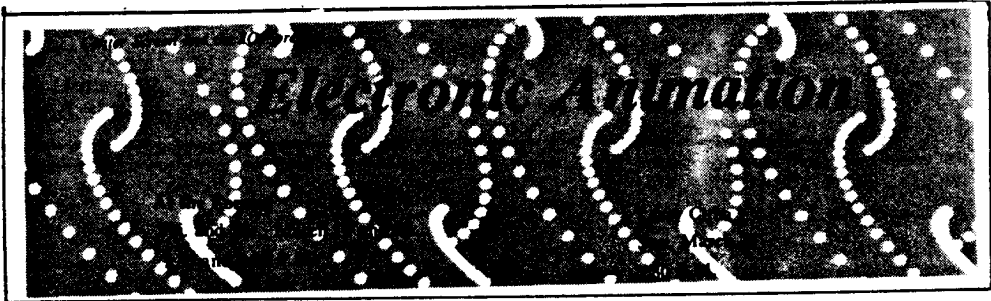
Electronic Animation

"Sunstone" by Ed Emshwiller

ELECTRONIC

ANIMATION

At Center Screen

Dotted planes bend, fold and mutilate into undulating sine waves; the profile of a woman turns into a delicate fairyland of video effects; a kaleidoscope of electronic blips forms mandalas to the rhythm of Balinese gamelon music; a wire frame "dial activated man" walks in circles and bends to touch his toes: these are all pioneer works in the field of computer-assisted animation. Traditional frame-by-frame methods are currently being revolutionized by new techniques of "real-time" animation, artificial "realism" and complicated sequences of geometric movement — flights over mountain ranges, through Chicago, and under dining room furniture that could never be accomplished by the camera alone.

The Center Screen program presents personal, commercial and scientific examples of this new technology.

It includes recent works by well-known video artists like the senior and junior John Whitneys and by experimental filmmakers like Stan Vanderbeek and Ed Emshwiller, who are trying out the possibilities of electronics. *Vol Libre* by Loren Carpenter is a delightfully dizzying Alpine version of the arrival on Jupiter in *2001*, and *Voyager I Saturn* is a sample of the computer animations that Jim Blinn, who has just been hired by George Lucas, did for NASA. Half of the program is on film; the other half is by local video artists and will be presented on the color video projection system at the Kennedy School of Government. The video segment includes Peggy Weil's and Howard Eglowstein's computer reproductions of lip movements and the sound of the human voice; John Halas' *Dilemma*, which features fill-in computer techniques; and a selection of works by such local video artists as Bob Snyder, Woody Vasulka, Joanne Gillerman, Copper Gilroth and Betsy Connors. Two of the best films in the program are *Two Space* and *3/78* by Larry Cuba, who will appear in person in the Arco Forum, Kennedy School of Government at 7:30 p.m., Sunday, March 21 to elucidate the mysteries of computer animation and explain the meaning of the words *vector refresh* and *RGB*. I was one of the few who enjoyed the video art in Coppola's *One From the Heart*; but Center Screen's program certainly shows how much more Coppola could have done.

CENTER SCREEN

CENTER SCREEN's 8th ANNUAL WINTER ANIMATION SERIES!   February 5 thru March 28, 1982
Presented in cooperation with THE BOSTON PHOENIX.   CENTER SCREEN Info: 494-0200

March 19, 20, 21 Friday thru Sunday   Fri/Sat: Film & Video 7:30, 9:30
                                                    Sun: Larry Cuba   7:30 only

ELECTRONIC ANIMATION

A program of the best of recent film and video created by computer-assisted animation
techniques which are revolutionizing the field.   Guest curated by California computer
artist Larry Cuba, best known for his independent films, TWO SPACE and 3/78, and for
the computer animation sequence in STAR WARS.   With the explosion of new technology
of the last few years, the nature of traditional animation--laboriously made frame-by-
frame--is being radically altered,with "real-time" animation, artificial "realism," and
immensely complicated sequences regularly being accomplished.   This 3 part program
emphasizes a sampling of the best new personal works, as well as examples of advanced
techniques in commercial and scientific works.

Part I FILM At the Carpenter Center, Friday and Saturday, 7:30 and 9:30 PM
    CENTER SCREEN FILM INTRO, Brian Raila
    WHO HO RAY, Stan Vanderbeek
    TERMINAL SELF, John Whitney, Jr. (7 mins.)
    3/78, Larry Cuba (6 mins.)
    TWO SPACE, Larry Cuba (8 mins.)
    ARABESQUE, John Whitney, Sr. (7 mins.)
    ADAM, T.J. O'Donnell & Arthur Olson (Silent) (5 mins.)
    VOYAGER I ENCOUNTERS SATURN, Jim Blinn (Silent) (3 mins.)
    VOL LIBRE, Loren Carpenter (2 mins.)
    SUNSTONE, Ed Emshwiller
    BOB ABEL FILMS, Bill Kovacs (sample reel) (6 mins.)
Part II VIDEO At The Kennedy School of Government. Presented in collaboration with the
                Institute of Politics. Friday and Saturday, 7:30 and 9:30 PM.
                Presented on the color video projection system in the Arco Forum.

    INFORMATION INTERNATIONAL, Richard Taylor (sample tape)
    ZOOMS ON SELF SAME FIGURES, Nelson Max
    DIGITAL EFFECTS, Judson Rosebush (sample tape)
    DILEMMA, John Halas and Janos Kass (excerpt) (5 mins.)
    ZERO BANDWIDTH VIDEO, Peggy Weil & Howard Eglowstein (4 mins.)
    WINTER NOTEBOOK '77, Bob Snyder (11 mins.)
    ICRON, Bob Snyder   (12 mins.)
    THE MATTER, Woody & Steina Vasulka (1974, 3 mins.)
    CANON, Ron Hays (6 mins.)
    SPIRAL 5, Tom DeFanti & Dan Sandin
    SKIPPY PEANUT BUTTER JARS, Copper Giloth (1980, 3 mins.)
    PENTAGON, JoAnn Gillerman & Jim Whiteaker (1981, 1 mins.)
    FIVE RESPONSES TO THE POLITICAL CONDITION NOVEMBER 1980, JoAnn Gillerman (1981, 12 mins.)
    BATTERIES NOT INCLUDED, Betsy Connors (excerpt, 8 mins.)
    ARTIFACTS, Woody Vasulka (excerpt, 5 mins.)
    DRIVING TIME, Vin Grabill (1 min.)
    THE COMPLEAT ANGLER, Turner Whitted

PART III LARRY CUBA In Person! At The Kennedy School of Government, Sunday Only at 7:30 PM

                                    -More-

Use of computers and other electronic devices to produce films and videotapes began to
come into importance during the 1960's. The exhibition 'Cybernetic Serendipity: the computer
and the arts,' which was held at the Institute of Contemporary Arts in London from August 2
to October 20, 1968, brought together for the public important works by Nam June Paik, John
Whitney Sr., Ken Knowlton, Ronald Resch and Stan VanDerBeek, among others, who had been ex-
perimenting with various new technologies.

WHO HO RAY, Stan VanDerBeek: VanDerBeek's experimental work in animation spans the last 26
years. He started using computers in 1963 and produced nine computer-generated films between
1964-70. Some of these were done with the help of Ken Knowlton using the BEFLIX language
Ken developed for Bell Labs.

TERMINAL SELF, John Whitney Jr.: John Whitney Jr. comes from a family of leading avant-garde
filmmakers. TERMINAL SELF was made on the motion control system developed by his father John
Whitney Sr. This equipment is described in detail in the December 1981 issue of American
Cinematographer and is the foundation of many motion developments for both the film and
television industries. The original image is a photograph of a woman. This image is placed
on the artwork table and the table assembly is moved by a complex system of gears. The film
is exposed as the photograph is moved, creating a streaked effect. The gears are controlled
by an analog computer Whitney Sr. put together from parts salvaged from an airplane.

3/78 and TWO SPACE, Larry Cuba: 3/78 is a set of sixteen 'objects' each consisting of one
hundred points of light that perform a series of precisely choreographed rhythmic transform-
ations. The film is an exercise in the visual perception of motion and musical structure.
TWO SPACE is defined by two dimensional patterns (like the tile patterns of Islamic temples
are generated) by performing a set of symmetry operations (translations, rotations, reflec-
tions, etc.) upon a basic figure (or tile). In TWO SPACE, twelve such patterns are produced
using each of nine different animating figures ($12 \times 9 = 108$). Rendered in stark black and
white, the patterns produce illusions of figure-ground reversal and afterimages of color.
Gamelan music from the classical tradition of Java helps create a mesmerizing effect. Larry
Cuba studied at the California Institute for the Arts in Valencia and also with John Whitney
Sr. The descriptions of his films are from Picture Start.

ARABESQUE, John Whitney Sr.: 'Shimmering lines and waves of oscillating color unfold their
dance to the music of Eastern rhythms, in the computer-generated imagery of this film. Com-
bining the interplay mathematical coordinates, wave frequencies, and sound-cycle manipula-
tions, John Whitney produces visualizations of flowing arabesques, evolving from randomness
to patterns inspired by 8th century Persian designs. Their correspondences with Islamic
abstract art are reinforced by the musical score of Manoocheher Sadeghi, leading contemp-
orary Iranian composer, who recorded his work for this film. Film notes from Pyramid Films.
A further discussion of ARABESQUE can be found in 'Digital Harmony: On The Complementarity of
Music and Visual Art' by John Whitney, published by Byte Books, 1980.

ADAM, T.J. O'Donnell & Arthur Olson: Those who are computer wizards can more fully appreciate
the hierarchical data structure used for this vector man and his environment. The data
structuring and animation were made possible through the use of GRAMPS, a generalized computer
graphics/animation system developed by O'Donnell and Olson at the Lawrence Berkley Lab.
Although the FORTRAN-based GRAMPS system was developed at the Labs for the National Resource
for Computation in Chemistry and chemical applications, O'Donnell and Olson wanted the system
to be able to handle a variety of animation problems. The man's walk is based on the 12
positions described in a book by Edwaerd Muybridge, published around 100 yrs. ago, as were
the lying down and jumping sequences. The basic positions were put into the computer and
the frames between the positions were interpolated.

VOYAGER I ENCOUNTERS SATURN, Jim Blinn: This film was produced at the Jet Propulsion Labora-
tory for flight path studies of the Voyager encounters. Jim Blinn has long been noted as one

Vasulkas is experimental in nature, and the tapes we see are usually the first time a particular image has been achieved. They have been leaders in the field of analog to digital to analog interfacing coming to this area from film backgrounds. They are learning a lot of programming techniques to improve their language and communication with the computers and people working in the field.

CANON, Ron Hayes: Music: Pachabel's Canon in D. If you saw the 'Music From Outer Space' concert by the Los Angeles Philharmonic Orchestra conducted by Zubin Mehta which included lasers, smoke, lights, video projections and film projections, you might be able to sense more of the environment in which Hayes works. He has done several concert media presentations which makes one tend to view his tape as a part of a larger whole. This more encompassing universal theme tends to be a strong factor in much of his work.

SPIRAL 5, Tom DeFanti & Dan Sandin: Sandin is most noted for the development of the Image Processor for video, and DeFanti for the development of the ZGRASS computer graphics system. Both are a part of a large community of electronic artists, living in the Chicago area, devoted to spreading the technology of computer graphics and video on a 'grassroots' basis. Plans for the Image Processor are very inexpensive to obtain and one need only to purchase the various electrical components to build one. The ZGRASS system, developed from the Bally Arcade unit used in video games, was designed for people who have had no prior knowledge of computers. The impact of the work done by this group can be seen in the works by Copper Giloth, JoAnn Gillerman, Bob Snyder and many other video artists.

SKIPPY PEANUT BUTTER JARS, Copper Giloth: Copper produced this charming tale of her experience with art school on the ZGRASS graphics system for real-time animation. This and other works by Copper exhibit the extent to which the system can be used with various programming strategies for this type of animation which depends on painting over the previous image.

PENTAGON and FIVE RESPONSES TO THE POLITICAL CONDITION, JoAnn Gillerman: These two pieces are very similar to the works by the Chicago group making full use of the video image processor to make artistic and political statements.

BATTERIES NOT INCLUDED, Betsy Connors: "BATTERIES NOT INCLUDED was commissioned by WGBH-TV in 1977 and completed two years later. A science fiction animation, the abstract narrative moves from futuristic earth sets to lunar landscapes peopled with strange creatures. Computer editing helped the development of the animated portions of this work by Betsy Connors, who is a fellow at The Center for Advanced Visual Studies, M.I.T. and has been working for several years on different techniques of video animations with small models."

DRIVING TIME, Vin Grabill: Grabill's methodology for editing his tapes can be transferred to a computer assisted videodisc system. "I look for the time when several videodiscs of 'information' can be blended together via user initiated computer programs to yield visual music; sound and image is part of the same rhythm, and that rhythm is primary to the viewing experience." Grabill is a fellow at the Center for Advanced Visual Studies, M.I.T.

A free series poster schedule, with complete information, is available.

TICKETS/MEMBERSHIPS

Individual Tickets: $3.50. (Both parts of **Electronic Animation** are included in the $3.50 admission; ticket buyers will receive tix for both. Cuba presentation on Sun. in separate $3.50 admission. On Series Ticket or Subscription Membership, Part I and Part II together count as one admission; the Cuba presentation counts as a separate admission.)

Series Tickets: $10 in advance, $12 at door. Good for any 7 admissions in Winter Animation Series (**plus** free admission as space permits to the German Experimental Film showings.) Only one person can enter at a time on a Series Ticket (unlike a Membership, which allows the Member to use one of the punches to bring a guest.) Series Tickets do not guarantee admission.

Subscription Memberships: The best movie deal in town! $18 for Membership: $ r students (include valid student I   mber and school; no student prices on individual tickets.) Over 500 Members last season. Benefits include: **12 admissions** in 81-82 Season; members **may use one of the admissions for one guest** (unlike Series Tickets); **15% off purchases over $5 at The Blue Parrot and The Idler** restaurants, Harvard Square, **including one guest; invitations** to special screenings and receptions (such as German Experimental Film); **discount parking** at half price in the Nutting Road Parking Lot, Harvard Square, Fri. and Sat. eves; and other benefits!

Series Tickets and Memberships available at: Beginning Jan. 25, Harvard Book Store, Harvard Square, and Center Screen Inc. office, Cambridge; beginning Feb. 3, at Holyoke Center Ticket Office, Harvard Square (495-2663). **Or by mail:** Send check or money order, payable to **Center Screen Inc.,** to: **Center Screen Inc., Box 130,** Cambridge, Ma. 02142.
Series Tickets and Memberships also available at the door. Individual Tickets available only at door. **Center Screen Inc.,** an autonomous media arts organization, is partially supported by the Mass. Council on the Arts and Humanities and the N.E.A.

Japanese audiences saw new work by American animators in *Synthetic Movements: New Directions for Contemporary American Animation*, an AFA film program presented at this year's PIA Film Festival. Sponsored by Japan's popular entertainment guide *PIA Magazine*, the Festival was held this year in Tokyo from April 15 to April 29. *Synthetic Movements* will also be screened for select Japanese university audiences this month in conjunction with visits by Take Iimura, a noted Japanese film artist active in both Tokyo and New York City.
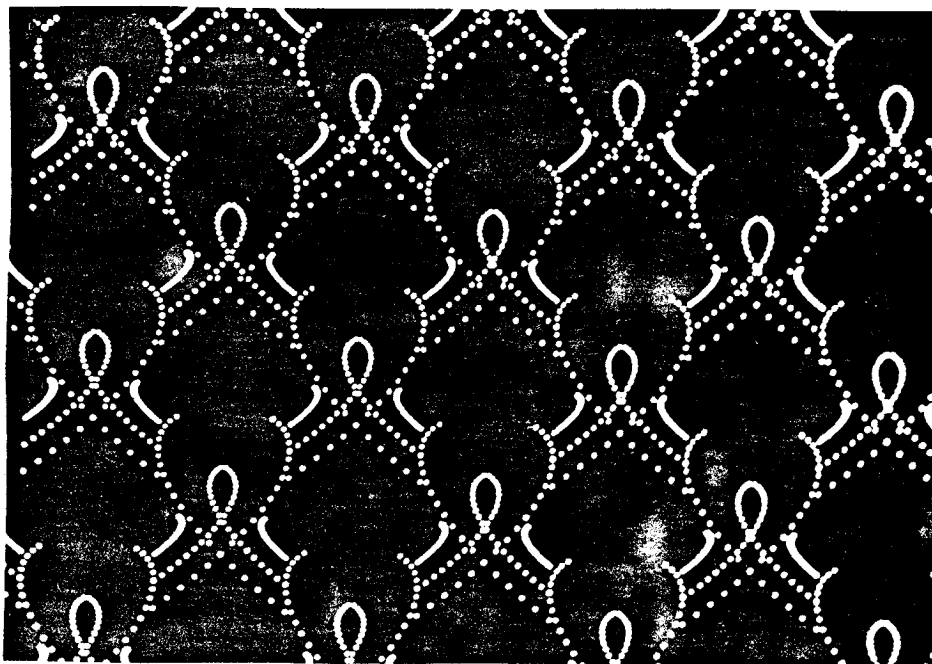
Still from Larry Cuba's *Two Space*, 1979. *Synthetic Movements: New Directions for Contemporary American Animation.*

Films

Calendar

Carpenter Center-Center Screen†
Fri.-Sun., Mar. 19-21—Electronic Anima-
tion. Part I: Film, Fri., Sat., 7.30 and 9.30
p.m. Part II: Video. Fri., Sat., Kennedy
School, 7.30 and 9.30 p.m. Part III: Larry
Cuba in person. Sun., Kennedy School,
7.30 p.m.

Fri.-Sun., Mar. 26-28—Czech Animation.
Fri., Sat., 7.30 and 9.30 p.m.; Sun.,
5.30 and 7.30 p.m.

—Carpenter (For more information,
prices, call 494-0200)
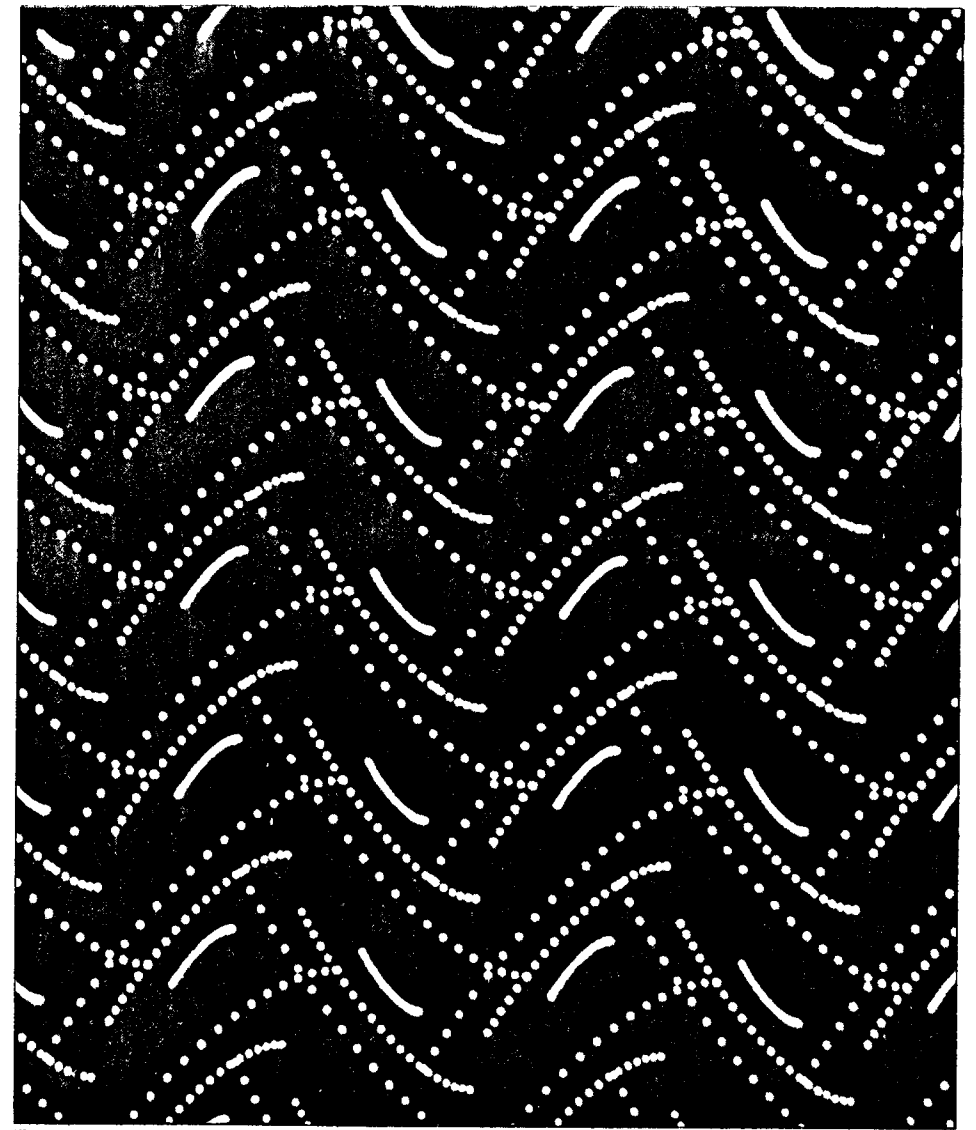
From *Two Spaces* by Larry Cuba, who will discuss computer animation on Sunday at
7:30 p.m., Kennedy School Forum, as part of the Center Screen Animation Series.

Trailers

ELECTRONIC ANIMATION

Computer-generated animation is considered by many to be the wave — or perhaps one should say the analog — of the future. Computers can instantaneously fashion the kind of images and sequences that used to take animators months. They can create a picture, digitize it, and then reorganize its components in thousands of different ways — flipping it, reshuffling it, multiplying it by a hundred, and so on. Before your very eyes. This week, Center Screen will mount a two-part, state-of-the-art, electronic-animation festival that should delight video babes and computer jocks alike, and one of its highlights will be a lecture/demonstration by Larry Cuba, who is notable for, among other works, the computer-animation sequence in *Star Wars*.

Although all the animation has been done in video terminals, half the pieces in the festival have been transferred to film. This half, I might add, is the more entertaining part of the program. For starters, there's John Whitney Jr.'s "Terminal Self," in which the mold of a woman's face endlessly swivels and reshapes itself, billowing into 10 or 20 heads, dissolving, and then coalescing into a single image — all while changing colors. In Cuba's abstract and hypnotic works (which have so much going on within the frame that one wag dubbed them "visual mind-fucks"), lines decay into dots and then putter off to form other shapes. For more down-to-earth animation, there's T.J. O'Donnell and Arthur Olson's "Adam," in which a little 3-D man (who is anatomically convincing, apart from a certain jerkiness) bows and somersaults. But the most entertaining computer-animated shorts are the commercial ones coming out of Bob Abel Studios (in Los Angeles), which offers a 7-Up ad full of starbursts and gaudily flashing peacock women. The best of the Abel films is "Chicago," an enchanting flight around a 3-D cityscape set to the love theme from *Superman;* it's infinitely more magical and convincing than anything in that movie. The best of this stuff has a cool fluidity that is almost frighteningly seductive.

And truly frightening is the sample from MIT's Architecture Machine Group, which can tape a couple of your sentences and use them to make you say anything it chooses to put into your mouth. The process is pretty crude right now, but you can bet they'll have the bugs out in a few years, and then they'll really have ways of making you talk. The Architecture Machine Group is also devising a video map that will allow you to sit at a terminal and drive around the city of Aspen, Colorado — with your choice of winter or summer scenery. That's not included in this particular program, but Center Screen has thrown in a short tape offering two different Boston drives intercut by the miracle of video editing. Unfortunately, if you attend the video half of the program you'll have to suffer the political inanities of Joanne Gillerman's "Five Responses to the Political Condition," which climaxes in a fractured look at the attempted assassination of Ronald Reagan, and the poetic inanities of Copper Giloth's "Skippy Peanut Butter Jars," an aimless memoir about learning to draw naked women on guess what.

Most of this stuff lacks what we affectionately call "the human touch," but it's important to remember that these are merely the first forays into a new era, that we are watching the development of what might prove a revolutionary artistic — not to mention commercial — tool. As Center Screen director Barry Levine reasonably asks, would it have been appropriate to thumb our noses at the pioneer animation efforts of Winsor McKay? Or at the crude early shorts of the Lumière brothers, so many movies ago? *Shown Friday, Saturday, and Sunday, March 19, 20, and 21. For complete details, call Center Screen at 494-0200.*
— **David Edelstein**

9 days a week

SATURDAY 13

At this time of year, in this region's highly variable climate, only one type of plant life can be counted on: the **New England Spring Garden and Flower Show**, which invariably rears its leafy head about now. It's at the Commonwealth Pier Exhibition Hall, 170 Northern Avenue, through next Sunday, and admission is $5; call the Massachusetts Horticultural Society at 536-9280 for more details.

The new German cinema isn't all Herzog grotesques and Fassbinder drolleries. Find out what else there is this weekend, when Center Screen and the Goethe Institute present a remarkable selection of **German experimental films of the '70s** introduced by the West German filmmaker and teacher Klaus Telscher. The screenings will all be held at the Carpenter Center in room B-04, and there will be four different shows. We suggest you call Center Screen at 494-0200 for details.

edited by Andy Gaus

Film listings

FILM SPECIALS

CENTER SCREEN (494-0200) at the Carpenter Center, 24 Quincy St., Camb. Admission $3.50. Mar. 13 at 7:30 and 9:30 p.m. and Mar. 14 at 5:30 and 7:30 p.m.: best of adult animation. Mar. 13 at 7 and 9 p.m. and Mar. 14 at 6 and 8:30 p.m.: German experimental films. Mar. 19-21: electronic animation, separate programs at the Carpenter Center and the Kennedy School of Govt., 79 Boylston St., Camb. Call for details.

CENTER SCREEN

INDEPENDENT FILM

8th Annual Winter Animation Series!

ELECTRONIC ANIMATION
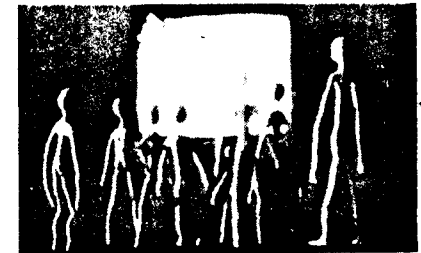
Fri.-Sun.
March
19,20,21
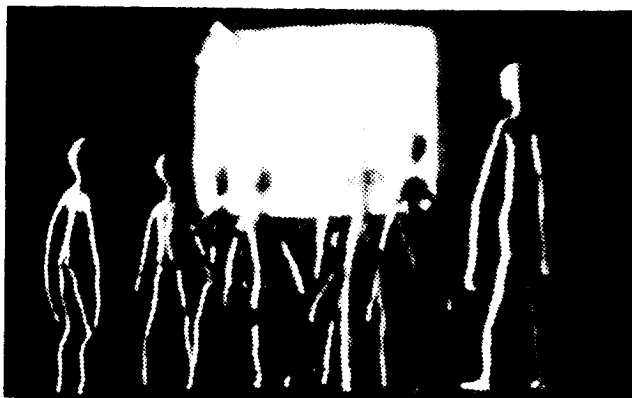
Boston-area Premieres

Part I: Film. Presented in the Carpenter Center, 7:30 and 9:30 p.m. on March 19 and 20. No program in the Carpenter Center on Sun., March 21. Including John Whitney, Jr.'s **Terminal Self**, Jim Blinn's **Voyager 1 Encounters Saturn, Sample Reel: Digital Effects, Inc.,** and others.

Part II: Video. Presented on the color video projection system in the Arco Forum of the Kennedy School of Government, 79 Boylston St., Harvard Square. Video programs presented in collaboration with the Institute of Politics, Kennedy School. Video showings in the Kennedy School at 7:30 and 9:30 p.m. on March 19 and 20 only. No video showing on Sun., March 21 (Except Cuba presentation). Including Betsy Connors' **Batteries Not Included,** Ed Emshwiller's**Sunstone,** Peggy Weil and Howard Eglowstein's **Zero Bandwidth Video,** Vin Grabill's **Driving Time,** and others.

Part III: Larry Cuba in Person. Sun., March 21, 7:30 p.m. Arco Forum, Kennedy School. "An Introduction to Computer Animation Techniques." No program in Carpenter on Sun.

An unusual program, guest curated by California computer artist Larry Cuba, best known for his independent films, **Two Space** and **3/78**, and for the computer animation sequence in **Star Wars**.

Individual Tickets: $3.50, including both parts I and II. (Ticket buyers will receive tickets to both parts.) Cuba presentation on Sun. is separate $3.50 admission.

Partially supported by Mass. Council and N.E.A.

March 12,13,14: **The Best of Adult Animation.**

larry cuba
1803 mission street #12?
santa cruz
california 95?6?

(428) 429 9??9

24 Dec 81

Woody Vasulka
1620 Old Pecos Trail
Santa Fe
New Mexico   87501

Dear Woody,

Good talking to you again. To confirm our phone conversation of a
few weeks ago:

I'm presenting two anthology-type shows of computer animation in March.
One at Center Screen in Boston and one at the Cultural Center in Utrecht.
I want to show The Matter in both shows and Artifacts in the Boston show
(I'm assuming you'll be showing Artifacts yourself in Utrecht.

The enclosed 20min. videotape is for a copy of The Matter. I have ordered
the Siggraph Video Review tapes which I understand has an excerpt from
Artifacts on it but I don't know how long it is. For the sake of having
a longer piece of it, you could use the rest of this tape for an extended
excerpt. Otherwise, I'll just use what's on the Siggraph tape.

Thanx for you help. Woody. My regards to Steina.

Sincerely,