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THE ETCHED MIND
DIGITAL STENOPAIC IMAGERY

By

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This Thesis for the Master of Fine Arts Degree by

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has been approved for the

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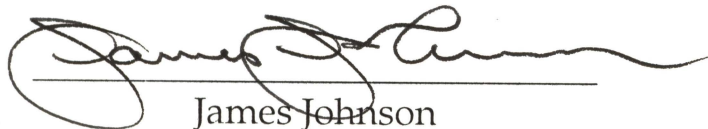
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Date 4.19.94

I sit down. Push the power button on and jack into the Quadra. My eyes become entranced with the glow of an image as it is illuminated on the monitor. Fingers tap on the keyboard as my mind begins it's union with the machine's circuitry. The transformation to a new consciousness has begun as I navigate along the road map of the computer's circuit board.

There is no more a tranquil or honest form of image making than lensless or pinhole photography. A tiny hole, placed in the side of a light tight container, allows the rays of light to pass direct, unaltered from the world outside the container, to the film held within. With lensless photography, there are no complex dials and settings. There is silence instead of the clicking of the shutter. It is about an artist and the small opening of the camera, that invites the world to leave its spirit in the form of mysterious imagery.

In 1895, F. W. Mills renamed the tiny hole stenope after the Greek term stenos, meaning narrow or confined. Stenopaic, however, it was never so popular as the term lensless.¹ Although the term pinhole has been used to signify a type of lensless camera, this suffers from misnomer since the image is taken with a lensless camera, not a pinhole.

In the spring of 1992 I found myself faced with the reality of not being able to afford supplies to make art. A faculty member, acquainted with my financial problem, suggested that I try doing some work using some outdated aerial film being stored in one of the photography department's closet. Not quite sure how I would go on, I nevertheless accepted his generous offer. What I did not realize at the time, is how that day would guide me on the road to self discovery and has a profound impact on the way I now make art.

The gift, a low speed black and white film, came on a spool of 500 feet and 5 inches in width. Because of the film size, the

¹ Lauren Smith, The Visionary Pinhole, p.9

most logical option seemed to construct a camera in which to exploit its uniqueness. It did not take long to realize that to make a working lensless camera, research would be necessary on design, exposures, aperture size and film developing times.

The progenitor of the photographic camera, the camera obscura, had been invented by Roger Bacon, in 1297, and the stenopaic camera around 1500 by Giovanni Baptista Porta, a physician in Padua Italy.² Nearly three hundred years had past when in 1839, it was announced that light messages had been permanently captured in silver. With this announcement, the lensless or pinhole camera was forgotten and almost made obsolete as the frenzy to photograph and to be photographed was the new art form. This new invention offered every person immortality through picture taking.

In the late sixties, with political and social countercultures, photography saw a renaissance of interest in alternative photographic processes that was intended to liberate photography from technical and aesthetic conventions from the forties and fifties. The primary target under attack was the black and white silver print that had dominated the look of photography since the 1920's.³

Many of the alternative processes being revised during this time were practices that had been abandoned or

² Frederick WM. Mills, F.R.M.S., Stenopaic or PinHole Photography, p,3

³ Terrence Pitts, The Visionary PinHole, p. 8

ignored for decades. Processes such as gum printing, photogravure, colotype, cyanotype and Van Dyke offered the photographer more freedom with subject content, color, print surface and so on. Each of these processes involved handwork, either coating emulsions onto alternative surfaces, the making of paper, and in most cases bypassed the darkroom all together, relying upon contact printing with the sun rather than the use of the enlarger.

PinHole photography, unlike the alternative methods that it is usually linked with, is actually an alternative camera process rather than a printing process. The means devised to create pinholes are as various as the formulas to determine exposure. There are pages and pages of information offering elaborate charts and equations. No two authors seem to agree upon one set of standard information. With this diversity of information, I concluded that it would be necessary to experiment and adapt standards that would best suit my own needs. The first lensless camera that I constructed, was a simple box that held a four by five inch piece of film. It would be necessary to experiment with the size of the pinhole aperture and the film developing times after the image had been made. I spent the better part of four months in determining the proper set of criteria to create the perfect pinhole image.

The problem was, it looked too good. The image looked as though it had been taken with any 35mm camera. Further, this really was not exploiting the aerial film to its

full potential. Thinking on a larger scale, and with the unlimited length of film, it would be possible to construct a camera anywhere from 1 foot to 500 feet, if I chose. The idea of using a rain gutter seemed an interesting direction to pursue. The first long camera that I made was three feet in length. I determined that it would be necessary to have multiple apertures set one quarter inch apart to have a continuous image. With all the natural beauty in the state of Colorado, I set out to photograph large scale landscapes with my rain gutter camera. When I printed up the negatives, the imagery did not seem all that spectacular to me. Why go through all the work of constructing a long lensless camera when it would be much easier to photograph with a commercially made banquet or panorama camera. It was at this point I began to question the whole process of working with lensless camera's. The literature on the aesthetics and appreciation of lensless photography is replete with words like "illusive reality," "mysterious" and "dreamlike".⁴ My images seemed rather dull and ordinary.

One day, a small bucket was blowing across the back lawn where I live. What if I constructed a camera out of it? Camera's have been made out of suitcases, tin cans and even a VW camper. The idea of a circular camera intrigued me. I quickly sat down and designed what I thought would be a great bucket camera. My first results were fruitless.

⁴Lauren Smith, The Visionary PinHole, p.16

The image, well, there weren't any, just streaks on the film. I was confused, but the excitement of a circular camera and the way I envisioned its imagery gave me the motivation to pursue it further.

A colleague suggested that I get in touch with Eric Renner. Eric is considered to be the primary expert on lensless camera's in the United States. Living in New Mexico, he publishes The PinHole Journal and curates the PinHole Museum. Several phone calls later I finally had a design that would work.

With some scrap matte board and a roll of black tape, I constructed a six sided lensless camera. Inside the box, the aerial film is wrapped around a five inch coffee can, secured with double sided transparent tape. Each aperture cast an image where 60 degrees is captured onto the coffee can. Each image fades proportionally into the one next to it, so that in the overall total image there is even exposure. Where one image is coming in at 70 % light intensity, the one overlapping it at that spot is coming in at 30%; 80% and 20%; 90% and 10% and so on.

In the spirit of traditional lensless photography I made images around the house, still life's and domestic landscapes. While I found the six sided camera producing interesting effects, the subject matter seemed all to mainstream and predictable. There was no sense of my own consciousness in the images. Working in a Printed Circuit Board manufacturing plant, I pondered the possibilities of

photographing in this very strange industrial setting. After receiving permission to photograph in the plant, I embarked on a journey that has taken two years to complete.

The large majority of images from this project, were taken in the back part of the plant known as the waste treatment center. The plant uses many different materials considered to be hazardous waste, and must be treated with other chemicals and acids before being shipped out for disposal. The rooms are constructed out of concrete, contain larger than life holding tanks and have sophisticated control panels for the discharge of chemicals. It is an environment that the average individual may never encounter. During this time, I was reading books by Samuel Delany, William Gibson and Bruce Sterling.

These author's are considered to be the front runners of literature known as cyberpunk, with Delany credited as the grandfather of this writing movement. Their story's center on cyberspace, matrix cowboys, computers, rips in the space/time continuum and a parallel universe. The image of the future is one of post apocalyptic doom, dark, mysterious, filled with concrete structures and strange machinery. The images from the factory could very well be illustrations for such stories about our future society.

As humans' with two eyes, we perceive reality a certain way. A fly on the other hand with its many eyes also sees the world in another way. The same space is seen differently depending on one's point of view. With the strange way the

six sided camera captures reality, could it be a magic box that allows us to see a parallel universe, that as humans we are unable to view because we have only two eyes?

With these thoughts in mind, I sought to discover a world that could only exist with the aid of the six sided magic box. I started adding props to the photographs that could further add to the element of the surreal environment of the factory. Often times' objects seem to move from place to place with no logical explanation. Could it be the result of people trapped in another dimension, unable to find their way out? Was this six sided camera able to capture images from that world? It is said that the lensless camera is capable of only photographing the truth. Light rays from objects in the world, pass through the aperture and are directly exposed onto the film. No lens we know, however finally crafted is as pure and direct as the pinhole aperture.⁵

For the better part of a year, I worked under the guise of the parallel universe theory. Looking at the photographs though, they seemed lifeless and lacking in emotion. I started experimenting with alternative printing processes, thinking maybe that would change the aura of the work. Gum printing lacked the detail, printing the black and white negatives onto color paper was uncontrollable and lacked the color's that I felt should be part of the images. I even came up with my own variation of printing and etching onto

⁵ John A. Tennant, The Photo-Miniature, p. 97

copper that I named *Black Oxide on Copper*. Then I was introduced to the Macintosh computer.

When I told my peers of my desire to experiment with the computer, I was strongly advised to stop such foolish thinking and print my images on silver gelatin paper. Like the artists of the 1960's I felt the need to explore alternative methods of photography. I wanted to depart from the traditional methods and breath new life into the work. With the Macintosh Quadra and software programs such as Photoshop, I started to redefine my personal work. By scanning the photographs into the computer, it is possible to manipulate and add other elements to the images. Putting the six sided lensless camera aside, I concentrated on the images that I had made in the factory, and started reworking them with the Quadra. I have always thought of myself as a romantic when it comes to the world of photography. Most of the photographic equipment that I own is from the forties and fifties. My studio lighting techniques have been self taught with large tungsten bulbs, staying away from strobes. I have often wished that I could travel back in time. To be one of the first photographers, with horse and cart, coating and developing glass plate negatives and going about the business of being one of the first "picture men." The more involved I have become with computers, and as I have found myself having to defend my position with the computer and photography as an art

making process, has brought these contemporary issue's into a more historical context.

The contemporary artist who chooses to make work on the computer, can be viewed as the horse and cart pioneer of the 20th century. The early photographers, with no visual reference, photographed portraits, still life, and landscapes, images influenced from the painters of their day. The painters were shouting, "Its not art, its a mechanical process." Today, in 1994, that same mentality exists. Now, instead of the machine being a camera, we have the computer. You would think that we would learn from history and not have to repeat it. Once understanding this, I realized what direction my work could now evolve to.

Until that point, I was mainly using the computer for touchup and an occasional special effect. With computers and the ease of appropriation, it made me think about process and evolution. As early photography borrowed from painting, I started to add other artists work, be it photography or painting to my own images. With the image, *The Etched Mind #5*, I have appropriated F. Holland Day's crucifixion self portrait,(circa. 1898) and placed it within the lensless image of the landscape. On one level I am referencing back and making a statement about the history of photography.

It is one thing to have an image in the computer, and quite another to output it from the machine. Like early photography, the output of images has gone through many

changes. In photography there were salt prints, ambrotypes, gum printing and so on, all which have evolved to the standard use of the silver gelatin print. With computer technology, printing methods have developed from dot matrix prints, to laser, dye sub, ink jet, iris and cactus. When most individuals refer to the output of images from the computer, the quality is always compared to the sharpness of a photographic print. I have chosen to print my work using the cactus printing process. It is a fairly new way to make images from the computer and does not have that photographic quality look. When people view the images I want them to wonder what type of printing method I used. The cactus prints have a shiny look to them because of the high gloss laminate. At first glance, the images look as though they may be a color cibachrome print. As one looks closer at the work, the resolution (graininess) from the cactus printing process gives it that high tech look associated with pixalation from the computer screen. I am also intrigued by the idea of using the lensless camera, the earliest form of image making technology and reworking the images with the computer, our latest form of high tech art making in the 1990's.

For the creative thesis, I have edited the work to 15 cactus prints. As I was making the images within the computer, there are many choices and creative decisions that have to be made. While I knew what pieces of appropriated images I wanted to work with, the placement of the images into the

lensless photograph were done on an intuitive level. It was only after the particular image was finished could I go back and understand the reasoning behind it. "The Etched Mind" has not been about a rip in the space time continuum, or a parallel universe but a journey into the subconscious of my mind and a window to my soul.

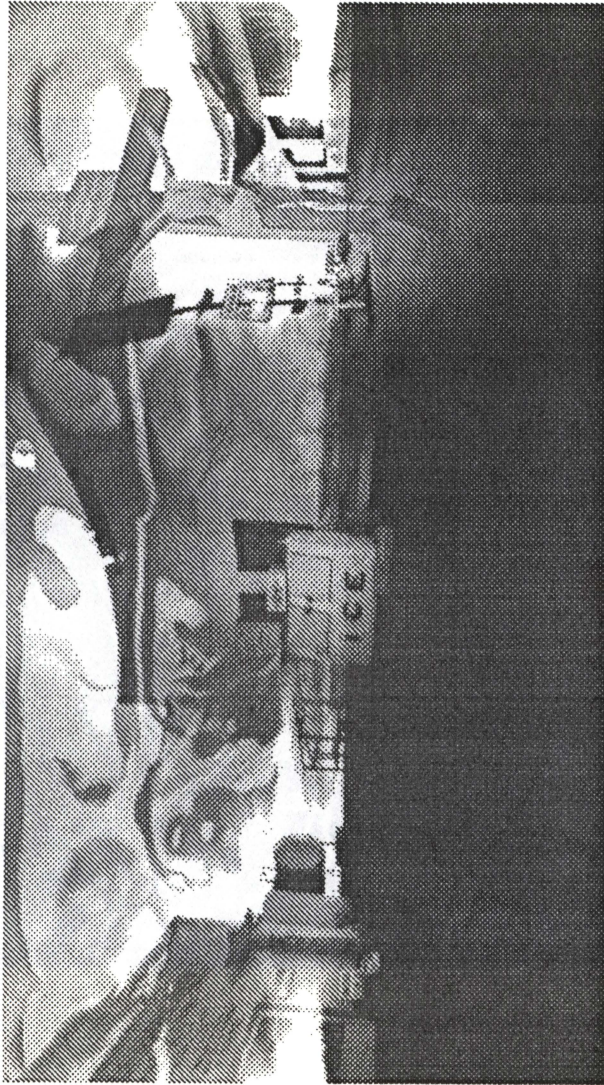
Instead of mounting the images onto the wall, I devised a way to allude to the virtual reality of the piece. Using plexi-glass squares and tubes, the images appear to be floating off the wall. The images exist on a syquest tape in a universe as 1's and 0's, not as a negative from a camera. These numbers constitute a digital image that transcends the cultural conventions that define media.⁶

In the book, 2001 A Space Odyssey, the characters are unable to power down the computer. HAL, the machine, is capable of thinking and making decisions for itself. When I sit down to work on the computer, there is a union of spirit with the machine. My thoughts and feelings travel along the roadway of the circuit boards, the brain of the computer. In the image The Etched Mind #15, there appears to be a shadow of a hand looming over the crucifixion. I have no explanation why it is there. It is not part of the original image, but somehow has been placed in the image by the computer. In the upper right hand corner there is the face of Christ. Again, how did it get there? Is the computer

⁶ Timothy Binkly, The Quickening of Galatea: Virtual Creation without Tools or Media, p.237

translating thought patterns from my brain or is it making aesthetic choices on its own?

The computer and the art that is made with it, will no doubt go through many changes, how it will evolve no one can say for sure. To this day, photography still suffers from critics who believe it to be a mechanical process, not a way to make art. I believe it is the responsibility of those working with the computer, to ignore statements about the mechanical process and continue to make art so those who follow, can build on the early processes and techniques of this new way of working.



The Etched Mind
5



The Etched Mind
15

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In partial fulfillment of the requirements

for the degree Master of Fine Arts

Charles Lo Verme

has submitted this written thesis

as a supplement to the creative thesis

and fifteen slides

which are in the permanent possession of the

University of Colorado and recorded with the

department of Fine Arts

Approved by



Chair of the Committee



Member of the Committee



Member of the Committee

Chair, Department of Fine Arts

Fifteen Slides, Digital Stenopaic Imagery

Cactus Print	20X24	The Etched Mind #1
Cactus Print	20X24	The Etched Mind #2
Cactus Print	20X24	The Etched Mind #3
Cactus Print	20X24	The Etched Mind #4
Cactus Print	20X24	The Etched Mind #5
Cactus Print	20X24	The Etched Mind #6
Cactus Print	20X24	The Etched Mind #7
Cactus Print	20X24	The Etched Mind #8
Cactus Print	20X24	The Etched Mind #9
Cactus Print	20X24	The Etched Mind #10
Cactus Print	20X24	The Etched Mind #11
Cactus Print	20X24	The Etched Mind #12
Cactus Print	20X24	The Etched Mind #13
Cactus Print	20X24	The Etched Mind #14
Cactus Print	20X24	The Etched Mind #15



