

LIGHT AND DARKNESS IN THE ELECTRONIC LANDSCAPE:
SOME ASPECTS OF THE VIDEO IMAGE

Barbara Buckner
February, 1978

That crystal lattice we call the brain has in it all the raging fires of an exquisite sense - trapped. The land and water mass of the body, riveted to its space in time is alight with phantasms of fire. The authenticity with which I live my life, the phenomena of the waking life and the poignancy of the dreamt life are all chattels of one desire: to have Light and Darkness become life in the traps of space and time. The translation of that entrapment of Light and Dark is the video machine whose very life is hinged upon the metric agony of time and life cycles.

The chain of Light and Dark, that serpentine spiral of electron flow which travels the height and breadth of the Brain is the same current which flows at the heart of the Machine. Deep in the heart of the video medium is a pulse which is the life breath - though invisible - in which the video system runs. It is not the wound motor and spring of the film camera which when released will die the mechanical death. It is not the hand and brush of the painter which must dip and dip again into colored oil for texture and hue. Its source is the white light flow of electrons ever present as the hot line both frequency of 60 cycles from any wall, from the ecstatic generator. This is the ever present power of the snake of alternating current manifesting in the electronic landscape as negative and positive charges --opposing Loves attracting to themselves magnetic webs of living matter. This is the electronic serpent - gushing, insinuating, resisting and carrying the powers of light and darkness. Its tail is in its mouth. The cycles of light and dark are the powers of regeneration. (Diagram A) The upward curve of luminance being the sun which feeds the universe and the downward curve being the abnegation of light or darkness, the mystery from which all things return. These are the birth and death cycles of light eating light as it were, the machine-serpent dance forming full circles of light and life into infinity.

A cool fire, the electron stream, is hurled down to create the electronic landscape patrolled and guarded by the snake who is on its belly, who severs the fleeting power of all things in two. Day and night is in the human landscape. Darkness, the snake's periodic death rattle endures but an instant as the sun goes down and returns to rise again, a departure and return from light to light, the formidable cycle. The magnetic human landscape is lived in by all powers and possible creatures - protozoa, the birds, the lion, and the dreams of other humans. Everything lives in this landscape by virtue of the current. It winds through rivers in the ears, in pools of phosphor behind the eyes, and in the forests of human memory. When light is overthrown, the dark is the frugal home to the sojourner in consciousness and the light is seen as the shadow of light, or death.

As the eye is the herald of the physical sight, the electronic landscape is the whole range of the invisible creatures and kingdoms of sentience, or the creations of the mind - signals which are received and transmitted in the form of shape, color and sound within and without our bodies. This is the power of thought moving in the magnetic landscape. They are all conduits of a certain passion - the passion being the electronic serpent meting out its works for new creations, the charged mason of electronic architectures, the manifold mazes of human sight and hearing. Television is the mirror of the mind, the moving electronic pictograph machine, the electronic moving picture house. The physics of the video machine are quite literally in the mind of the beholder.

As I see it, video appears to be the first visual art and information producing tool that has a built-in cyclic nature. (Diagram B) Just as the processing of information in the brain is accomplished by an electrical sweep of scansion (to and fro) through the cerebral cortex, generating electrical activity in the

form of alpha, beta and theta waves by which we monitor all sensory and nervous connections, so the video camera and monitor operate on the same cyclic principle of scansion - where each frame of video is scanned 30 frames per second at normal speed in contrast to film which runs at 24 frames per second at normal speed. Two fields make up one frame of video. (Diagram C) Each field occurs every 1/60th of a second. The two fields are like two sides to the same story, an interpolation of two views of the same scene, the story being the telling of picture information. Thirty times a second, the electron beam, which consists of a focused stream of electrons scans 525 consecutive horizontal lines of picture information.

Imagine a scene as seen by your eyes. The scene is composed of varying degrees of luminance which in a black and white picture read as a range of black, white and shades of gray. On the back of the retina there are millions of light sensitive rods and cones which are stimulated and convert the light into electrical impulses. These corresponding voltages are sent along the optic nerve to the brain which interprets these electrical impulses as a whole picture. This process is similar in the video system. The video camera is the eye of the system which is sensitive to light energy. The camera tube then converts this light energy by scanning the picture elements with the electron beam, encoding the light energy as electrical energy or voltage which the monitor then plays back as light energy or picture information. We see the translation of voltages corresponding to the original picture as seen by the camera.

Each of the 525 horizontal lines of information is divided into hundreds of picture elements of varying brightness which are scanned by the electron beam. (Diagram E) The number of picture elements along the line determines how much

detail or resolution the picture has. For the period of one field, the 262.5 odd-numbered lines are scanned; for the period of the second field, the 262.5 even-numbered lines are scanned. (Diagram D) The whole picture may be seen as a metrical mosaic of alternating light and dark which due to the incredible speed of scanning we perceive as a whole picture, at the source of transmission and final reception.

After each field is scanned, the electron beam is extinguished and instantaneously returned to the top of the field to begin its scanning pattern again for another cycle. This is called the vertical retrace. This vertical pulse occurs every $1/60$ th of a second. The horizontal scans and the vertical deflections are timed very precisely by what are known as vertical and horizontal sync pulses. They can be likened to the film sprocket holes which pull down 24 film frames every second in syncopation with the camera or projector. If these sprocket holes are ripped or if the motor or spring is faulty the film will disengage and we will see a blurred image, because the frames are not being pulled down at the correct speed which creates the illusion of normal movement. The process of video image scanning and recording is the process of converting reflected light as seen by a camera eye and coding this light energy as intelligence in the form of a sequence of voltages over time and decoding that arrangement into radiated and transmitted light in the monitor.

How different this process is from film. The crucial difference being that between transmitted and projected light. In film, the image is projected from one surface (the film plane) to another surface of the screen. The small image on film is shot through with light and magnified onto the screen. In video, the internal transmission entails a light to electrical energy conversion, a

process of encoding and decoding a signal of varying voltage, a translation of the light substance itself where electrical current transduces to light.

The film image is eternally recorded, a fact which does not change. Once chemically developed on film, the image is not recomposed in the present. The chemical is developed: this is the recorded quality of film. Each time a video recording is played back, there is a coding process which must be re-lived in order to translate the encoded magnetism on tape to the monitor picture. This is the sense of immediacy inherent in the video medium.

This may also explain, in part, why one can look, gaze and finally be numbed into holding one's vision toward the television screen that has even a still scene on it. The picture processing mirrors or counterpoints the electrical activity and cyclic movements in the brain. Instead of watching the wave break, recede, gather itself up again and break, we have become the wave and have neither memory nor expectancy. For this reason also, video is crudely a meditative medium; crudely, in that the single-mindedness is built into the system and works upon the beholder.

A video tape recording is accomplished by using video tape as the recording intermediary between the source of transmission - the camera - and the place of reception - the monitor. In its unrecorded or raw state, the video tape is in a state of complete chaos. This is what we see as noise or "snow" or "salt and pepper" patterns on the screen when no signal or intelligence is being transmitted. In this state the tape consists of an unintelligent surface of unmagnetized particles. When played back, this uncoded energy is transmitting chaotic luminance patterns. When the video tape recorder is set into the record mode, the video recording heads magnetically lay down tracks of information along the tape at a high speed. The non-arrayed, unmagnetized particles on the tape are organized

into an arrangement of a coded signal or voltages. Other circuits within the video tape recorder are designed to transduce this magnetic recording into a transmitted signal which the monitor plays back in concert with the recorder. All sync pulses and timing references must be aligned for camera, recorder and monitor. The sync pulses, the invisible hooks which hold the frame in place as they run in place are a prison in the way that natural day and night are - a necessary division of activity. When the image loses sync, there are visionary cataclysms which occur similar to earthquakes and flooding. The eye is the recipient of such natural disasters and wishes to flee the scene (seen). Loss of vertical sync is seen as the vertical rolling of the picture; horizontal sync loss is when the picture collapses into horizontal bars across the screen.

The monitor also contains an electron beam which scans the underside of the monitor screen which is coated with a layer of light-emitting phosphors. When the electron beam strikes the phosphors they emit a corresponding intensity of light for each picture element. It is this radiated light which we see as the picture on the face of the screen.

The electron beam is the internal sun which illumines the whole interior of the electronic landscape. It is actually extinguished or eclipsed at the end of each horizontal line scan and again at the vertical retrace interval, when the beam is returned to the top of the field to begin its surveyance of the video field. (Diagram D) At these times, there is no transmission of picture information. If this were not done, it would result in confusing picture information during the horizontal and vertical retrace intervals. It is the nay-saying part of the electronic pulse, the other half of the face of the sun. The invisible hand of the electronic current dictates the pulse or intelligent choice (energy) to

move the system even during the darkest hour. It is the metric sine qua non of this intelligent machine to go on when the sun has turned its face into a cloud. It returns again in an instant to light up the field. These little paths of dread, the invisible chains of light eating light and burying their faces at dusk starve for a time in the mystery of their own disappearance, or metric agony. The beam follows closely the choice of a pre-destined, built-in intelligence. It follows closely the netted fabric of the warp and woof of intermittent lights. Its order is the love of order, or the inevitable bound of nature losing herself in herself as day follows night. The hand of the human is not evident at all in the scheme of things. Perception caught in the cog of a wheel does not wreck the machine dance. The human hand does not admit to anything save for the initial propulsion for the power.

What takes place in the Dark? Shadows fall and light shatters on the face of the electronic face. Constant change is ever the same reproduction of the same face, the whole picture remodelled as the sum of its parts. The unique aspect of the video machine is that the whole of its physics is the extreme of mechanism - the whole dynamism of the system is plotted. As soon as we enter the system we enter as Chaos. We encroach upon its absolute metre.

What takes place in the Light? Horizontal sync is the latitude on which the electronic territory is hung, along which luminous beads are strung and burst. They are the jewels of the eyes of humans, set upon a rule of measure. Vertical sync is the longitudinal stop where the breath gives out, the ears are stopped and the inner eyes dance in darkness at the signal for another round to begin, - a signal which sounds in silence for the light again to survey.

This is luminance: the jetting forth of exquisite and merciless freedom bound up in lines of attitude. The electron and lines of such invest their wealth in a

stock which ever increases in darkness; seeding continual fluxes of light in series with the expectation of summation and annihilating themselves by cutting the string upon which beaded weights are hung. The particle/wave of charge is a herald of the deceased from which it came and to which it goes.

Each picture element receives light to its capacity in order to give it up and go dark to receive yet again. It is a memory of forces, light memories regurgitated thousands upon thousands of times. Each light element gives up its store to the next, while the internal sun, the electron beam delivers full to each. In succession each portion of light empties itself out for the next - a succession of light histories, or the species of human memory. These incandescent phosphors are the intrepid ghosts of light. Each element reverberates its image onto the next; each line reverberates its sum onto the next - replicas multiplied, variegated, all mind ghosts of the original light impulse. When recorded, these light ghosts have been caught. It is a salient response to the continual flight of light from its origins.

These are the times of accrual, storage and retrieval in the space of incessant stillness or the casing of the nervous system, the dark house of the machine. These light offerings propelled and impeded by the electron current flow is the distinctive measure which differentiates video from any other visual art medium. For at its heart, video uses an internal sun which appears no matter what the hour, the internal sun being 60 cycles which ignites the machine with ecstatic pulsing and phantasms of metric fire. Like the sybil speaking from the entrails of the earth, the system is informed by an intelligence that speaks and explodes in the powered pocketed sums of the travelling and winding rivers known as circuits through the electronic landscape, the electronic pulse electrifying these globes of sight. And the machine sees from within.

In the space of an eye, the system hangs suspended. Light constellations form, ignite and disappear, modelled for the eye's fancy - that cavern of light filled, reflected and hung in an ocean of black. The eye reroutes lovingly to a thousand destinations the light that made it. Video is an interstellar system. The electron beam scans that mesh of matter called the brain to activated sentience. The electron beam blinds the cavern, the incandescent box. It is the sun and its rays are at the heart of space. The phosphors are the planets and the stars, and the timing pulses are the orbits of each. Stardust is that layer of light hung over the screen, babes of phosphor decay and activation; reverberation of line after line emitting light fossils, the memory of light remembering itself.

When manifest, the current runs on forever until the serpent disappears under a rock; rather, the power switch is turned off. Switches on or off are cues for the living and the dead, for sending and receiving, illuminating and extinguishing - simply, directions for complex arrangements of attraction and repulsion. The human hand is not evident as the power for these phenomena. Power has become a phenomena of no-mass or that weightless entity - information, the serpent power of coded energy or intelligence in the form of signals. It carries no weight but lovingly reroutes the seeds of light who bear it, an infinite breed of luminous circles whose centers give birth to darkness and beam out telling tales of light, the tale of Nature herself, in cyclic rounds. The electronic landscape begets itself.

* * * * *

The video landscape is at once the day and night of the electronic human. It is the heaven and earth of the galvanized machine, the abode of two warring powers - the natural and imaginary - both manifesting in the electronic landscape and claiming rights to the video image.

The video image as seen by a black and white camera is the natural one. It is a product of the natural landscape of vision reflected by the light of the natural sun whose rays reflect its natural skin. When seen as a video image, the object is in its most natural setting - that of the document or record. The light of the image remains literal. It awaits the ecstatic fire of another landscape - or the land of the artificial sun. That land gives rise to a raiment of color so vast as to resemble the lightness and chimera of the dream - in its quantity, its movement, fluidity and magic proportion. This is the land of the internal processing currents embodied within the casing of those magic image machines known as electronic image processors - alone and in concert with computers. In these machines the natural image is reconstituted into electronic pictographs of pulsing color, shape, texture and forces - the instantaneous magic mirror of the mind's eye.

The image seen by a camera eye is the natural one - natural in outline, texture and luminosity. It is all we can say about it. It is assumed in its adroitness and simplicity. It is a phenomenon of reflection, visible because of the exterior sun shining upon it. If the sun does not shine we do not see it. Whether it be a human head, a tree or a lamp, it remains the direct perception of the camera eye, the natural sight of its sister sight - the human eye. As soon as the light surface is struck by the electron beam, the image at once begins its second birth in artificial reproduction. The light is transmitted on the face of the tube into multiplied countenances of varying voltage. This seeding of light along a time line for 525 lines is the machine sampling of light and dark, where the natural object is remodelled continuously as the sum of the parts of itself. This is the natural landscape transformed to the artificial one, in the land of the internal sun. The image is whole but transmitted as moving and

varying voltage. It has been dismembered into models of itself and serially added in order to reproduce itself as whole. It is because of this characteristic that the video image appears to have the ^{unique} property of being still and moving at once.

At this point, the natural source of illumination needed to light the object is gone. Reflected light has gone the route of internal transmission instead. At this point the image has become the product of the interior field - the eye turned back on itself, or the mind's eye producing its own pictures. The image made whole by the camera eye is shattered and recommences to make itself whole in series - a sequential summation of light and dark sown in the electronic landscape. The image is lit from within. The monitor illumines the image from the inside out. How different is the process from the projection of a film. The reflection is no more, projection is no more. The natural sun has passed away into a cloud forever. The dark box - camera obscura - is now continually lit to transform the image continually in the present. In sequence, ever again, the image is constantly re-lit and re-lived. Yet the changing mosaic is ever still, its stillness being the complete and ever changing reproduction of the original image.

The sun has become an intelligent sun. We caccepted its gift and we now place its rays in the field. The human hand - the plough of the visual arts (the wound camera gearing its way through the earth to make the visual contour) has been replaced by the mind in the machine; rather, the intelligent computer circuit powering the light of day and the power of the human hand. The fruit of the labor is an ingenious mapping of intelligience onto the electronic territory of the video field or ikon. This is accomplished by a memory of electronic forces embodied as the telling tales of leasts of electron charges, those magnetic seeds planted and replanted a thousand times and more per second. Reading the field, perceiving the sequence of these light reverberations along the horizontal line

and its complete cycle of scansion is an imprint of the mind picture and its subsequential erasure - a continual series of imprints and erasures, tabula rasas of least events, or ^{the} phenomenon of ghost-telling. We reach behind with the mind and catch the ghost imprint - or that light which was struck, reverberated and released into the ethers of the invisible spheres of the electromagnetic spectrum. The transmission of these imprints are invisible to the human eye but create lines of force within contours of electronic energies, mapping their histories (forces) upon the human picture making screen or the mind's eye, the screen of delight and fancy - the imagination. This screen is ultimately the video monitor. This is the invisible made visible in the electronic imaginary landscape.

The machine of delight and fancy, the electronic image processing machine in combination with computer controls heralds the end of the necessary object in the natural landscape.

This electronic machine is the great artificer, the body which remakes the body of the necessary and natural object. It automatically accomplishes the demonic process where in an image light becomes shadow and shadow light, sky earth and earth sky, water fire and fire water. One does not have to wait for the natural tree to eclipse the natural sun so that leaves may cast their shadows. The elements transmute their shape and energies to some phenomenal ersatz. The machine is the electronic beast by which the initiating force of the human hand continues to reshape the phantasms which fire the human brain and imagination. The human may program a set of controls via the computer to control the intensity and choice of color, brightness level, amount of contrast and gray levels, multi-camera image sequences, the insertion of one image into another and the rate of change for each. The human may program the machine to go on indefinitely creating variations on itself in time. The serpent power begets itself. These are the new pictures, or the artificial and incendiary mind creatures invested with the power

to evolve in the bogus mirror of machine dance,ⁱⁿ the space where thousands of lights erupt and die - the expressive heart.

To quote from Don McArthur, a designer of a computer based video synthesizer system:

With a computer-based video synthesizer, one can generate a sequence of images while controlling each individual image with detail and precision that is many orders of magnitude greater than is possible with manual control...In the compositional mode, the artist can enter programs and parameters through the keyboard, observing the resulting sequence of images, and then modify the parameters through either the keyboard or a real time input and thus build up a data set for a complete piece. The data set, representing all the aesthetic decisions made by the artist, is stored in the computer at each state of the composition. When the composition is finished the system will operate in the automatic-production mode generating the final video signal in real time with no intervention by the artist...¹

The video image processors reconstitute a natural image as seen by the camera eye. A black and white video camera will see a flower in its natural state. This natural black and white image will be passed through an image processor which electronically adds a variety of color, increases and decreases the amount of luminance, gray levels and contrast in the image. Up to eight or sixteen images may be mixed together additively; some parts of one image being inserted into parts of the second and third and so on until a multi-layered, multi-colored new image composite is created which is not only a variation on the original, but also takes on a form which is completely original because new lines of force and texture have been compounded. The process of compounding two or more images together is similar to the iconic and mental configurations which occur in Chinese character formation. (Diagram G) In the video mixing process, the inside of one image may become the outside of the other image, the boundary of one appears as the inner body of the other. The contour or boundary of an object is conjoined electronically with another. Where light falls in one, the dark portion of the second image may appear. The contour of one may interdict the other and form a new contour altogether. The body of the contours, that mass between lines of the

exterior form may have been of a single texture. A second texture mixed with the former creates a transmuted one.

Perhaps paradoxically, video is not a medium for detail. To record the image of an object with a video camera and process that image with a variety of luminance, contrast, and color is to automatically lose original detail and hence texture. One must electronically add texture to texture or modify texture to create new texture, or detail. The phenomenon of adding color to any black and white image is basic to electronic video picture making. Unlike film, color and light in video are disengaged from their objects, because they are added and subtracted independently from the initial image. Color may fly from one object to another; it may pass from foreground to background, electronically flown out of reach of gravity or attachment. Color added to an image is not the naturalistic color of a color camera - it is artificially created internally by changing the phase relationships between the three primary colors of light - red, green, and blue. An equal mixture of these three creates white or the total additive mix of colored light. Each colored light mixed is a step toward increased luminosity. This is the reverse of mixing pigments where every color added is one more step toward black. An unequal mixture of these three primaries yields the electronic palette of video. The internal sun of the video machine issues forth an artificial rainbow of itself, the recreation of color anew - not from the natural sun whose rays reflect the object, but from the shining internal one whose raiment are the colored suns of electron flow.

Where an object had a reflection and luminance added to it, that lit portion will appear to create a new body or mass in and of itself. It loses the appearance of being a highlight belonging to a larger body. That light becomes a new mass, a body in its own right which acts in consort with other light bodies of a similar

kind. The shape of a dog may have dark and light added to it and the texture removed so that the picture becomes a human figure in the middle of water. The magic of the medium is the transmuting of elements within the movement of light. Video is first and foremost an image and light producing vehicle. If an image of light and dark is mixed with a second, it yields a third and a quality which is greater than the sum of its parts. Just as the Chinese character for East is composed of two signs for man and fire; East is not what man and fire add up to, but suggests a vital relationship between them: a luminous icon in a field of disparate parts.

The camera is still used with most image processors to retrieve the initial image for processing. The electronic sun eclipses in the camera every 60th of a second. The natural sun promises to eclipse altogether when the camera or the use of reflected light is done away with altogether. If the screen can be divided into the millions of bits of picture information that it is; if all the information in one frame of video can be stored in computer memory, the whole picture can be reproduced point by point, line by line and images created without any natural referent whatsoever. One can create an image from nothing with the greatest detail through varying degrees of abstraction. This information can be called up or stored at any time. It is the end of the necessary object in natural space and time. It is the art of total artifice. The interior sun begetting its children in the electronic landscape programmed to continue during the day light hours or the dark is like the eye begetting imagery on the face of the mind when the eyes are closed. The interior sun haunts the imaginary landscape, the human consciousness. The electronic sun haunts the same landscape and will beget its own children, incendiary computer images of fire.

With the advent of computer control of the whole picture, the control and storage

of all picture elements, the picture will be broken down into leasts. A hundred shades of white could be found at once on the screen turning in the next instant to another hundred whites. The measurable is infinitely calculable in these machine assisted works. The computer program would then be the art work, the model for execution. The artist enters as Chaos into this plotted moving kingdom of electronic architectures. These are the telling tales of leasts on a moving electronic mural, the epiphany of Western hieroglyph moving without the aid of the human hand, moved solely by information to go on indefinitely without assistance. The artist enters as Chaos - to break the order of the machine.

How many heaven gazing symmetry watchers will there be whose sole pleasure is to watch pattern after video pattern, variation upon variation begetting itself, line after line, triangle after triangle? This is the ecstasy and the danger of the machine which can be plotted. This is the danger of the electronic beast who is also the human. The art works made with these technologies ultimately rest upon the edifice of the human imagination.

It seems that the notion of least, least than least, measurability itself and the non-physical (or the artist's imaginative vision) are locked like bulls in these machine assisted works. Because after all, the white of sand in the desert is not the white of snow; and the white of sky when it rains is not the white of the cataract of a water fall. And after all, the triangle of the road sign is not the triangle of the nimbus above the head of a Saint found in medieval painting. The circle of the circus ring is not the circle of the wedding ring. The red on the lips of Snow White is not the red in the blood of a soldier. The color of an event is colored by the event just as it colors the event. The shape of a thing is shaped by the character of the event just as it shapes the event. And who is to make these decisions? Certainly not the machine. The machine is the automatic

mind which has increased many fold the speed of the hand-brain manipulations. It is informed only by Nature's processes. The machine can go on as day follows night, as summer follows spring. The machine can go on forever without assistance or interference from the artist evolving pattern after pattern. This is the natural beast in the imaginary landscape, the one continually meting out a cycle for its own existence.

The ecstasy of the machine dance is that the machine can create these colors and images in any variety that the artist wishes: evolutionary histories of shape and color called up before the eyes for some future incarnation or stored away for some temporary death. These could be likened to unevolved image species which undergo mutations in time with a certain amount of direction from the electronic picture making machines - the human imagination and its electronic servants. This is perhaps the ecstasy and dilemma of those creating machine assisted works. The universe is not made up of moving geometries forming out of vast space and crashing into colored oblivion. The artist enters as Chaos, but he/she also enters as the vision to wreck order upon the order of the machine.

The mind breathes forth its own illusion - it is that total and that instantaneous. The machine breathes forth its own illusion - it is that total and that instantaneous. The mind - its picture making capability, its executing decisions, its will, its pattern recognition capability, its recall and memory have been externalized from the body of the human. The mechanism of mind and its picture making ability are now embodied in the body of a computer/processor whose function it is to lift this burden into the realm of what is known as artificial intelligence. The hand is gone, the thumb is gone, the ape is left the human. The natural sun has died on the human landscape and has been internalized to illumine the mind's eye to form pictures from the inside out. The mind is become externalized in the machine. The

picture painted by reflected light outside the body is become the picture created with transmitted light inside the body and pictured forth by the sun in the machine, that same light which illumines the mind of the human. The electronic landscape has begotten itself and Art is the fruit of its labor.

Paradoxically, the gulf between artist and machine widens as does the gulf between Nature and Divine Imagination. The gulf increasingly widens because the snake is the machine, nature, or the intrepid cycles of light and dark. The imagination is diametrically opposed to machine workings. The imagination being that conception of the outline or the distinctive unity in the video work. This unity manifests as the expressive force in the human heart. What moves these telling tales of leasts embodied in the electron are the force fields of the imagination and heart center which in turn move the magnetic fabric of the image across the screen. These force fields are originally set up in the heart, imagination and mind of the artist. The psychological and physical mapping of these force fields upon the territory or landscape of the image is ultimately the art work of imagination, the art of divine geomancy in the television raster.

The human stands locked between heaven and earth, eternally grounding the lightning that is hurled from sphere to sphere. The machine has caught fire with the same and is destined to take the burden from the human in order to do work. Lightning strikes and the hum is deafening and meted out in appropriate portions - to the gate of one circuit and passed through to another. This is the distribution of shock, of cataclysm, of natural disaster correcting itself outside the human brain. The machine creates models for execution without the trial of execution. This is the burden of mind workings lifted from the human body onto its sister, galvanized.

The art of the video image is created from a perfect union of two beasts - the

human and the mechanistic, both extraordinary creatures of light. The human has eyes in the illumined sun of imagination; the machine reroutes that fire of sight at extraordinary speed and calculation so it may serve well the conceptions of the heart.

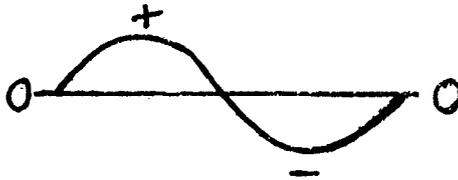
Life and Death in the electronic landscape exist contemporaneously, as Nature holds sway in this world continuously. The artist or electron warrior has met the natural enemy in its own landscape of consciousness - the warring of heaven and earth in the human imagination. It is the serpent power winding its way eating light to make light. This is the feast of light eaters and death swindlers, or the electronic beast counting out its lives in the hinterland of an electronic wilderness - the frontier for a new art form.

finis

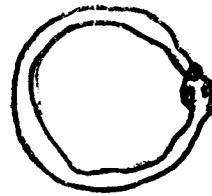
1. A Computer Based Video Synthesizer System by Donald E. McArthur, June, 1977. Research and development conducted at the Experimental Television Center, Binghamton, New York. The Experimental Television Center is funded by the NYSCA and NEA

DIAGRAMS for: LIGHT AND DARKNESS IN THE ELECTRONIC LANDSCAPE

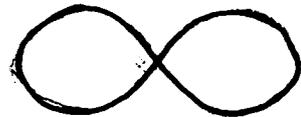
A) The snake of alternating current



generated at 60 cycles per second

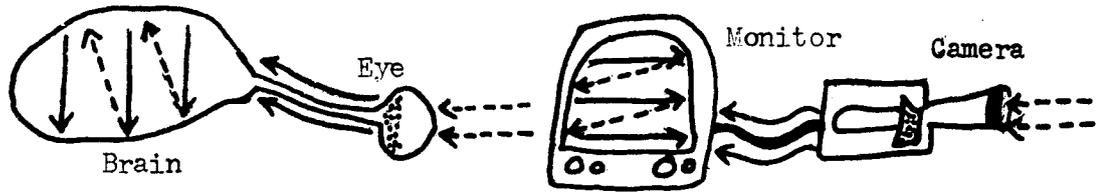


light to darkness



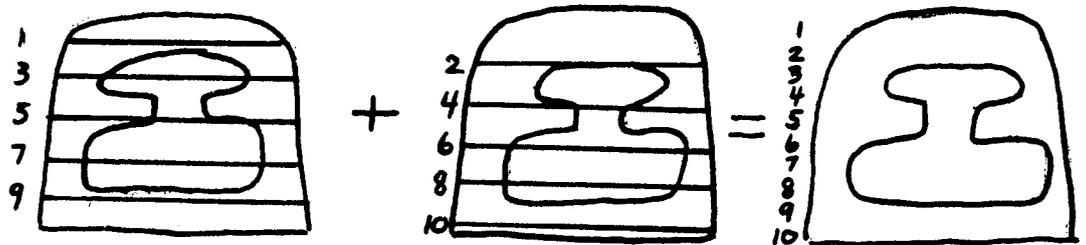
light to darkness, darkness to light, etc.

B) Eye/Brain
Camera/Monitor
Transmission/
Reception



In each case, light energy strikes a light sensitive surface and is converted into corresponding electrical impulses which are re-interpreted as light energy or picture information.

C) Scansion

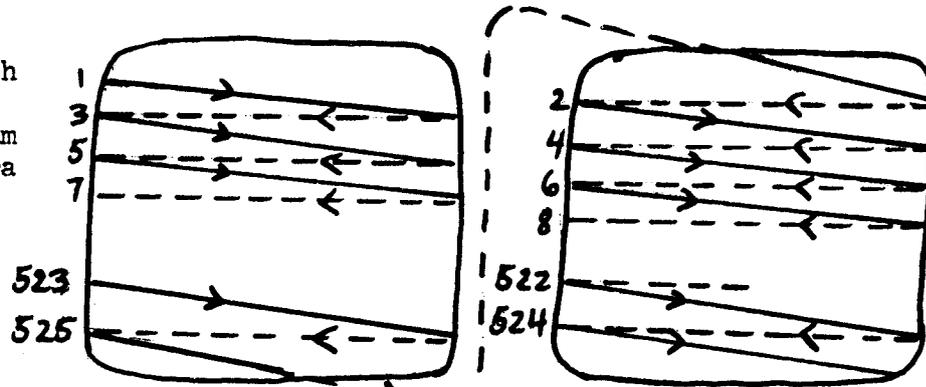


Odd field
(262.5 scan lines)

Even field
(262.5 scan lines)

Complete Frame
(525 scan lines)

D) Scanning path of the electron beam in the camera and monitor



Odd Field

Even Field

→ solid line left to right movement of beam - on
← dotted line right to left return of beam - extinguished (horizontal retrace)

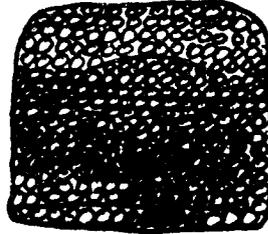
The beam is also extinguished when it reaches the bottom of each field (every 1/60th of a second) and is instantaneously returned to the top to begin scanning again (vertical retrace)

DIAGRAMS for: LIGHT AND DARKNESS IN THE ELECTRONIC LANDSCAPE (cont'd)

E) Scansion of picture elements in the mosaic



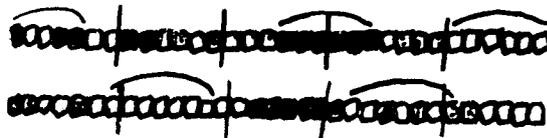
Each horizontal line consists of a row of a few hundred picture elements of varying degrees of brightness. Since each horizontal line is scanned 15,750 times a second, each element is struck by the electron beam for but a fraction of that time.



The temporal and spatial summation of these lines of picture elements compose the video picture.

F) Scansion in poetry, music and video

^x O, how | ^x much more | ^x doth beauty ^x beauteous seem,
 By that | ^x sweet ornament | ^x which truth | ^x doth give!



G) Chinese character formation and image composites



Hsi. The evening, the beginning of night; represented by the moon emerging on the horizon



To. Two, meaning symbolically, reduplication, multiplication, multitude, many

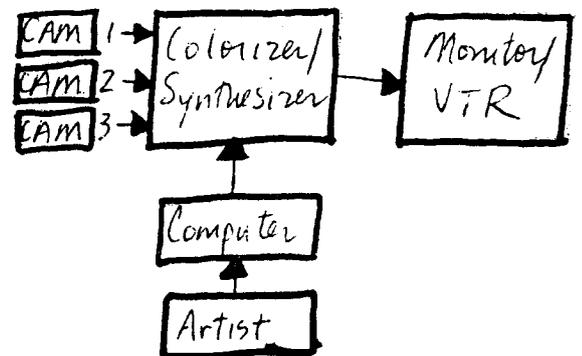


I. Idea of the good ordering of all the objects contained in a house, between the roof and the ground



Hsien. From door and moon ; the moonlight streaming through the door; idle, empty, leisure

H) Computer control of video image features



The computer controls the rate of change for the following variables: Luminance, hue, camera selection and sequencing, oscillator frequencies, gray level-key levels