FATBITS

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Canto Nine / Nine Nights I Hung from a Windy Tree
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Diane Fenster's Canto Nine is part of John Grzywacz's continuing coverage of Siggraph "97, p. 8

Siggraph '97

By John M. Grzywacz-Gray

Artists' exhibits highlight 1997 computer graphics conference

This month John Grzywacz continues his coverage of Siggraph '97 with an indepth review of the work of computer artist Diane Fenster.

"Mystery cannot be put into words."

—Joseph Cornell

"The story I am going to tell comes from a place deep inside of myself, a place that perceives all that I have irredeemably lost and perhaps, what gain there is behind the loss. If some people forget their past as a way to survive, other people remember it for the same reason."

Of Water and Spirit
—Malidoma Patrice Some

The above words introduce Diane Fenster's "The Hide and Seek Series: An Archaeological Excavation of Memory," on her web site. They insist that we the viewer look at the images from a point-of-view that we probably are not prepared for. Some of the preparedness consists of notions about what art is, what meaning does it have in our life, what meaning does it have for the artist, and why does it exist?

There are notions about the meaning and purpose of art that ebb and flow depending upon the century and the nature of the current global and personal cataclysms we experience in the political, physical, intellectual, or psychological universe.

During the fifties most "normal" folks thought that the world was healthy and the future was brilliantly optimistic. An ersatz aurora borealis (TV) began to blanket the world with a light that permeated all decent, God fearing responsible (sic) humans and addicted them to its so-called light. Artists, in many diverse media recognized something was substantively awry.

Among my mentors in college was a genius named L. Moholy-Nagy who had written a book, *Vision in Motion*, that has had a life long impact on my thinking. He did not start from the point of view of art as an object…but from the point of view of art as something more substantial.

When he wrote about the function of art he said that "art is the most complex, vitalizing, and civilizing of human actions. Thus, it is of biological necessity." That statement resonated in me with a power that I have never been able to disregard. As we wander in and out of a world where art is a precious object to be appreciated, bought and sold, and a second world where art serves a purpose that might be described as prophetic, spiritual or healing, it is not surprising that we are confused about what art is or is not. Moholy-Nagy described the second world in the following way: "Art has two faces, the biological and the social, the one toward the individual and the other toward the group. By expressing fundamental validities and common problems, art can produce a feeling of coherence. This is its social function which leads to a cultural synthesis as well as to a continuation of human civilization."

The second notion of art expressed by Moholy-Nagy is equally liberating. Forgive the sexism…these words were written in 1946. "Art sensitizes man to the best that is immanent in

him through an intensified expression involving many layers of experience. Out of them, art forms a unified manifestation, like dreams which are composed of the most diverse source material subconsciously crystallized. It tries to produce a balance of the social, intellectual and emotional existence; a synthesis of attitudes and opinions, fears and hopes."

That second notion has a lot to do with what artists using computers are doing. I am going to try and expunge the phrase "computer artist" out of my vocabulary. The computer is not an artist…the artist uses a computer in the same sense that he/she may choose to use a camera or paint brush. We don't say oil painting artist, or camera artist…no, we say artist.

The Siggraph '97 art provided a really excellent entry into what I believe is the maturation of the computer as a tool for artists.

Margaret Mead, anthropologist, wrote the following in a paper called "Art and Reality" in 1943:

"…the art of the primitive culture is seen now as the whole ritual, the symbolic expression of the meaning of life, appeals to all the senses, through the eyes and ears, to the smell of incense, the kinaesthetisia of genuflection and the kneeling or swaying to the passing procession, to the cool touch of holy water on the forehead. For Art to be Reality, the whole sensuous being must be caught up in the experience."

Ongoings: the Fine art Gallery at The Siggraph '97 Conference and Exposition presented an in depth view of the works of a few of the 13 artists exhibited, curated by a committee chaired by Lynn Pocock, an artist and Associate Professor Computer Graphics and Interactive Media at Pratt Institute.

Diane Fenster, whose web site is located at http://www.art.net/Studios/Visual/Fenster/ritofab_Home/fenster.html exhibited work that I was viscerally connected to. Work that is autobiographical addresses issues that the artist knows something about. I love the notion by the 14th century mystic, Miester Eckhart, who said that the work of art is not the object that the artist produces but the artist, his/her self is the work. Those sentiments have been expressed by other artists and writers about art such as Bill Jay, photo historian who has argued in his book *Negative Positive*, "If any person should be in the front ranks, breaking trails into the future, it should be the creative individual, who has already found a purpose and meaning to life. This meaning is not directed towards a product, the photograph, but towards the growth of the individual, as a human being who is striving to become actually what he is potentially. …It is my conviction that photographs are merely by-products of man's spiritual quest toward fulfillment."

> "…The silly myth that the genius has to 'suffer' is the sly excuse of a society which does not care for its productive members unless their work promises immediate technological or economic applications with calculable profit."

One of the bodies of work presented at Siggraph was *The Hide and Seek Series: An Archaeological Excavation of Memory.* It was described by Ms. Fenster…"This autobiographical body of work addresses issues of self, gender, and intimacy using the concept of an archaeological excavation of memory as a metaphorical structure." The Siggraph committee included, besides Lynn Pocock; Jeremy Gardiner a well known artist whose paintings and multimedia projects have been shown in the U.S. and abroad along with Andrew Glassner, a Writer-Director at the Microsoft Network, where he creates new interactive entertainments.

Fenster goes on, "I have forgotten and now I am remembering.

"In these images, the animus figure approaches my symbolic solitary environment. the ambiguous nature of this male/female form in relation to itself and its circumstances is the beginning of both my journey and my longing. It is a search for an identity that is not obscured by memory or dream anymore than by somnambulistic living. It is a game where what is known and understood plays with what is only suspected. It is a night that ends in wakefulness.

"My starting point in each piece are lines of poetry by Vincente Huidobro, the Chilean Surrealist poet. Using the Surrealist poetic concept of the 'cut up' as a model, I am creating a new poem from the selected fragments of Huidobro's work. The images in the series are numbered and when placed in order, will create a new poem which is autobiographical in nature."

The use of language with this series is not without antecedent. The most powerful body of work that utilizes this approach…but uses photographs mostly as we think of them is the work of Duane Michaels, a well known fine-art and editorial photographer who has integrated autobiographical text, his words as well as others words with the photograph image.

When I approach the work I do not think about computers or technique, the work stirs an emotional, intellectual, and psychological stew. The intricate photomontages utilize photographs, signs, and text in a richly overlayed environment that is elegantly organized and approachable from a purely decorative perspective as well as from a deeply psychological perspective. Ms. Fenster's pieces are large. The works were output to 34" x 47" Iris Ink jet Prints on Arches 356 paper.

Please turn the page to continue

It is clear that the work has been influenced by the Dada and Surrealist art movements "…primarily in the use of the juxtaposition of seemingly unrelated visual elements. This methodology," said Fenster in the catalog notes, "…enables me to present an almost 'cinematic' storyline based on the relationship of each of the vignettes within a particular piece. The computer has now offered me an even wider range of possibilities within the photomontage format. The technology has actually freed my range of expression and allowed an even more personal shaping of the symbolic elements I use in my work."

When I showed my students Ms. Fenster's work they were in tune with the richness of the visual appearance of the work, but because of the limitations of much of our culture, were not able to discern the symbolic and metaphorical statements. I am always surprised by the difficulty that metaphor and symbolism presents to modern audiences. I have to admit that it bothered me that students were stuck in the literal …is that guy nude?…response instead of looking for connections within the work itself and to their own lives.

Diane Fenster describes her art as being "a combination of myth, spirit, science, and technology." She sees herself as "a modern alchemist, using silicon chips as a tool to transform electrical patterns into art. My attempt to portray an element of mystery is the guiding factor in these works. The juxtaposition of the image elements hopefully serves as a catalyst for the viewer's recognition of her/his own inner processes. The computer does not destroy your soul, as I once thought, but rather has liberated a creative aspect of the self that might have otherwise remained undiscovered."

The role of the artist as a catalyst for change in whatever regard has always been in my mind at the top of the hierarchy of purposes for art. Diane Fenster follows a long tradition of artists whose work explores the sources of our relationship to the world and when so wondrously presented the work forces us to rethink preconceived notions that may, if left unattended, prevent us from moving forward.

While thinking about Diane Fenster's work I went to my library and pulled down a book I had not looked at for years, *"The Sociology of Art"* by Arnold Hauser. One of the passages I underlined may well be an entryway into Ms. Fenster's work. "Art, especially, however playful and unconcerned, fantastic, and extravagant it may be, serves not only indirectly, by honing the sense of reality, but also directly as an instrument of magic, ritual, and propaganda, in the creation of weapons for the struggle of existence. …Art is always concerned with altering life. Without the feeling that the world is, as Van Gogh said, 'an unfinished sketch' there would be little art at all."

In some of Ms. Fenster's work there was a strong sense of child's play. The spontaneity and excitement that children experience when they explore something new, almost a sensibility that comes from finger painting. Hauser said, "In the same way children's drawings do not present a disinterested view of reality; they, too pursue a sort of magic purpose, express love and hatred, and serve as a way of gaining power over the person depicted. We may, then, use art as a means of subsistence, as a weapon in the struggle, as a vehicle for the dissipation of aggressive drives or as a sedative which will allay destructive and mutilating desires. We may use it to correct the incomplete nature of things and demonstrate against its gloomy and lackluster character and against its senselessness and aimlessness. No matter what the reason, art remains realistic and activist, and it is only in exceptional cases that it expresses a disinterested or neutral attitude toward questions of practice."

Diane Fenster teaches at San Francisco State University and creates her fine-art and illustration work on a Macintosh computer. She uses a combination of her own 35mm photography, video, still video, and scanned imagery. She has been exhibited internationally. Her clients include Apple Computer, Inc., IBM Corporation, Dell Computer Corporation, Adobe Systems, Inc., Oracle, Inc. and Silicon Graphics, Inc.

I want to leave you with two final thoughts—one from Moholy-Nagy and the second from Margaret Mead: "Through his sensitivity the artist becomes the seismograph of events and movements pertaining to the future. He interprets the yet hazy paths of coming developments by grasping the dynamics of the present and by freeing himself from momentary motivations and transitory influences but without evaluating their trends. He is interested only in the recording and communicating of his vision. This is what materializes in his art. He cannot misuse such a situation. To be a 'full time' worker, a 'professional,' involves a moral responsibility. This is why the secured existence of the uncompromising and incorruptible artist is so important to society. If he does not have adequate tools and materials, he cannot produce his best. His records cannot be fluid and direct if he cannot consecrate his life to the constant work in his craft, if he has to fight for minimum subsistence.

The silly myth that the genius has to 'suffer' is the sly excuse of a society which does not care for its productive members unless their work promises immediate technological or economic applications with calculable profit."

Margaret Mead said, "...in primitive societies, the artist is not a separate person, having no immediate close relationship to the economic processes and everyday experiences of his society. The concept of the artist whose gift sets him apart, or who only becomes an artist because his life history has set him apart, is almost wholly lacking. The artist, instead is a person who does best something that other people, many other people do less well."

Diane Fenster does her work exceptionally well, and what's more, she presents it to us in an accessible way so that we can, like all good ritual and magic, make use of it in our own lives.

Canto Five / Union of Opposites
Copyright 1995 by Diane Fenster

text in image

Why one day—in a flash—did you feel the terror of existence?
And that voice that hollered at you you're alive and you can't see that you're alive
Who made your thoughts meet at these crossroads for all the grieving winds?

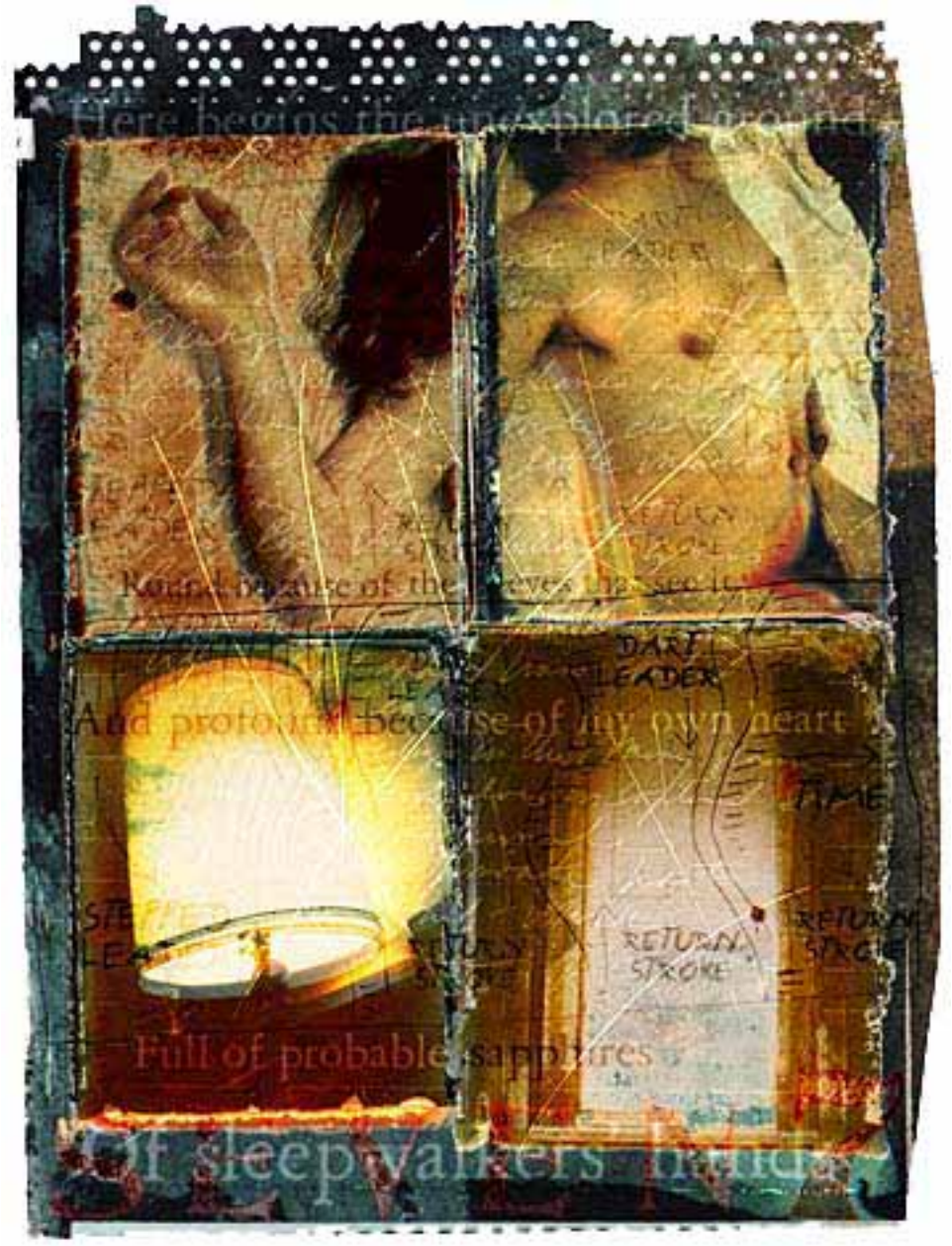
from "Altazor or the Parachute Voyage" by Vincente Huidobro

Canto Nine / Nine Nights I Hung from a Windy Tree
Copyright 1995 by Diane Fenster

text in Image

There is no time to lose
All this is so sad like the child that's left an orphan
Like the letter that falls in the middle of an eye
Like the dog's death of a blind man.

from "Altazor or the Parachute Voyage" by Vincente Huidobro



Canto Seven / The Path of Lightning as it Descends from the Sky
Copyright 1995 by Diane Fenster

text in Image

Here begins the unexplored ground
Round because of the eyes that see it
And profound because of my own heart
Full of probably saphires
Of sleepwalkers' hands

from "Altazor or the Parachute Voyage" by Vincente Huidobro

Siggraph '97

By John M. Grzywacz-Gray

Madge Gleeson, Bar Codes, Goya and the Vons Club Card

John Grzywacz-Gray continues his coverage of Siggraph '97 and computer artists with a review of the work of artist Madge Gleeson.

"Do you think that when a painter expresses an opinion on political beliefs he makes even more of a fool of himself than when a politician expresses an opinion on art? No!"

—Ad Reinhardt

Are bar codes, warranties and credit card applications a deserving subject for Art?

Some believe that art must deal with what is beautiful. That notion treats art as if it is some sort of sweet stuff for the eye—an opiate for the masses, which is not necessarily bad.

Other artists have attempted to integrate art and politics, art and social consciousness, and, like oil and water, mass culture tells us that they don't mix.

A wonderful 1946 quote by Ad Reinhardt makes the point…"Do you think that when a painter expresses an opinion on political beliefs he makes even more of a fool of himself than when a politician expresses an opinion on art? NO!"

The first work of art that forced me to look at something other than beauty, nobility and religion was Francesco Goya's Execution of the Madrilenos on May 3, 1808. The painting is not a battlefield scene…instead Goya has chosen to show us civilian hostages being slaughtered by a firing squad. You don't see the face of the firing squad…all you see are the expressions of the victims.

Goya's painting is a watershed in art because up to this moment, art for the most part has celebrated warfare and its accompanying murdering heroes. Goya chooses to oppose the brutality and injustice.

With Roger Fenton's photographs of the Crimean War, Jacob Riis's "How the other half lived," and Lewis W. Hines's documentation of child labor, photography took a careful look at significant social issues through the eyes of a newly emerging technology. What happened? War did not end, some children were protected and the exploiter learned a new subtlety. We have underestimated those who cause us the most damage.

Photography is too easy to co-opt…its images surround us and inflict on us a value system that reflects not our chosen values, but those forced upon us us by a crafty and powerful commercial class.

As Gisele Freund stated in *Photography and Society*, "The lens, the so called impartial eye, actually permits every possible distortion of reality: The character of the image is determined by the photographer's point of view and the demands of his patrons. The importance of photography does not rest primarily in its potential as an art form, but rather in its ability to shape our ideas, to influence our behavior, and to define our society." When Freund writes about photography, I tend to dump film, video and computer imaging into the boiling pot.

Pablo Picasso, in Guernica, painted in 1937 continues the tradition of opposition to senseless violence by painting to commemorate the Spanish dictator Franco's German dive bombers' attacks on the Spanish Basque town of Guernica. Picasso did not focus on the Fascists…he focused on the fact that noncombatants were dying.

In the 1930's the collages of John Heartfield attacked such prevailing notions as one could find truth in newspapers. There is a collage of Heartfields where the individual's

head is bound with newspapers so that you cannot make out any part of the human face…The title—"Those who read bourgeois newspapers will become blind and deaf, 1930."

In the 80s, Martha Rosler contributed a body of work in which she examined anorexia, food adulteration, TV cooking lessons, waitressing, restaurant unionizing, and the Vietnam War. Rosler used humor, a deadly familiarity, to point to the abuses of society.

Other contemporary artists who have explored issues related to information, truth in photography, video and public performance include: Suzanne Lacy, Allan Sekulah, Victor Burgin, Barbara Kruger.

At the Siggraph exhibition last August, Madge Gleeson showed current work that does not deal with anything so dramatic as the bombing or execution of civilians, but instead, about a cancer that spreads unknowingly throughout the land and affects all of us in one way or another. Ms. Gleeson is part of the Department of art at Washington University in Bellingham.

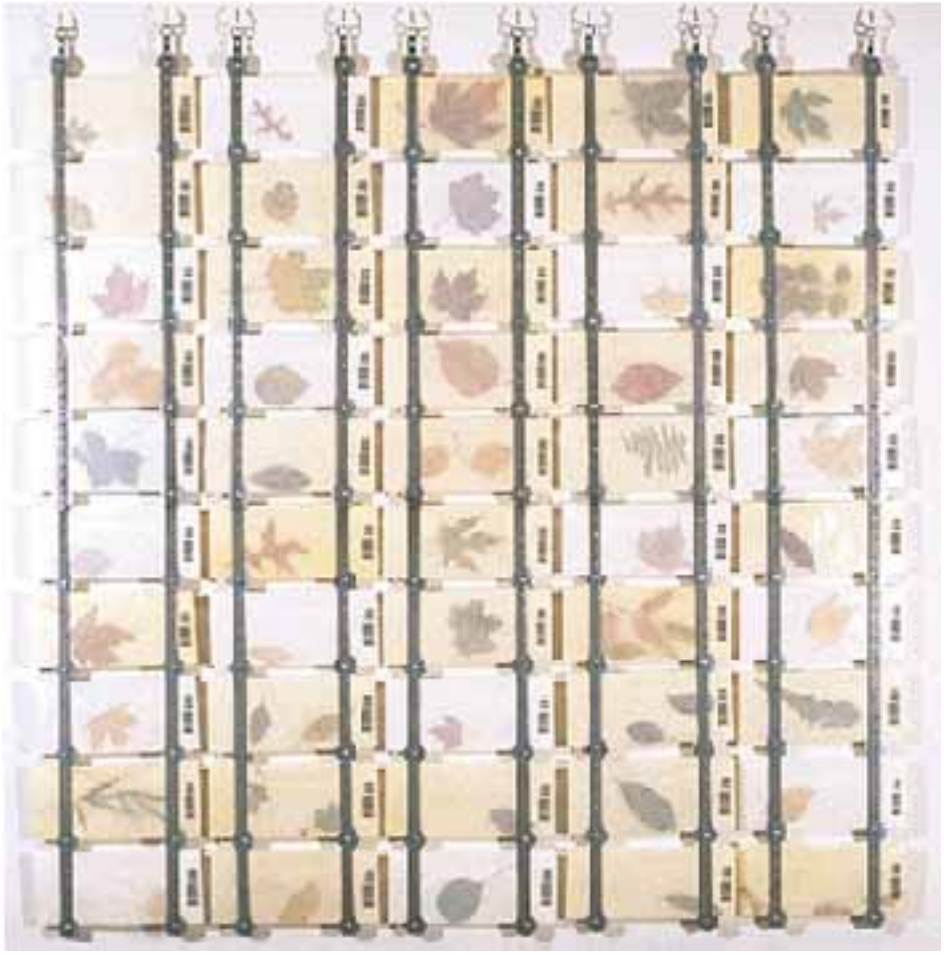
T.S. Eliot has said that an artist begins to communicate before he/she is understood.

When I first visited Ms. Gleeson's work I was intrigued by the aluminum frames, the use of bar codes the unusual textures and the fragility of the images as they contrast with the ruggedness of the presentation. It almost made the bar codes and the manifestations of our technology seductively attractive.

She uses scanned objects that are enhanced and then enlarged. She describes their texture as hyper-real, and that the black and white images fictionalizes them.

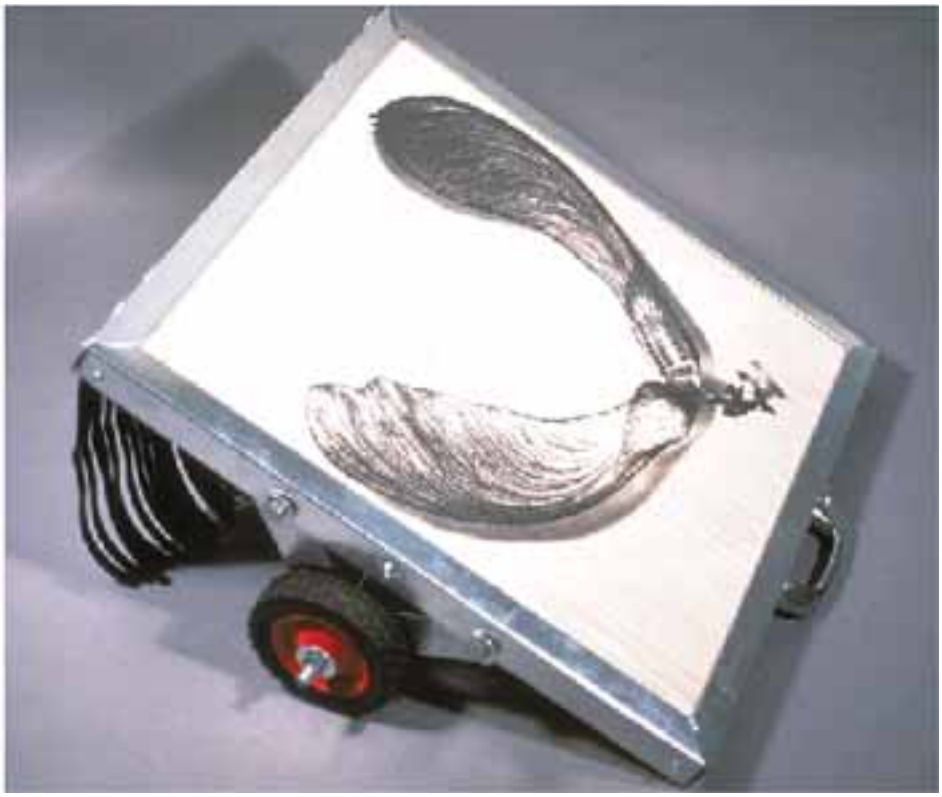
"Most of her images are printed on mylar, which is transparent or frosted and then displayed over wood veneer, formica, aluminum foil and other materials. The hardware is repurposed from the local scrap metal yard, and the framing material is made by a furnace contractor. There is an intended

please see **GLEESON:** *page 12*



"Endangered Species," is made of real leaves displayed in glassine envelopes each of which is sequentially bar coded.

"Mirror, Mirror," is about letting go of privacy, one seemingly innocent question at a time.



Road Warrior.

GLEESON: from page 9

slurring of the real and artificial, of the digital and tactile."

Like many contemporary artists she is "interested in the role of new technology in shaping our cultural environment."

Similarly she is interested in the tools not only as they are used for the making of the art works but the tools become the content of the work. Ms. Gleeson has said that "If Dick and Jane are still out there, they would be quite shaken by the information society that we are creating." That is not an unusual response as almost every day in our newspapers and on television we are bombarded by opinions claiming that technology is both our salvation and our damnation.

Pornography/erotica on the web, gambling, violent games, email and chat rooms are all pointed to by conservative forces as destroying the fabric of our society.

Meanwhile the same technology is claimed to be saving us from ourselves by providing us with enormous opportunities and accessibility to information, communication and ideas.

One of Gleeson's pieces does not ask what is endangered, but what is not endangered, certainly a more active question. Her piece "Endangered Species," is made of real leaves displayed in glassine envelopes each of which is sequentially bar coded. There is something ominous in our indefatigable need to collect stuff.

"Road Warrior" uses a motorcycle metaphor, including tail reflectors and a mud flap. The maple spinners are going nowhere unless someone gives them a lift. The meaning and value are, of course, altered by the predicament.

Madge Gleeson asks a lot of questions about the information that is collected almost hourly by information miners in industry and retail sales. When will they have enough information about us?

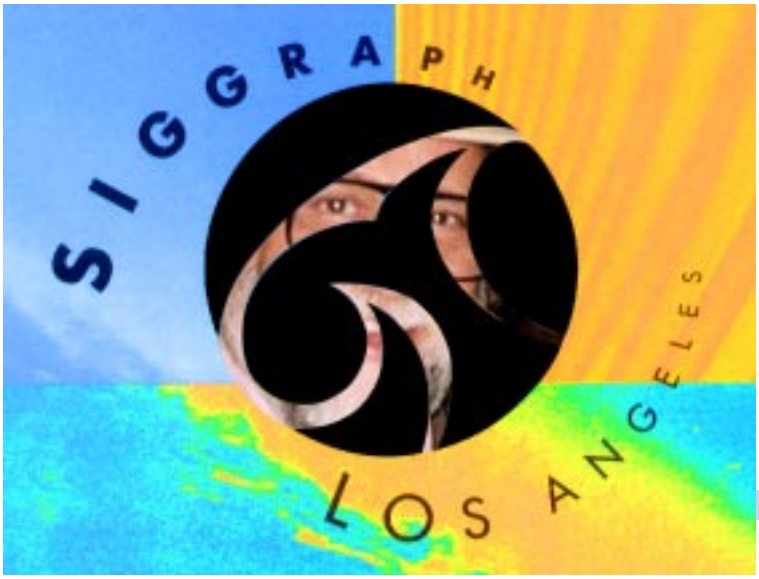
"Mirror, Mirror," is about letting go of privacy, one seemingly innocent question at a time. The long list of questions in "Mirror, Mirror," have actually appeared on various inquiries received by her. Off to the side are two rear view mirrors that look at the questions of the viewer. "How many miles do you drive your car per year? Do you like your job? Is your life in order? Do you own your own home? What is your principle source of heat? What is your approximate income? Who is your doctor? What is your highest level of education, etc., etc., etc. Where does it end? Of course it only ends when the literate individual refuses to give unnecessary information to corporate America just because they ask for it.

Did you ever wonder why grocery stores have cards that they swipe when you purchase groceries? Do you really believe it's because they want to give you special discounts on groceries because they want you to save money?

We live in a consumer society and the information is only useful to tap into our needs and mass merchandisers use those tactics to separate us from our our ability to think critically.

Next time I fill out a warranty card for a toaster or an automobile I will remember Madge Gleeson's work. Everytime I look at a bar code I think of her pieces. She has penetrated my consciousness and forced me to ask questions about the nature of the information being mined from me by modern business.

Did you ever wonder why grocery stores have cards that they swipe when you purchase groceries? Do you really believe it's because they want to give you special discounts on groceries because they want you to save money?



Siggraph '97

By John M. Grzywacz-Gray

A look at the history of computers and art

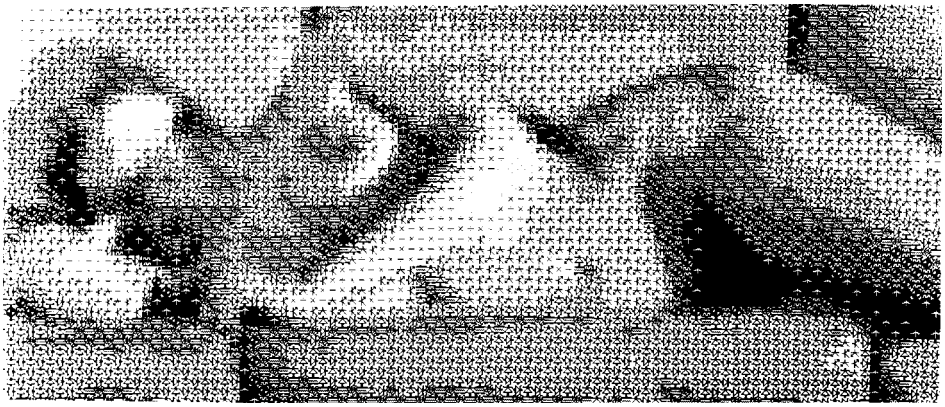
John Grzywacz-Gray delivers the third in a series of his coverage of Siggraph '97 and computer artists with a review of the work of artist Madge Gleeson.

The computer has put into the hands of artists a capability that was only part of science fiction and fantasy a short 50 years ago. In the previous two articles in this series I have written about artists who are using the computer as a tool to create art that could easily be fabricated in the imagination without a computer. The computer has made the complex images easier to execute than they would be in traditional media.

This is not a history…but an attempt to give you some sort of historical perception of how this strange tool, the computer has etched its patterns on our collective consciousness. It is not anywhere near complete but it is a starting place.

Hard as it may be to believe, computer art did not begin with the Macintosh, the graphical user interface (GUI), or Photoshop. It began with the invention of the computer itself…with a notion that may seem strange to many mathematically challenged students and artists. The notion is that mathematics itself is elegant, unpredictable, and beautiful in ways that cannot be projected with traditional images. Artists were drawn to the computer because artists are compelled to explore new tools, materials, and processes as a way of extending their vision.

In the beginning many computer artists were engineers who had access to computers and who had the know-how to use the different peripherals that were available. Artists without an engineering background would be dependent on the collaboration with engineers to produce art.



Leon D. Harmon and Kenneth C. Knowlton: mural based on the photograph of a nude which was scanned and translated into eight brightness levels realized in the finished picture as symbols. This computer-produced nude was completed in 1966.

The beginning of computer art occurred in the 1950s when composers, artists, engineers, doctors, mathematicians, philosophers and poets had access to this strange new machine that could do anything.

Some credit the first computer art work to Ben F. Laposky, a mathematician and artist from Cherokee, Iowa. In 1950 Laposky worked with analog devices. His pieces were called "oscillons" or "electronic abstractions." Laposky manipulated electronic beams across a cathode-ray tube similar to a television tube and then recorded the abstract patterns on film.

In 1951 on Edward R. Murrow's television show "See it Now," a bouncing ball was shown from a screen of The Whirlwind, a mainframe computer built at the Massachusetts Institute of Technology in 1949, and afterwards the computer played "Jingle Bells."

Early computer artists used pen plotters for output. The pen plotter is a printing device in which an ink pen is moved across the paper, drawing line by line, based on data stored in

Art: 'Computer graphics' have been around since 1960

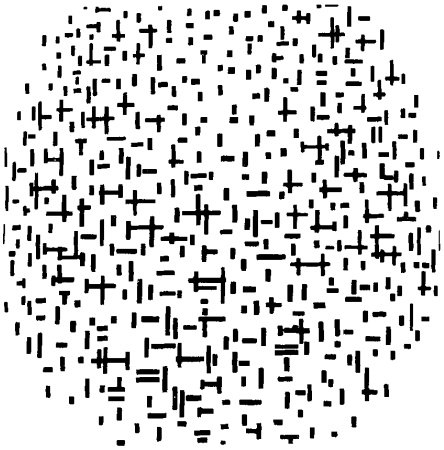
ART: from page 7

those punched on IBM cards." Fetter went on to express the process of making computer graphics to an uninitiated audience in the early 1960s…

"The techniques of typesetting and the photomechanical processes fulfill the role of translating thought into visual form. Computer graphics represent a further stage in this process involving the skills of a designer, programmer and an animation specialist. In this latest stage, however, there is less scope for ambiguity because the information must be communicated descriptively and accurately.There are three important stages which have to be considered in making computer graphics: first comes the communicator who has an idea or message to communicate; second, the communication specialist who decides on the best way to solve the problems—for instance, whether it should be done graphically, verbally or as a combination of both; third the computer specialist who selects the computer equipment and interprets the problem so that it can be dealt with by the computer. It frequently happens, of course that the communicator, the communication specialist and the computer specialist are one and the same person."

Some early computer art of the 60s-70s looked strangely like what computer art would look like in the 80s when MacPaint broke ground on the Macintosh. Looking back at early Macintosh art…Zen and the Art of the Macintosh is a good place to start…the work resembled work that was done 20 + years earlier by Allen Bernholtz at Harvard and not nearly as sophisticated as the work of Ronald Resch at the University of Illinois where complex architectural forms like the geodesic dome and its variations were being explored.

Michael Noll, a researcher at Bell Telephone Labs collaborated with Bela Julesz in the first computer graphics exhibit at the Howard Wise Gallery in New York in April 1965. The critics were not friendly—Time Magazine noted that the pictures on display not only resembled the notch patterns found on IBM cards but also had about the same amount of aesthetic appeal.

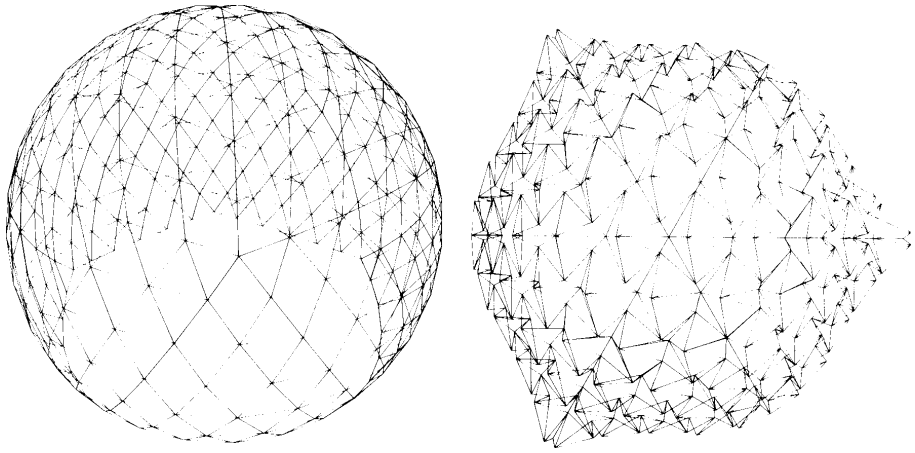


Mondrian: *Composition with Lines* **1917, was used for a subjective comparison with a computer-generated picture by Michael Noll.**

A. Michael Noll. *Computer Composition with Lines* **1965, based on the composition by Mondrian.**

Noll did all sorts of explorations which he developed into animations. He did stick figure representations and modeled work after artists like Mondrian. Noll's experiment with Mondrian was interesting in the way that he tested the success of the image. He showed some 100 people at Bell Labs a xeroxed print of the original Mondrian and the computer generated image. Only 28 percent correctly identified the computer-generated picture, while an astonishing 59 percent preferred the computer's rendition to the actual painting by Mondrian. Noll also understood the possibility of using the computer to visualize in three dimensions and to do so before the construction of a three dimensional object.

Noll raised an additional interesting problem. What is the work of art, the output or the program that generated the output? Noll insisted that the true work of art was the generating program rather than the computer-generated object.



Ronald Resch: geodesic dome structure (left); a variation on the dome structure (right).

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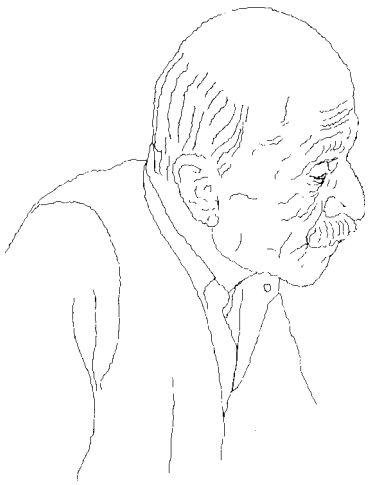
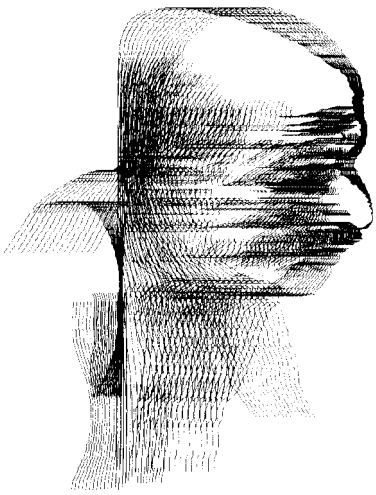


Charles Csuri: data deck of the old man used for the illustrations below. This is a digitized drawing made with a graphic plotter.

Charles Csuri: *Sine Curve Man* **1968. A sine curve function was used on both the x and y values.**



Charles Scuri: *Sine Curve Man* **1969, a version of** *Sine Curve Man* **1968.**

M.R. Schroeder, also from Bell Telephone Labs, explored computer manipulation of images using special programing techniques to produce half-tone renditions of images. One of Schroeder's pieces, "Wordy eye," was "A human eye composed of individual letters and spaces forming the English sentence 'ONE PICTURE IS WORTH A THOUSAND WORDS' repeated over and over again. Each letter was exposed in the microfilm plotter from one to forty times according to the brightness level in the original eye. Four kinds of information or patterns are visible: the individual letters, the words and sentences, the periodic design pattern resulting from the repetition of the sentence and, finally the eye.

When did a Nobel Prize Winner in Physics collaborate with a twentieth Century artist?

Arno A. Penzias ,who was a Nobel laureate for his work on the big bang theory, collaborated with Lillian Schwartz in the design of a technological piece called Proxima Centauri in 1968. The piece was interactive. "As a spectator approaches, the translucent dome emits a red glow and slowly sinks into a circular opening in the black base. When the orb resurfaces, it glows in blue. A series of computer-generated abstract patterns is continually projected on the surface of the dome, below which a water-filled rectangular tank moves up and down every thirty seconds, causing the image to vibrate and the dome to appear to be a soft, gelatinous mass. It was activated when the current was broken by the viewer stepping on a proximity detector pad. In 1983 Arno A. Penzias updated it installing microprocessors that allow Proxima Centauri to respond to sound waves."

A quantum leap forward took place in the late 60s and early 70s at the Department of Art at Ohio State University, which is still one of the most active centers in the field of computer graphics and animation. The major force at Ohio State University was Charles Csuri, who, in the 70s, was not only exploring computer animation, but who had a vision of interactive sound and visual systems. That vision was exhibited in 1970…14 years before the Macintosh was released.

Csuri was not only an artist, but he was a programmer and systems designer. One of his early computer animated films was Hummingbird, which cost about $12,000 in 1967…by 1970 he was doing more complex films for only $120. Csuri was one of the first to explore computer sculpture. The sculpture was created on the computer and the computer became a control for the milling machine which would work on a variety of materials.

Another pioneer in computer sculpture was Robert Mallary, professor of the Department of Art at the University of Massachusetts, where he developed a computer graphics program, TRAN 2, to generate sculpture.

A major strand in the late 60s and 70s came from the Computer Technique Group in Tokyo who were experimenting with the relationship between technology and art. From its beginnings, computer art was problematic. Its humanity is always a concern. A poignant letter from Haruki Tsuchiya of the Computer Group in Tokyo closes Miss Jasia Reichardt's book…"I found out several things while producing computer art

"1. Computer can treat only symbols not meanings.

"2. Through computer we can handle images, patterns, symbols by means of symbols

"3. Through computer, we can control images, patterns, symbols by means of logic

"4. We must always be careful of the differences between symbols and the meanings of the symbols, when we use the computer.

"In any way, computer can't understand the meanings of program, work, art and our life.

"While producing computer art, I found myself staying still as an engineer, but not the same as before."

"I must think everything over again."

In the closing panel Ms. Reichardt enclosed a Christmas Card from Haruki Tsuchiya which had a hand written message that said: "I married on 23, November. I would like to be a man, not artist, not engineer, a man."

A major contributor to the humanizing of computer/technological art was Robert Rauschenberg. In the 60s, Robert Rauschenberg was experimenting with art and technology. In 1966 he put together a show that involved his partner, Klüver, a laser researcher at Bell Labs, 40 engineers, and ten well-known avant-garde artists to produce work that included the amplification of brain waves, cardiac sounds, and muscle sounds occurring inside of a dancer's body.

Their interdisciplinary effort lead to the foundation of an organization called Experiments in Art and Technology (E.A.T.) to promote joint efforts between artists and engineers. Part of E.A.T.'s mission was "to catalyze the inevitable active involvement of industry, technology and the arts."

In the early 1970's there were over six thousand E.A.T. members nationwide.

By the 80s there were wonderful works being produced by artists like David Em at the California Institute of Technology's Jet Propulsion Laboratory. British artist, Harold Cohen, had programmed a computer to draw remarkably natural drawings on its own. He would then hand color these spontaneously computer drawn images and in fact later wrote a software program to color the images as well.

In the next article I will explore the work of Roman Verostko, an artist who celebrates the mystery and excitement of mathematics and computers and their peripherals.

"a few drawings, mere 'restes d'encre,'
each, a few lines on a sheet of paper,
each, countless & invisible lines of code in a computer,
each, minute & uncertain ink strokes by an indefatigable plotter."

Roman Verostko

Bibliography:

The Computer In Art, Jasia Reichardt, Van Nostrand Reinhold Company, NY, 1971

Digital Visions, Computers and Art, Cynthia Goodman, Harry N. Abram, Inc., 1987

LUCKY WINNERS!

The following lucky people won prizes at the May general meeting. Be sure to attend the next meeting on June 4th and you could be a lucky winner too!

WINNERS MAY 7, 1998

Eye Candy for Photoshop
Susan McMahon, Patricia Barry

Eudora Pro Email
Nancy Haberman, Gene Estes

Final Effects Complete
Dick Deakins

Zip Disk
Ted Schultz, John Hytowitz

T-Shirt and/or Hat
Mike Tullus, Constance Woods, Lynn Weeks, Mike Fields, Frank Distefana, Laura Rosen, Larry Sikora, Grace Martinez, Harold Atwater, Charlie Holt, Earl Erickson, Ed Runckle, Jim Barker

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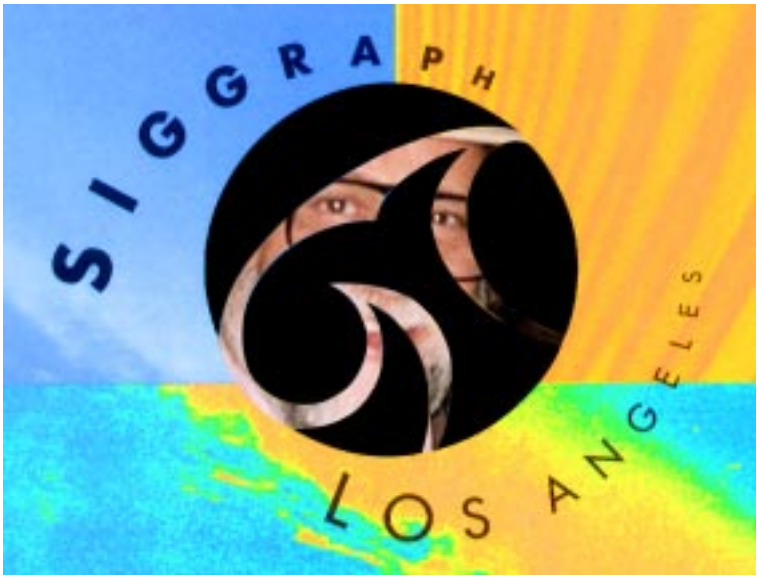


Siggraph '97

Roman Verostko and Algorithmic Art

by John M. Grzywacz-Gray

This article in the third and concluding part in a series of articles based on the computer and art from Siggraph '97. Watch for coverage of Siggraph '98 in upcoming FatBits.

"...Renaissance perspective provided the tools of visualization essential for the development of modern western civilization. ... I think that we stand at a similar threshold today as we face the future. The computer provides the artist with a seemingly limitless power to transform and improvise. And like Renaissance perspective it provides us with a new window on our world —one that is altering the way we perceive that world."

There is a definition of art that survives from before the birth of Christ; it exists in Greek, Chinese and Eastern cultures. That definition implies that the goal of art is to make what was previously invisible visible.We sometimes confuse art with craft. Great craft does not necessarily make for great art.

Craft is indispensable in the creation of great art, but, there are brilliant works of art that are not technically perfect. Another way of thinking about it would be to ask yourself what happens when a musician plays perfectly all of the notes of a Beethoven sonata?

Is the craft of playing the notes correctly all that is required to make great music? Are we surprised when a talented musician plays the same piece of music, maybe with a bit less craft but with greater insight, making ideas that were not immediately visible known to the listener?

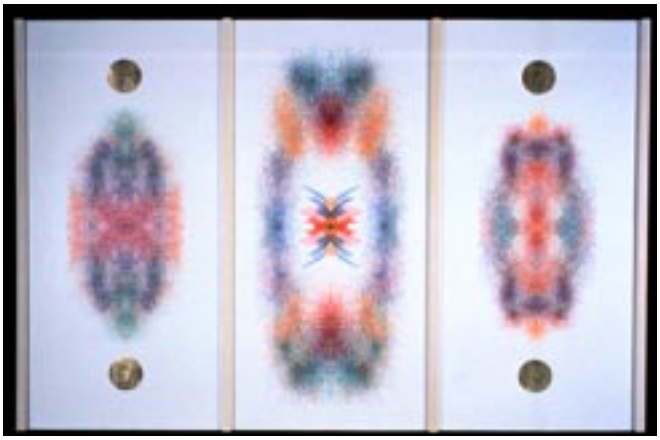
"Making the invisible, visible" is a definition that can be successfully tested by applying it to a wide range of media. The one media where it becomes really inarguable is that of algorithmic art. Normally we think of algorithms (instructions) as part of the mathematical / computer world...but that is not the only way to think about them. Roman Verostko, an artist whose work was presented in the 1997 Siggraph Art Gallery, is part of a tradition that goes back many centuries, and he considers himself an Algorithmic artist.

Verostko is an artist from Minneapolis, MN. He describes himself as an artist, educator, and humanist who was born in 1929 and who maintains an experimental studio in Minneapolis. He has degrees in Philosophy, Theology, an MFA from Pratt Institute, studied Art History at NYU and Columbia and Printmaking at Hayter's Atelier in Paris.

When I first viewed Verostko's art I responded to what was an indefinable connection. I wasn't sure where it was coming from...but I had been reading a truly extraordinary book by Kathleen Norris called *The Cloister Walk*.

Norris's book is about her experiences in a Benedictine Monastery and the changes that occurred in her and in her relationships with people as a result of that experience.

Roman Verostko was a Benedictine Monk from 1952 to 1968 at St. Vincent Archabbey, in Latrobe, PA. Verostko taught at St. Vincent College until 1968. He moved on to the Minneapolis College of Art and De-



Epigenesis: The Growth of Form. Mural Model. **Eleven 1/6th scale pen plots on paper, each representing a 3 by 6 foot plot in the finished work. The final work, framed with stained oak paneling, occupies a space measuring 9 feet by 40 feet will be installed in the Frey Science and Engineering Center at the University of St. Thomas (St. Paul). At one sixth scale the model measures 1.5 feet by 6.6 feet.**

sign until he retired in 1994. He has participated in numerous exhibitions and won many awards during his distinguished career. If you are interested in more about Roman you can log on to his web pages at: http://www.mcad.edu/home/faculty/verostko/roman.html

Verostko makes what is invisible visible. It is a compelling idea. He calls his art Algorithmic art. He wrote a paper for a panel on Algorithms and the Artist for the Fourth International Symposium of Electronic Art, Helsinki, September 1994.

What are Algorithms? Here is Roman's explanation:

"Algorithms are logical procedures for executing a task. The best of them, lean and clean, display a splendid rationality that the medieval scholastics called claritas. Even those that deliver us to experiences that transcend the ordinary may be ruggedly rational. For example, you may never understand why you are moved by hearing Bach's Musical Offering - but the score, the procedure for performing the music, is well known and may be studied in every detail.

"The score itself is an algorithm—a procedure for constructing the musical experience. But the procedure for writing the music is another matter. Writing the musical score is always the creative work of the composer. We should not confuse the procedure by which the composer creates the composition with the procedure for performing the composition.

"Similarly, when it comes to algorithmic art, we should not confuse the procedure by which the artist creates algorithms with the procedures by which the algorithms execute the work. This may be the most important distinction we need to bear in mind in our discussion of art and algorithm. Musical compositions and architectural plans are algorithms for executing works of art. Those who create these algorithms are artists."

Roman started in art as a traditional artist drawing from life and studying with John Nesbitt, a muralist from the 1930's. He describes how his eyes were opened to a "process whereby you simultaneously learned how to "see" by "drawing" and you learned how to "draw" by "seeing."

You might ask what does this have to do with computer art? Verostko discovered when he "began to write software that those early drawing experiences would be relived." Verostko said "you learn a lot about how to draw by writing drawing code and you learn a lot about how to write drawing code by drawing."

It may be hard for us to maintain that the code a programmer writes is art but still others may think of it as poetry. If you are fortunate enough to see Verostko's elegant and supremely aesthetic prints you will come closer to understanding that

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SUPPORT:

from page 17

mote sites in situations where high throughput is required.

<http://www.vicomtech.com/vig.t1.html>

Viking update to V.90

Instructions and code for the modem update.

<http://www.vikingcomponents.com/support/software/v90/v90start.html>

Test Pilot—Give test and surveys via the web - 100% Java

Test Pilot is a software package for the creation of tests and surveys for delivery and collection via a web server. Optionally, it can automatically score responses. It consists of a database of test, tutorial or survey questions and a Web server extension to both administer the surveys and tests and record, score and retrieve user responses.

Test Pilot's web server component is 100% Java! See it running under MacOS, Windows NT and Rhapsody (UNIX). Write once, run anywhere: it works!

Test Pilot allows the test or survey designer to completely avoid the learning curve of web-based forms development and the requirement of server extension development by using a single standardized form handler.

Once the webmaster has installed the administrative portion of Test Pilot, designers can create as many online tests and surveys as they please without further technical support involvement.

<http://biomedia.bio.purdue.edu/TestPilot/>

The Dragon—online surveys w/Filemaker 4.0

Description! The Dragon Web lets you quickly and easily build Surveys that can be hosted from any Internet / Intranet Server. Host multiple surveys simultaneously. Authentication

continued next page

ART: Not about tools but about vision of the artist…

ART: from page 11

the poetry is not just in the image, on paper, behind glass…it is also in the "0"s and "1"s that are stored as magnetic impulses on a hard disk, programmed in Basic, and transformed into something more accessible.

Roman call his software Hodos which means "way" or "method" in Greek. Hodos literally defines the procedures or pathways for structuring his art forms.

Often in the past, and even today we hear people talk about computer art as if it were something that was created by 1,024 monkeys each with a separate brush painting on a surface and creating, after much trial and error, something called art. This is where the artist and non-artist separate…because art is not about tools—it is about the vision of the artist. Roman articulates it this way.

"One of the fundamental problems for the artist who wishes to create pure algorithmic art is to establish a link between the algorithm and his own art making process. When you control the charcoal, your own seeing or vision is there. And by vision I do not mean an image; I mean something more—a complex transformative idea about what you experience and see as possible in the finished work. When you hold the algorithm in your hand—when you are in charge as you are with the charcoal—then you also control your vision."

Another way of thinking about it is something I learned from a 14th century teacher who argues that for the potter, the work of art is not the pot but the potter.

Roman uses pen line and occasional brush strokes generated with his software and executed with pen plotters on fine papers. He uses Chinese brushes that have been adapted to fit the plotter's drawing arm. The routines also generate text-like elements associated with manuscripts and oriental calligraphy. Some of the works, reminiscent of medieval manuscripts, are enhanced with gold leaf applied by hand. In executing a work the plotter may automatically draw thousands of lines with a precision specified by the artist, a precision impossible to the human hand. These thousands of intricate colored and transparent lines "grow" forms which appear to drift into infinity. The sources for his ideas appear in commonplace structures of our everyday world—a maple leaf, a spring violet…a snow flake.

From that observation Roman has also defined his art as epigenetic. The term epigenetic comes from epigenisis, borrowed from biology, which refers to the process whereby a mature plant (phenotype) is grown from a seed or genotype (DNA). By analogy, the artwork (phenotype) is grown from the algorithm (genotype). The procedures for growing the work may be viewed as epigenetic.

When I was in college, I had a professor of sculpture, Cosmo Compoli, who insisted that as artists we should not only respect our tools but we should love them and speak to them gently. We often named our tools. Verostko has named his plotters Alberti and Brunelleschi. Filippo Brunelleschi developed linear perspective in the 15th century and Leon Battista Alberti documented its theory and practice in his work Della Pittura (1435).

Verostko describes his computer and plotters as "excellent companions in exploring…new perspectives. They help me explore visual analogues of probability, forms which were hidden from view before we had these machines. Through the computer we have gained access to a visual domain filled with mystery and growth patterns of these forms echo processes lying at the core of the unfolding universe. For me, the computer and its companion plotters, provide a new

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ART: Verostko weaves magical web by programming computer to drive pen plotter

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pathway to making 'making visible the invisible.'"

Verostko taught modern western art history in China (1985) and has lectured on diverse subjects such as Buddhism in Chinese Art. One of his pieces is titled "WuWei," (34 x 24 inches, Pen and Brush Plot, 1988). "Wu Wei" is a traditional Chinese expression suggesting that it shall be achieved by doing nothing by letting nature takes it course, e.g. the tree will grow. The pen and brush pathways, a form of computer automatism, were achieved by letting the computer's random walk take its course.

Like so many explorers of art, science, the heart and soul, Verostko seems to be creating a synthesis between Eastern ideas and Western Ideas, between art and science, between materialism and the spiritual. Perhaps building bridges for the damage done by Descartes is the reference of the day. Perhaps artists, scientists, computerists and clerics have divided up the territory into such small pieces that we can no longer live behind fences. In his studio in South Minneapolis he maintains a network of workstations viewed as a digital scriptorium.

An example of how he connects these notions is in a work titled Illuminated Universal Turing Machine, 44 x 30 inches, 1995. The central area is the algorithm in binary form, for a Universal Turning machine ("u"). The "u", a sequence of 5,495 digits, is based on Roger Penrose' version in the Emperor's New Mind. This specific algorithm holds a special place in the history of computing machinery. Here it is illuminated as an authoritative text, the scripture of our information age. The gold-leafed character, a non-rational algorithmic gesture was gold leafed by hand emphasizing the artist's interest in the tradition of the illuminated manuscript.

His largest work to date is a mural in 11 panels that occupies a space 9 feet by 40 feet that is installed at the Frey Science and Engineering Center at the University of St. Thomas (St. Paul). While I have never seen the full size image I have seen small prints and I must say it is a beautiful piece that in many respect must remind the viewer of an altar.

In the final analysis Roman Verostko confirms what Joseph Campbell once said about computer processors…they speak in their own language, they work in mysterious and sometimes logical ways, they are miracles waiting to happen, they are angels…but it is still the brain of humankind that is required to make great art.

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