

YLEM

Artists Using Science and Technology

NEWSLETTER

Post Office Box 749,
Orinda CA 94563

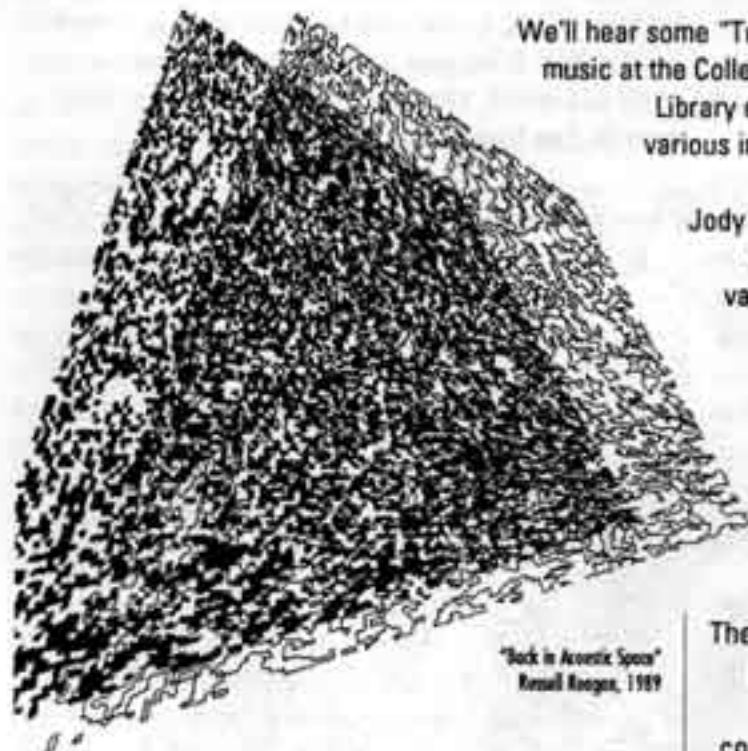
Ylem (Eye-lem): The primordial stuff out of which the universe emerged in the Big Bang.

December 1989 - January 1990

YLEM FORUM

"A MUSICAL EXPEDITION"

Tuesday, January 16, 8 pm
McBean Theatre, The Exploratorium
3601 Lyon St., San Francisco



"Back in Acoustic Space"
Russell Rogers, 1989

ABOUT 1990 FORUMS

The March Forum will be held on *Wednesday, March 14*, when the whole museum is open. Come early and play! Everyone will pay admission to the museum, but our Forum will be gratis. When the museum schedule permits it, we will hold forums on Wednesdays from now on, so stay on your toes!

Our March and May Forums will explore the living organism that is Earth.

We will journey from deep forests to Indonesian Theatres to Hi-tech studios, and orbit the solar spectrum in search of ambrosian sounds and sights.

Paul Matzner, co-founder of the Nature Sounds Society, describes his adventures recording everything from birds to elephant seals, striving for quality sound recording in remote locations. We'll hear the results. He is in charge of the Library of Natural Sounds at the Oakland Museum, where he does sound environments for exhibits.

We'll hear some "Tree Pieces" by composer Wendy Reid, who teaches music at the College of the Holy Names in Oakland. Drawing upon the Library of Natural Sounds, she combines forest sounds with various instruments. She sometimes combines mathematical relations like the Fibonacci Series in her works.

Jody Diamond, just back from a year in Indonesia, where she was a Fulbright Scholar, will show video of wild variations on traditional theatre and gamelan music in Bali. She is the director of the American Gamelan Society.

Her husband, Larry Polansky, music editor for *Leonardo*, is co-author of HMSL, a popular computer music language. He'll present a piece for voice (Jody Diamond), and two interactive computers (himself and Phil Burk).

They both teach music at Mills College in Oakland. The solar spectrum is the specialty of Martha and Alex Nicoloff. They make their own prisms, and coax the refracted colors to elaborate upon themselves in concert with contemporary music. This is recorded on videotapes that have recently won them an NEA grant. Open to the public. Admission for non-members is \$3.



EXHIBITS

PRINTMAKING AT THE SPEED OF THOUGHT

through Dec. 23, Philadelphia

Algorithmically generated computer works. Twelve artists including Ylem members Edith Smith and Isaac V. Kerlow. **The Print Club, 1614 Latimer St, Philadelphia, PA 19103**

ABACI 1989 INVITATIONAL EXHIBITION

through Dec. 30, Portland

Includes Ylem member Eleanor Kent. **ABACI Gallery of Computer Art, 312 NW Tenth, Portland, OR 97209; 503 228-8642**

COMPUTER ART / ELECTRONIC MEDIA INVITATIONAL EXHIBITION

Jan. 9-26, Cheney and Spokane, WA

Exhibition sponsored by Eastern Washington University includes Ylem member Diane Fenster.

EVENTS

PAMELA Z PLAYS THE EXPLORATORIUM (literally)

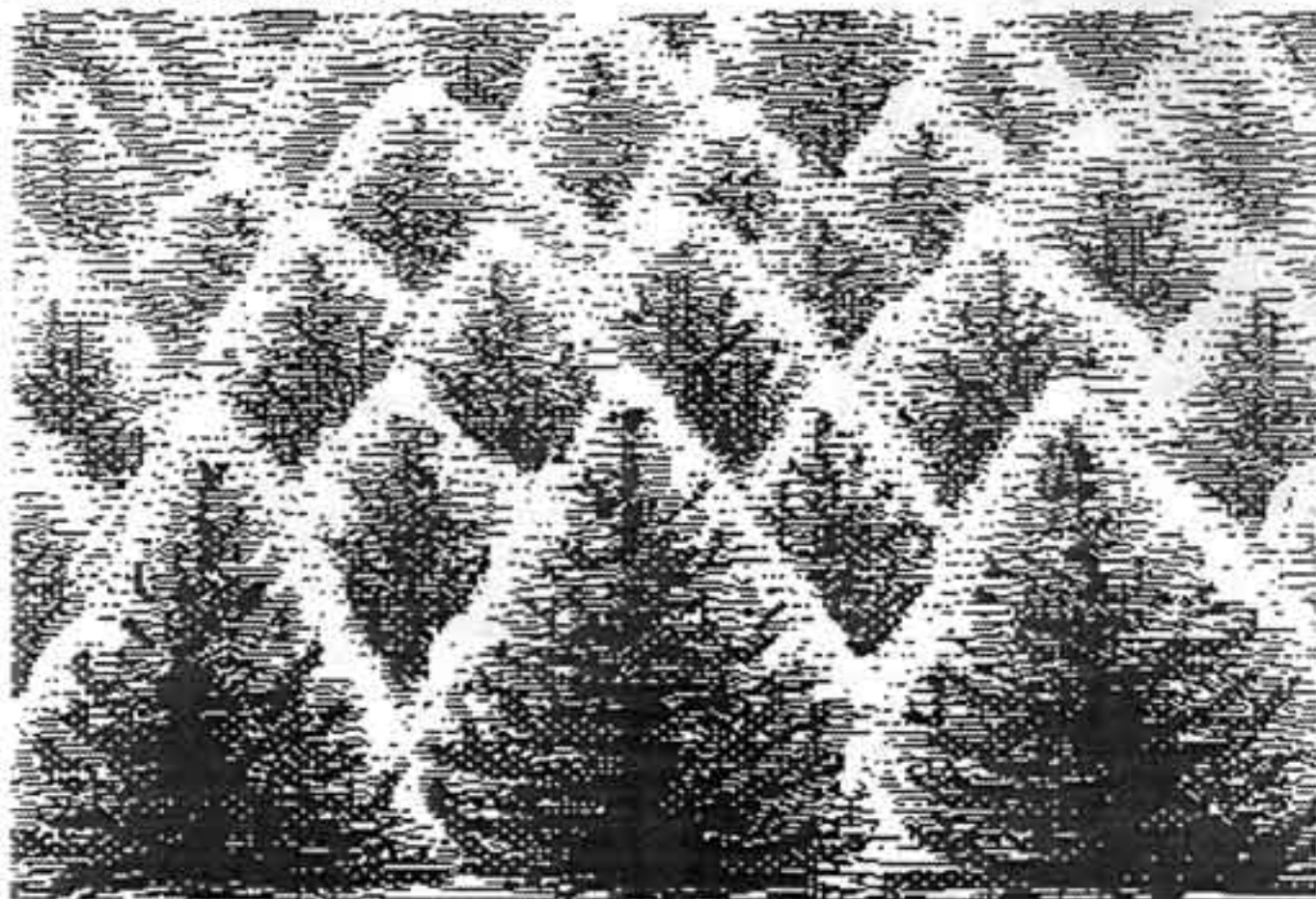
Jan. 6, San Francisco

Vocalist and composer Pamela Z will contrast digital tape loop effects with unusual forms of acoustic delay including special stereo effects and singing into the "Echo Tube" exhibit. **The Exploratorium 3601 Lyon St. San Francisco; 415 563-7337**

POLAROID MANIPULATIONS

Jan. 13 & 14, San Francisco

By artists Niki Gruhn and Richard S. Beckett. Beginning with their quickly developed image, the artists spray paint, use plastic and found objects or incorporate words, to otherwise transform the original Polaroid effect. A new craft for those seeking instant gratification. Bring your loaded Polaroid camera or just come and watch. 12 to 5pm. **The Exploratorium 3601 Lyon St. San Francisco; 415 563-7337**



"Graveland" Trudy Myrick Raigos, 1989

NEEDS AND OFFERINGS

ELECTRONIC JOURNAL OF ART

Texas A&M College of Architecture proposes to disseminate electronically-generated works of art first by video tape, then by other electronic means as the technology becomes available. It will be an electronic academic journal with referees, and serve artists, collectors, academics, libraries, and curators. Your responses to this idea would be very welcome. Note: The College is also proposing a new degree, Master of Science in Visualization, emphasizing the use of electronic media for creative work. Contact: **Alan Stacell, Div. of Design Communication, Texas A&M, College Station, TX, 77843; 409-845-7070; FAX 409-845-4991**

ARTIFEX

Artifex, a quarterly magazine of arts and technology, seeks information about events, also writes for critical reviews.. It seeks to discover and use language that makes transdisciplinary communication easier. It includes visual arts, music, the basic sciences, architecture, cognitive science, linguistics, film, video, theatre arts, and design. Writers in these fields who can regularly cover certain localities or subjects, and also interdisciplinary thinkers are needed. Send resume and what you can report on to: **Denise Penrose, Artifex 28, Exeter #203, Boston, MA 02116; 617-267-7732; e-mail: <dpenrose@lotus.com>**

FACE ANALYSIS SOFTWARE SOUGHT

Desperately seeking Susan-Brennan-type software that has generalized facial features across a large sample of faces, and can zero in on the features we notice when we recognize faces. The purpose is "to find detectable, quantifiable features that will predict the degree of genetic relatedness between two people from images of their faces." Contact: **Stevan Harnad, Psychology Dept., Princeton University, Princeton, NJ 08544; 609-921-7771; <harnad@CLARITY.PRINCETON.EDU>**

PRINTED HOLOGRAMS

The silvery ones you see on various products were pioneered by the **DZ Company, P O Box 5047 (181 Mayhew Way #E), Walnut Creek, CA, 94596; 415-935-4656**

FRENCH STUDY GROUP

Espace SNVB is a foundation to promote the understanding of the major changes in society, particularly those on the border between art, science, technology, and economics. So far, it has held roundtable discussions, and it publishes *Dechiffrage*. One issue was proceedings from a conference, "Toward a Culture of Interactivity." Info: **Frank Popper, 49 Quai des Grands Augustins, 75006, Paris, France**

HYPERMEDIA U.

CRECH (Centre de Recherche European de Creation Hypermedia), is a private university just opening in Paris. It will center on general culture as it relates to multi-media, cognitive science, the study of multimedia technology and hypermedia. (After hearing a lecture on hypermedia, a multimedia performance artist was heard to comment, "I've decided what I do is *hypomedia*.") Info: **CRECH, 6 Rue St. Severin, 75005, Paris, France**



"DEMETER" Terry Deas, 1989

OPPORTUNITIES

FIRST CONFERENCE ON CYBERSPACE: CALL FOR ABSTRACTS

Abstracts due Dec. 15

Conference to be held May 4 & 5, 1990, Austin

Conference is about the nature of cyberspace conceived of as an independent realm, a shared virtual environment whose objects and spaces are data, visualized (and heard). Of significance is the design of graphic user interfaces, scientific visualization techniques, video games, CAD, abstract architectural design theory, knowledge navigation, "cyberpunk" discourse, virtual and artificial reality systems, ISDN and other networks, groupware, and hypermedia; and the potential functional unity of these to create a true, public cyberspace, as well as private, special-purpose cyberspaces: viable, 3-D, alternative realities providing the maximum number of individuals with the means of communication, creativity, productivity, mobility, and control over the shapes of their lives within the new information and media environment. Conference participation is limited to 50 people. Registration fee: \$50. Send to **Michael Benedikt, Sch. of Architecture, Univ. of Texas at Austin, Austin, TX 78712; 512-471-1922**

BOOKS FEATURING COMPUTER ART

deadline (Apple/Mac) Dec. 31; submissions for IBM & compatibles: 1/1 through 6/1/90

ABACI Gallery is compiling work for a proposed series of books featuring fine art created on a computer. Editors for the book include Daria S. H. Barclay. Submission rules: Duplicate slides only (no limit). All artwork created by the artist(s) using specific computer as art tool. Send art to **ABACI Gallery of Computer Art, 312 NW 10th, Portland, OR 97209; attn. Daria Barclay; info: Daria 503 228-8642**

SEEING TIME '90

deadline Jan. 1

Submit slides or video. Installation and/or performance. Info: Kala Institute, 1060 Heinz, Berkeley, CA 94710

VISUAL MATHEMATICS: CALL FOR PAPERS

deadline Jan. 1

Leonardo Magazine seeks papers and manuscript proposals from artists and scientists for a special issue on the various aspects of visual mathematics, including methods for creating a large range of new forms and shapes, a new universe of mathematical images, over all possible media from drawings to computer graphics. The issue also focuses on esthetic aspects: mathematicians proposing themselves as artists, artists using visual mathematical ideas, and their role in the history of Art. Papers by scientists must not just be descriptive, but must investigate and explain the mathematical techniques involved. Papers by artists must point out how visual suggestions from mathematics have influenced the artist's work. There may also be papers explaining how visual input from art has been useful in mathematics. **Leonardo, 2030 Addison St. #400, Berkeley, CA 94704; 415-845-8298**

THE REAL CANADA

Mid-January

Believing that the evening's television commercials can often be far more "truthful" than the evening news, students compile a 20-30 minute tape which will purport to show the "real" Canada. No editorial, cropping or montage, just 30-50 juxtaposed ads. We wish to invite about 3-5 other institutions to do the same thing. Tape exchange in mid-January. Participants in Hong Kong, Japan, UK. Looking for one college in the US, and others in Latin America and non-English speaking Europe. Tapes 1/2" VHS, using SP mode. **Maurice Barnwell / Sue Barnwell <FCTY7279@RYERSON.BITNET>**

COMPUTER GRAPHICS CAREER HANDBOOK

deadline April 1, 1990

Please submit a two to four typewritten page description of your computer graphics career for publication consideration. Categories include: art, animation, CAD/CAM/CAE, presentation graphics, desktop publishing, educators. Info: **Catherine M. Keith, Chair, ACM SIGGRAPH Careers Handbook, 424 Custer Rd, Hayward, CA 94544**

FRACTURED FRACTALS

Benoit Mandelbrot, the Father of Fractals, has called them "the mathematics of wiggles." One complex function that generates particularly beautiful and complex designs on the computer is called the Mandelbrot Set. We see in this picture from Iris Universe, summer '88 (published by Silicon Graphics), that Jeffrey Ventrella of Syracuse University has been teasing these patterns into new forms. He is attracted to natural forms, and to surrealism in art. He finds poetry in the peculiarities of fractal manipulations.

Here is his letter to us about the work:

"Are they from a computer model? I'm not sure what you mean by that question; the images are generated mathematically on a cartesian grid of numbers — like the complex plane, only tweaked to the point of being un-analyzable through complex (mathematical) analysis. They are two-dimensional in the technical sense of the word. But in the perceptual and metaphorical sense, I'd say they are somewhere between 2 and 3 dimensional, hence, fractal. [If a plane has two dimensions, but has infinite ruffles that fill up a plane, it approaches being three dimensions.]. They are derived from the Mandelbrot function, the most important piece of genetic code discovered in mathematics. I write my own computer programs in Pascal, on an IRIS 3020 workstation. I am currently preparing an animation of my tweaks which I will deliver to the SIGGRAPH gods for their judgement."

He says he photographs them right off the screen using slow film that he develops himself. He concludes,

"May your pixels be tiny and many bits deep."

An Amateur Astronomer Talks about Eclipses — for Jacques Guertin

Dark fountains flare: Deep orange, dark purple-pink.

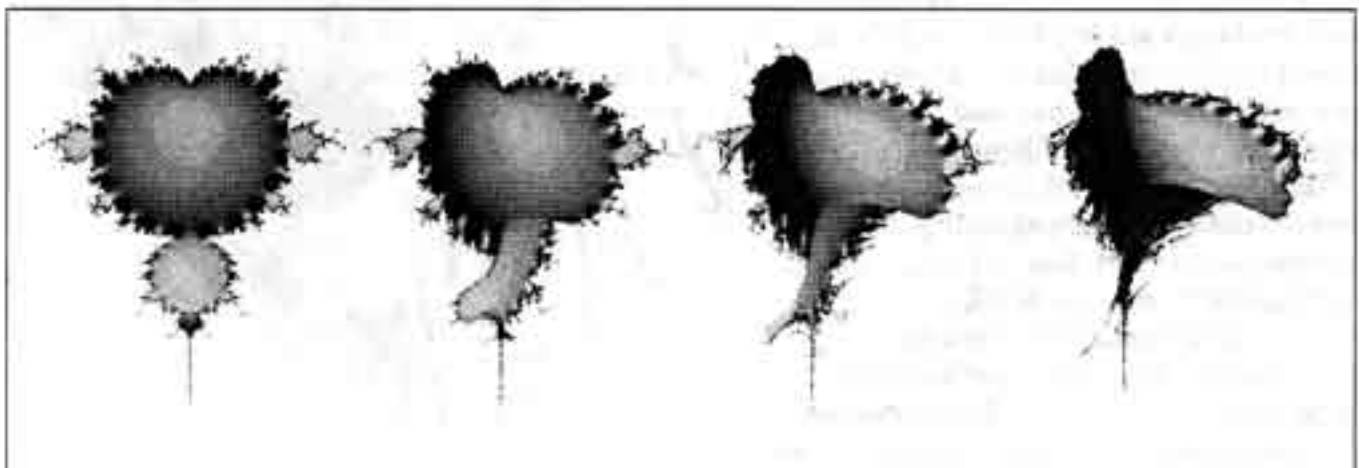
They hide in light, too sharp for men to see
Except at eclipse. When the white light sinks
Behind the friendly moon, those times when we
Observe the sun that's hidden in the light.

When shadows move, the umbral dark can show
The colors, arcs, auroras of the bright
Display forever moving, that we know
Only by hearsay:

as we know the leaves
Keep autumn's colors hidden under green
All winter long, until the kind frost weaves
The red and gold release.

What can be seen
In frost and shadow is the way things are:
Beneath the monochrome, the hidden star.

—Meredith Angwin



NEWS OF MEMBERS

Edith Smith exhibited her computer-assisted etchings at University of Indiana in November, at Bloomsburg University in Pennsylvania in September and October, at Ars Electronica, Linz, Austria in September, and currently in Philadelphia (see Exhibits).

Luz Bueno's computer paintings are involved in two travelling shows: one in several offices of Skidmore, Owings, Merrill, and the other with SIGGRAPH.

Tina Ebey is corresponding with Danielle and Natalia, two Russians interested in choreography and technology in the arts. Would Anyone like to donate \$30 for an Ylem subscription plus foreign postage? Call Tina Ebey, 323-5215

A Rocky Mountain Film Center Fellowship has been awarded to **Alex and Martha Nicoloff**.

This is the second grant they have received for their experimental video creations using the solar spectrum as a light source. This year they were chosen out of 300 entrants in a competition funded by NEA. A short segment entitled "Vision Serpent" was shown in the Video-Fest section of the Mill Valley Film Festival in October. Local composer Robert Hughes provided the electronic score for the piece.

One of **Vernon Reed's** neckpieces, "Up-Link Theta", is part of an exhibition of American Craft artists, organized by the American Craft Museum and the U.S. Information Agency. This exhibition opened in June at the Musee des Arts Decoratifs in Paris and will travel for three years to museums on both sides of what used to be called The Iron Curtain. Also, Vernon will be giving two lectures in December on the nature of cybernetic jewelry as an Information Age art form. Both will be on Wednesday, the sixth in NYC, one at Parsons School of Design and the other at Pratt Institute. He is one of four Ylem members included in a show of Soviet-American kinetic art in Moscow next year. The others are **Alan**

Rath and Alex and Martha Nicoloff.

Frank Dietrich and **Zsuzsa Molnar** have moved to Koln, West Germany, where Frank will be a European representative for Silicon Graphics Corp.. Their new address: **Kaule Feld 8, D-5060 Bergisch-Gladbach 1, West Germany.** Home phone, 011-49-2204-72419; voice mail (cheaper) 960-1980 (ask operator to put you on voice mail).

Dave Archer's paintings gained a 6-page spread in the Sept. '89 issue of *Omni Magazine*. Be looking for his paintings also on the TV show, *Star Trek: The Next Generation*, and the cover of Isaac Asimov's new book, *Fantasy*.

Barbara T. Myman's photomontages have been included in two recent exhibits, one in Lancaster, CA, and an international collage exhibit in Everett, WA.



"Cellophane Terrain"
Russell Koopon, 1989

GOLDEN LINKS by Trudy Myrrh Reagan

Electronically linked to artists, great minds, and regular folks in many locations, what could we do besides stunts? Years ago, when CB radio was new, my husband and I wired up two Heathkit CBs. When I was expecting him to call me I would turn it on to listen for his message between all the others on the same frequency, calls like, "Judy! I'm all the way up on Mountain Boulevard! Can you still hear me?" Listening was a waste of patience. We threw them out. A lot of what I see done with our gold-plated technology has that flavor. Yet eloquence is just a thought away. Once, I found a stamp more memorable than the letter inside. On it was a quote from John Donne: "Letters mingle souls."

Many love the marvelous ability to converse across space with total strangers. How can we as artists captivate newcomers, engage them, draw them out? (From their point of view, what could be more engrossing than Dynasty or a Nintendo game?) One kind of artistry is to create the magical medium. Two people creating a design with two cursors on the same computer screen from two different cities, Tokyo and Houston, sounds pretty exotic now. But Howard Pearlmutter, an Ylem member who is writing an application for this called "Pen Pal," envisions kids who can't even speak the same language playing together, drawing on the same drawing.

Beyond that, we'll be challenged to pose questions and interactive projects that hold people's interest. Kt Boyce, who spoke at an Ylem Forum this year, is dedicated to the idea that artists can and should fascinate everybody. She interviewed hi-tech artists in Los Angeles on video, and played the video tape to people in an unemployment office line, a beauty parlor, and a rest home. Then she taped the responses. A lot of people thought the artists were pretty goofy, but many were nevertheless watching attentively. Some were really turned on. Electronic links are a two way street. How will our project generate responses that change our head?

Who'll be engaged with us? This summer it was "Border Axes", gallery lizards in San Jose and San Francisco and other cities exchanging FAXes with ones in San Diego and Tijuana. We learned of artists down south bashing the border between Mexico and the U.S. with happenings to make people aware of the artificiality of it; also creating cooperative projects that transcend national boundaries.

This summer, Chinese students FAXed information back and forth during the great demonstrations in Tiananmen Square.

Is art across space just a new passtime? Or can it answer some need in us, a fundamental one like combatting loneliness? What about those caused by the crazy conditions we have created for ourselves? To name a few:

Arbitragers sell currency wherever the sun is shining on the globe, and the transactions take place instantly. Like subatomic particles, the exact location of all the money in the world at a given moment is unknowable. Global interaction is invisible, but it only takes a glitch to make millions aware of it. And with mass communications, how fast lies can propagate!

Individuals are bombarded with images and news, mostly trivial and transient. Meanwhile, some problems that may do us in are growing by accretion, they are on a rolling wave longer than one human life span. They are easy to ignore.

We worry that access to technology, and the power that goes with it, is a new development in the saga of the haves and have-nots. Happily, technology can be an equalizer. Our friend who spent a thousand dollars in 1960 on a monster Ampex stereo tape recorder couldn't have predicted that 30 years later artists in Tijuana and San Diego would be playing their poetry on cassettes as they passed the inexpensive ghetto blaster back and forth across the U.S.- Mexican border. Assume that access to electronic links is general: Will it force us to notice the people affected by decisions made in our corporate board rooms? We casually pass the homeless by. Would we feel differently if we each got e-mail from one?

Here we are, alternately distracted and downhearted by the trivia and toxic products of our time. On the other hand, Jacob Bronowski spoke of our civilization's "failure of nerve," the inability to recognize the marvelous values and accomplishments that have brought us this far, ones that need preserving. He grasped to medium of television to pull all the bits and pieces together for us into a hopeful vision called *Ascent of Man*. I hope that others see the potential for realizing their constructive shared visions with the new networks, and that these will hum through the nets like melodies racing through the head on neurons.



AN ARTS RESEARCH AGENDA FOR THE 90'S by Stephen Wilson

© Stephen Wilson, SFSU Art Department, 1989

I am worried that a narrow focus on computer graphics and sound diverts artists and their audiences from attending to more culturally salient issues. Below I discuss a few emerging topics that call out for attention.

Hypermedia and the Structure of Information: Increasing computer abilities to handle image and sound information and modular, object oriented computer languages have stimulated exciting new ways to think about methods for structuring information resources. Traditional paths of accessing resources are often conceptualized as linear (for example, reading a book or viewing a videotape) or indexed (for example, reading entries in an encyclopedia). Hypermedia theory, however, emphasizes the network and weblike nature of creative thought — ideas give birth to associated ideas which give rise to families of other ideas in a idiosyncratic way for each mind. Ideas are stimulated not only by text but also by image and sound.

The new generations of computers and optical storage technology potentially allow computers to facilitate and enhance these associationistic ways of thought. For example, viewers looking at a display of text and image can freely select any part of the display into which they want to inquire deeper. The system reads their interest, currently indicated by mouseclick, and speedily draws upon its vast resources that include video, sound, static graphics and text to display relevant material, which itself is a gateway to further associations.

Art Related Issues: While the vision is exhilarating, there are important unresolved issues relevant to the arts: What is the best way to design complex computer displays of simultaneous video, image, sound and text so that they are provocative, clear, and informational? What conceptual structures and related visual metaphors can be developed to aid navigation through these comprehensive information spaces? What new art forms are made possible by hypermedia which focus specifically on the variety of paths through materials or the structure of information?



Virtual Worlds, Artificial Realities, and Expert Systems: Increasingly our world is mediated by computer displays. Some of the displays represent realities that are too small, large, inaccessible to normal senses, dispersed, or abstract to experience directly — for example, component layouts in microchips, patterns of rainforest destruction, stockbroker displays of futures in crops that may or may not exist. Some represent hypothetical realities and designs — for example, animated computer aided design of desired new cities and products or extrapolations of social trends. Expert systems simulate a human expert at the other end who can give advice and help make judgements. The new photo-realistic, high resolution displays and interactive capabilities increase the verisimilitude of all these simulations.

Issues for the arts: These abilities to visualize and concretize abstract or hypothetical realities is an exciting enhancement of human capabilities. But maybe we grow to trust these displays too much and the line between reality and abstraction becomes dangerously dim. Because the arts have historically been leaders in the creation of fictional

worlds and characters, they might be a powerful arena for the culture to use to reflect on these new possibilities.

What are the limits of our abilities to simulate artificial worlds and characters? Can artists use the new simulation abilities to create fictional worlds and characters that enrich the human community? Can artists find ways to reflexively use these new capabilities to help us reflect on the balance of enhancement and danger unleashed by this technology.

Remote Sensing, Robotics, and Telepresence: In some ways the physical side of the computer revolution is still relatively undeveloped. Information primarily goes into computers via keyboards and mice and comes out via CRT displays and printers. Small computers are unable to control useful physical work in the everyday world of most people. Personal home robots have developed nowhere as quickly in sophistication, power and economy as have home computers. The sensual circumscription of these input/output modes and physical actuators may subtly distance people from important potentials of computer technology. For example, sensor technology exists to read a wide range of physical and biological phenomena such as infrared



"Synthetic Speech" Stephen Wilson, 1988



energy, proximity, gesture, and touch which could create new contexts in which computers might be useful.

Similarly, the high end robotic technology that enables the handling of delicate physical maneuvers in research and industrial settings could be adapted for personal worlds.

Issues: The arts have historically focused on the sensual qualities of objects. Again, they seem like an ideal arena for exploring the linkage of computer technology with sensually diverse methods of inputting and outputting information. What modes can be developed in which control of computer mediated intelligence is exercised through physical action such as motion and gesture? What modes can be developed where the computer controls movement in the world such as robotic devices? How can the arts use this technology to help the humans to reflect on their dual nature as bodies and intelligences?

