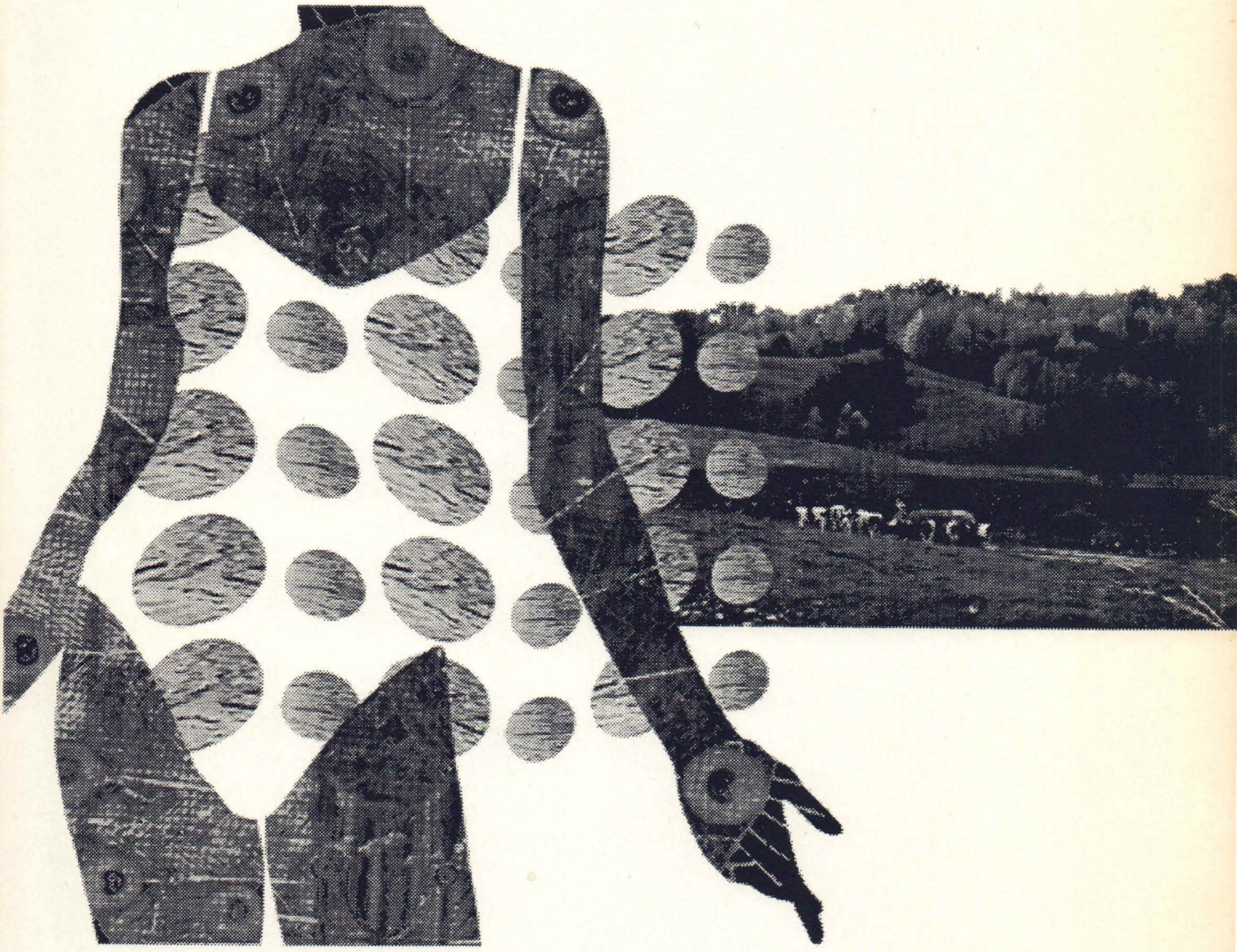


SCAN '96

From ENIAC to MANIAC

The 16th Annual Symposium on Small Computers in the Arts
The Franklin Institute Science Museum
Philadelphia, Pennsylvania
November 1st-3rd, 1996

Schedule of Events for ***SCAN '96***

Thursday, October 31

7-8pm	*Halloween Reception*
8:00	***Phantom of the Opera***

Friday November 1st

8:30	*REGISTRATION*
9:15-9:30	OPENING COMMENTS - **Dick Moberg**
9:30-10:20	*KEYNOTE:* **Bill Mauchley** My Brother, the ENIAC
10:20-11:00	**John Thompson** Platforms,Tools, And Content: The Evolution of Interactive MultiMedia
11:00-11:40	**Tom Porett** Multimedia Techniques for Websites
11:40-12:10	**Jody Sweitzer** TAB: The Philadelphia On-line Megazine
12:10-1:30	*LUNCH*
1:30-2:10	**Robert Smith** VRML Sculptures
2:10-2:50	**Kevin Gallup** Transferring New Sculptural Processes to Traditional Methods
2:50-3:30	**Judy Andraka** Pixels With A Purpose: A Case for "lower end" Resolution and Printing from a Printmaker's Point of View
3:30-4:10	**Kenneth Hoffman & David Black** The V_Portfolio
4:10-5:00	**George Thompson** Keeper Of The Flame: The Legacy of John Whitney, Sr.
8-10pm	*SCAN '96 Art Show Opening & First Friday*

Saturday, November 2nd

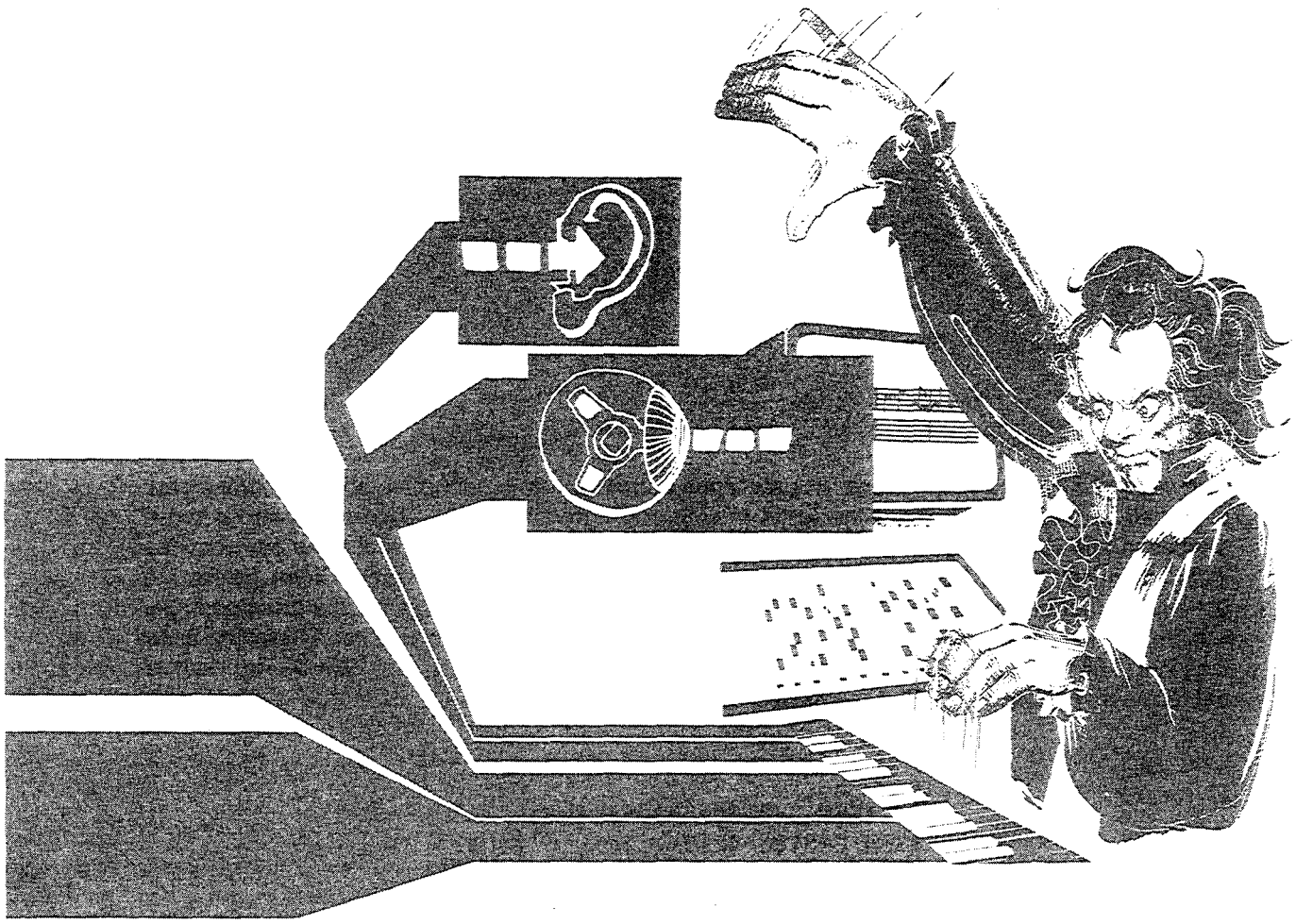
9-10:00	**Bob Finocchioli** My Very Own Silicon Graphics Machine??
10:00-10:40	**Carl Machover** Computer Art...Where It's Been And Where It's Going?
10:40-11:20	**Judson Rosebush** DNA Programming And How The Human Body Computes.
11:20-12:00	**Michael O'Rourke** A La Recherche du Centre Exact
12:00-1:00	*LUNCH*
1:00-2:30	**Bill Kolomyjec, Mary Williamson, Justine Cassell, & Walter Wright** Theory and Practice of Deconstructing Play: Play, Education and Computer Games
2:30-3:10	**Rob Fisher** Olympos
3:10-3:50	**Paul Pangaro** Personal Scan: From Room-Fulls To Hand-Fulls, A Review Of What Computing Still Doesnt Give Us, But Could
3:50-4:30	**Bill & Lynn Purse** Zen and the Art of Music Synthesis
4:30-5:10	**Herb Deutsch** Jazz Images: Worksong And Blues
5:10-5:50	**Bryan Shuler** Theremin Resurrection With the Wave of a Wand
8-11	*Saturday Evening Performances*

Sunday, November 3rd

9-10	Live Picture, **Michael Hanes**
10-10:40	**Rick Decoyte & Jeannie Pearce** The Trials and Tibulations of Digital Print Making
10:40-11:20	**Fred Danziger** An Electronically Open Studio
11:20-12:00	**Paul Badger** Filters and Plug-ins; Adobe Photoshop and Adobe Premiere
12:00-1:00	*LUNCH*
1:00-1:40	**Judy McClenning** I'm Scanning As Fast As I Can; Keeping Pace With An Evolving Concept Of Visual Literacy
1:40-2:20	**Shinya Watanabe** Internet Diary Project
2:20-3:00	**Steve Berkowitz** The Scanner As CAMERA
3:00-3:15	CLOSING COMMENTS - **Dick Moberg**

The

S•C•A•N•M•A•S•T•E•R



as he appeared on the cover of the

Proceedings
4th Symposium on Small Computers in the Arts
October, 1984 Philadelphia, PA

SCAN:

Symposium:

Dick Moberg, Founder & President
Mark Scott, Vice President
Misako Scott, Symposium Coordinator
Mark Scott, Proceedings Editor
Rick Decoyte & Tom Porett, Art Exhibition Curators
Brian Souder & Steve Berkowitz, Music Program & Performance Coordinators

Technical Staff:

Steve Beuret, Dick Moberg, Tom Porett, Brian Souder, Chuck Lutz, Steve Berkowitz, Mark Scott, Ken Kramar, Ranjit Bhatnagar, and Keith Robertson.

SCAN Board of Directors:

Dick Moberg, Moberg Medical, Ambler, PA
Tom Porett, University of the Arts, Philadelphia, PA
Steve Beuret, Videosmith, Philadelphia, PA
Rick Decoyte, Silicon Gallery, Philadelphia, PA
Rebecca Mercuri, Notable Software, Philadelphia, PA
Steve Berkowitz, Tyler School of Art, Philadelphia, PA

SCAN Steering Committee:

Dick Moberg
Tom Porett
Mark Scott
Steve Beuret
Rick Decoyte
Ranjit Bhatnagar
Rebecca Mercuri
Brian Souder
Steve Berkowitz
Nora Muñoz
Howard Byer
Sharon Heesh

THE SMALL COMPUTERS IN THE ARTS NETWORK

Presents

The16th Annual Symposium on Small Computers in the Arts

The Franklin Institute Science Museum
November 3rd - 5th, 1995 Philadelphia, PA

SCAN '96

From ENIAC to MANIAC: *the history of our future*

Fifty years ago, Philadelphia was the birthplace of ENIAC, the first electronic digital computer. Sixteen years ago, it was the birthplace of SCAN, the first personal computer arts organization in the universe (. . . it's possible!) And so,

SCAN announces
The 16th Annual Symposium on Small Computers in the Arts
in the 50th Anniversary Year of the Miraculous Conception
of the C-C-Computer.

This year's symposium will give the wild horse-eye
to the twisted pioneers and build-it-yourself inventors
of new artforms and musical instruments from the early days of the microcomputer,
and their maniacal counterparts of today
the TOOLMAKERS OF TOMORROW
and the figits who just can't use shrink-wrapped tools straight from the box like anybody else!

The16th Annual Symposium on Small Computers in the Arts

is Sponsored by:

The Small Computers in the Arts Network

and

The Franklin Institute Science Museum

With Very Special Thanks to:

Ed Wagner & the Franklin Institute Staff
Bob Kuss, (Franklin Institute T-1 Guru)
Rick Decoyte and Michal Smith at the Silicon Gallery
Kevin Chun and the Curtis Organ Restoration Society
Apple Computer, Inc.
Ranjit Bhatnagar, Howard Byer,
Dick Moberg, Sharon Heesh,
Bob Helms, (concert sound technician)
The American Music Theater Festival
Leonardo Magazine

Welcome to Philadelphia, and SCAN '96!

and

The Franklin Institute Science Museum

20th Street & Benjamin Franklin Parkway
Philadelphia, PA 19103
215 • 448 1200
email: webteam@sln.fi.edu
http://sln.fi.edu

What's at the Franklin Institute?

Feature Exhibit: Movie Special Effects

Movie Special Effects offers hands-on, interactive exploration of the magic and wizardry of Hollywood. The exhibit features actual props from "Return of The Jedi," "Terminator 2," "The Abyss," "Mrs. Doubtfire," "Batman Returns," and "Honey, I Shrunk The Kids," offering a real behind-the-scenes tour of the movies.

The Tuttleman Omniverse Theater: Special Effects...Anything Can Happen

(Four stories and in-your-face!)

Meet the visual effects technicians who create the illusion of reality on screen in ***Special Effects...Anything Can Happen***, a documentary created by the producers of the PBS science series "Nova." They've re-created some famous effects sequences from films like "King Kong," "Star Wars," and "Jumanji" for the giant Omnimax screen. You'll even get the how-to for this summer's biggest movie effect: the destruction of the White House in "Independence Day." Everyday, visual effects experts use special effects to make the impossible happen. ***Special Effects...Anything Can Happen*** shows you how.

First Friday in Olde City

The most entertaining way to see 35 galleries and showrooms of Fine Art, Antiques, Furniture, and the Decorative Arts.

"First Fridays in Olde City is the best way to show off Philadelphia"
and was voted one of the
"things about Philly you couldn't live without."
—City Paper

Local Restaurants:

Ben's
Downstairs at the Franklin Institute
Homemade soups & sandwiches, moderate prices

Milky Way Café & Scoops & Slices
Downstairs in the Atrium at the Franklin Institute

Dock Street Restaurant & Brewery 496 0413
2 Logan Square; between 18th & Cherry Streets
Good freshly brewed beer, innovative menu, medium prices

Cutter's Grand Café 851 6262
2005 Market Street
Very fresh seafood, well stocked bar, medium prices

Mace's Crossing 564 5203
1714 Cherry Street, (17th & Parkway)
Tavern with good burgers, medium prices

Morton's of Chicago 557 0724
Big, wonderful steaks, lobsters, lamb chops, tabs

Swann Lounge & Café 963 1500
Elegant lounge, creative menu, expensive

TGI Friday's 665 8443
18th & Parkway
Friday's is Friday's

Pete's Famous Pizza
20th & Cherry Sts.
Self-explanatory

Little John's
20th & Race
Pizzas, Steaks (sandwiches) and Hoagies

Wagon Train Deli
Race Street, between 20th & 21st

Cherry Street Bar
21st & Cherry Streets
The Fountain at the Four Seasons Hotel 963 1500
Logan Square, between 18th & the Parkway
Fancy Food, fancy desserts, fancy prices

Mirabella's 981 5555
17th & Parkway
Good, updated Italian, reasonably priced

Rose Tattoo Café 569 8939
19th & Callowhill Street
Good international food, moderate prices, cute place

Brigid's
24th & Meredith

Bistro St. Tropez
24th & Market, The Marketplace

Cabs are everywhere, but just in case:

Olde City Cab 338 0838 • Quaker City Cab 728 8000 • Yellow Cab 829 4222

CONTENTS

Friday, November 1st

8:30
REGISTRATION
9:15 - 9:30
OPENING REMARKS
Dick Moberg

9:30 - 10:20 *Keynote Speaker* **John William Mauchly, Jr.**

MY BROTHER, THE ENIAC

The ENIAC, finished in 1946, was the world^Rs first electronic computer. It was developed by Eckert and Mauchly, for use by U.S. Army, at the University of Pennsylvania. The ENIAC is a fascinating machine; we can now that see that it changed the world. But even more interesting is the story of the people that brought the ENIAC into this world. It took the collaboration of two extremely different young men, a philosophical physicist and a fanatic engineer, plus a team of brilliant and dedicated people. It started with a lost memo and turned into a high risk wartime contract. The story involves the pursuit of science and the clash of egos. There was a patent that got the inventors fired, got them hired, and that was ultimately given away. The ENIAC was indeed the first in the world, but more importantly, the ENIAC team showed the world how to make computers; they started a revolution.

***John William Mauchly Jr.**, Bill was born into the first family of computers; his father was the co-inventor and his mother, a programmer for the first computer, the ENIAC. His own career has woven his genetic interest in computing with the field of music and audio. He played guitar synthesizer, flute, and Mellotron in a progressive rock band, and later recorded and toured with the Philadelphia group Musica Orbis. In the late seventies he became involved in early digital synthesizers like the Fairlight, and helped start SCAN. For the past 12 years he has been designing musical instruments and DSP products for ENSONIQ, where he has participated in the design of over a dozen products, from the Mirage to the MR-61. He is currently Director of New Product Development, and is active in the fields of sound analysis and resynthesis, DSP software and architecture, psycho-acoustics, and music.*

10:20 - 11
PLATFORMS, TOOLS, AND CONTENT: THE EVOLUTION OF INTERACTIVE MULTIMEDIA
John Thompson

JT will give a survey of the development of multimedia technology, tools, and new media. The emphasis will be on the role authoring tools have played in the development of this new media.

***John Thompson**, "JT", has been active in developing tools for interactive multimedia for over a decade. He is the inventor Lingo, the scripting language for Macromedia Director and has been developing Lingo since 1988. JT is also a professor of communications at the Interactive Telecommunications Program at the Tisch School of the Arts/New York University where he has taught classes in interactive design since 1988. JT is the author of the best selling book 'The Macromedia Director Lingo Workshop", published by Hayden. JT has exhibited interactive art work internationally.*

John's book, *The Macromedia Director Lingo Workshop* is for sale at the SCAN table at a considerable discount, AND the author is on hand to sign your copy!

Friday, November 1st

11 - 11:40
MULTIMEDIA TECHNIQUES FOR WEBSITES
Tom Porett

This presentation will discuss and demonstrate multimedia techniques that may extend the dynamic character of online presentation. The talk will concentrate primarily on Shockwave technology including conversion of Director movies and the preparation of audio files for Shockwave streaming audio. There will also be discussion of Quicktime and Quicktime VR technologies for web presentation. The context of the presentation will center around the web specific art work titled "theBeautiful" [http://www.op.net/~tporett] and will include online demonstrations of the techniques.

***Tom Porett**, Director of Electronic Media, The University of the Arts, Philadelphia. Board of Directors, Small Computers in the Arts Network; Visiting Professor, School of Visual Arts, NYC (1987-93); M.S., Institute of Design, Illinois Institute of Technology; B.S., University of Wisconsin;*
email: tporett@netaxs.com, tporett@aol.com Multi/Art: http://www.netaxs.com/~tporett
theBeautiful: http://www.op.net/~tporett

11:40 - 12:10
THE PRODUCTION OF "T.A.B. MEGAZINE" FOR THE PHILADELPHIA ONLINE WEB-SITE
Jody Sweitzer

The production of an alternative "megazine" is complex, the issues are many. Ms. Sweitzer discusses her experiences in the formation of a new, wild web-site tied to a major metropolitan newspaper.

12:10 - 1:30 LUNCH

1:30 - 2:10
VRML SCULPTURES
Robert Michael Smith

will present several VRML sculptures and worlds that he has designed in the past few months for the "artnetweb VRML SIG" site on the Web <http://www.artnetweb.com/vrml>. He will also present his latest sculpture visualizations, design of Web pages for the Sculpture Center <http://www.artnetweb.com/sculpctr>, and developments with the use of CAD/CAM for manufacturing sculptures and teaching on-line.

***Robert Michael Smith** is a sculptor and 3D Computer Artist. He currently teaches at the Sculpture Center, New School for Social Research, and Pratt Institute in New York City. Smith is an active member of artnetweb, the largest Web site for art exhibitions, resources, and research projects of new media for the Web. He is also very active with the Computers and Sculpture Forum, and the International Sculpture Center. This year Sculpture magazine published two articles by Smith regarding VRML (Virtual Reality Modeling Language), and an interview with sculptors who use digital technologies. His sculptures have been exhibited extensively in the U.S. and abroad.*

Friday, November 1st

2:10 - 2:50

TRANSFERRING NEW SCULPTURAL PROCESSES TO TRADITIONAL METHODS

Kevin Gallup

(Kevin's work is represented in the SCAN Art Exhibition at the Silicon Gallery).

Things moved very fast for me in creating these pieces due to the new found capability within Studio Max. What started out being headed in one direction with the pieces, changed completely within the past couple of weeks.

What may be interesting are some of the new processes which can make these changes possible as well as recognizing how these small computers are changing the basic capability of the artist (from a sculptural point of view). The big question is how to transfer these new processes to traditional methods. For example, in my case, I was able recognize the potential of some new computer output which could greatly speed up the making of complex models, but it required changing the casting process a bit. In the case of the average artist, rendering the piece is one thing, but actually casting the piece requires a foundry, and most foundries are not real excited about experimentation with customer work. There are solutions to questions such as these but the difficulty is finding a forum to discuss and solve issues that are especially inherent to leading edge technologies. This may not be difficult for, say the manufacturing industries, but what about sculpture? You can count them on one hand with some fingers left over. The SCAN Conference fortunately is a place where this type of information can be shared.

Kevin Gallup, *currently adjunct faculty at Old Dominion University, Kevin recently set up a ceramic shell bronze casting foundry at ODU, and is exploring new techniques in casting, especially with CAD & 3D Digitizing.*

2:50 - 3:30

PIXELS WITH A PURPOSE

Judy Andraka

A case for "lower end" resolution and printing from a printmaker's point of view.

A look at the use of "dots" (mosaics, brush strokes, grain, pixels) through the history of art. This will lead into fine art today that is being done on the computer, but is not the photographic reality being made for advertising or executed on high end technical printers such as the Iris. We will look at and discuss fine art that is being done with less resolution and lower end printers. This overview will include work that was influenced at some stage by computers, but ultimately executed in another medium.

Judith Oak Andraka *is Chair of Art & Music Department, Prince George's Community College, Largo, MD., and founder of Mezzanine Multiples, a printmaking studio.*

Friday, November 1st

3:30 - 4:10

THE V_PORTFOLIO

Kenneth Hoffman & David Black

We have developed an interactive photographic portfolio web site of over 80 portraits taken in Vietnam in 1969-70. Visitors to http://icarus.shu.edu/gallery/V_Portfolio have the opportunity to add their own comments about the images, or the war. Or, they can respond to the comments left by others. Visitors have posted over 250 comments ranging in length from a few words to several paragraphs. The site is listed with YAHOO! and we see over 150 visitors a day. The portfolio is part of a multimedia project that will include photography, music and commentary from the web site.

Kenneth Hoffman *is an Associate Professor and Director of the Computer Graphics Laboratory at Seton Hall University where he supervises the curriculum in computer graphics--a program he initiated in 1984. He teaches a variety of media-related courses including motion picture production, introduction to computer graphics, computer animation and digital photography. Publications include Computer Graphics Applications, published by Wadsworth Publishing Co. and Legacy Thorough the Lens: A Study of Mendham Architecture, for which he was photographer. His animated film Leaves in Space was selected for screening at the Animation Festival of the New York Film Festival. He has an MFA and Ph.D. from New York University.*

David Alan Black *received his doctoral degree in Cinema Studies from New York University in 1989. He currently teaches in the Department of Communication at Seton Hall University, where he also serves as departmental Internet Supervisor and as a Faculty Fellow of the Center for Academic Technology. He is currently at work on a forthcoming book entitled "The Representation of Legal Processes in Fiction Film."*

4:10 - 4:50

KEEPER OF THE FLAME: THE LEGACY OF JOHN WHITNEY, SR.

George Thompson

We evolve as artists through the tools fashioned by our ancestors, which they designed to provide solutions to the questions they asked. Each generation of artists is indebted to those who pioneered not only the material means, but also the conceptual means to answer the artistic paradigm they find themselves in. To those artists who pursue an integration of the visual and aural arts, the achievements of John Whitney, Sr. serves as beacon of inspiration and direction. The intent of this illustrated talk is to explore how Whitney's vision regarding "the voices of light and tone" have left us a legacy worthy of appreciation and exploration. In this presentation, we will look at his pioneering work with analog and digital computers. We will examine the historical context of his work; the outcomes of his investigations; the necessity of his inventiveness; and the aesthetic which shaped his experimental films. The career of John Whitney, Sr. provides us a remarkable legacy! of the inventive spirit, which through linking computers to a graphic cinema not only left us his films, but a theoretical frame work from which to produce our own visual music.

George Thompson *combines his love of music, the visual arts and education through his work as an artist/educator. He currently is the Director of the Visual Arts and Music Programs at Johnson County Community College in the greater Kansas City area. His interest in John Whitney, Sr. stems from his need as an artist to understand the paradigm of visual music. Since 1985 he has employed the microcomputer to produce visual-aural recordings which have been shown at the Nelson-Atkins Museum of Art, the International Symposium on Electronic Art, the Symposium on Small Computers in the Arts and the Vision Interface/Graphic Interface symposium. His study of the theory and practice of visual music has found expression in guest presentations at SCAN, the Kansas City Art Institute and the Nelson-Atkins Museum of Art.*

5-7pm
Suppertime!

may we suggest:

an area rich in restaurants and eateries in the FIRST FRIDAY GALLERY SECTION of Olde City, where our own **Art Show at Silicon Gallery** *is situated. Located within the most historic square mile in the USA, Old City Philadelphia, once a busy waterfront district, is now a thriving art community with theaters, dance companies, art galleries and restaurants.*

*Brazils Restaurant and Nightspot**
112 Chestnut Street
215-412 1700
Brazilian Cuisine, Live Music

*Café Sorella**
314 N 4th Street
215-592 7075
Fresh seafood and poultry

*DiNardo's Famous Crabs**
312 Race Street
215-925 5115
Guess what they specialize in?

Jake and Olivers House of Brews
22 S. 3rd Street
215-627 4825
60 Microbrews on-tap, food and dance.

Old City Coffee
221 Church Street
215-629 9292
Fresh roasted coffee and snacks

*Philadelphia Fish & Company**
207 Chestnut Street
215-625 8605
A neat place for fish

*Ristorante Panorama**
Penns View Inn, Front & Market
215-922 7800
Italian food - best wine bar in Phila.

*Serano**
20 S 2nd Street
215-928 0770
Inventive cuisine - Acoustic Café upstairs

Brick House Café
141 N 3rd Street
Coffee and great foccachia sandwiches

*City Tavern**
138 S 2nd Street
215-413 1443
Colonial Tavern

*The Five Spot**
5 South Bank Street
215-574 0070
Cocktail lounge, Supperclub and Jazz

Mexican Post Restaurant and Bar
104 Chestnut Street
215-923 5233
Good inexpensive Mexican Food

*Old Original Bookbinders Restaurant**
125 Walnut Street
215-925 7027
Lobsters, fresh fish and steak

Quarry Street Café
147 N 3rd Street
215-413 1360
Coffee house, bookstore, gallery

Rococo
123 Chestnut Street
215-629 1100
The newest trendiest place in Phila.

*Society Hill Hotel**
3rd & Chestnut Streets
215-925 1919
Jazz & food

Café Pazzo
51 N 3rd Street
215-629 5878
Café, gourmet deli, pastries

Continental Restaurant and Martini Bar
138 Market Street
215-923 6069
Trendy martini bar and tapas style restaurant

Gargoyles Restaurant and Pub
278 Vine Street
215-627 9706
Good cheap eats with Creole flair

Mulberry Market
236 Arch Street
215-592 8022
Casual deli/small restaurant (they serve beer)

Pasta Blitz
212 Walnut Street
215-238 0499
Could this be a pasta place?

Ristorante Ghiottone
130 N 3rd Street
VERY popular BYO

Sassafras
48 S 2nd Street
215-925 2317
Bar and restaurant

Sugar Mom's
225 Church Street
215-925 8219
Cheap eats, real ale

*Warmdaddy's**
Front & Market
215 627 2500
Blues and food

SCAN '96 ART EXHIBITION OPENING *7pm - 10 (or so)*

Silicon Gallery 139 North Third Street

SCAN's annual art show at SILICON GALLERYone of the few in the region to showcase computer art. SCAN attendees will be treated to *First Friday*, an event in which this cluster of galleries in our "gallery row" open their shows concurrently and SCAN puts you there!

Saturday, November 2nd

9 - 10
MY VERY OWN SILICON GRAPHICS MACHINE?? THE O2
Bob Finocchioli

This new box will truly take your breath away (get it? O2?) and you won't believe the price. We will have one to take to the show.

***Bob Finocchioli**, Silicon Graphics/Cray Research, Trevose, PA*

10 - 10:40
COMPUTER ART... WHERE IT'S BEEN AND WHERE IT'S GOING
Carl Machover

Contrary to some assertions, computer art really didn't start in the caves of Southern France. But it certainly can trace a 50 year history...starting with analog techniques and moving into the digital era. Usings slides and video, this presentation will illustrate representative static and dynamic computer art from the past five decades, and suggest some things that the next decades may bring such as a viable market and the impact of Virtual Reality and the Internet. In fact..in the next decade...we may no longer talk about "computer" art....just.."art".

***Carl Machover**, president Machover Associates Corp, is an internationally recognized expert in computer graphics. He is also an Adjunct Professor of Computer Graphics at RPI, President of ASCI, Past President of the National Computer Graphics Association (NCGA),Society for Information Display,and the Computer Graphics Pioneers. He is on the Advisory Board/Panel of University of Bradford, Datapro, and the Boston Film and Video Foundation, Board of Directors of the International Society for Computational Modelling of Creative Processes (SCMCP), the Editorial Boards of "IEEE Computer Graphics and Applications", "Computers and Graphics", "Computers for Design and Construction:", "IM Information Management", "Journal of Computing and Applications", "Scanning Technology", "The Visual Computer" "Language for Design", and Chairman of the Editorial Board of the "S. Klein Newsletter on Computer Graphics". He is History Chair for SIGGRAPH's 25th convention anniversary in 1998. He has been extensively published, and has over four decades of experience.*

10:40 - 11:20
DNA PROGRAMMING AND HOW THE HUMAN BODY COMPUTES
Judson Rosebush

***Judson Rosebush** is a producer and director of interactive media and computer animation, an author and a media theorist. He completed his first computer animations in 1970 and founded Digital Effects, Inc. in New York City , the company which virtually introduced computer animation to the commercial marketplace. The Judson Rosebush Company, founded in 1986 and located in New York City, is a creative multimedia studio currently producing animation, interactive interfaces and software, QuickTime movies and editorial content for interactive CD-ROM titles.*

Saturday, November 2nd

11:20 - 12

A LA RECHERCHE DU CENTRE EXACT

Michael O'Rourke

The title of the series is a reference simultaneously to Proust's A La Recherche du Temps Perdu and to a poem by Galway Kinnell. The Proust reference points to the animation's attempt to deal with distant - in fact, uterine - memories. The Kinnell poem speaks of a man and a woman finding the "exact center" of each other through the sex act. The talk would address both the aesthetic issues that underlie the series, as well as the technical issues that were involved in the production of the series.

Michael O'Rourke is an artist and Associate Professor in the Computer Graphics Department at Pratt Institute in New York City. He was a contributor to a Clio award-winning animation and a first prize winner at the Los Angeles Animation Festival.

Michael's book, *Principles of Three-Dimensional Computer Animation,* is available at a substantial discount at the SCAN table - don't forget to get him to sign it!

12 - 1 LUNCH TIME

While you're out, grab a snack for later - good, solid day - no breaks!

1:00 - 2:30

PANEL: THEORY AND PRACTICE OF DECONSTRUCTING PLAY: PLAY, EDUCATION AND COMPUTER GAMES

- Dr. Bill Kolomyjec, Mary Williamson, Justine Cassell, & Walter Wright

We believe any computer game is educational! And we do mean all games, irrespective of genre, from Dungeons and Dragons to Toy Story Animated Storybook. We design games and we are concerned about turning our clients into mouse-clicking zombies. It isn't really enough just to notice that a game is educational. As designers, we also need to be aware of which values and attitudes we are promoting.

***Dr. Bill Kolomyjec** is the Education Specialist in the Pixar Interactive Group, a Division of Pixar Animation Studios. He is currently a Visiting Scholar in the Graduate School of Education, University of California at Berkeley doing research on Play.*

***Mary Williamson** has taught and done research in philosophy and cognitive science at Northwestern University and the University of California at Berkeley and been employed full-time in educational software development. She has published and given talks in such diverse fields as discourse analysis, interface design and critical theory. She presently works for the Interactive Media Study Group at Berkeley and is completing a Ph.D. in cognitive science.*

***Justine Cassell** is an Assistant Professor at MIT's Media Laboratory, and head of the Gesture and Narrative Language Group. Cassell studies how artifacts, such as internet agents, computer interfaces and toys, can be designed with psychosocial competencies, based on a deep understanding of human linguistic, cognitive and social abilities. Her current projects include (a) integrating gesture, speech, and facial expression in autonomous animated conversing agents; (b) generating interactive storytelling agents; (c) designing technological toys that take advantage of gender differences in children's play styles to encourage them to try new kinds of toys and new kinds of technologies.*

***Walter Wright** is no longer an illegal alien. He has a green card and is legally employed by GameFx, Arlington, MA. This is a new company designing games using the latest hardware acceleration for 3D graphics. Walter and Mary Ann Kearns have a loft in the Fort Point Channel district of South Boston which functions as a studio and exhibition space for 911 Gallery. They live, work and eat computer art.*

Saturday, November 2nd

2:30 - 3:10
OLYMPOS
Rob Fisher

The illumination of the tallest building in Atlanta during the Olympics. "Olympos" was a computer designed and controlled monumental lighting of the top of a major skyscraper. It was designed on several computer systems from Mac A-Vs to SGIs with the assistance of several highly skilled programmers at CMU to do the architectural constructions and a top lighting designer who developed a significant program for simulating the accurate character of lighting instruments mostly for the theatrical field.

In addition to the Olympic project, Rob will show several videos from the highly successful "Journey into the Living Cell" planetarium show which premiered in December of 95 and which includes some very effective new interactive technologies and scenes. He'll also discuss plans for their next production on the brain.

Rob Fisher *produces large-scale Environmental Sculpture, and is pre-eminent among computer sculptors.*

3:10 - 3:50
PERSONAL SCAN: FROM ROOM-FULLS TO HAND-FULLS, A REVIEW OF WHAT COMPUTING STILL DOESN'T GIVE US BUT COULD
Paul Pangaro

(1969) My first computer: five refrigerators big, with dancing graphics in fat black-and-white lines, cranking out movies. (1996) A pocket GameBoy has more RAM and more color, so what more do I need?

A great deal more. First off, Id like a personal computer, one that really responds differently to me than to you (Im not fooled by all these small boxes we have around; theyre just impersonal computers). Next, Id like my software to distinguish data from information from knowledge - Im sick of managing a lot of dross and confusing it with meaning. Then Id like a machine environment to be extension of myself, a medium for my purposes - all I have now is a dumb tool that I alternately dominate ("DO THIS!") or hit upside the head ("CANCEL!").

Adaptive machines, conversational interaction, and design partners are all possible, but why don't we have them yet? From a personal, historical perspective I offer prescriptions for changing the unconscious state of computing I feel mired in.

Paul Pangaro *completed an undergraduate degree at MIT in Humanities (Drama) and then worked at the Architecture Machine, Nicholas Negropontes pre-Media Lab research group. He pursued a Ph.D. in England in order to study cybernetics, and from 1981 has directed a consulting practice in the design and implementation of large-scale software environments for training, organizational modeling and team coordination. For clients such as Du Pont, Lotus and Xerox, Pangaro has brought a systems perspective to technological and social issues in the evolving modern corporation (www.pangaro.com). Now with Grasp Information Corporation, he brings theoretical underpinnings to the creation of commercial software for knowledge design in electronic media (www.grasp.com).*

Saturday, November 2nd

3:50 - 4:30
ZEN AND THE ART OF MUSIC SYNTHESIS
Bill and Lynn Purse

bring their philosophy of IMOM (In Music Out Music) to their electronic performances and seek to create music that is both artistically expressive and emotionally satisfying. They will present both their music and their approach to electronic performance in a demonstration/concert* that will utilize a laptop computer, sampling/looping devices, and a wide variety of MIDI controllers for keyboard, guitar, wind, voice and percussion.

***Bill Purse** is Chair of the Music Technology Department at Duquesne University, and was instrumental in the development of two new majors at Duquesne University; Music Technology and Sound Recording Technology. He has specialized in developing an accelerated course for mastering music notation software, Getting Started With Finale (Hal Leonard Publications). Purse is presently beta testing Finale 4.0 for Coda Software, and has integrated Macintosh music technology software into all areas of his classroom and private teaching at Duquesne University.*

***Lynn Purse** is a faculty member in Music Synthesis at Duquesne University, where she manages the Music Technology Labs and directs Paradigm, an electronic performance ensemble that she founded. Ms. Purse is an active performer and recording artist, and specializes in electronic keyboards, wind controller, and voice.. Ms. Purse is also a composer and arranger for the Carden Keyboard Method Series where she specializes in writing for electronic keyboard ensembles; her keyboard ensemble compositions are performed regularly in concert programs throughout the country.*

4:30 - 5:10
JAZZ IMAGES: WORKSONG AND BLUES
Herb Deutsch

This is the very first piece ever written using a Moog Synthesizer (composed during the pre-prototype development of the instrument, especially reminiscent of the "new music" of the sixties. DREAMSCAPES will be performed* using didjeridu, rainstick, kalimba, ocarina and shofar). POINTS OF ENCOUNTER is also a new piece for computer and trumpet & flugelhorn.

***Herbert A Deutsch** has had an eclectic career as a composer, educator, author, performer and businessperson. He is Chairman of the Department of Music at Hofstra University where he is also Director of the Music Merchandising Program, the Electronic Music Studios and a teacher of composition. His music has been performed widely and he is the recipient of numerous ASCAP and Meet The Composer awards. In 1964, he collaborated with Robert Moog on the design and development of the Moog Synthesizer. He has been a consultant in the music and education worlds to Jim Henson & the Muppets, Norlin Industries, Passport Systems Software and many others. He is the author of "Electroacoustic Music" (Belwin) "_Synthesis" (Alfred) and several other music publications.*

**The Purses and Mr. Deutsch will use this time to speak about their work. They'll reserve their performances for this evening.*

5:10 - 5:50
THEREMIN RESURRECTION WITH THE WAVE OF A WAND
Bryan Shuler

Bryan will be giving Theremin. The particular model will be one of Bob Moog's creations. He'll lecture on the history of the theremin and the renewed interest in the instrument.

***Bryan Shuler** is currently persuing a PhD in both Humanities and Ethnomusicology at Florida State University. He's a composer, performs on piano, and accompanies the Tallassee Ballet and the FSU Dance Dept. Bryan has served his Fulbright Fellowship in Ghana, West Africa as Composer in Residence to the National Dance Ensemble of Ghana*

SCAN '96
Saturday Evening Performances

Stearns Auditorium
8 pm - 10 pm

The Alarming Steve Berkowitz, Master of Ceremonies

Performances by:

Anthony Ferrara
Ensoniq, Malvern, PA

Bill & Lynn Purse
Duquesne University, Pittsburgh, PA

Herbert Deutsch
Hofstra University, Hempstead, NY

Jazz Images: Worksong And Blues
This is the very first piece ever written using a Moog Synthesizer

Dreamscapes
will be performed* using didjeridu, rainstick, kalimba,ocarina and shofar.

Points Of Encounter
is also a new piece for computer and trumpet & flugelhorn.

Group Motion
Philadelphia, PA

Dialogue
is an interactive peformance piece using "Soundbeam," an ultrasonic beam translating movement into sound via MIDI, the Yamaha SY 95 Keyboard, choreography software "Compose" and video projection. Dialogue is created and performed by Manfred Fischbeck and Beth Buck.

Manfred is artistic director of Group Motion Multi Media Dance Theater and Adjunct Professor at the University of the Arts, Philadelphia, PA
Beth Buck is a dancer and choeographer, currently working with the Group Motion Company
The Soundbeam *was designed by Richard Monkhouse and Robin Wood and is currently manufactured for the Soundbeam Project, EMS, Cornwall, England*

Ralph Lecessi
ESO • *The Electronic Symphony Orchestra*
Monmouth Junction, NJ

ESO, the Electronic Symphony Orchestra, electronically emulates the instruments in a symphony. Designer Ralph Lecessi programs twenty electronic musical instruments, and writes the parts of a symphony orchestration using MIDI sequencing and production techniques to produce realistic, CD quality live music. The visual aspects of ESO's performance are enhanced by Ralph playing all solo parts on conventional clarinet and flute."

Sunday, November 3rd

9 - 10
LIVE PICTURE
Mike Hanes

Live Picture is the only image editing application that delivers photographic quality and real time performance offering a complete set of tools to perform compositing, masking, retouching and color correction with unlimited undoes. It is fully integrated with other desktop applications and offers a flexible editing environment to help you deliver the best quality images across the broadest range of media in the shortest time. From film quality to the Internet! The perfect complement for any Photoshop users toolbox! Come see the Live Picture, Inc.'s newest applications: Overdrive and extension for Quark XPress.

***Mike Hanes** is the Eastern Regional Sales Manager for Live Picture*

Live Picture is available at a discount on the SCAN table

10-10:40
THE TRIALS AND TRIBULATIONS OF DIGITAL PRINT MAKING
Rick Decoyte and Jeannie Pearce

This presentation will explain the process of digital printmaking from two viewpoints; the digital printmaker and the digital artist. Rick De Coyte, Digital Printmaker, will talk about different methods of digital output from desktop output to using outside digital printmakers. He will also cover preparation of files, archival issues and realistic quality/color expectations. Jeannie Pierce, Digital Artist, will show some artists work who choose to output digitally. She will discuss the reasons for using digital medium, the methods of getting to the output and what the artists have to learn and go through to get to the final print.

***Rick De Coyte** is a director of Silicon Gallery Fine Art Prints, a digital printmaking studio specializing in archival IRIS (Gicleé) prints. He has been involved in the electronic publishing industry since 1981. Rick is co-founder of Silicon Gallery, one of the nations only art galleries to exclusively show digital art. He is also president of the Foundation for Computer Art, a not-for-profit corporation, devoted to the promotion of digital art and educating traditional artists and art teachers in this new medium.*

***Jeannie Pierce** is Professor at the Media Arts Department at the University of the Arts, Philadelphia, and has a BFA from Rochester Institute of Technology in Photographic Illustration and an MFA from the University of Delaware and Tyler School of Art. She has continued her ongoing education with workshops and seminars. Jeannie publishes, teaches and exhibits her art nationally and has been working exclusively in the digital medium since 1990.*

Sunday, November 3rd

11:40 - 12:20
AN ELECTRONICALLY OPEN STUDIO
Fred Danziger

The WWW affords artists revolutionary new paths to exhibit their work- and in the process, may be as important as the development of the 17th century "gallery system" in its impact. Fred Danziger is exploring these potentials. He maintains an electronically "open studio," - inviting the web audience to "look over his shoulder" as his acrylic paintings evolve on the canvas. This talk will discuss, how and why he does it, the international response he has received, and some new ideas about art, and the impact of the Internet.

***Fred Danziger** is a graduate of the Pennsylvania Academy of the Fine Arts, where he was awarded the Cresson and Scheidt Travel Scholarships for study abroad. He has also received a Tiffany Foundation Grant and numerous other awards in the course of his 30 year career as a fine artist. His work is widely published and is in the permanent collections of seven American museums, including the Philadelphia Museum of Art. Fred Danziger's web page, with its "open studio" concept, was the subject of a major article in the Philadelphia Inquirer (7/25/96 - Tech Life section) and was recognized with a "Hot Spot" award, by USA TODAY on September 5, 1996. Danziger teaches at the Art Institute of Philadelphia.*

12:20 - 1:30 LUNCH TIME

1:30 - 2:10
FILTERS AND PLUG-INS: ADOBE PHOTOSHOP AND ADOBE PREMIER
Paul Badger

One of the building blocks of image processing software is the filter. Filters are implemented in most commercial software as a "plugin" structure. This has allowed third party developers to develop many highly specialized image processing tools. I will review some of the available plugin software and show some examples of work that features a prominent use of filters. I will also review the ongoing debate in the art world as to the meaning of images made with filters and express some of my own views on their usefulness.

New tools make the creation of these plugins easier than ever and allow artists access to rapid pixel based experimentation. I will demonstrate the construction of filters for Adobe Photoshop, Adobe Premier, Fractal Painter with Filter Factory and the Photoshop Developers Kit. and provide sources for construction/programming help and shareware filters, including some of my own.

***Paul Badger** has a long time interest in both technology and public art. He is currently an adjunct lecturer at Brown University. "Decoding the Information Superhighway", his anagramatic decoding of the phrase "Information Superhighway" onto commercially available bumper stickers was displayed at Siggraph 96. A smaller version of the piece is in this year's SCAN art show at Silicon Gallery. Current projects also include "Shopper" an Internet robot for printed information retrieval and "Virtual Sex", an interactive installation for two participants involving ropes, pulleys and processed sound.*

Sunday, November 3rd

2:10 - 2:50
I'M SCANNING AS FAST AS I CAN; KEEPING PACE WITH AN EVOLVING CONCEPT OF VISUAL LITERACY
Judy McClenning

I would address the challenges associated with making art in a climate of changing technology; keeping individual knowledge/skills up to date with technology, creating artists coalitions..., equipment, difficulties in perception of the "quality" or "content" of art with variations in dots per inch, pixels, print out, megabytes of ram on your computer to play that animation.....

***Judy McClenning** is Assistant Professor of Communications Widener University*

2:50 - 3:30
INTERNET DIARY PROJECT
Shinya Watanabe

Shinya Watanabe is one of the best-known diary writers in Japan's Internet world. He writes his diary on the Internet with images (everyday, of course). This summer, he also started to organize and supervise the site called "Nikki Engine (Diary Engine)", which is to provide the links to many other diaries written in Japanese. The CGI script, he and his partner created, is providing a unique environment for readers and writers. He will describe the diary world of Japan's Internet and the site that he supervises.

***Shinya Watanabe** is currently a candidate for the Master of Fine Arts in Photography at Tyler School of Arts. During school breaks, he goes back to Tokyo where he works at Reuters, producing broadcasting news for world wide clients, including CNN, PBS, NBC, Sky and so on. In 1995, he produced an eight minute documentary on the 50th anniversary of atomic bombing of Hiroshima, which was broadcast all over Europe.*

3:30 - 4:10
THE SCANNER AS *CAMERA*
Steve Berkowitz

What qualifies as a photograph? What's a camera? Steve will investigate this topic covering such points as, varying degrees of resolution provided by various scanners, how a scanner's own light source affects the final look, the Act of Scanning, sharpening. .

***Steve Berkowitz**, Professor, Tyler School of Art, Philadelphia, PA*

4:10
CLOSING COMMENTS
Dick Moberg

END OF CONFERENCE
SCAN '96

SCAN '96
Exhibition at Silicon Gallery
November 1 - 30, 1996 • 139 North Third Street • Philadelphia, PA

Charles Colburn	*Strange Loop #2* *Tet-Cap #16*
Colette Gaiter	*Space/Race*
Richard Helmick	*Sandie as Flower Child*
David Herrold	*Paradise Burning*
Lisa A. Johnson	*Continuum* *Hubble*
Guy Marsden	*Digital Numeric Replicator MK XVI - Blue* *Moves*
Sean Nixon	*Design*
Michael O'Rourke	*Small Tears #1-6*
Jean Plough	*Vacation Planner*
Martin Snyder	*Enigma of Love(ring)* *Zeb(skateboard jump)*
George Thompson	*Art A La Carte*
Elaine Crivelli	*To Fly Away*
Jeannie Pearce	*Tool Series*
Tom Porett	*Untitled*
Paul Badger	*Decoding the Information Superhighway*
Kevin Gallup	*Digital Sculptures*

Papers:

Deconstructing Play: Theory and Practice

Mary Williamson
InterActiveMedia Study Group
4533 Tolman Hall
University of California
Berkeley, CA 94720
maryw@cogsci.berkeley.edu

Dr. Bill Kolomyjec
Pixar Interactive Group
Pixar Animation Studios
1001 West Cutting Blvd.
Richmond, CA 94804
kolo@pixar.com

> The spider carries out operations reminiscent of a weaver and the boxes which bees build in the sky could disgrace the work of many architects. But even the worst architect differs from the most able bee from the very outset in that before he builds a box out of boards he has already constructed it in his head. At the end of the work process he obtains a result which already existed in his mind before he began to build. The architect not only changes the form given to him by nature, within the constraints imposed by nature, he also carries out a purpose of his own which defines the means and the character of the activity to which he must subordinate his will.
>
> Karl Marx, *Capital*

> The creation of an imaginary situation is not a fortuitous fact in a child's life, but is rather the first manifestation of the child's emancipation from situational constraints.
>
> Lev Vygotsky, *Mind in Society*

1. The nature of play

The child playing with Legos is learning to envision an object — a doll house or a rocket — and to create it in the material world. The child is also learning that the material world will influence what may be created. This is the nature of play: it supports the development of the child's ability to *mediate between thought and action.* The child playing a game of checkers is also learning to mediate between thought and action. The game of checkers enables a *mediation* between the desire for conquest and the form of conquest (represented by the capture of enemy territory).

The terms *mediate* and *mediation*, which we use throughout this paper, are key terms in a sociocultural approach to play. The assumption underlying our use of the terms (and underlying the sociocultural theories we are relying on) is that "human beings have access to the world only indirectly, or *mediately*, rather than directly." [1] Applied to play, this

1. Wertsch, J.V., del Rio, P., and Alvarez, A. (1995) Sociocultural studies: History, action, and mediation. In Wertsch, J.V., Del Rio, P. and Alvarez, A. Sociocultural studies of mind. Cambridge: Cambridge University Press. p. 21.

means that any play event will be *mediating*, or linking, the child and his or her environment. The play event is the *means of mediation*. The play event is made up of play objects, rules of play, and the child in a social context, all of which modulate the nature of the link between the child and the environment. What about computer games, the new and ubiquitous form of play? Of course, they also support practices of mediation.

Take Looney Lander [2], a descendent of the 1979 Atari arcade game Lunar Lander and a shareware computer game seemingly devoid of educational value. *All play has educational value as a means of developing complex thinking and acting.* Let us emphasize our claim: all games and all play, irrespective of genre, including Dungeons and Dragons, Toy Story Animated Storybook, tea parties, board games like checkers, and even Looney Lander, have educational value. We care about the import of play because we design computer games and we are concerned about turning our clients into mouse-clicking zombies. We care because we live in a social world in which play is a principle way in which children take up, or become educated about, social values and attitudes. We know that it isn't really enough just to notice that a game has educational value. As designers, we also need to be aware of which social values and attitudes we are promoting.

In its present incarnation, Looney Lander promotes rapid judgment and reflexes but doesn't do much for cooperation or abstract thinking. It is appropriate for ten-year-olds or so, but not for younger kids. It could be changed, though, to promote different values or be appropriate for different ages. When we deconstruct the idea of play, we get a clue to how to go about making those changes in Looney Lander (as a design experiment) and how to go about incorporating our insights from sociocultural theory into responsible software design. In this paper, we draw on social theory to create a model of the child's world of play and use it to understand the role of play activities on a child's development.

2. Voices from postrevolutionary Russia

Lev Semyonovitch Vygotsky was born one hundred years ago, almost to the day (November 5, 1896), near Minsk in Byelorussia.[3] After 1917, he moved to Moscow and turned to the new field of psychology. For Vygotsky, following the tradition of Marx and Engels, the "mechanism of individual developmental change is rooted in society and culture." [4] His belief was that Marx's methods and principles of dialectical materialism could be applied to explain the "transformation of elementary psychological processes into complex ones." He also believed that Marx's notion of historical materialism could be applied to explain concrete psychological processes such as consciousness and behavior (i.e., could be applied to the study of the development of human nature).

---

2. A shareware game offered by MASS Productions. Game design by Tom Stromar and Andrew Reimer. Programmed by Tom Stromar. verision 0.9. ©1993

3. Luria A.R. (1978) Biographical Note on L.S. Vygotsky. In Vygotsky, L.S. Mind in society: The development of higher psychological processes. Cambridge, Mass: Harvard University Press.

4. Cole, M. and Scribner, S. (1978) Introduction. In Vygotsky, L.S. *Ibid.*

For our purposes in the following discussion of play, both beliefs are important. Vygotsky set out to describe human psychological functioning by describing the relationship between its mediated nature and its historical nature (i.e., the relationship between dialectical materialism and historical materialism as applied to psychology). He recognized that play was an important part of the transformation of the child's psychology into the adult's and that the situated and social nature of play was influenced by the social circumstances in which it occurred.

Vygotsky's description of play and development has served us as a theoretical model and as a template for design. For Vygotsky (1978), play takes on an essential role and we will describe his idea of play in some detail. [5]

3. Play is more than make-believe

According to Vygotsky, beginning around three years old, when the child starts to experience unrealizable desires, play mediates these desires by allowing the child to create an imaginary world where those desires *can* be met. For example, the child with limited control over the adult world can become a "mother" playing tea party. By taking up the "mother" role, the child realizes the desire to have increased control over real world events. In fact, in the play activity, the child often acts more maturely than in everyday behavior. Throughout childhood, play serves this mediating function between unrealized desire and imagination. It is this mediating function which allows the child to develop, while playing, important cognitive, social and affective skills that the child will use later as an adult. The historical and situated function of play is also very important. Of course, the child in another culture -- Bali, for example, or Iran -- might not play tea party. Instead, that child might chose a different game and a different role. Further, there are gender differences in play. Certainly, boys in our culture tend not to play tea party as frequently as girls.

Vygotsky introduces the notion of the "zone of proximal development of play" (we shorten this to the ZPD of play below) to describe the model in which the developmental progression of the relationships among the child and the play event is represented. It appears to us that there are three developmental domains in the ZPD of play: the cognitive domain, the social domain and the affective domain. Any play event will have elements of all three. In the ZPD Space Model we created (Figure 1 below), we represent these relationships as three mutually perpendicular axes (the bold lines) each representing a domain of development. Any play event (PE) will be found at the "point" within the ZPD space where relative measures of development intersect (in principle an infinite number).

5. Vygotsky, L.S. (1978) *Ibid.*

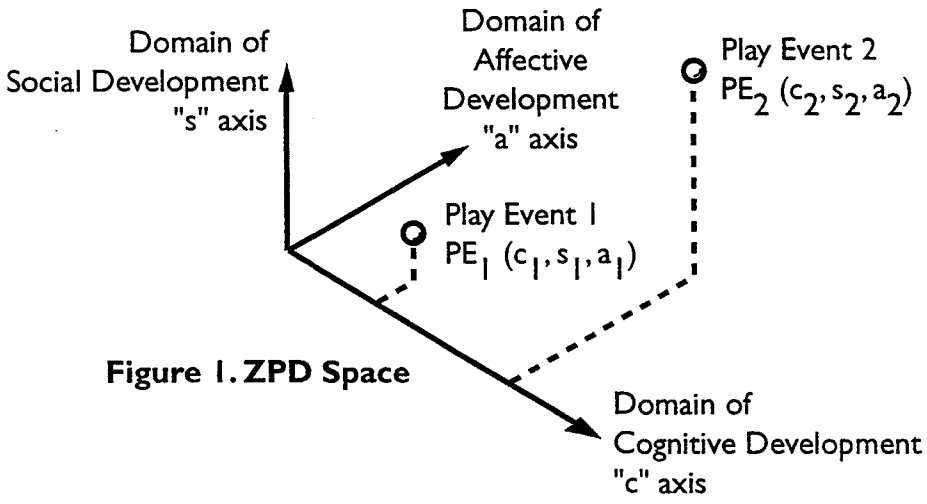


Figure 1. ZPD Space

To elaborate further, the child participating in an *actual* PE may be represented as a location in the ZPD Space Model by coordinate notation. We could say a PE is represented by PE_i (c_i,s_i,a_i) where "c_i" represents the contribution of development in the cognitive domain where play affords the development of abstract and symbolic thought, "s_i" represents the contribution of development in the social domain where play affords the development of adult social roles, and, "a_i" represents the contribution of development in the affective domain where play affords the development of the ability to defer gratification and obtain pleasure from attaining a goal.

Moveover, we conceptualize each axis as a bundle of aspects. Each aspect represents a facet of the domain of transformation. Our idea is that while playing, a child will invariably be transformed in some domain(s). We have schematized the three axes and identified some of their component aspects (Figure 2 below). For example, along the Cognitive Development axis, there appears to be a transformation in the domain of rules whereby the child becomes increasingly able to separate the rules from the objects of play. Along the Social Development axis, there appears to be transformation in the domain of imagination whereby the child becomes increasingly able to step out of character and still maintain coherent play. Along the Affective Development axis, there appears to be a transformation in the domain of goal behavior whereby the child becomes increasingly more concerned about winning and losing outcomes. We say more about each of these domains in the following sections.

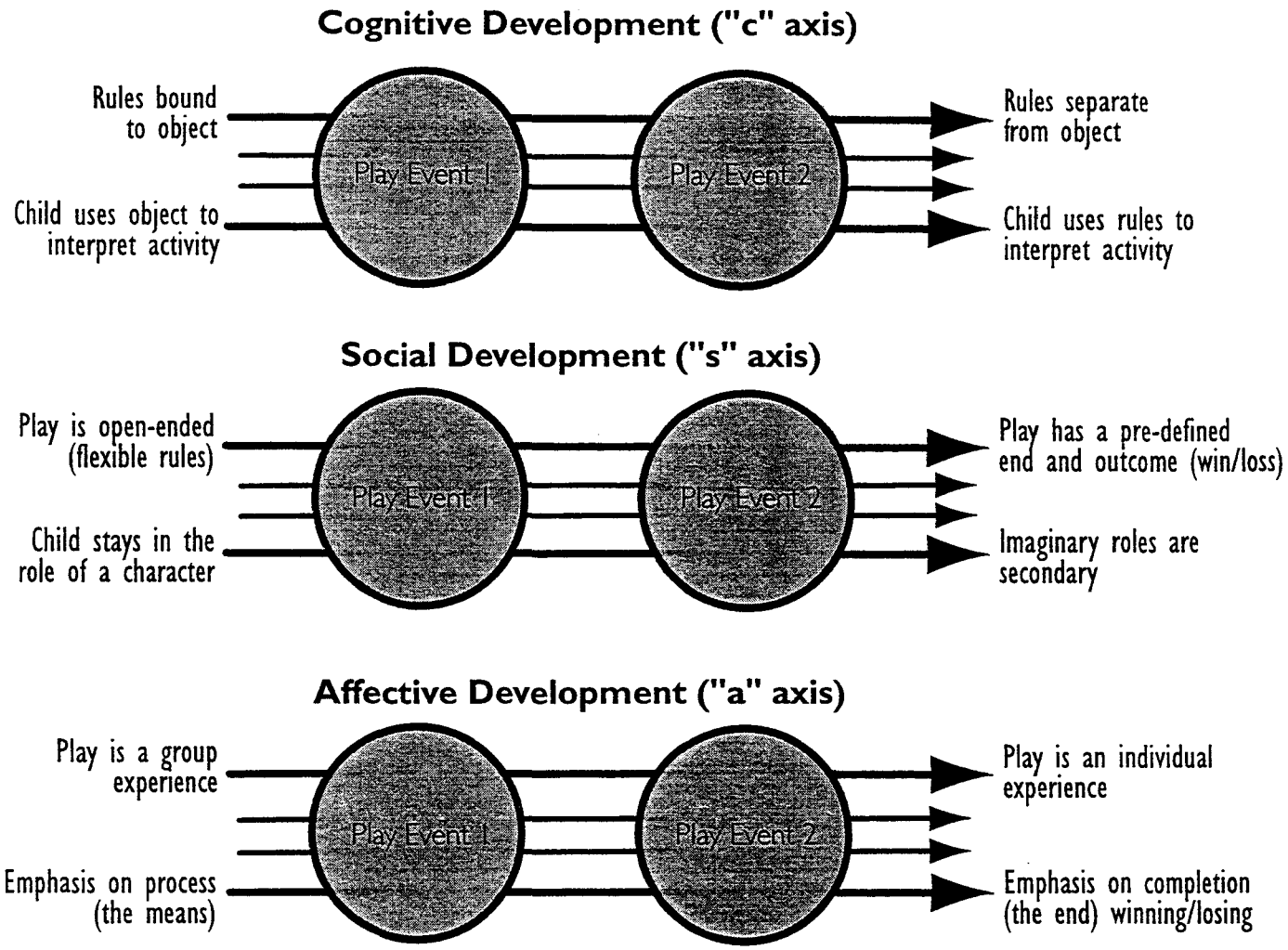


Figure 2. Aspects of axial domains that contribute to the transformation of the child

Historically, for any individual there can (and will) be many different PE's played out in the ZPD Space. If it were possible, plotting the PE's of an individual's over time would present a picture of cognitive, social and affective change. One thing we can say with certainty is that PE's will transform the child. Vygotsky's idea of a "pivot object" provides a concrete way to recognize and analyze change.

4. The progression of play and the development of thinking

Vygotsky defines a "pivot object" [6] as the object with which the child actually plays (the "play tool," such as the cup, saucer and tea pot in the tea party activity). The nature of the pivot object turns out to be quite different, depending on the development of the child, the "location" of the play event in the ZPD of play, and the culture in which the play event

6. Vygotsky, L.S. (1978) *Ibid.*

takes place. It is primarily the *differences* between pivot objects themselves, the child's relation to the objects, and the play events in which the objects are embedded which can be analyzed and extrapolated into principles of software design.

Recall our claim about the importance of play to the development of the child's ability to mediate between thought and action. The facilitation or hindrance of the developing relationship of the child to the pivot object is the key to the critique of the mediation of particular play events (and to the critique of computer games). Vygotsky describes the progression of this relationship in three ways. First, all objects take on a meaning independent of their meaning as objects (e.g., a cup is not just a cup, it is part of a tea set). However initially, the very young child will be influenced by the characteristics of the object (e.g., a stick may become a horse, but a postcard cannot). The older child will be able to take a meaning and attach it to nearly any object (e.g., a round, red piece of plastic can be a "man" on a battlefield in a checkers game).

Second, the older child comes to be guided by the meaning in the (imaginary) situation and not by the objects in it at all. At first, the pivot objects in a situation will determine the play activity (e.g., a tea set will be used for a tea party). Later, the game will determine the perception of the pivot objects (e.g., the round, red piece of plastic can be a "man" on a battlefield but it can also be a poker chip).

Third, the rules anchor play behavior and determine the shape of the imagination possible during that event. As the child matures, the rules become more abstract but also more explicit. Also, as the child matures, the rules place more (not fewer) constraints on behavior. What was observed by Vygotsky and what we have observed is that during the course of the ZPD of play, play transforms from being an "overt imaginary situation with covert rules" (like a tea party activity) to a "covert imaginary situation with overt rules" (like a checkers game). What we mean is that as the child moves from one play event to the next developmentally, the child and the play event (PE_1) become transformed from being a situationally-embedded activity with implicit and generally unconstrained rules into being a play event (PE_2) with abstract and explicit rules which highly constrain behavior.

So, would we suggest that kids playing Looney Lander are participating in a positive play experience with an age appropriate pivot object and rules that stimulate development? Well, yes and no.

5. Tea party, checkers and Looney Lander: examples of child's play

We examined a tea party, the game of checkers and the shareware arcade game Looney Lander in detail and developed an understanding of their multidimensional nature. Our description of the elements of play in these play events serves two purposes: first, it shows how play can be systematically deconstructed into elements which can serve as building blocks for educational software activities and game design; second, it shows how looking at play activities from a Vygotskian point of view can highlight cognitive and social relationships that a designer can drawn on.

The tea party is a play activity that develops at preschool age. It is an example of what may be called an "open-ended" play activity. Play begins and ends by mutual agreement without winners or losers. In the tea party activity, the child creates an imaginary world in which he or she can act out the adult social roles and participate in polite conversation during tea time. The tea set serves as a pivot object, constraining the activities to those appropriate for tea time: brewing, pouring, sipping, stirring. At least while the child remains young, the objects in the tea set actually have to be cups, plates and a tea pot for the activity to take place. Rules of polite conversation and ritual activity determine the course of play. There are conventionalized conversational topics such the day's events, complimenting the hostess, apologizing for spills, and telling an amusing story, but the content is flexible and mistakes are tolerated. Other examples of this kind of open-ended play activity include image creating software, simulations and activity centers.

Checkers, on the other hand, is an example of a play activity prototypically called a "game." It is a board game played during preadolescence (or somewhat earlier or later). It has a defined beginning and ending point and a winner and loser. In checkers, the child also creates an imaginary world. In this world, he or she can act out a battle scene in which the object is to conquer the opponent's territory by subduing all his or her men. Unlike the pivot objects for the tea party activity, however, those in checkers retain few properties of the men and battle ground they stand for. Just about any object that fits on the checker board and can rest on another object can be substituted for conventional pieces (a bottle cap, a flat rock, a penny). The rules are fixed and inflexible and violations are sanctioned. Other examples of the game kind of activity include most card and board games, adventure games and Dungeon and Dragon games.

It is arguable that tea party and checkers promote social values and attitudes, albeit perhaps somewhat sexist and imperialist ones, and promote the underpinnings of complex thinking. The child playing tea party is using the tea party objects to practice a socially defined role, practice imposing a meaning on an object (a meaning which is still largely determined by the object itself), and practice sustaining a certain type of social interaction. The child playing checkers is also practicing a socially defined role (to design and carry out a battle plan), practicing imposing a meaning on an object (in this case, the meaning is almost completely arbitrarily imposed on the object), and practicing winning or losing. What about Looney Lander?

Just for fun we downloaded Looney Lander, analyzed it al a Vygotsky and proposed its redesign. The URL for the version of Looney Lander that runs on a Macintosh is

`ftp://ftp.uu.net/systems/mac/info-mac/_Game/_Arcade/looney-lander.hqx`

The Looney Lander screen is shown in Figure 3 below. To play the game the child controls the direction and thrust of the module while attempting to land it on the planets' surface.

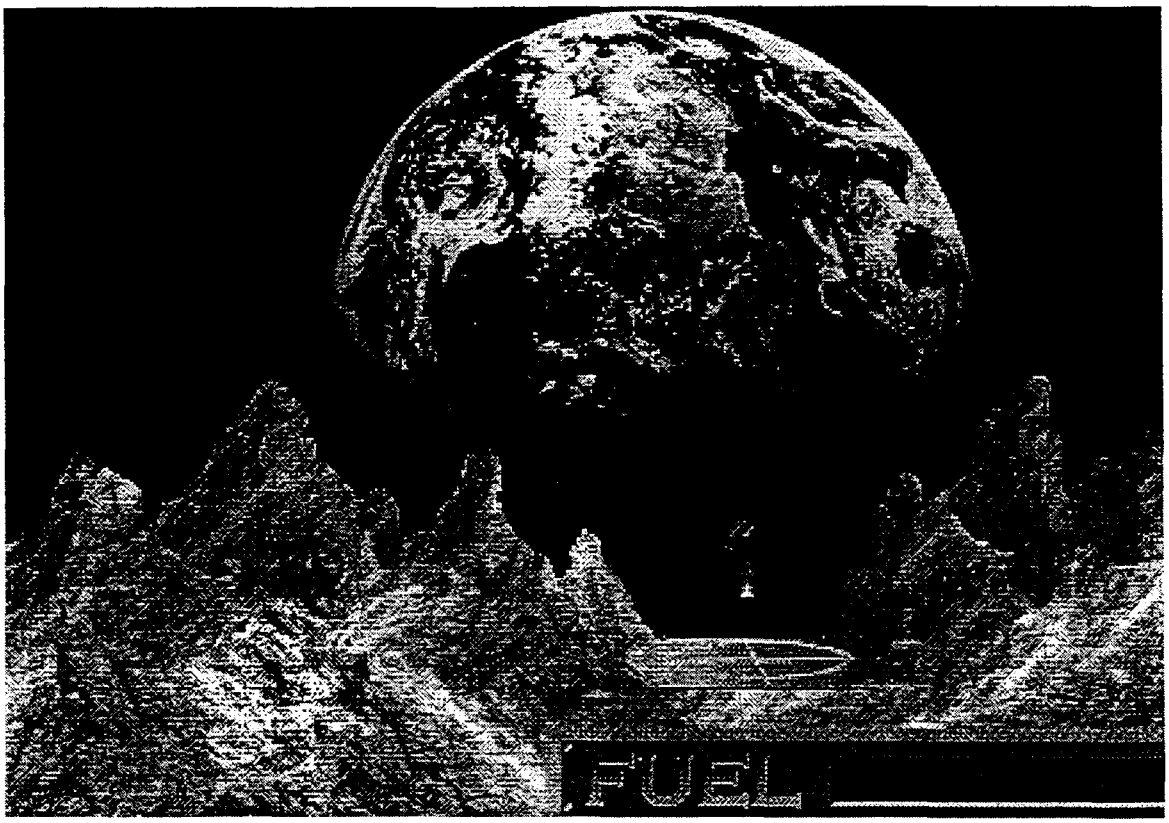


Figure 3. The Looney Lander screen

Looney Lander Game Summary

Rules: Land the lunar module safely as close to the center of the landing pad, using as little fuel as possible. You get points for doing this well. Hit the mountains and you crash. Use up all fuel and you crash. If you crash you lose a life. Lose three lives and you lose the game.

Controls: Use designated keys to control direction and thrust.

Variables: Skill level (easy, medium and hard) and the gravity constants.

First, we analyzed the game in terms of its effect on development in each of the domains we identified from Vygotsky's analysis of play. We found that:

- In terms of cognitive development, the player sustains the interaction with the game by imposing an arbitrary meaning on the objects on the screen and by following the rules. However, as in checkers, there is some connection with the objects and their meaning in the real world (the Looney Lander player will have expectations about what will happen if "gravity" is changed, for example; the checkers player will have expectations about what a king can do).

- In terms of affective development, the player experiences the possibility of success but losing is pretty brutal. We, at least, experienced few feelings of connectedness to the space creature and the moon setting. (But we think a younger child might feel more identification, see below.)

- In terms of social development, there appears to be little with which a child can identify in terms of a social role per se. On the other hand, the *lack* of a social role and social responsibility may in fact be a cultural value which the game is promoting.

Next, based on what we had observed about the dimensions in the play activities of tea party and checkers, we analyzed Looney Lander in terms of how it might be redesigned for a younger age group. To modify the game we could:

- make it easier to win, to sustain the child's pleasure and involvement;

- make losing less harsh and de-emphasize the competitive aspects of the game, since the younger child's games aren't primarily about winning and losing but about sustaining involvement;

- create more of a character for the space creature with which the child can identify, since the taking up of social roles is an important element in the young child's play;

- alternatively, we might make it *less* easy to identify with the creature so that the child doesn't feel so bad about hurting it;

- make the rules more intrinsic to the space character and less abstract, since the young child will expect the rules to be more concrete;

- enable the child to restart the game at any point, to overcome frustration and to give the younger child more control over the game;

- create a couple of creatures, who help each other, in order to model a social behavior for the young child, and

- make the game two player to facilitate interaction with another child, parent or able other.

6. Conclusion

Following from our interpretation of Vygotsky, we have described the abstract dimensions of play, presented some instantiations of these dimensions in the tea party and checkers examples, and critiqued a very simple computer game. We hope that we've shown that by creating our Model and by applying it to existing games, we can develop insight into their underlying influence on the child's development and we hope that we have shown that we can use this insight to direct design.

The play tools created and used by children in play *already* serve cognitive, affective and social functions. However, including an understanding of culture and the social world into the theory and practice of play isn't simply a matter of "tacking on" more elements to the design process. Human beings create and use tools, including play tools, as an intrinsic

part of human thought and action. Indeed, as Michael Cole has put it, it has previously been recognized that "he mediation of activity through artifacts... is the fundamental characteristic of human psychological processes" [7]

Through our efforts, we want game designers to recognize the critical importance of play to the process of acquiring social and cultural value. We believe that our Model will fit play activities and games developed for diverse cultural contexts. We also believe that it is socially irresponsible to be unaware of the social and cultural values we are promoting.

7. Cole, M. (1995) Socio-cultural-historical psychology: Some general remarks and a proposal for a new kind of cultural-genetic methodology. In Wertsch, J.V., Del Rio, P. and Alvarez, A. *Ibid.* p. 191.

A Method of Creating Actual Models From 3-D Objects Made With Animation Software (It is also cheap and easy to use)

Kevin Gallup

It seems that each year in the past decade has resulted in increased capability of the small computer that has dramatically changed the direction of my sculpture work. In part, these changes in direction have been due to one of the great benefits of being an "artist", which is the pursuit of one's work that may ride along or even push the leading edge of technology and innovation. There is also the pursuit of attempting to get the most bang for the buck in creative capability, and as is the case for most artists, much of these new technologies are astronomically priced. The general trend and cycle of technology is that prices go down and power goes up in the capability of these technologies.

In the case of the process for this paper, the drawing capability of animation software plus an unfolding software residing within a CAD software makes it possible to create paper models of 3-D objects within a reasonable budget. There have been "unfolding" software around for a while in the form which manufactures would use to create an object such as a bracket or ductwork, but most of this software is quite expensive and not very user friendly. This particular software from Pentari called ProtoForm (Pentari, Inc., P.O. Box 1001, Vashon, Wa. 98070) was $200 at the time of release and was expected to cost $500 later.

For some time I have been looking for a solution to create 3-D models from the following criteria: to be inexpensive, easy to use, and eliminate some of the steps in the casting process. I have found that this process has a number of features for other applications that make it's capabilities known to those outside my own particular interests worthwhile. In the past few years I have created objects for computer models in a variety of ways. Methods such as developing cross-sectional views that make templates that can then be used to fabricate an object would require a thorough knowledge of CAD software (also requiring expensive software), not to mention skills in fabrication. I have also used a process called stereolithography, which "grows" an

object from a computer file. This is quite expensive, requires a high degree of proficiency using expensive software, and can create an object of limited size. While these two methods have their own unique capabilities, especially making a very large or very small object, they are generally out of reach to the average person due to the expense and expertise issues.

This is where the unfolding capability will be of interest to those interested in making a physical model of their computer models. It takes very little training to make successful models, the computer power can be relatively low, and the output devices can cheap.

Before addressing those issues, one might ask what the importance is of making paper models of 3-D objects. Why would someone want to make something out of paper rather than the traditional sculpting methods such as plaster? For my own purposes within the bronze casting environment, there are certain shapes that the computer coupled to animation software can create, but would difficult to make. This can be seen in some of the figures accompanying this article. The animation software today offers a freedom in conceptualization that is incredible. Currently, I am using Studio Max which has the ability to create models and just as importantly, be able to view the model in a very complete manner. This means that I can create the model on the computer, see the model in a very realistic manner, make changes to that model, and output that model to assembled with inexpensive materials. This allows several advantages over traditional methods of sculpting. First, I can make the object at any scale; it is a quick change to increase or decrease to scale of the object. Secondly, there is the elimination of a costly and time consuming mold making process (not to mention the space and inconvenience of mold storage). The most important aspect though, is the speed at which the object can be produced. Being able to view the object on the screen and making adjustments is quite easy compared to corrections made to an object in processes such as working with plaster. The computer to folded pattern process allows a fast conceptualization process as well as a fast assembly time. The resulting paper model can then be manipulated into a suitable form for casting in bronze. For those of us that have spent many an hour of labor in sculpting clay or plaster, only to find that the shape is either "dead" or inappropriate, the thought of being able to send the object to the trash heap is hard to deal with (I have many models collecting dust that should be tossed). It is much easier to throw away a paper model with low hours of investment.

Aside from interest I have for my own work, there have numerous situations where I found this process to work well. Since the output medium is paper, this has been useful for students in classes such as 3-D design an sculpture. In a typical 3-D design class, students are asked to create models that exhibit structural capability as well as compositional components. With this process, the students can arrive at some fairly complex solutions without some of the agony that is associated with the traditional methods making paper models. With the traditional methods, the ability to cut and glue a model that ends up looking as expected can be difficult and met with a great deal of anxiety when a deadline is looming. The unfolding approach allows the conceptualization to occur on the computer and a relatively simple assembly period. Sculpture students have found the process useful in a number of ways. When attempting to assemble a number of pieces of cut sheet metal into a shape can often result in an object that is nothing like the intended form (which can be good or bad- most likely the later). With this process, success in arriving at the intended shape has a much greater rate. This ultimately means the students will have a higher interest level when successful pieces are accomplished.

This unfolding software from Pentari was originally intended for use by architects to construct models so as to view a physical form of their computer models. There are many who would like to make 3-D objects and have some computer skills but not many physical skills. This process can allow those individuals to make some really cool stuff that will be the envy of those so called expert craftsmen. So what type of computer system and software does it take to operate this system? The following is a list of requirements:

A. Animation software that exports a DXF or DWG file.
B. The Pentari "ProtoForm" software.
C. AutoCad version 12 or 13, DOS or Windows.
D. Output device (printer or plotter)

A. Software such as Lightwave or Studio Max are great tools but require a fairly steep learning curve. They also require a lot of computer power. There are may less expensive software available that can produce good results. CAD software can also be used as a drawing tool, but tend to be more cumbersome than animation software for general drawing and conceptualization techniques.
B. There are other "unfolding" software available, but this product is probably the cheapest with the most user friendly aspects involved. Some of the features include:

automatic unfolding, labeling of edges to meet, glue-tab features, and manual decisions in the pattern process.

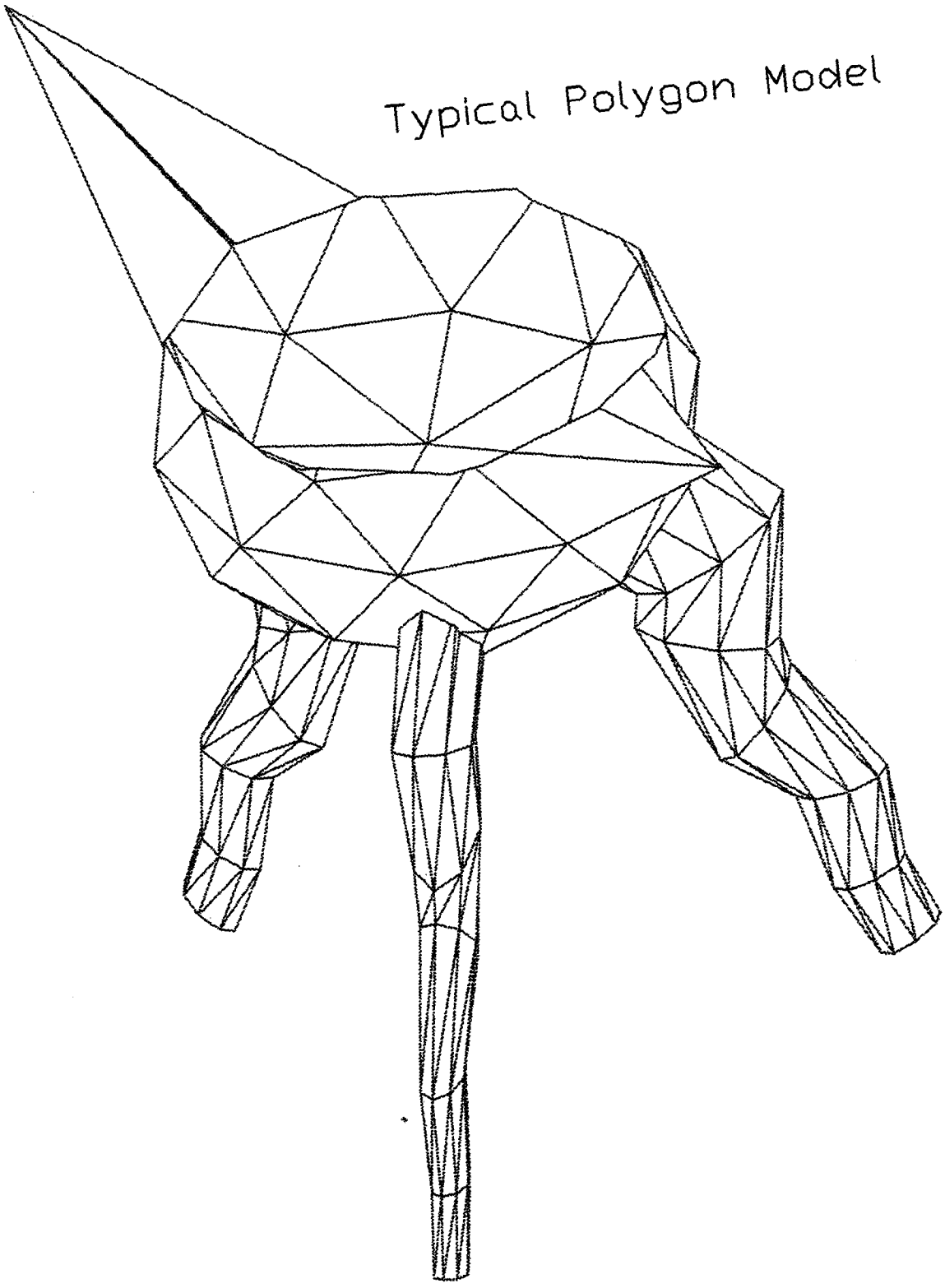
C. The Pentari product "resides" in AutoCad, so you must have this CAD software to operate ProtoForm. You can buy AutoCad R12 very cheap these days.
D. The larger the printer or plotter, the larger the pattern that can be created. If you don't have a large plotter, there a usually plotter service companies around that can give you output for a reasonable cost.

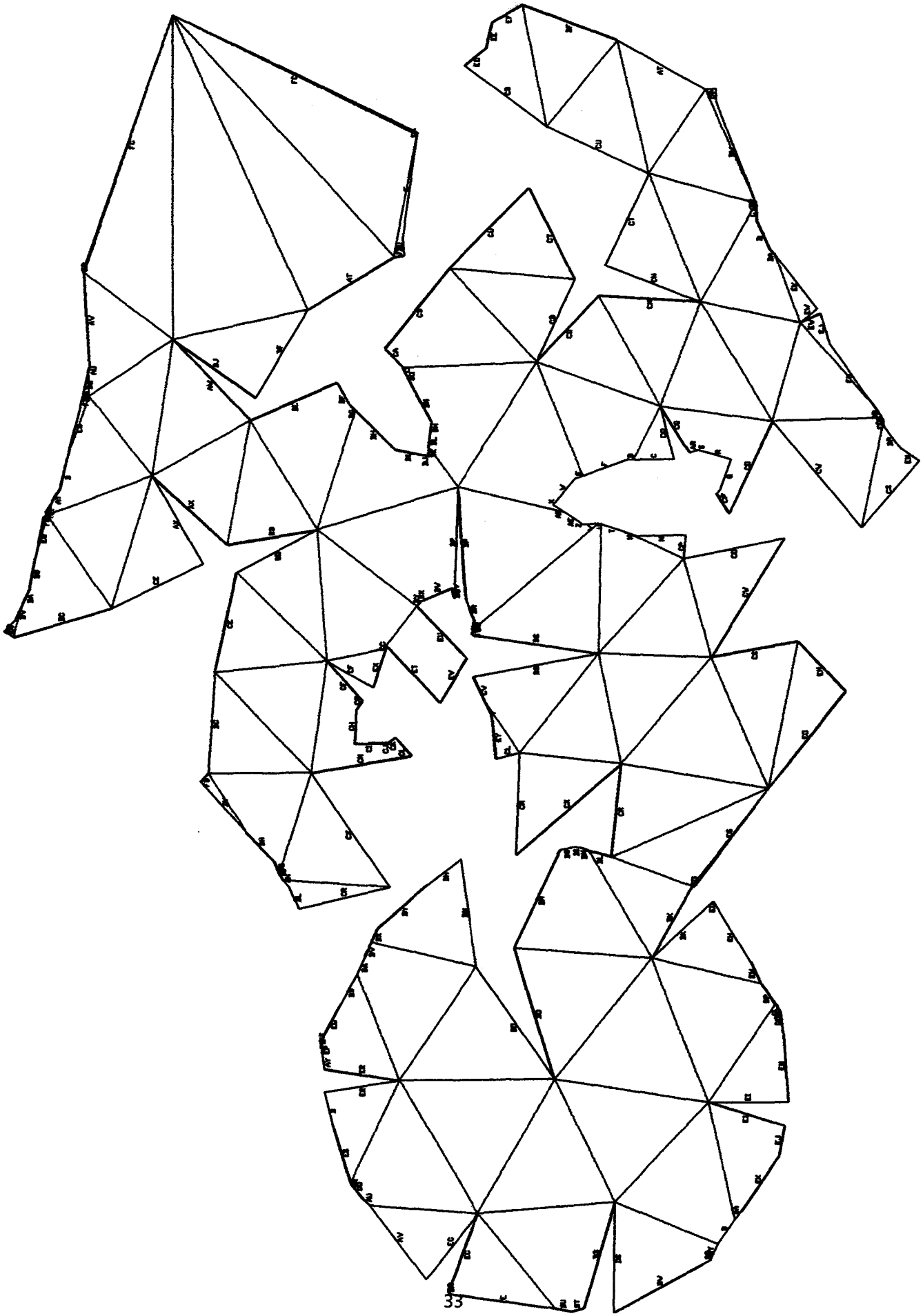
The basic process is this:

A. Drawing with an animation software that can export a DXF or DWG file and create an polygon object that has surfaces (usually automatic with animation software).
B. Bring the DXF or DWG file into AutoCad with ProtoForm installed.
C. Within a few commands, the object is converted into a flat pattern with the option of labeling sides that meet each other and gluing tabs.
D. Cut the resulting pattern out, score the bending lines, and glue the pattern together. I usually glue the paper pattern to a stiffer layer of cardboard to give more rigidity.
E. The resulting pattern can then be coated with fiberglass or wax to be cast in bronze.

For those that feel the word CAD means an unacceptable learning curve, the process of converting a DXF or DWG file into a pattern can mean only having to learn a few essential commands.

Kevin Gallup
1532 W. 38th St. Apt. 2
Norfolk, Va. 23508
(757) 440-1216
kgallup @ series2000.com
http://www.series2000.com/users/kgallup


Typical Polygon Model



VIETNAM WAR INTERACTIVE PORTFOLIO

Kenneth Hoffman, Ph. D.

The purpose of the *Vietnam Interactive Portfolio* project, funded by the Seton Hall University Research Council, is to collect comments and reminiscences about the war in Vietnam. Visitors to the Web site may record personal experiences, thoughts, or feelings about the war, as well as respond to the comments left by others. Since its inception in April of 1996, approximately 6000 visitors have visited this site, representing over 50 foreign countries. Of these visitors, over 250 have left written commentaries. These typically range from a few words to several paragraphs. The photographic portfolio acts as a catalyst to promote discussion and to provide opportunities to respond. Using the Internet, I have brought together a larger community of people interested in the Vietnam War—including veterans, students studying the War, Vietnamese (born in this country and in Vietnam), relief rkers and Vietnamese scholars.

Publication on the Internet is like leaving your gallery door open 24 hours a day. You never know who might drop in or what their perspective will be. A serviceman who did a tour of duty in Vietnam stated that: "this very special page will help so many in different ways I personally want to thank you for the time and caring..I was a grunt medic with the 25th division in Cuchi in 67/68.." A Vietnamese American stated that the "Vietnam War is part of my history. It's what has made the present Vietnamese culture. Personally, it's an essential part of my psyche—i. e., who I am... Every now and then, I come back to this page and show the pictures to my family members...They speak much to all of us, living so far from home."

The *Vietnam Interactive Portfolio* can be found at "http://icarus.shu.edu/gallery/V_Portfolio". It contains over 80 photographs taken in Vietnam between 1969 and 1970. Categories include Children, Montagnard Tribesmen, Military, Vietnamese people, Protest & et cetera, and Shrines. The site is managed by Dr. David Black of the Department of Communication, who is responsible for the interactive messaging system. The photographs were taken between June 1969 and June 1970 while I was stationed in Vietnam in the Signal Corps. The site was recently selected by the *Chronicle of Higher Education* as its Web site of the day. A reprint of the *Chronicle* review can be found at http//www.shu.edu/~hoffmake.

Once the commentaries have been collected, I hope to create an expanded multimedia project that will include photographs, reminiscences, narration and music of the region. My goal is to show how people living through the war remember their experiences during that period. The cultural significance of this project can be summed up by a Vietnamese scholar interested in preserving this period in Vietnam's cultural history who said, "The atmosphere, the settings, and the life of the time, (we) are losing fast, and we'd like to put them on CD-ROM for preservation purposes. Whatever portrait of humanity we may be able to capture, however incomplete, may be a great education to the children that follow." The commentaries have given my photographs diverse voices, and I hope that this collaborative effort will expand our understanding of the experiences of this war. The following are samples of commentaries received to date, illustrated with photographs from the portfolio.

"Cherished Memories"

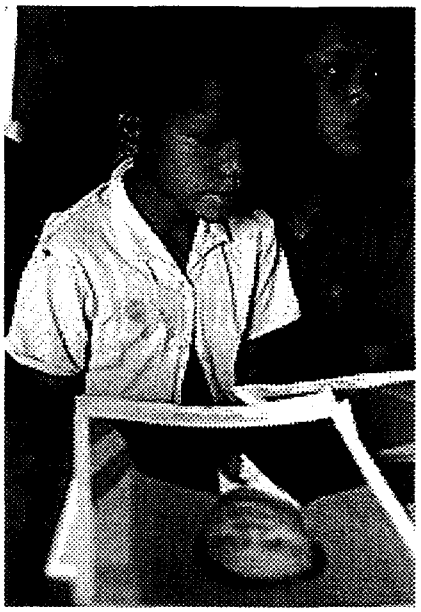
The question is why (look at the pictures)? The answer is simple, I cherish the memories of fallen comrades and those who survived. Check out the backpack, ammo, and weapon; I once carried a home like that on my back. I once protected my life and those of my friends with that little black firestick. Friend, I grew old in 18-months in Vietnam. A part of my heart and soul remains there, to this day. I have no apology for my actions or service in wartime; I simply chose to do the job. The soldiers who served had no part in the fall of the Republic of Vietnam. We were young, we were scared, we were lonely, we were dirty, leech-infested, crying, bleeding, dying and, yes, killing. It was war and that's not a pretty sight, but we remain defiant and PROUD. I refuse to bow my head to the politicians who betrayed us and the Vietnamese people. We have walked the hard road; I CHOOSE to REMEMBER! Those who served deserve that reflection. Those who took the other fork in the road will never understand. (Larry Ash)

"Simple"

I see so many faces of tired boys, I imagine their hearts like Worn baseball gloves, Holding on to detonating emotions Held against the chest. Maybe to save a buddy. Maybe to save themselves From the hell of coming home To

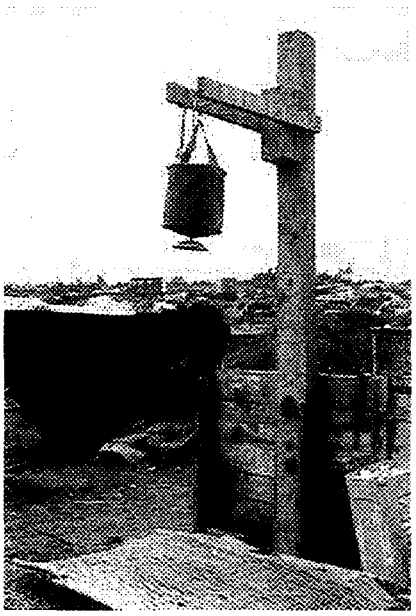
spit and venom, I know that there is no peace Until hell's been visited And the demons have Done their dance inside this mind, This life Like a tribe of Indians Around the fires of imagination, Reality, But what is real in this life Of velveteen love and Charred hope... It's all very simple, No, Really...(J. Marcus Weekley)

What US soldiers went through in Viet Nam is not, and never should be taken into consideration as to why the US lost the war. No reasonable person doubts their hardships. The war was lost because the US troops had nothing to fight for, nothing to win. The Vietnamese people did...It was another instance of one mass of poor people killing another mass of poor people so the rich could get richer. LBJ and the American corporations got rich off of this war...Poor people on both sides fought it...The average American citizen gained not ONE DAMN THING! (Dan McCarthy)



Your response is, by far, the most sensible one I have seen. I am a former North Vietnamese linguist and had the rare opportunity to gain an insight into the motives of both sides. It is obvious you are extremely intelligent. It is unfortunate that all sides did not see things so clearly in the past. I often wonder how Nguyen Cao Ky feels now, after having said he would never leave his homeland, that he would fight, yet when the time came, he, like so many other leaders who could have stayed, left. I am not arrogant enough to think I know all angles of the conflict, but I know that the men and women in the field did the best they could under the constraints they were placed. Had the South Vietnamese soldiers had better leaders, had the US stuck to advising and not fighting, they would have faired much better...taamj bieetj anh, (CMSgt Ron McMasters)

The true reason that America could not win the war in Vietnam does not really have anything to do with who was supplying weapons to the Viet Cong and it was not because of the ununited America at the time. To put it simply, it was a civil war where the people fought for what they believed right...There are many factors to why America lost in Vietnam including Chinese weapons and brilliant military tactics that were perfected by General Giap and the Viet Cong, but if `you want to know the TRUE reason America could never have won in Vietnam it is simply that they would have had to kill every Vietnamese to do it. The Vietnamese were fighting for freedom, regardless of what they received at the end of the war, they were only fighting for a FREE Vietnam!!! And that alone is why America COULD NOT have won! (TRAN VIET SANG)



You are wrong. How can you possibly know what went on in the Nam? Did you leave good buddies behind in black bags? I doubt it. (Anon)

You're a bit premature with your thoughts, my insensitive friend. You're not alone with your pain of losing your comrades. But did you ever stop to think that while he may not have lost his buddies, he may very well have lost members of his family, maybe even to the guns of the Americans. I think about the only part he may have been confused on was the part of General Giap being a genius. As a tactician, his methods were antiquated. He caused the deaths of over 100,000 North Vietnamese troops during the Tet offensive. Had it not been for the US reporters covering the offensive and showing it to the American public, the US wouldn't have even blinked at the battle, other than to congratulate themselves on the hard-fought victory. Giap was saved by the media, which turned the tide and scope of the war. (CMSgt Ron McMasters)

It's been 30 years and there isn't a day since, that I don't think about it. (John Thomas)

"All in the eyes"
The eyes of the children tell more than the surroundings they are in. I see eyes that do not understand, eyes filled with terror, and wonder. The eyes are the gateway to the soul. (Jean)

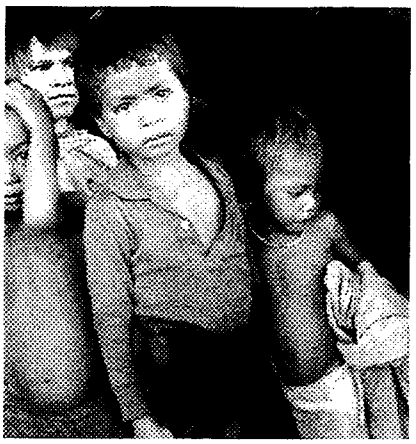
It could have been me...
I was born in Saigon in January 1972. How my two brothers and I managed to come to America is purely a miracle of God. We were adopted by an American family. If it hadn't been for their love, these pictures could very well have been of me or my brothers.
As I gaze at these frozen moments in time, I feel ashamed that others weren't as fortunate as myself. Utter helplessness can only describe my thoughts. I want to reach out and share my comforts with those tear-wrenching photos...
A man who doesn't know his own heritage...I am lost...looking at these "windows" on my past helps bridge the deep chasm of solitude. Isn't it ironic, how war raped my homeland, yet I now am part of that machine? Yes, I serve with the United States Army, and I am proud of what I stand for. Maybe I can make a difference in this world...even if I can't, I will forever try. Those pleading eyes are my inspiration for life. (Tuan)

"People don't want to remember!"
When I showed these pictures to my family, nobody cared. I was shocked when I saw these photos, either my family is desensitized or that they are too American to care anymore. I was not there, but I read about it in history books and, saw movies on the "War" but I knew there was more to it than that, this site has showed me more than any history book, thank you! (Michael Nguyen)

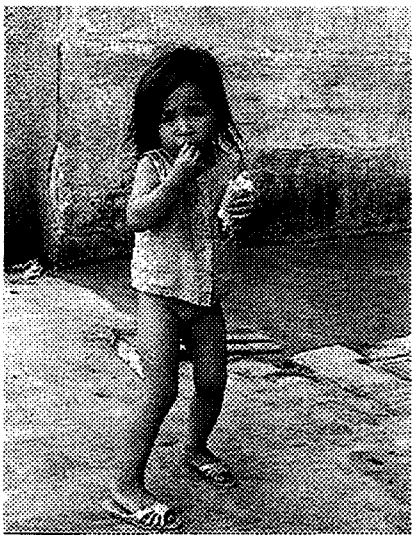
"Where are they now?"
I wonder where these children are today? Some might have survived. Some might have died... Either way, I hope they finally have peace... Thanks for the memories... (Unknown for now)

"Trust"
I have heard that some kids could not be trusted. They would work for the other side under threat of death. Pretending to be friendly and hooking a granade on your belt when you turned around. Some American soldiers were forced to kill children in order to save themselves. (Marcus Haward)

"Trust"
First of all, those pictures remind me of my childhood. I was just one of those children in a village in Danang between Monkey Mountain and Marble Mountain... Talking about "trust" and "untrust", You heard wrong, I think all those Vietnamese children were just children, and children are trustworthy. It was a pity those children grew up in war, I think they are just human, please don't differentiate children (in) war from other children. (Joseph Si Nguyen)



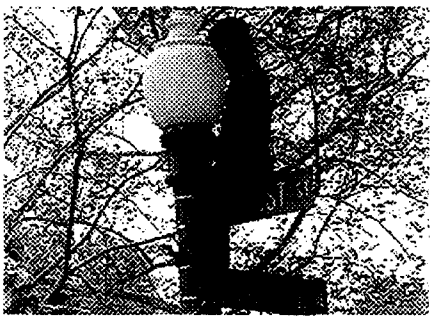
"Trust"
When we speak of "trusting" we must remember that these children who fought and played a role in the war trusted the adults who told them they must do such things. Imagine being told as a child that you could be a hero, save your country if you participated in a simple game. To us children the war was a game. We had no concept of what our actions would lead to. We were doing what we were told was the right and honorable thing to do. You cannot blame children for the deaths of your soldiers, but you can blame the war that drove children to kill, or the American government which sent the soldiers in the first place... (Dinh thi Phuc)



The past is never forgotten! Canada is the only home I know (for 22 years) but I'm eager to discover my Vietnamese root ever since my parents came over. It's a matter of balancing out your life between two cultures and to never forget where you're coming from and where you are now!!! Those pictures touch me because they are not old ... those scenes still exist. Vietnam will experience another suffering with the rising population and the unchecked economy. Thanks, (Sebastien Do)

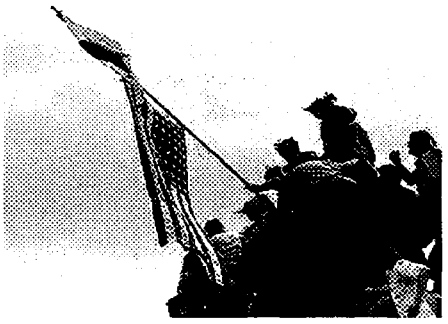
"Complete Adoration"
I have already sent a personal letter to Mr. Hoffman regarding my reaction and feelings on his beautiful archive of pictures, but wanted to tell anyone else who would listen as well. I am merely an ignorant 16 year old girl, and yet the country of Viet Nam has fascinated me for years: the people, the language, the history, the legends, but most of all, the children and the country itself. This collection of pictures, moving, heartbreakingly sad, and all extremely beautiful have touched me deeply. Thank you for sharing them with us.
(Cassiopeia Hultin)

"Thanks from the next generation"
The 58,000 killed in action, to the hundreds of thousands who served and those who were wounded: all honor to their names. I was in diapers for part of the war, but the respect and thanks I feel toward Vietnam veterans can not be put into words. I have bitterness for many of the protesters who, when the draft calls dwindled in the early 1970's, suddenly disappeared and forgot about the war. I feel many claimed that the war was immoral, but actually just did not feel like going. Many just cared about themselves, not morality. I feel America had a contract with those who fought: serve your country and the country will serve you. But the contract was broken. Wounded veterans returned from Vietnam and saw those who stayed had advanced in their jobs, had cars and houses. They could brag about their actions, while many veterans were forced to feel ashamed. I have noticed times have changed for the better and I am glad. (CPT Pike)



"Agreement"
I must say I agree with the protests. The armed forces never should have gone and should have been returned to their families. They were treated badly when they arrived home. I have heard the stories from my family and my family's friends. If I would have been in that era, I too would have been in the streets, at the capital, and anywhere else I could have gone to protest the safety and the return of our troops. (Kelly Peter)

Hi Kelly,
Thanks to you and those Vietnam war protesters that had helped stop the war. Thanks to you that hundreds of thousands of south Vietnamese boat people(600,000 estimated by UNHCR) had died on the open sea trying to escape from their beloved land since the collapse of Saigon(1975). Thanks to you that thousands of south Vietnamese officers have been vanishing from the concentration camps in the jungles. Thanks to you that the boat people- were once fought bravely along side with your countrymen against the communists - are being sent (against their will) back to the communist paradise....I've heard some people like you saying that The US has nothing to do with VN, so why send troops there !!?? why die for those people !!??...Sounds logical...but people never impose this same question to other countries : Tell me Kelly, What does the US have to do with Thailand, Singapore, Philippines, Korea, Japan, U.K, Germany...etc..?? Why is that VN a special case ??!!! Kelly, go take the streets, go to the capital to protest the safety and the return of your troops from Korea, Thailand, Japan, Singapore, U.K, Germany ...(you got the idea) because you know that your troops are not on vacation in those countries. If war breaks out, they just die just like they did in VN. I was born, grew up and lived through the war. I'm myself also a boat person who left behind all the loved ones to find a place to live. I know what it is to be a loser in a war. I know what it is to be betrayed by your friends who sell you out to the enemy. To you Americans, the war was over and that your troops went home safely, but to us the south Vietnamese people, the war is still here with us and back home in Vietnam. We haven't stopped fighting yet for a Vietnam with freedom and democracy. And I'm proud of those who served as well as who died in Vietnam. God bless America. (John Nguyen)



"I would have voted for Uncle Ho"
I would have voted for Ho Chi Minh. I was Viet Cong. I wanted my country together. When the peace was made at Geneva in 1954 it was promised that fair elections would be held and my country would be unified. This did not happen because of the United States intervention. I grew up resenting the United States...I now live in America...Only now since the Soviet union has collapsed can American officials look back and say "the Viet Nam War was a mistake." I have heard the Viet Cong referred to as "dickless bastards" and "f--king slant eyes." After the war by people who did not realize I was one of them (of course one half of the first insult is true; I am female). The resentment is still there. Let me say this : I fought for a noble cause. The methods of the Viet Cong may have been unsavory at times, but so were the methods of the Republicans and the Americans (Need I mention My Lai?). I have killed, yet I could just as easily have been killed. To say that either side was inherently good or evil is wrong. We both did what we felt necessary at the time...For many people in Viet Nam and in the United States the war continues every day of their lives. It is fought with their minds and with their hearts. Let us end it. Now. Until this can happen our whole country is a Prisoner of War, a victim. It is time for us to stop being the victims and become the victors. (Dinh Thi Phuc)

Art on the WEB
Fred Danzinger

This paper is presented along with a presentation given in November 1996 at the Franklin Institute to SCAN (Small Computers in the Arts Network)

The main points covered include:
*Previous major shifts in the relationship of the arts to society
*Why the Internet is potentially another major shift
*The authors personal experience and "open studio" project
*The impact of the project on his work
*A prediction for the future and why it is important

Precedents:
In the sixteenth century, crowds of people filed into the Vatican Library, to watch as the artist Raphael worked on his famous frescoes there. Artists like Michelangelo, were seen as national heroes, the "superstars" of their time. His famous "David" sculpture was done for a public square. Art was woven into the everyday lives of Renaissance people. In the seventeenth century, something revolutionary happened in Holland. Because of an emerging middle class, made possible by Dutch exploration and trade, there were new possibilities for artists. The members of this expanding economic group wanted some of the same things the aristocracy had had for years- and one of those things, was art. To supply this need, the gallery system was invented! No longer were artists limited to royals or the church for their patronage. Artists now created their works "on speculation" -not just on commission. Market "taste" became a factor, and meticulous still life paintings of flowers and tables piled with food, as well as beautifully observed landscapes, filled gallery walls, waiting to be purchased. Unfortunately, with an expanded market- the number of artists also expanded, and that period is full of stories about artists like Frans Hals and Rembrandt van Rijn, who died virtually penniless.

Other major shifts in the art world include the advent of inexpensive photo-mechanical color reproductions in books about artists. Most "famous" artists today, are known because of reproductions of their work, not because of mass exposure to the actual pieces.

Relationship:
What does this have to do with the Internet? It is possible that this emerging technology will create equally new outlets for artist, and new involvement of the public in the creative process. To some extent, it already has. The Internet allows artists to by-pass the gatekeepers of modern art. No gallery owner, curator or publisher need approve your work, for world wide, full color exposure. There are still formidable hurdles- but because of direct availability- a new dynamic is being created. Getting your web page listed as a hot spot on Yahoo, might eventually become just as important as being included in a show at the Whitney Museum, in New York. Does this mean one set of gatekeepers will be replaced by another? Yes and no. But let me back-track to provide context.

A Personal Experience:
When I saw my first demonstration of the World Wide Web- my head was spinning with the possibilities! My immediate thought had to do with one of the nagging chores of being an artist- keeping art consultants supplied with slides of your recent work. Not only is it expensive and time consuming to do this, but too often- when consultants show the images to clients, the little slides are simply held up to the light. This is much less than ideal! I realized that if I had my own homepage, art consultants anywhere in the world, could show my most recent work to clients either from a laptop computer, or at any Internet connection. They could also download the images and use the new ink jet printers to

produce presentable color images, to show where direct access was not available. At the time, I didn't think beyond that possibility. That was enough!

Involving the public in the process:
The second possibility didn't occur until I actually had a basic homepage created, and I realized that this was much more than just a new way to promote art. In August of 1993 "Artist's" magazine, had published an article about my work, in which they showed the stages that a painting went through- a "how to" series. At some point, I decided that it might be interesting for the web audience to see such a series- but now it would be happening as the painting evolved - and because of the speed of e-mail, "audience reaction" would enter into the creative process. There is no way for a paper magazine to do this!

In spite of some apprehensions about allowing this kind of interaction, in June of 1996, I "opened my studio" -electronically to the web. I began work on a large (5' x 6') acrylic painting, to be called "Night Flight." It was to be a view of the Los Angeles airport at night, based upon a series of photos which I had taken there on a recent trip. I posted the photographs I planned to use, and discussed my ideas. Then, as the painting developed, I photographed the canvas again and again, and scanned the images onto my page to show the process in which I was involved. I invited e-mail comments. They didn't exactly flood in.

Getting exposure:
There is no way to know precisely how many fine artists are showing their work on the Internet. It must be a large number however. There are art "malls" and many services which will post an exhibit for a fee which is very reasonable, compared to magazine advertising. The problem, of course, is how do you get recognized? So far, doctors' offices do not have Netscape running in their waiting rooms, next to the piles of old "Geographics" and Time magazines. To see your work on the web, someone has to actually be looking for art- and then find you in the fog of URLs!

Of course there is help. Many of the major search engines have special categories for art, and many have art "editors"- and invite artists to submit their work for consideration. There are quite a few newspaper, television and magazine sections which also invite ideas. Seeking a wider exposure, I began to send out notices, via e-mail about my project. At some point, I received a call from Martha Woodall of the Philadelphia Inquirer. She wanted to do a piece on my project for the "Tech Life" section. The power of print is still amazing!

As the article was being readied, the televised version of the paper, called Inquirer News Tonight, came and did a segment- and the next thing I knew, I had 40-50 e-mail messages a day for about a week. About a month later, without realizing it, USA TODAY listed my project as its "hotsite" of the day- and I had another surge of visitors, but strangely, very few e-mail messages.

The result was that well over a thousand people logged on to my project, and I received hundreds of e-mail messages- primarily from the Philadelphia region, but also from a variety of states, and internationally, from Norway, Greece and some countries which I could not determine.

The impact on the process:
Most of the e-messages were positive. They applauded the idea. Here are some summaries as I posted them onto the page:

Bob Emling: feels the screen resolution hampers the project. (I agree but...)
R3: "cool page and even cooler concept"

Jay: referring to "How an Eclipse Works" (on the surrealist path)- the "dual nature" of light is not accurate. Light is one thing which behaves differently, depending upon how one interacts with it.

Ellen Wise: doesn't like predella concept so far, wonders if the frame will unify the painting. Says the plane looks like a "spirit container."

Grace Koo: enjoyed "hearing" my thoughts. Feels this gives her greater appreciation of the painting. Likes the "shocks of light."

Carmen: wonders if signed lithographs of the piece will be available. (no- but some kind of high res print will be.)

Richard Bosco: regrets "long download" but says painting "looks so real I thought I'd miss my flight."

Patti discussed the spiritual side of the painting. Says she feels a "twinge of envy" when she looks up at the sky and sees a plane flying overhead Lorden plans to show the project to his middle school art classes.

Pete says "Z-plane Z-plane I see Z-plane!!"

Hal Miller wrote on one of the essential problems of this project. He wrote: "Sometimes it is more like a magician where the process is never revealed...(perhaps it is more) fun, just to let your imagination tell you what you see..."

The involvement of the audience became a motivating factor for me. I found myself working with more dedication than usual- I didn't want to let them down- and when I didn't post a message for over a week at one point- I received several messages checking to see if I was okay!

The greatest impact on the painting itself, however, came after the explosion of TWA flight 800. At that point in the painting, I had underpainted the body of the plane in my painting with a dark purple color. The mood of the e-mail suddenly began to reflect anxiety about flying. For example:

Anita Conlon wrote: "does the recent crash of the TWA flight have an immediate (or even long term) effect on the underlying theme(s) of your piece? The painting, in terms of the lighting and angles, immediately struck an emotion within me- and the airplane seems like a mixture of things: a risk we must all take; the airplane as a tool (or "victim") for bad guys to use, and an element in life which inadvertently brings us all together."

This type of expression of apprehension made me realize that there was a potentially morbid side to this imagery- and that was something that I did not want. As a result, I changed my focus for some of the images which I used as border pieces- a style I've used for many years. Instead of, for example, associating a small replica of Grunewald's Resurrection with my piece- I used an image from Peter Pan, Captain Hook's ship flying through the sky. Did this make the painting "better" or "worse?" That is a question with only a totally subjective answer. To me- the painting is being reacted to, more in harmony with my original intent- so to me, this is better.

The net result of the experiment was: It did in fact change the outcome of the art work which was created. Many people who watched the painting unfold gained a new perspective on how a painting is created. Their appreciation of art increased. Some people had their view of the Internet changed, such as in this comment: From Steve Jones: "I'm an English teacher, not a painting student, but I would like to tell you that the web seems a little better and more humane with your page on it. Keep it up!"

These comments and others reflect the dynamic that evolves when people are able to interact with artists, thanks to the Internet.

The Future:
The question I come back to is: will the WWW cause one set of "gatekeeper" to be replaced with another. I believe that the answer is no, but that there will now be so many "gates" that the dynamic of which artists are determined to be the defining artists of our times, will be altered. Already, the search engines seem to hire recognized curators and writers to determine who will be on their "hot spots." But on the other hand, an enterprising artist can, by providing a homepage, at least have a potential world wide audience. With the system of links, sharing links and recommending links- it is possible that an artist whose work resonates with the human spirit, will achieve a kind of recognition that was impossible, prior to this technology. No longer will world wide access to audience be controlled by a group of elites- even though those elites will still be important. The elites will not like this. They will complain about "pandering" to "common tastes." They will see this as a negative.

Is any of this important? Possibly. At present, artists who are non-urban and reflect a love of nature in their work, have little hope of wide exposure. There are rare exceptions, like Andrew Wyeth, but the current "gatekeepers" generally ignore nature oriented art and in some cases are hostile to it. Paintings which contain "beauty" for example, are considered "lies" in the current elitist art scheme. Is this a good thing? Would it be a good thing to erode the power of this oligarchy?

Political structure is also influenced. One of the first things despots try to control, (generally by cheerfully offering money- not through coercion) is the arts. Film and music are far more powerful than visual arts like painting and sculpture right now- but the arts tend to influence each other. There is ample historical proof, of the impact of the arts on the future. Those artists whose visions are able to reach a mass audience, will have the greatest "future creating" impact. The Internet can play an increasing role in this process as more people become involved. This is also a reason why any attempts by government to control access to, or content on the Internet should be resisted.

Are there dangers in all of this? Is there danger in television, radio- the printing press? Is there danger in writing, language etc? The answer is obvious. But the expansion of democracy, opportunity, and information availability, seem to be part of our human destiny. It will take us where we are going.

Exploring Creativity Through Tool Building

Kevin Daniel

As an educator teaching in the area of computer-mediated art I have long struggled with the balance between an application-based curriculum and one based on creative exploration through programming. Each strategy certainly has its strengths and weaknesses and given the luxury of time both could be pursued with equal vigor. The demand for teaching students "commercially viable" software and the steep learning curve implied in programming graphics applications of any sophistication has typically left tool building by the wayside. With the introduction of utilities such as Adobe Filter Factory into both Adobe Photoshop and Adobe Premier I hope to reintroduce the notion of direct artist control over the tools of electronic media.

Every Tool has an Agenda

Every tool has an agenda that has been built into it consciously or unconsciously by its designer. Its agenda is manifest in its ability to perform tasks, the artifacts of its use, and in the reading of those artifacts. The mark left by a number 2 pencil is different than that left by a burnt stick and those marks can carry a very different significance based on how they have been used.

The history of electronically-mediated art is the history of compounding agendas which may or may not be in sync with those of the artist. In the early days of personal computing the use of the machine as a creative tool usually meant programming. The balance between the agendas of the computer maker and those of the artist were much closer because the artist had a much greater role in determining the shape, use, and artifacts of the tools they were creating through software. The increase in the complexity of both hardware and operating systems, as well as the availability of powerful and flexible software tools have made the notion of "rolling your own" much less appealing. Each layer of hardware and software provided by an external agent is one step that the artist has been removed from complete control over the media, even if that only really means that the artist does not have as full an understanding of the processes they are using.

This separation between the artist and the tool may be of little consequence in many situations, but at what point does an application like Kai's Power Goo change from being a tool, to being an piece of interactive computer art with the user supplying the images.

Rolling Your Own

The thing that I am most troubled by about the separation of the artist from the tool is that it can be disempowering. Creative solutions may ultimately depend on making choices based on the facilities (agenda) of the software at hand. The fact that some software is better at performing certain tasks than others promotes its use and also aids in the propagation of its particular artifacts into the finished work. Some software, such as Adobe Photoshop, have included provisions for third party extensions which may broaden the range of expression possible with that tool, but which also leave the signatures of their creators. Adobe's Filter Factory extension to its Photoshop and Premier software has reopened a path by which an artist may exercise more control over the process they have chosen to use.

Filter Factory is a filter building tool kit which allows the user to program their own image manipulation routines in a relatively simple language and save them for later use. The code used for designing filters is checked as the user types it in for errors in syntax and visual

feedback about the effect of the code on the image is immediately available in a preview window. This serves to produce an environment in which it is fast and easy to experiment with different image manipulating strategies and in which many interesting tools can be produced either by accident or by the rapid evolution of existing routines. The overhead associated with programming is much reduced by taking advantage of Photoshop to handle the lower level tasks of loading, displaying and saving the data and, the artist can focus on the more relevant task of working the image. Working within an existing set of tools also allows for a more seamless transition between using "traditional" paint type operations and the newly created ones.

Updating a tradition

There exists a tradition in video art for trying to cast off the baggage of the visual formats and effects of broadcast television by tampering with the mechanics of the image making process. The mechanisms of video have evolved to a level of complexity which, like the digital technologies they are converging with, has excluded all but the most technically trained from interfering with them. It was in an attempt to have my students discover the freedom associated with invading the works that I first introduced Filter Factory into the video curriculum.

The classroom use of student written filters originally required the coordination of three hardware and software elements: Data Translations' Media 100 video editing system, Avid Videoshop and Adobe Photoshop. The Media 100 is a Macintosh-hosted Quicktime-based video editing system which the students used to digitize source footage and dump processed video back to tape. Avid Videoshop is a Quicktime movie editing tool which includes among other things an add-on for Photoshop which allows for the import and export of Quicktime files. Photoshop with the addition of the Avid Quicktime plug-in forms the platform from which the students can process the footage with their custom designed filters, manipulate individual frames by hand or composite the material with other still or moving images.

Since the students in the Electronic Intermedia program typically do not have much in the way of programming experience, I provide them with a few very basic prototype filters from which to begin their exploration. The students are also given copies of the Filter Factory documentation and instructions to explore the tools by whatever means they feel comfortable with. Some students have very specific ideas about visual effect they wish to create and set about designing a filter for that purpose. Others will randomly replace parts of the template filters until they find something interesting and then develop what they have found. All of the students however end up with a visual treatment that they can claim ownership of.

Outcomes

The experiment in developing student written tools as part of the video curriculum is just over a year old and there are still many wrinkles to iron out. Some of the solutions will involve bettering my presentation of the idea of tool building to non-programmers and streamlining the process of using filters on video by replacing the Photoshop/Videoshop combination with Premiere which has a version of Filter Factory specifically for it. Of the students using the tools I have described, some will create very sophisticated processes which will excite them to explore further, and some will decide that rolling their own is not for them. In general it is my belief that by giving the students a sense of ownership over the process, they but will develop a closer connection to the media they are working with.

Visual Literacy: Hotlinks to resources on the Web

by Judy McClenning
mac1113@aol.com
Judy.E.McClenning@Widener.EDU

In the summer of 1995 my degree from the MFA program in Imaging Arts at the Rochester Institute of Technology, in Rochester, NY was crisp and ready for framing. In other words, I was green. I was attending a national fellowship for graduate students at the American Photography Institute at New York University. Through the two weeks of panels, exhibitions, and discussions one term that caught my attention was that of "visual literacy". Group consensus evoked a need for greater education on the concept, that is, if we could ever define it. Ironically, within a month I was a newly hired faculty member in communications and preparing to teach a class entitled "Visual Literacy".

I began to research possible texts and found remarkably little outside of Paul Messaris' Visual Literacy: Image, Mind, Reality, or Ways of Seeing by John Berger. And then I discovered the Web....In the summer of 1995 I typed in visual literacy as a search and had relatively few hits. Granted, I was using America OnLine. Through my recent search efforts , however, I have found that there are currently a number of resources.

Here is a sampling of what you can find:

1. Need a definition? Try:

a. On Visual Literacy:

http://watarts.uwaterloo.ca/ENGL/courses/engl210e/210e/tutorial/design/sec_91.html
Here it is defined as the encoding of meaning in a visual field defined through visual weight, coherence, sharpening & levels.

b. Visual Literacy:

http://helix.infm.ulst.ac.uk/~mcdonnell/prof23.html
This site, part of a larger paper on visualization, defines visual literacy through a discussion of directon, hue, scale, and dimension.

2. Online projects devoted to the subject:(with great hotlinks to archives)

a. Media Literacy OnLine Project

http://interact.uor...u/MediaLit/HomePage
The goal of this project from the Center for Advanced Technology in Education, College of Education, at the University of Oregon is to provide resources to teachers, students, etc. to issues related to the influence of mass media. Their media literacy resource collection contains information on readings, organizations, teaching resources, collaboration & discussion and the internet. One of their best photographic media links is American Memory: http://rs6.loc.gov/.

The Library of Congress has digitized a large part of their collection of primary source and archival material related to american culture. At present there are three photographic collections, and three early motion picture collections.

b. On-Line Visual Literacy Project

http://www.pomona.e...it/intro/intro.html
This project through Pomona College in California greets the viewer with a downloadable short animation and sound. It states that with a knowledge of basic visual elements one can understand the meaning and components of an image. These basic elements are broken down into: dot, line, shape, direction, texture, hue, saturation, value,scale, dimension, and motion.

This site also provides several references and links to image banks, of which their own Re/Presentation Project References is excellent. The viewer is asked to deconstruct images of Blacks, Women, Black youth, Native Americans, Gays & Lesbians, Asians & Whites. The section on women provides a downloadable alternative advertisement: a woman on a mountain bike, "The power to win lies in the will."

3. personal experiences

a. Michele's Art & Visual Literacy Journal
http://jersey.uoregon.edu/~makasha/
MicheleLukowski took her journal created during her participation in the course Art & Visual Literacy from the Arts & Administration department at the University of Oregon. This is a great site with rich drawings broken down into 8 weeks plus one that focuses on her Response to Ways of Seeing. I especially recommend Week 2-Art or Not Art and Week 8-Women & Media.

4. course descriptions:

a. Visual Literacy
http://www.est.gov...visart810/vavis.htm
This is a promotional site by the Ministry of Education for the Province of British Columbia for their curriculum in Visual Arts. Highly detailed, it attempts to show how perceiving and responding by a student can then be translated into creating and communicating.

b. Art 1A. Visual Literacy
http://arts.ucsb.edu/Faculty/reese_h/visual_lit.html
This course description focuses on the ideas, issues and concepts in contemporary art.

5. other resources for teachers

a. Media and Visual Literacy Hotlinks:
http://www.ewu.edu/...udents/gstiles.html

b. A VISUAL LITERACY EXERCISE:
http://www.csuohio.edu/history/exercise/series.html
Designed for self-study, this exercise is broken down into 8 woodblock prints from a series on Tokaido by Hiroshige Ando and provides for written response by the viewer. However, it's creator Lee Makela also thoughtfully provides teaching and resource notes.

c. Analog vs. Digital Bibliography
http://www.sils.umi...nalogVsDigital.html

6. organizations:
International Visual Literacy Association(IVLA)
http://www.emporia...ce/IVLA/IVLAVLC.htm
The Visual Literacy Collection for IVLA is housed at Arizona State University and contains archival, book and media collections, and back issues of the Journal of Visual Literacy. IVLA also sponsors galleries (kids & adults), conferences and publications.

Currently teaching this class for the fourth time I'm thrilled to have so many resources. Now if I could only find the time to view it all.

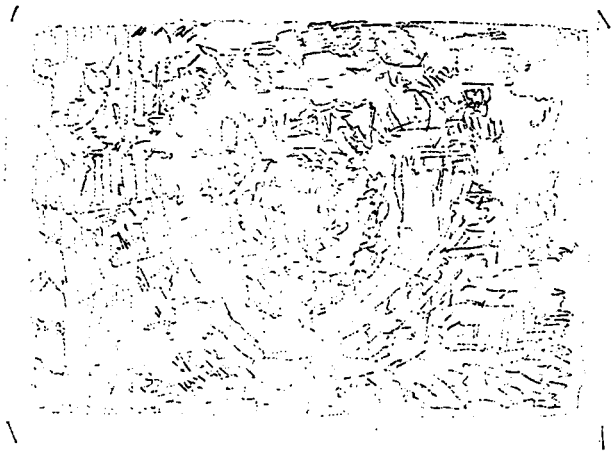
Judy.E.McClenning@Widner.EDU

Pictures on the Net: The Virtual Museum

Jeff and Colette Bangert

On the screen of our PC, behind this text as we write it, is "Pink Circling Green," one of Colette's paintings. Any of the millions of Internet users with a graphical browser to the World Wide Web can download this image (Figure A) from our WWW site. This is just one example of how the Internet has changed the availability of images forever.

With full Internet access, you can monitor the worldwide bulletin board called "Usenet News." One of the newsgroups is alt.binaries.pictures.misc (a.b.p.m). From all around the world, people send pictures to a.b.p.m. These pictures include beer labels, race cars, fine art, super models. Anyone can copy these pictures to their own computer.



A "Pink Circling Green," by Colette Bangert.

A.b.p.m is one major source of pictures on the net. But like many things on the net, it is not comprehensive. Nor is it planned. No one is making sure that all different kinds of images are available. Thus, the net becomes a "virtual museum" with Disney in one gallery, Playboy in another, Bosch in a third, and beer labels in a fourth. The net imposes no order, so standard ideas of what constitutes "art" fall by the wayside. There are currently some exquisite images from the Book of Kells and some wonderful photographs of autumn leaves. We have found Monet, Van Gogh, Rembrandt, Delacroix, and Astruc, but no El Greco. Early Lichtenstein, but no Anselm Kiefer.

Your ticket to the Internet's virtual museum is the WWW's Uniform Resource Locator. The URL is a kind of address. For example,

http://www.cc.emory.edu/CARLOS/carlos.html

points to the "home page" of the Michael C. Carlos Museum in Atlanta, Georgia:

- http:// stands for HyperText Transfer Protocol, used to prepare documents for display, possibly with pictures and references to other documents or even sound and video clips;
- www.cc.emory.edu is the WWW Internet address for Emory University; and
- /CARLOS/carlos.html points to a specific document—the Carlos Museum home page.

The following URLs contain pictures, mostly without extensive comment. Running the Mosaic or Netscape browser, you can just type in one of these URLs and view the pictures. (These browsers work best if you have a connection to the Internet of at least 19,200 bits per second.)

Traditional fine art sites

Here are some of our favorites:

http://bookweb.cwis.uci.edu:8042/AdamsHome.html
UCI Bookstore: Ansel Adams Home Page. The photographer was commissioned to record each campus of the University of California system.

http://www.cc.emory.edu/CARLOS/carlos.html
Michael C. Carlos Museum, Emory University, Atlanta, Georgia.

gopher://monera.ncl.ac.uk:70/11/Miscellaneous/.Kells/
Images from the Book of Kells. Truly luminous.

http://www.ncsa.uiuc.edu/General/UIUC/KrannertArtMuseum/KrannertArtHome.html
Krannert Art Museum, University of Illinois at Urbana-Champaign.

http://meteora.ucsd.edu:80/~norman/paris/
This URL actually points to the beginning of a tour of Paris. It's easy to find the Louvre.

http://csmaclab-www.uchicago.edu/SmartMuseum
The David and Alfred Smart Museum of Art at the University of Chicago.

http://ukanaix.cc.ukans.edu/~sma/prints.html
Printroom of the Spencer Museum of Art, University of Kansas, Lawrence, Kansas.

http://fuji.stanford.edu/icenter/png/ngp.html
The New Guinea Sculpture Garden at Stanford.

http://sunsite.unc.edu/louvre.net
The WebMuseum network. This isn't a museum, but it has a lot of nice pictures.

Other kinds of pictures

Fine arts are not the only pictures in the virtual museum. Here are some favorites:

http://web.cnam.fr/Images/Usenet/abpm/summaries/index.html
Contact sheets of the latest images from a.b.p.m.

http://www.gatech.edu/desoto/graf/Index.Art_Crimes.html
Art Crimes Index.
http://boas3.bo.astro.it/dip/Museum/MuseumHome.html
Bologna, Astronomical Museum.
http://the-tech.mit.edu/Gallery/gallery.html
The Edgerton Center's Online Photo Gallery.
http://lcweb.loc.gov/homepage/lchp.html
Library of Congress World Wide Web Home Page. Hundreds of American Civil War photos, hundreds of celebrity portraits by Carl Van Vechten, and hundreds of American color photos from the 1930s and 1940s.

Keeping current on the net

All museums change, but not like the virtual museum. It changes with the Internet as a whole, which is in a constant state of flux. Mostly it grows, but at any given moment, parts of the net may be inaccessible. There was a month when we couldn't get pictures from the Library of Congress because they had changed something. One week we couldn't get to MIT at all.

By the time you read this, some of the sites we've listed may no longer be valid, but there are Internet sites that keep track of what is new. Our own favorite is

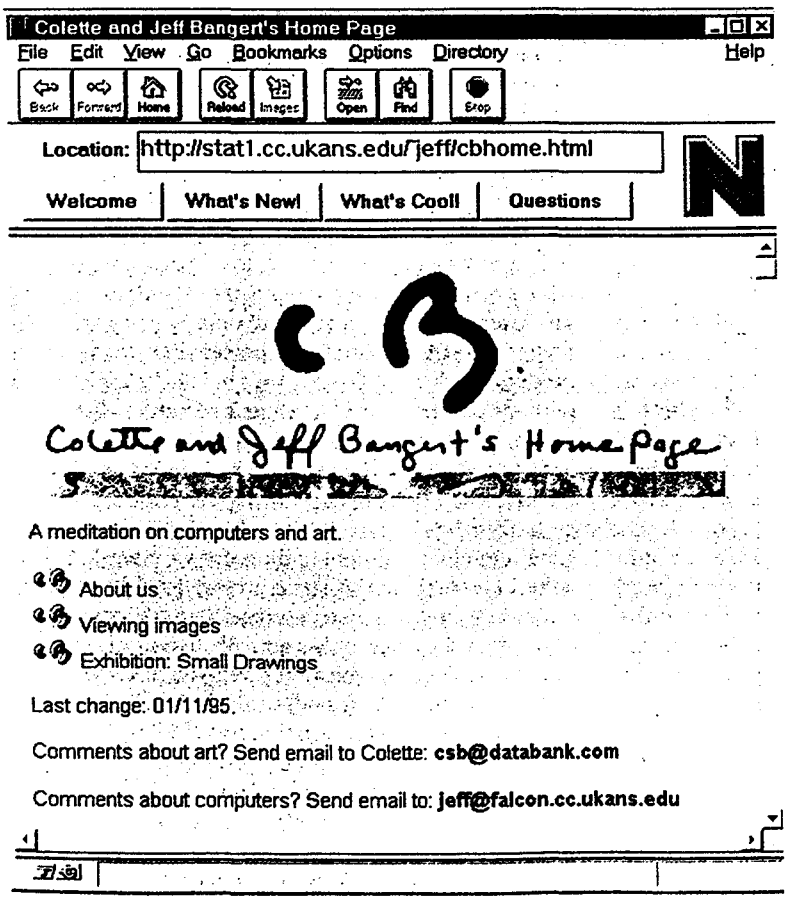
http://akebono.stanford.edu/yahoo/
Yahoo—A Guide to WWW.

Some sites list only art-related pages:

http://www.msstate.edu/Fineart_Online/art-resources.html
The FineArt Forum WWW Resource Directory.
http://akebono.stanford.edu/yahoo/Art/
Art from Yahoo.
http://www.primenet.com/art-rom/museumweb/
Art-ROM Museum Web.

And finally, we invite you to visit our own home page, shown in Figure B:

http://stat1.cc.ukans.edu/~jeff/cbhome.html
Colette and Jeff Bangert's home page.



B The Bangert's home page on the World Wide Web.

Acknowledgments

Our thanks go to Jerry Niebaum, executive director of Information Technology Services, and Wes Hubert, assistant director of Academic Computing Services, University of Kansas, for enthusiastic support over many years.

Media Archaeology : Upon Entering a Pre-Cognitive Era

For publication at SCAN (Small Computers in the Arts Network)
October 31 - Nov. 3, 1996
Franklin Institute, Philadelphia, PA

An acquaintance with the significance of images as conveyors of information from the prehistoric period to present offers a more radical insight into the future, than what is currently being envisioned by the electronic arts and scientific visualization communities. Contemporary electronic images will most likely be invisible to archaeologists of the future. It's not likely that magnetic storage formats that barely survive ten years now will be viewable three thousand years from now, as are papyrus documents and bronze sculptures from earlier periods. What will be in great evidence, however, is the occurance in the late 20th. and early 21st. C. of a new visual comprehension process.

Much work has been done in an effort to explain the world view of previous cultures. McCluhan investigated the communication media of the late historic period - Guttenberg to present. The middle historic period has been studied by classical and pagan scholars. The early historic period has been explicated by archaeologists and biblical scholars. European pre-historic images have been addressed by archaeologist, Marija Gimbutas. World view (the ordering of the world by a particular culture in an attempt to make sense of it) is usually understood retroactively. We can assume that world view is a concept of human imagination and that cultural artifacts and language are created to make that concept useful. We can also assume that language and visual artifacts anticipate the creation of world view.

Cultural artifacts from the prehistoric period (35,000 BCE to 5,000 BCE) contained symbolic images which preceeded pictographs. Historic period scholars have never given full credence to this period, because there is no extant written language. In both

the West and the East, writing as we know it evolved from pictographs. The Chinese character for mountains has remained  and the Roman letter for the "cut" sound continues to be the Accadian  or K. The transition from symbolic communication to linear writing is evident in Egyptian hieroglyphics, which are pictographs read in lines and rows. Symbols, the language of the prehistoric period, were such powerful conveyors of information that they continued to be used as the basis of paradigmatic thought throughout the classical period. Euclid's basic synthesis of geometry will serve as an example: there are lines that cross and lines that don't cross. For the purpose of this discussion the crossed lines shall be represented by a square or "X" and the uncrossed lines by a circle or waveform.

If the content of the circular and square symbols is to be fully understood, it is necessary to step back from linear concepts of time and look at the quality, not the rate, of cultural change within the prehistoric and historic periods. Change is predicated on value systems. The prehistoric period could be characterized by a zero-sum system and the historic period as an open-ended, evolutionary system.

A zero sum system tends to value what is necessary for existence. It also values the old as much as the new; seeing both as different and essential parts of one system: a white and black (w)hole which creates and consumes the universe endlessly. The circle is the symbol which represents the value system of the prehistoric period. A time of cyclical agrarian life, ancestor worship, essentially communal societies and equal respect for all of life. Time is tied to natural cycles and culture reinforces concepts of balance, and the finite.

The progressive, evolutionary system values rarity. What is in short supply commands the highest price. What is new is inherently better than what is old. The square or X is the symbol which represents the value system of the historic period. A period of innovative tool making, hierarchal political states, youth worship and the subordination

of all of nature to human life. Time is linear, running from left to right or right to left - but always continuing in that direction - improving, changing and endlessly expanding.

That's a lot of information to be conveyed by two symbols. It does not even stop there however. These archetypal symbols continue to reverberate in all dimensions. The circle represents the earth, which the Native Americans knew was egg-shaped. It represents the power of the soil to nurture life and glorifies living and dying on earth. The square or X places the sky above the earth. Heaven is where the gods of the historic period reside. The middle historic period, being seriously linear, believed the earth was flat. The square or X represents the power of lightening or electrical energy to spark life. It glorifies dying and living forever in the sky.

What does this have to do with the 21st. Century? The historic period, which lasted essentially from 3,500 BCE to 2,000 AD is now over. True to Hegel's helical philosophy of time, we are entering an age similar in some respects to the prehistoric period. This is evidenced by the gradual shift in cultural values from closed systems to open systems. This transition may be caused by cosmic transformation, just as is the flipping of earth's magnetic poles every millennia or so no doubt are. If its cause is inexplicable, its effects are not. Those artists and scientists working with electronic media in the 20th. Century are the early warning system.

Scientific visualization has made great progress in the last fifteen years. What might have once been disregarded as extra sensory perception is now valid scientific inquiry in the West. The fact that reams of data can be translated into a 3D image and understood through a process similar to meditation, is now scientific fact. Fractal geometry is an example of a field created because digital imaging made possible insights into large scale data.

The thought process which occurs during this encounter with a visualization of data is called precognitive reasoning. The import of the image as a representation of

a system is grasped by a different process than linear rational cognition. This process is barely understood. It actually occurs in dirrerent parts of the brain from linear thinking and bypasses many of the rational forms we have been taught. The fact that the image gives information which is applicable to many realms of inquiry has discredited it in the past. It has taken a scientific generalist like Benoit Mandlebrot to seize the mathematical principles behind graphed systems. Video artists experimenting with feedback in the 1970's made similar observations, but with different audiences.

Artists see relationship. It is self apparent to an artist that the system represented by a symbol is true on the macro and micro levels, that it has spacial, temporal, cultural and pyschological implications. Artists have a refined way of understanding symbols. They are not restricted to mere form, but use color, line, texture, composition (and animators use movement), to convey meaning. Whether their subject matter is an abstraction or realistic representation, art is concerned with the dynamics of vision and communication on a subliminal level. The precognitive process cannot be proven like a theorem. It does not follow cause and affect rules. The self evident nature of the encountered symbol is not only universal but also perpetuous. The abstract image is the ultimate communicator of meaning to the artist.

The artistic process is often the inverse of the scientific process, however. Whereas scientists empirically collect data and then attempt to understand it, artists apprehend the symbols presented by nature and the subconscious. The artist understands the implications of these symbols and can deductively give specific references from general insights. Currently the scientific community employs artists to aid scientists with the tweaking of the image for purposes of clarity. The artist would be more interestingly employed in the interpretation of the significance of the image. In an era when the tenets of physics and metaphysics are less and less distinguishable, it is only appropriate that the intuitive and scienticfic processes inform each other.

Yet, the art and science of precognitive knowing in the era upon which we have embarked differs significantly from the prehistoric period. In the past recorded symbols were restricted to still images or performance. In India the mandala, mantra and mudra are all manifestations of an absolute yet fluctuating truth. The mantra or vocalization as well as the mudra or dance could convey the temporal import of the symbol of the mandala. For one hundred years the possibility has existed to record moving images. The difference between the recorded image and the witnessed performance is significant. In performace the viewer is distracted by self-consciousness, whereas a recorded image can be contemplated in solitude and repeated. The dimension of time, whether perceived as linear, circular or helical, can now be understood through the precognition of moving images.

Today those working with computers are plagued with huge amounts of data and sped up expectations. Electronic screens display symbolic icons which link to an open global system of communication. The creation of universally understood symbols is a pragmatic enterprise as millions of users logon to the internet from every country and language group in the world.. Success in the electronic authoring environment is measured by the flow of information. Linear cognitive reasoning slows this flow down. Precognitive knowing leads the viewer effortlessly through the extended electrical membrane which now envelopes the earth. Though anticipation of what's to come makes us impatient with the limitations of the present, it is imperative to take the time to meditate on the images we are making. The electronic artifacts of our age may be inscrutible to the archaeologists of the future, but the fact is that they represent the world view of the new global village.

CAROL GOSS - Biography

Carol Goss is a video artist / computer animator who has exhibited and lectured internationally as well as done live performance video in collaboration with jazz and electronic musicians, since the early 1970's. She is co-founder, along with jazz pianist Paul Bley, of Improvising Artists (inception 1974), a record and video company credited with creating the first music video. In April of 1996 she curated the first annual open screening "NOT STILL ART: Video Artists and Music" which focused on abstract and non-narrative video art. Currently she is organinzing abstract film and video animation for the dvd format to be released on Improvising Artists. Additionally she is working on a book entitled Narrative Abstraction. Visit at: <http://members.gnn.com/ImprovArt>. Say hello at 201-1728@mcimail.com.