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Artists Using Science & Technology

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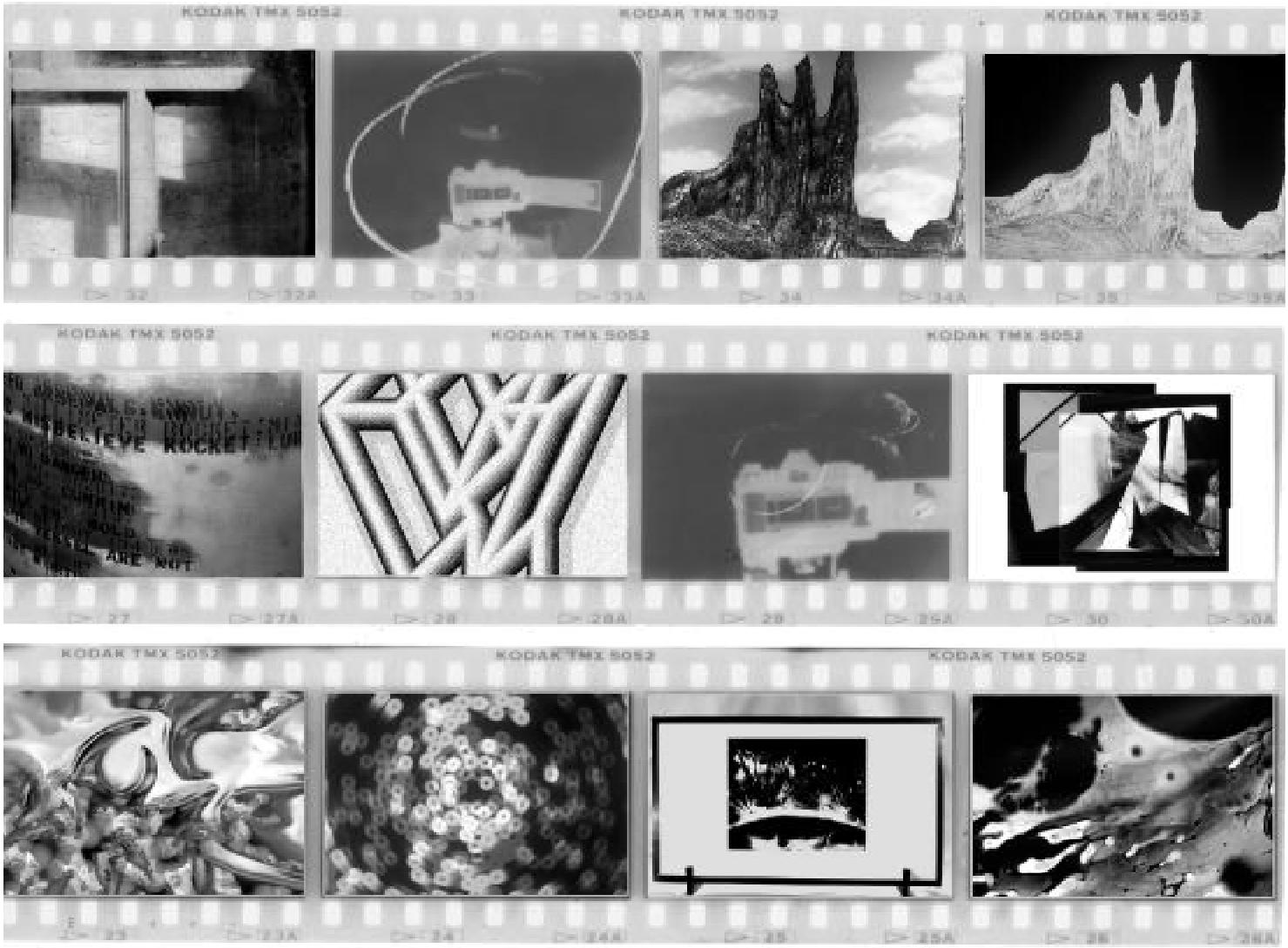

Photo-based Experimental Work

Special Double Issue

formerly YLEM newsletter

PHOTO-BASED EXPERIMENTAL WORK
By Loren Means, Executive Editor

This issue of the YLEM Journal presents images and statements by six artists who create two-dimensional abstract work in a variety of media, from computer-generated imagery to mixed media. What unites these artists is the fact that they all create using forces outside themselves, and their work ultimately is printed on some kind of photographic emulsion. Three of these artists, David Berg, Frances Dose, and Marius Johnston, live in the San Francisco Bay Area and were featured in a gallery show I curated for the Marin Civic Center which ran from May 20 through July 10, 2002. I discovered Susan Rankaitis' work in a bookstore, where I found a Japanese monograph on her next to a book on Man Ray. I interviewed her in her studio in Southern California, where she is a professor at Scripps College. I discovered Ellen Carey's and Jon Lybrook's work on the web. Ellen is an art professor in Hartford, CN, and Jon is a web designer in Boulder, CO.

Prefacing these images and statements is an interview conducted in French with Jean Baudrillard, the philosopher who is best known for his book Simulacra and Simulation (the Body, in Theory: Histories of Cultural Materialism). Although Baudrillard is not himself a photo-based experimenter, I have included this interview to point up the intense ferment in the arts that tends to center around photography and its relationship to the computer. The author of the interview, Chiara Donn, is an Italian photographer and arts critic living in Paris and writing for Conde Nast.

There are two kinds of photo-based experimenters, and they can be divided into those who rely heavily on the computer in the creation of their work, and those who do not. The experimenters who do not use the computer tend to enjoy manipulating materials directly with their hands, using paint on film or chemicals on photographic paper, or reinventing the hallowed tradition of the photogram by placing objects on photographic paper and exposing them to light. The experimenters who use computers find their hands useful mainly for typing commands and moving mouse pointers. (I once asked my son, Daniel Shulman-Means, if he missed getting paint on his hands when creating his computer art. He looked at me disdainfully.)

Experimenters who do not use the computer tend to find themselves fighting for a niche in the world of art galleries, museums, curators, and collectors. Their work being something of a hybrid between the permissiveness of painting and conceptual art and the more hidebound traditions of photography, they often find themselves struggling for acceptance, but it is a struggle they ardently pursue. The computer-based artists, on the other hand, more often create outside the art world, exhibiting their work on the web and in occasional shows, but generally preoccupied on other fronts.

Of the six artists whose work is presented here, three do not use the computer, two use it actively and one creates primarily without using a computer, but exhibits his work primarily on the web.

Marius Johnston works on the computer, but he works with his hands in manipulating objects on his scanner. The scanner serves as something of a photogram generator moving through time.

Frances Dose is primarily a filmmaker, who uses the computer to generate real-time imagery from which she plucks still images. Her work entails all of the complexity of graphics programs like Photoshop, but includes the added complexity of imagery changing over time.

David Berg applies paint to film. Ellen Carey and Susan Rankaitis use chemical processes and other materials in the creation of their images. All three like to work in very large displays.

Jon Lybrook applies chemicals to photographic paper, but also manipulates his imagery on the computer and shows his work on the web.

The non-computer experimenters, Berg, Carey, and Rankaitis, are active as educators. The computer-based experimenters, are also computer programmers, with Johnston acting as YLEM's web master and Dose also teaching.

Traditional photographers, according to one prevailing esthetic, put a frame around reality and froze a moment of time and a certain condition of light and shadow. Many photographers did not believe in manipulating reality, but waited for the right conditions to appear, and captured that moment. Other photographers gave themselves permission to work in a studio and to manipulate lighting, but they were still capturing reality. Photo-based experimenters create or discover new realities.

The invention of photography gave rise to the opinion that painting was dead. The use of computers by artists has given rise to the opinion that photography was dead. Both media still live, but both have been transformed by the influence and implications of the new inventions.

Susan Rankaitis makes art about science, and in interaction with scientists. Ellen Carey and Frances Dose are expressionists, conveying ideas and emotions in their work. David Berg seems to be fighting with the implications of his imagery, which is created completely by chance and yet looks like the real world to many observers.

In the Fifties, B. H. Friedman spoke of the death of three individuals who seemed to embody the sensibility of the time. They were Charlie Parker, James Dean, and Jackson Pollock. In the Sixties, Susan Sontag spoke of a new sensibility uniting the two cultures of art and science, represented by Jean-Luc Godard and the Beatles. She was addressing an intellectual community that has undergone massive upheavals since that time. Now YLEM constitutes an intellectual community that is uniquely situated to appreciate the latest new sensibility represented by these six artists.

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YLEM Forum:
"Capturing Change"

Wednesday, July 17, 7:30 PM
McBean Theater, The Exploratorium
3601 Lyon St., San Francisco, CA 94123
Free, open to the public, wheelchair accessible.

The world is in flux, which lures and challenges both scientists and artists. This forum presents some fascinating projects by artists, two of whom encorporate science into their work, and a space scientist studying fleeting phenomena. Also featured are some science animations and displays.

PROGRAM

JoAnn Gillerman: "Capturing Change: A portrait of the Earth from the outside in and the inside out: interactive works."
JoAnn Gillerman and Rob Terry of Viper Vertex have recently created an interactive electronic multimedia installation "Shadow Dance: Eclipse Exhibit" to provide an exploratory glimpse into the unique planetary phenomena of Solar and Lunar Eclipses. She is co-founder of Viper Vertex Interactive and professor of electronic arts at California College of Arts and Crafts.

Elizabeth Gerken: Sprites
Sprites are recently-discovered electric discharges emitted from storm systems, somewhat different from lightning. These elusive phenomena have been difficult to record. Gerken will show video data obtained by a telescopic imaging system in July-August 1998. Elizabeth Gerken is a researcher in the Space, Telecommunications, and Radioscience (STAR) Laboratory at Stanford.

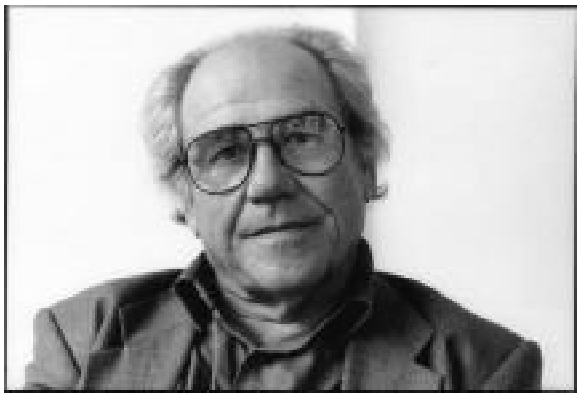
Ruth Eckland: Seeing is Forgetting the Name of What You See
Eckland will show two videos whose actors are mechanical toys. She says, "For many years I've worked with scrims and veils, interested in the nature of the partially revealed. The soft focus, slow motion...explore the limits of our vision and visioning."

Ned Kahn: Fluid Dynamics Installations
If Forum attendees have not enjoyed Ned Kahn's Tornado and other installations at the Exploratorium, they can do so at intermission. We will also show a video of some of his other experiments.

Also featured:
Betsy Pitts will present the BioGlyph project at Montana State University, Bozeman, in which art students drew on culture medium with liquid containing phosphorescent bacteria. The resulting artwork subtly glowed. Animations of continental drift by Prof. Tanya Atwater of UC Santa Barbara and stop-action photos of the mysterious gliding rocks of desert playa by Prof. Paula Messina, and a display about an art and biology project at Montana State University, Bozeman.

Complete information always listed at
http://www.ylem.org/NewSite/news/Forums.htm

INTERVIEW WITH JEAN BAUDRILLARD
By Chiara Donn



The concept of aesthetics is heading towards extinction: it will be so widespread that art will become a new type of craft.

Chiara Donn: Besides being a philosopher and a writer, you're also a photographer. Yet, you prefer not to comment on the images you create, as if to illustrate Wittgenstein's celebrated remark: "don't try to put into words something that can't be expressed."

Jean Baudrillard: Yes, you're quite right. As a matter of fact I had thought of more or less the same words myself: images require silence. For me, an image is a sort of metamorphosis of discourse. If discourse, theoretical discourse in particular, gets to a certain point, the need to move on to another form, to change register, takes over in me. At that point it becomes obvious that images are, above all else, a form of silence.

I started taking photographs at a particular moment in time, so as not to have to write any more and, above all, so as not to have to write about photography. It was a strange sort of alternative. Photography encapsulated discourse and from its silence you could instinctively perceive the multitude of possibilities contained within it.

CD: Photography as necessity then?

JB: Yes, that's what it has become because, if there is a relationship between image and text in terms of vision, there is convergence, affinity, and complicity. But that doesn't mean you can say: "Right, now I'm going to express myself through images." I am not a professional photographer, so it's not an obligatory destination… it's a passage. That's what distinguishes true photographers, because they don't look at it in the same way. When I wrote Cool memories, Les fragments, I was thinking of an almost photographic form of discourse; fragments alternating with photos.

At that time I didn't consider images to be a particular way of perceiving things, but as a world free from the constraints of time. At the start, photography represented pure pleasure. Something to set against writing, which isn't always necessarily fun.

CD: You've claimed that photography is our exorcism. Primitive society had masks and the bourgeois its mirrors. We have images. Considering the spread of new "virtual" technologies, do you think photography has a future?

JB: It's a serious problem, and one I can't solve. I certainly don't feel ready to enter the numerical era: digital photography. I know that this is the end of the road for photography, but I'm sure something else will happen. I've got the same problem with the computer. I don't know what to use it for and I still write using an old typewriter. I'm not trying to make some kind of statement, I simply don't have any reason to use it.

The virtual has its own way of solving the problem by suppressing the subject-object contraposition. This concept will undoubtedly create a new approach to events and, as a consequence, will constitute a sort of lasting singularity.

CD: You are well known for your rather negative view of contemporary art. Do you think there will still be "easel" painters in fifty years time, or will painting become a sort of craft, like working with gold or glass?

JB: Only those directly involved can answer, but I'm sure that artists who use painting as an expressive means don't think it will disappear some day. To be honest, the thought fills me with neither hope nor despair. I believe it's the aesthetic concept that will disappear. What I mean is that, in being so widespread, it will become, as you say, a new type of craft. I get the feeling that artists are not really aware of this. On the other hand, ought they to be?

Aesthetic judgment will be lost in a sort of "operational" aspect, but, when it comes down to it, more and more people will be involved. Everybody will become an interactive creator and this is probably democratic. Maybe this is human and political progress, but it's certainly not ethical/aesthetic progress. An artwork should always be exceptional, universal. It cannot be rendered universal, global, or democratic in all its aspects. It's an objective dimension, but deprives the work of value. Nowadays it seems that everybody wants to express anything in any language, because "deregulation" exists everywhere, from the world of economics to that of aesthetics. And it is here that we will see degeneration.

It's not a question of finding the "guilty party" because there are no victims or guilty parties. It's more like a conspiracy, because everyone is ready to protect the pretence of art, rather similar to politics really. I've known a great number of artists and I've come to realize that this isn't their main concern. Maybe we'll find a new form of culture. Maybe we'll go back to the anthropological culture of past societies where neither aesthetics nor works of art existed, but where production was instinctive, a continual produce, produce, produce…

CD: Some artists, such as Peter Halley, Allan McCollum, Sherrie Levine, and Louise Lawler, have been influenced by your thoughts and writings. Doesn't this amount to rendering painting intellectual?

JB: There was a great misunderstanding in the '80s in New York when, unbeknownst to me, the Simulationists took me as their point of reference. During that time I was credited with an aura and a glory which I never imagined having achieved. In a certain sense, it still goes on today. If they benefited from it, that's good. I was honored, of course, but I got nothing in exchange; nothing new or original. On the contrary, I was misunderstood.

CD: You've often spoken of Francis Bacon, Andy Warhol, and Marcel Duchamp.

JB: Yes, because they did something fundamental. Warhol's work is simulation, but at the beginning it was original, explosive simulation. After that it sank into "second thoughts" and mere repetition. I never got beyond artists like Hopper. To me he represents enchantment, vision. There are few artists who have a true vision of reality; Hopper is one of these.

If I go back further, I follow a line that moves from Vermeer to Turner to Edward Hopper. In French that rhymes! Then I would take Bacon, Duchamp, and Warhol… there aren't many. Recently I was very impressed by an exhibition of Mark Rothko's work. I believe he manages to rise above all this aesthetic fusion. Then again, that's only my subjective opinion…

Jean Baudrillard was born in 1929 in Reims. Besides writing, he recently held an exhibition of his photographs at the Maison Européenne de la Photogaphie in Paris, where he lives and works.

Chiara Donn
Translation by Jacqueline Smith
Originally published in "tema celeste" no. 83 January - February 2001.

INTERVIEW WITH DAVID BERG
By Loren Means

LM: How did you get started in art?

DB: Art for me was something I always did. I could draw. By the time I was nine or ten I could render what I saw. My father taught me when I was around six, maybe seven. He showed me some basic single-point perspective connections and how to use light and dark. He showed me chiaroscuro and how to smudge and make a 3d effect. It was something at that age that I really saw and began to practice.

So for the next ten years or so I really honed my ability to render what I could see, so that when I was in my mid- to late teens I had developed a drawing style using very soft graphites, making very deep blacks in combination with a French blend to make these facial images—close-up images of faces with extreme light-and-dark contrast. It looked photographic. People who saw it assumed they were photographs. So there was an interest early on in photographic imagery. Even though I still can't take a picture. I don't know how to use a camera. But I was interested in at least training my rendering abilities to render at that level. With a great deal of precision and attention to detail.

David Berg: Negative Painting No. 26 (1998)

So I honed my skill in school. If Spanish was dull I'd be drawing on my notebook or my journal. I would draw my classmates, discreetly looking and draw a profile, or I'd draw my own hand in various positions, really focusing on detail and light and dark.

I've been self-taught. I lived in Spain for three years, and during a year of that time, when I was in the Canary Islands, I worked with a guy. He had a large house in Tenerife, and through the intervention of his ex-wife whom I had met on the mainland, agreed to let me live there for about a year. I watched him paint. He was a Swedish painter who had been living in the Canary Islands for about twenty years. He was in his mid-forties at that time. He was a good abstract painter. He had some abilities.

His name was Per Lilliestrom. I would watch him. I had not had any real didactic exposure to abstract techniques or pedagogies or anything. I was about nineteen or twenty at the time. I had been aware of abstract art but had never really studied it, and there hadn't been anything in my life up to that point to help me understand what it was from anything beyond its facture.

LM: When was this?

DB: This was 1976. I was in Spain from '75 to '78. It was just after Franco died.

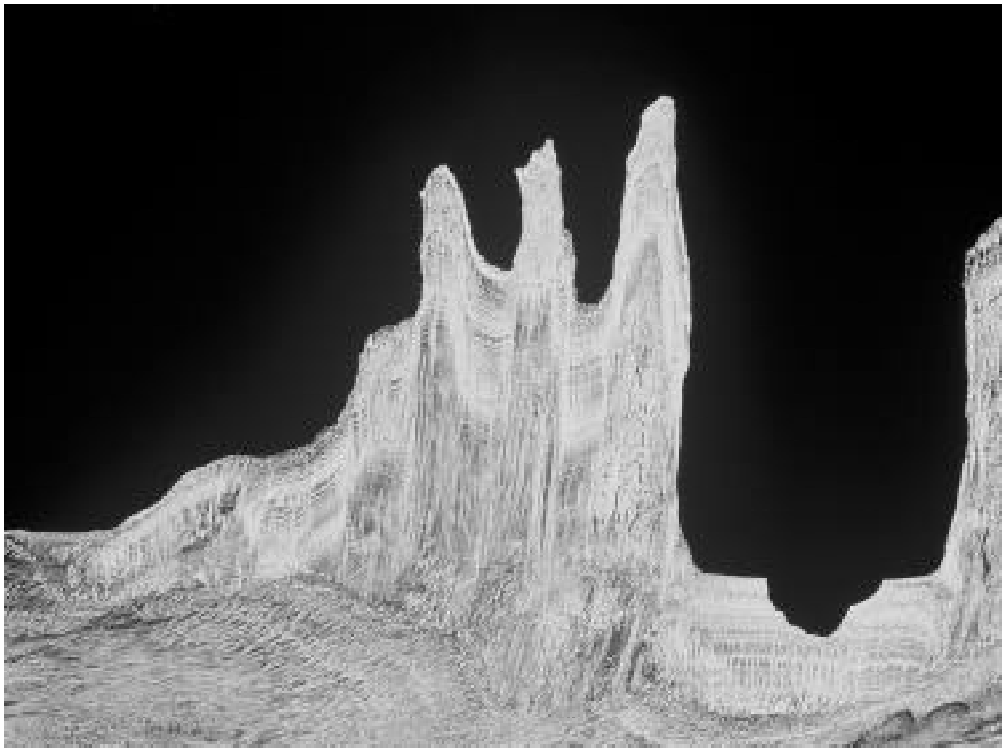
LM: What were you doing there?

DB: I wasn't sure. I'd gone to UCSD pre-med, and was strong in math and science. I went to college because that's what you were supposed to do. I was just ineffably bored. I couldn't quite figure it out. It was a terrible school for me. I found myself spending most of my time in these large music rooms that were filled with percussion instruments. I'd been playing drums since I was nine.

I'd never seen so many of these instruments. They were all great, super-attractive, big ghettos and suburbs of drums from all over the world. They all had great musical quality. So I ended up cutting my classes and just having a blast. Nobody ever used the rooms. There were three of them. They were enormous. They were like the size of basketball courts, these rooms. They were all shut down and black. So I figured maybe it was time to do something else. So I temporarily left school and ended up in Europe for three years.

LM: So all your young life you were playing drums and drawing?

DB: But drawing came easily so I never gave it a second thought. I certainly never gave it a thought as something to pursue. After I decided to come back to the States from being in Spain for three years, I actually decided to come back to become a jazz musician, and to study music, study hard. I did that, but also at the same time I needed to support myself, so I got into education. In getting a teaching credential I took a figure drawing class out at Cal State Hayward. That's really where things started to happen. I finally learned



David Berg: Negative Painting #18 (1998)

to see beyond the retinal experience. That's when my artistic development really kicked into gear. I was about twenty-five at the time. I continued in education to pay the rent, and spent most of my waking hours in the studio.

LM: Playing music or drawing?

DB: Both.

LM: So you always played and drew?

DB: The studio was the same. My drums were set up where I painted. It was actually helpful. As I was practicing and playing, I always had at least eight to ten things going at the same time. I was able to check in with them at various stages in a sort of peripheral way, sort of with the unconscious eye, and I could really see and feel what each work needed, as opposed to standing back there and trying to scrutinize it. It was a great combination. Music was always playing when I was painting. Sometimes there would just be an irresistible piece of music playing, so down with the brushes, and I play along with it and move into a music mode. There was kind of a segue. My studio was completely soundproofed, so I could bang away at one in the morning and not disturb anybody. It was a nice setup.

I was painting in oil. Many, many layers, and then removing layers by force, and painting very unconsciously and automatically, with the idea of seeing what kind of unconscious imagery would come up. That was the first work. Around 1985 I had put together a pretty large-sized body of work, two- or three hundred pieces maybe, ranging from ten inches by fourteen inches to six feet by eight feet. So I went out and found a gallery in 1986. I did the Introductions show in 1986 here locally with Bruce Velick. The way I got into Bruce's gallery, we had spoken and I had piqued his curiosity. So I brought a bunch of work in, and that gave him an opportunity to bring in his star artist, to be his eyes.

His name was Harry Fritzius. He and I hit it off right away, and he became a powerful mentor for me until 1989 when he died. He felt that he didn't have anything to teach me as a painter, but he wanted to pass on a tradition that had been passed on to him. He said he would pass it on to me only if I promised to pass it on to others. That was a big part of it. What Harry was painting was what I would probably be doing thirty years from that point. I got to see, if I continued what I was doing, I would end up painting the way Harry was painting at that time.

Seeing that completely shut me down. I found myself being so powerfully influenced that in spite of my best efforts I was merely copying what he did. As a result I went into transition for about two-and-a-half years, the latter half of '87 all the way into 1990, going to the studio every day and failing. I must have made and destroyed hundreds of paintings. I just couldn't find my own voice any more. So finally in 1990, through a studio accident, I

David Berg: Negative Painting #18 (1998)

had dropped a painting mixture I had made.

I had learned to make this painting mixture from the Swedish painter I had been with in Tenerife. I was desperate. I was looking at some of the techniques that the Swedish painter had used. And I spilled it. I had some cellotex on the floor, paper pulpboard to insulate my studio for sound proofing. It formed a perfect butte. The paint was a colloidal mixture. In the formation of the butte, it had a semblance of 3-d mass and the paint as broken up really looked like desert sagebrush dotting the slopes.

The shape of the curves of the butte and the way it resolved into valleys was so convincing and so lyrical I was astounded. So I began experimenting with breaking up a heavy-duty industrial enamel into a colloidal mixture and painting with that. I had been using a brush up until that point, and from that point I haven't used a brush since.

Then I tried it on paper. I tried it on a variety of things. I tried it on canvas and paper, and I discovered that paper was better than the canvas because it was a smoother surface.

It was just black. I looked for the heaviest-duty industrial enamel you could find commercially and broke it up by the recipe given me by Per Lilliestrom in Spain. He did a similar thing. He'd mix red wine with India ink. He'd throw beer into it. He'd do all these wacky things, and came out with some very nice effects. The extent of Per's abstraction was more decorative than anything conceptual. But he was very gifted esthetically. I was desperate, so I was trying anything. I was throwing brushes at the canvas. It was bad news.

I was throwing stuff at the canvas while it was still on the wall because I was so angry at it, because I couldn't' find my voice. Everything was just dull and dead. I really began to hate painting. I'd look at Caravaggio and be bored. It was bad. I was not easy to be around at the tail end of these two and a half years. Because I went to the studio every day, with the hope that I was going to find something. It was not a smart approach, but I was young still.

But it was through this accident that I saw an image. At the time I had been looking a great deal at ancient Chinese and Japanese landscape scroll painting. So that the cellotex is this brown color, and the enamel is black, so it made a very similar muted palette that you see with the Asian landscape scrolls. So aesthetically I really liked it, and conceptually I really liked it, that this stuff, this toxic gunk created this very lyrical and delicate desert image landscape on this brown surface.

I would make these browns by taking the sludge from the bottom of my brush jar, where my brushes would sit, and I'd pour that on there, or I'd also then cover it with plastic that I'd also make dirty, and then I'd attach it with heavy-duty industrial staples, and then I'd bind them in ropes and cords and make this big sort of polluted mess where you could see glimpses of this landscape through it. The overall effect was such that people assumed, and more than assumed, that it was photographs.

At first I felt in a backhanded way kind of acknowledged for something special, that I had created a performance that people thought was so convincing that it must be photography. Then after a while I got really

annoyed with it, because I felt that that was discrediting a large part of this concept, which at the time was nature recreating itself. I would take the stuff that would poison the earth, and through physics and gravity and all these other laws of nature would recreate these images, just as an insect resembles a stick, or a stick resembles a snake. Nature repeating itself.

I was put off by people perceiving it as a photograph. So I began putting up a large wall text "Paintings by David Berg", and writing the whole thing out. I remember one show in '95 where a woman came up to me, pointing to where it said "Paintings by David Berg", and she said "Oh, the gallery forgot to take that sign down. It should say 'Photographs.'" I was beginning to find that there was no way to get people to alter their perception about what these images were. So, if you can't beat 'em, join 'em.

The next show I did, I took these paintings with the colloidal mixture and rather than making them very large, I made them very, very small. I put them in 35mm slide mounts, or I put them in accordion sleeves for wallets, or I put them in these college frames that families used to put pictures of their children and their relatives, little oval cutouts and square cutouts. In other words, I put these paintings in a photographic context.

LM: They were still on paper?

DB: Still on paper. These slides were totally opaque. I put them in clear slide sheets and attached them to the wall, and people invariably, nine out of ten, more, would lift it up and hold it to the light, at which point everything would disappear. It would just be dark gray. They couldn't see anything. And yet they still thought they were slides.They still thought they were actual places. This was really too much. I then made a series of actual slides. This is the first time I painted on plastic. I had experimented in the earlier phases of doing the pourings on plastic and then layering the plastic to create the illusion of three-dimensional depth, of atmospheric depth.

...I had created a performance that people thought was so convincing that it must be photography. Then after a while I got really annoyed with it... I was put off by people perceiving it as a photograph.

LM: How were you getting the stuff onto the plastic on the little pictures?

DB: I was pouring. I would pour it on a larger piece of plastic and then cut out a spot that looked good.

LM: When you poured it, how did you move the paint around?

DB: I would hold the surface that I was pouring it onto and move it and tilt it a little bit. Part of the colloidal mixture was mixing it with super hot water. Boiling water. So I had to be a little bit careful. I would wear protective clothing. I learned to pour it so it wouldn't splash, and pour it in a way that I could direct it somewhat. I had about ten- to fifteen-percent control of the outcome.

LM: So it was basically self-organizing.

DB: Totally. Well, eighty-five percent. Which I liked. I had gotten so sick of consciously attempting to do things. This felt very restorative to me. Just to let go of all conscious control and intent, and see what this stuff would do. So that slide show went over so well that the idea came about, if you can paint in miniature positive, why not try negative? So then I went back to the studio and experimented doing these paintings backwards.

The pouring method wasn't going to work. So I went back to oil paint on the plastic. But you can't pour oil paint. So what I discovered was moving the oil paint on the plastic with another piece of plastic, like a sandwich. I experimented with different ways of scraping and moving and I could create an even better sense of higher-detailed organic abstraction that looked like photographic landscape.

By also using that technique, I was able to control it enough to do the backwards. I don't know how to take a picture and I certainly don't know anything about the darkroom, but a friend of mine had set something up for me, so I took one of these and just put it in the enlarger. We looked at it on the wall. Just bent the enlarger back. I was really startled. It looked like a negative, so much so that he helped me learn how to work in the darkroom to make a print. That first print that came out, he and I both thought it would look like a pinhole camera, scratchy, fuzzy, blurry. It was incredible, it was so sharp.

LM: Now there's more color involved.

DB: I finally got back to color. But that was ten years. All of those splashy abstract paintings from the early Eighties up through close to 1990, because that's when the black-and-white landscapes came to be, I was sick of color, and I was sick of painting in any sort of traditional sense. It was very healing for me not to actually paint. The next ten years I worked exclusively in black-and-white, learning how to print in the darkroom and learning black-and-white photography methods.

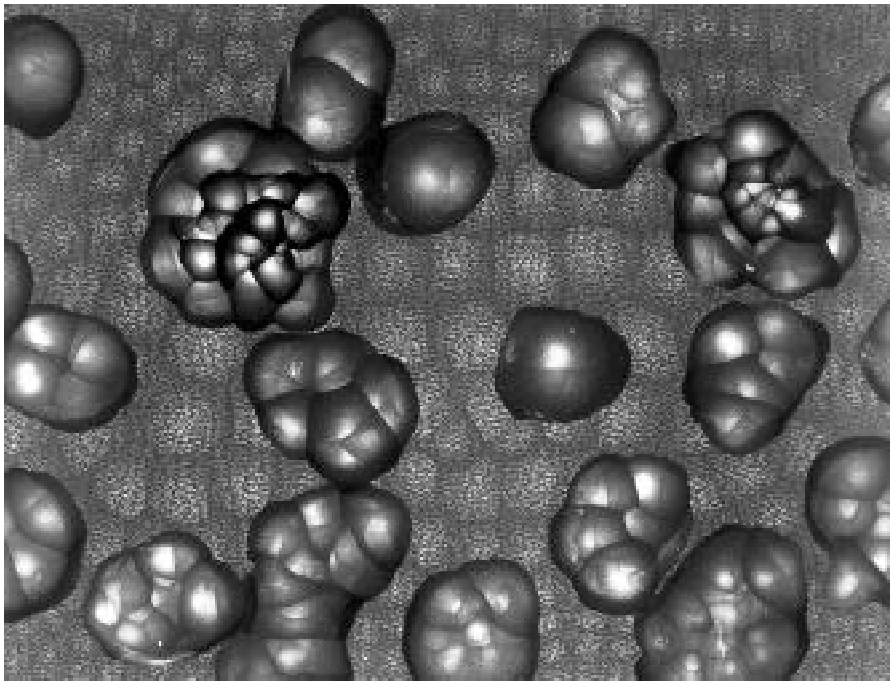
Then I was tired of black-and-white. So another friend who had been a nature photographer taught me how to do Cibachrome processing. So I went to his house and made some color positives, because Cibachrome is a positive process and in showing me how to do a Cibachrome, I was able to see how these work. They were spectacular too. Just

extremely sharp, color was extremely strong, saturated. So that started getting into exploring color. Now the imagery isn't landscape, it's micro-photography. Imagery that looks like cells, blastocysts, viruses, cellular life.

LM: You've gotten a lot of good positive response from this. Including a lot of important purchases. You purchases. You're in San Francisco MOMA…

DB: I'm in the LA County, and the DeYoung, and the Legion in Hawaii, and the University Art Museum in Berkeley. I was the first SECA Fund purchase in the history of SF MOMA. They have the SECA Award, but in 1995 they used SECA funds to purchase my work. That's how I got into MOMA. I was the first artist they did that for.

I would install the painted negative alongside the print, so that people could see, "There's the negative, this is the painting. Here's the print that I made from it." Nobody got it, "Oh, you found a negative and



David Berg: Double Negative #4 (2001)

you painted on it." "Oh, you made a painting and took a picture of it." To this day, nobody gets it. The senior curator of photography at LACMA, I happened to be there when they were showing my purchase peice at their Millenial show, ***Made in California, 1900-2000***.

He bumped me aside. I was standing there with a junior-level curator. We were looking at the work and he bumped us aside so he could show Diane Keaton the painting. He was talking about it. He was very emphatic and very into it. He was completely wrong. He drew with a Rapidograph. It's amazing to me. A show I just did at San Diego, the curator was explaining it to a group of people. Completely wrong. I don't understand why people don't get it. It's so simple.

DB: With the color work, I put that on with plastic and move it around with plastic, and I also draw with an air brush with no paint in it. The compressed air moves the paint around in certain ways.

LM: But you're not using a brush…

DB: No, no. But I've got a palette, I'm mixing colors. I am painting, but more akin to an abstract-expressionist style than a realist painter.

LM: You make a palette and the palette does the work of creating the image?

DB: It's a little bit more than that. What I'm showing is really the tonalities and the possibilities of what paint can do. The paint is doing it. Not the meat.

LM: And there are also chemicals involved…

DB: Not any more. Ever since I stopped the pouring. Ever since I started the darkroom work, making paintings for the darkroom, it's been all oil paint, straight. No more of the chemical stuff. Paint is amazing stuff, so there's a concept there. Letting the paint do the imagery. And they're photographs. I think it's wild. But I don't think too many people agree.

LM: So you've come to a scientific understanding of how paint can work…

DB: I think more Buddhist than science. The way these are made, they only way they seem to work is if I'm relaxed, in kind of a peaceful mode. If I'm trying to do something, if I feel pressured, every one of these experiments is a failure. There's a real sense of letting go. It's some other zone, to make these things work.

LM: And you don't use computers in your work…

DB: No. Yet some of the more recent "cellular" stuff actually looks more computer-based. When people assume that there is a computer involved, I also take that as something of a backward compliment. They can't believe that that's been hand-painted. At this point I still enjoy the concept that it's all painted, and that the painting is what's making this happen.

LM: What are you going to do next?

DB: Where I've been has been looking for an ever-increasing vocabulary of imagery to do this with. Yet, I'm starting to feel that this is going to move on. I may experiment again using paint, but making photographic images that don't look like a camera had made it. I might be going back to what I was doing in the 80s with abstract techniques and seeing if I can create a realm of slipping glimpse on plastic and then print those. It wouldn't look like a camera had made it, but it would be photograph of the unconscious eye. If I could successfully create unconscious imagery again as I did in the 80s, I'll turn those into photographs, maybe. Whatever I do, I know it will have a significant conceptual direction to it.

LM: Would you like to cut back on the amount of time you spend working as an educational consultant?

DB: No. The education thing is quite possibly my most mature and developed conceptual piece. It's completely original. I've developed it over the last twenty-six years from scratch. I use the same kinds of creative problem-solving approaches I do in my art work. I feel toward it now as if it were an art project. I don't have a kind of resentment that maybe I would have if it were a mind-numbing kind of drone job. It is much too much, but it's affecting powerful change. People really are responding, and need it. It's kind of its own self-generating experience.

I see the educational work and my studio time somewhat intertwined. I think over time there will be shifts. Right now there's a real focus on the educational development, and I see that shifting and perpetuating itself on lesser voltage, and then I would have more time in the studio. I see it as yin-yang. I have a private practice working with students with learning disabilities, and I train teachers at school sites, and I teach university courses that are also trainings for educators.

LM: And this is really satisfying?

DB: Immensely. It's changing people's lives. Sometimes art can feel a little effete in that context. It tandems well with the art. I don't see them as mutually exclusive. It interferes with my studio time, but not with the creative process, and not with my own development as an artist. I see them as one and the same.

David Berg's images courtesy of Catharine Clark Gallery. Her web page is www.cclarkgallery.com. David Berg's email address is david@makingmathreal.org

ABOUT MY WORK
By Ellen Carey

I view myself as a 20th century artist, using the tools of her time for aesthetic and conceptual expression. More often than not, the tool in question is the large format Polaroid 20 X 24 camera. This camera, of which there are five in the world, was built over twenty years ago under the sponsorship of the Polaroid Corporation. Dr. Edwin Land, the inventor of Polaroid's one-step peel away process, gave photography the "instant" image. Dr. Land's brilliant contribution to the medium stands alongside that of Daguerre, one of the founding fathers of photography, whose invention/process also produced one-of-a-kind images noted for their crisp clarity and detail.

The immediacy of the Polaroid process is especially invigorating to me as an artist. It allows me the opportunity to instantly view the art that I am creating, then make adjustments, and continue working. All of my work with this camera is experimental, technically inventive, and process oriented. This free-wheeling approach gives me the opportunity to be genuinely creative in the Polaroid 20 X 24 studio, preparing each shooting session with drawings, yet allowing for serendipity, chance, and play. The innovation and attention to method in my work reflect photography's unique combination of being an invention and a process.

It is at the particular intersection where a photograph is devoid of any recognizable image that I wish to concentrate my artistic, intellectual and aesthetic energies.

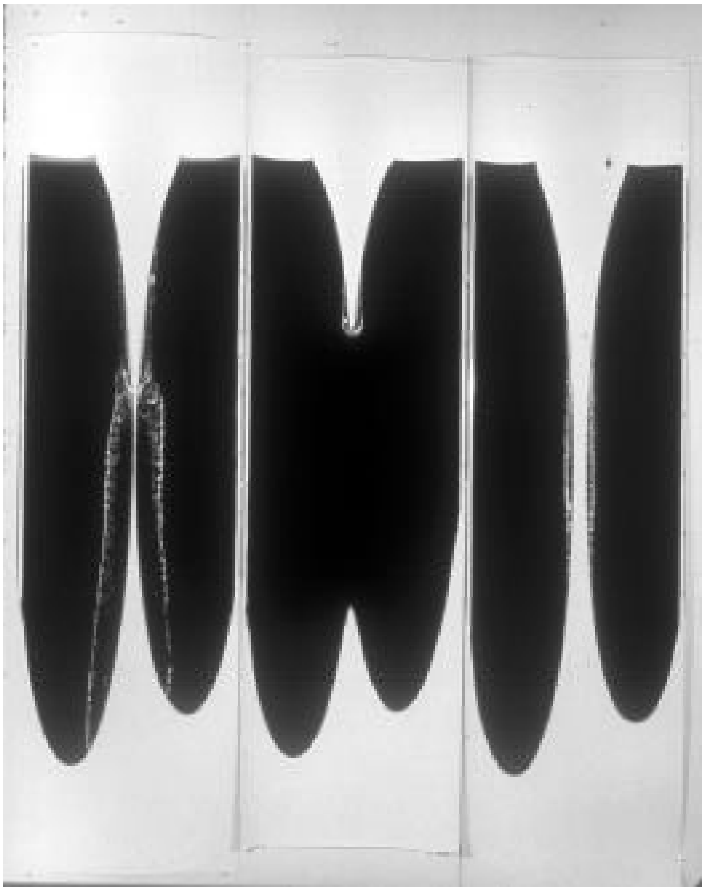
I approach photography as picture making rather than picture taking. I am interested, both visually and conceptually, in chaos theory, fractal geometry, and symmetry and asymmetry as found not only in art, but nature (nautilus shell), science (DNA helix), mathematics (the golden mean, the logarithmic spiral), and architecture. Order and randomness both play key roles in the creation of my work, which has affinities to Abstract Expressionism (size, scale, and "off-frame" space), Surrealism (light, the darkroom, photograms), and Minimalism (material-as-process, seriality, non-representational images, issues of silence). One question frequently asked about my work is "How was this picture made?" More recently, this has been joined by the question "What is this a picture of?" With these two questions my art not only confronts photography-as-process (the Polaroid camera is both invention and process) but also challenges the prescribed expectation that photographs depict reality.

Abstraction is well-established in painting, but still emergent in photography. In my particular case,

abstraction in the last few years has approached Minimalism more and more closely, as my most recent one-person shows in New York and elsewhere bear out. I wish to push the parameters of the photographic medium, both to question the process by which a photograph is made and raise the issue of photographic meaning in the absence from the frame of a recognizable representation. Abstraction in photography is a virtual contradiction in terms, and Minimalism a further oxymoron. It is at the particular intersection where a photograph is devoid of any recognizable image that I wish to concentrate my artistic, intellectual and aesthetic energies.

Minimalism remains distinctly underdeveloped in photography, but is well established in contemporary painting and sculpture, with specific affinities between my work and the sculpture of Dan Flavin (color and light), the paintings of Ellsworth Kelly and Agnes Martin (simplicity and repetition), the conceptual art of Sol LeWitt (geometry and systems), and the sculptural installations of the late Donald Judd (non-art materials and the square). The work of all these artists has a sublime presence and a timeless eloquence that not only challenges ideas about what is and what is not art, but also carries with it spiritual and perceptual overtones that are existentially self-defining. In my own work, this same combination of qualities can be seen in a palette linked with the stained-glass window of my Catholic upbringing which serves as the basis for a rigorous investigation of light, that primary agent responsible for all photography.

Ideas and visual codes that I have used freely in my art practices derive from the discoveries of Benoit Mandelbrot, who developed fractal geometry. I have also used in my own work ideas found in the writings of Rudolf Arnheim, whose basic thesis that art has two structures (the circle and the square) can be seen in connection with my use of the photographic apparatus with its circular lens and rectangular camera body. These conceptual and contextual affinities, along with studying the history of photography and its contemporary practices, have given me the tools to create in a more meaningful way and have underwritten a richer synoptic clarity in the end result.

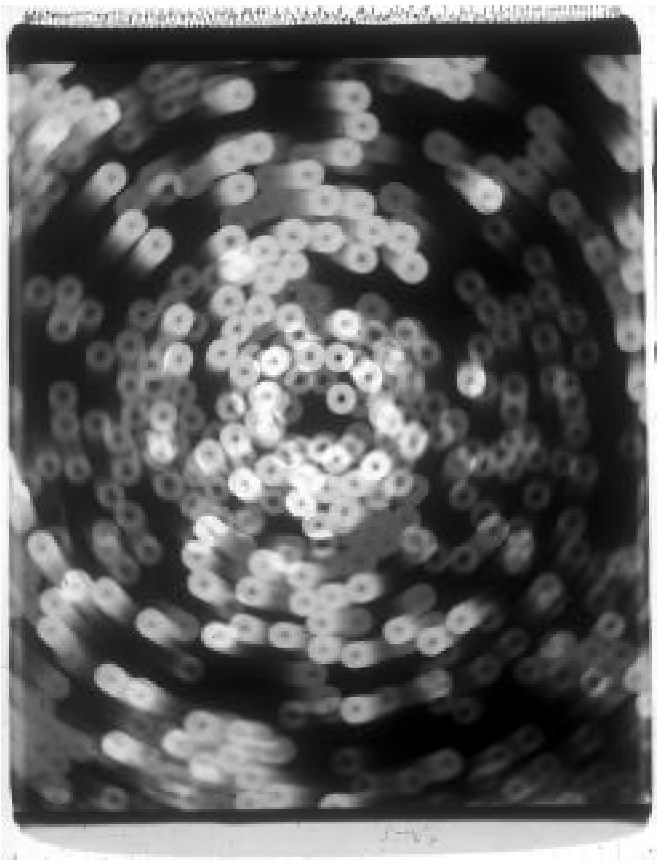


Ellen Carey, #207 (Unique Polaroid, 1997)

In 1996, my one-person show at the Ricco/Maresca Gallery in SoHo (NYC), "Photography Degree Zero, was the first exhibit to show my investigations into Minimalism and photography, of which "No. 47" (1995) is one. These photographs show the colors yellow, red, green and blue—images that record pure saturated light as it falls in front of the Polaroid 20 X 24 camera. These colors also represent the four elements: yellow/sun, red/fire, green/earth and blue/sky. This four-panel art work also contains the primary colors in painting; yellow, red and blue, and the primary additive colors in color photography; red, green and blue, In painting with light I re-introduce one of photography's unique characteristics, that of capturing the magic and beauty of color (light) and give it equal status to that of an image of "something".

"Photography Degree Zero" is a direct reference to Roland Barthes' book, Writing Degree Zero, published in French in 1953 and in English in 1968, with an introduction by Susan Sontag. Barthes offers theoretical meditations on writing, focusing particularly on the dispassionate tone and minimalist style of the French new novel. In related fashion, my work is meant to represent a departure from the picture sign idea of the photograph, as well as from the historical and cultural expectations surrounding the idea that a photograph will describe, document, and narrate such as in the snapshot, landscape, portraiture and photojournalism.

In tandem with my Polaroid 20 X 24 work, which I began in 1983, I have also been making photograms for over a decade, both in black-and-white and color. Over the past several years I have rediscovered the work of the British inventor, William Henry Fox Talbot (1800-1877), one of the pioneers in photography. Talbot's system produced an image, say a fern leaf, on chemically treated drawing paper, creating a negative, using



Ellen Carey, #42 (1995)

sunlight for exposure. The result of this procedure was called “sun pictures”, or “photogenic drawings”. Later it evolved into the calotype or Talbotype processes, which often involved contact printing the “negative” image to make a “positive” one, thus introducing the reproduction of prints from an original negative.

I have similarly produced images (in the darkroom) using the photogram technique, a method from the dawn of photography. However, I start out with a “positive” image, later contact printing it to get a paper “negative”, thereby reversing Talbot’s original process. Often the negative image is more successful than the positive one, but in this diptych from 1999, both have equal aesthetic value. The paper negatives are striking in their rich, luxurious warm blacks. The positive photogram has a decidedly modern look, with cooler blacks than those of its counterpart. It is in this link to the beginning of photography that my work has a “back to the future” quality, referencing early photograms, especially the “negative” images from Talbot.

My pictures, when taken altogether, are reminiscent of distant galaxies and nebulae taken with a large telescope or the interior microphotographs of tissue, optical nerves and cells. I have created rich fields of marks that are clearly abstract, mysterious and full of ambiguities while paradoxically introducing the gestalt of forms and metaphors. The wonder of photography’s invention and process is revisited here. Years of darkroom experience coupled with knowledge from various fields outside of art inform my revisitation with critical acumen and aesthetic rigor.

As our culture spins towards the 21st century, camera-based and technological media like photography seem logical and appealing choices for certain artists. Photography's protean diversity, its comparatively short history, its technical advances, and the universality of its images all speak to the interests of those artists in addressing issues beyond and outside the rarefied concerns of the art world of former times.

Ellen Carey, #21 (1987)

It is in this spirit that I have made a conscious decision to work in a medium in which a machine can combine with imagination to redefine notions of truth and beauty at 1/125th of a second.

The vintage photography and collecting market have answered “yes” to photography as a viable art form for over the past 25 years. As the market for vintage material gets scarce and numbers climb to the six figures, it makes sense for institutions and collectors to look at contemporary photographers and artists to continue the aesthetic, intellectual and technical dialogue with which their forebears began in this pioneering field.

The number of galleries devoted to contemporary art/photography has grown enormously over the years, and my generation (Cindy Sherman, Robert Mapplethorpe, Barbara Kruger, Sally Mann etc.) has led the field in breaking down barriers between art and photography. Mid-career lens-based artists and photographers such as myself have paved the way for the upcoming generation, with my work specifically having important links to photography’s past in the work of Talbot and Daguerre. The trajectory of these links must be preserved in related artworks whenever

possible, as they reflect not only the photographer's artistic vision of their time, but photography's collective importance over time. Thus the vitality and expansion of the language of photography is enriched, and the legacy of Talbot and Daguerre preserved.

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(All Ellen Carey images courtesy of JHB Gallery, jayne@jhbgallery.com)

INTERVIEW WITH FRANCES DOSE
By Loren Means

LM: How did you create your new pieces?

FD: I work with a whole bunch of different applications. I often start out with photography. I work into the photographic pieces both with custom effects that I have written and an application that I used to work on called Pandemonium. I also work with compositing applications called Flame and Flint, as well as 3-D applications. For this particular selection of pieces, I started out with photography and worked with Flame and Pandemonium and Photoshop. I use a lot of image distortion and also paint into the images again afterwards.

LM: How did you get the photography in there in the first place?

FD: Scan it. Most of the stuff was shot on 35mm. Nowadays I'm doing lot more digital photography. If I shoot it digitally of course it's no problem getting it into the application. I've also got a really nice DVCam. A lot of my work is actually animation. I take stills out of my animation, and then work into them as still images. There are at least three pieces in the current show at Marin Civic Center that come from a longer six-minute animation.

LM: So you make movies besides doing stills?

FD: Right. I have been creating animated films for some years and I am beginning to get into documentary filmmaking.

LM: And you work for Phillips?

FD: It used to be Phillips. Now it's Thompson. They bought us out.

LM: So you work on the applications there that you use for making your art?

FD: I used to work at Xaos Tools, and they had a wonderful application called Pandemonium. It had organic effects, and it was just great. That's where I started getting into it. Then I went to Kodak and started working on more utilitarian compositing. There was a bit less usage for my own artwork there. Now I'm working on an application that does high-end real-time film conformance editing. I find programming very creative. I'm creating something from nothing, and it's something that people use to do their artwork. But the software I'm working on right now isn't so much something I can use for my own work. So I sometimes write my own plug-ins. I'm working on a 3-D animation right now, and I wrote a little plug-in, because I'm really into non-photo-real rendering. I like taking a 3-D source and filtering it in such a way that it ends up looking like hand-drawn animation or something non-photo-real. Making 3-D animation look like it's been rendered in sort of a watercolor or a pastel. That's one of the things that I'm really into right now, but unfortunately, that's not part of my job. My job is a little bit more straight-laced at this point, but still very interesting to me.

LM: What language do you write in?

FD: C++.

LM: Do you work in the Mac world or the PC world?

FD: The SGI world, which is my favorite hardware platform, and is doing so poorly. Once you've done graphics on an SGI, it's really hard to find an equal on a PC or a Mac. The Macs are getting better, and I hear that they've just come out with rack-mounted servers. And the Macs are finally going to Unix, which is wonderful. So you're not working just in Mac OS. But definitely Unix and SGI are my loves.

LM: Do you have SGI at home?

FD: Yes, I do. And where I teach, at the Academy of Art College, I'm also teaching on SGIs. Unfortunately the SGI department is getting smaller and smaller and smaller all the time, and the PC department keeps getting bigger and bigger. We've got a Director who only thinks PCs. It's unfortunate.

LM: What do you teach?

FD: I teach compositing and effects using Flame and Flint, applications by Discrete Logic. They all run on the SGI. I use a lot of that for creating my artwork as well. I have about eighteen students per class. I teach two classes and a workshop. It keeps me busy.

LM: I think of the Academy of Art College as a traditional school.

FD: They started out as a traditional school. Now they're moving more toward being a trade school, which is kind of unfortunate. I find in the Computer Arts Department that they're not doing such a good job of opening their hearts to people who want to be fine

artists. They're much more into turning out people who can get into the animation industry, to do modeling or animation pretty much the way everyone else does. They're not really supporting people who want to be fine artists, which is very much what I'm trying to do when I'm there. So I find myself kind of alone at the Academy lately, trying to support students who want to do things that are different.

LM: What is your educational background?

FD: I have three undergraduate degrees. I have one in Psychology, one in Fine Arts, and one in Philosophy/ Religious studies. I went to a variety of different schools, but I finally graduated from San Francisco State University. After that I did my MFA in experimental animation at Cal Arts in Valencia. I'm on-and-off working on a PhD in Mythological Studies. I'm off right now, but I'm hoping to get back into that maybe next year. It's a school called Pacifica. It's down in Santa Barbara. It's a very unusual school, where they actually offer degrees as esoteric as mythological studies, which to me is absolutely wonderful. I love it.

LM: How did you get your first job in technology? Did you have your MFA then?

FD: Yes, I did. As happens to most people when you're just fresh out of art school, it's not easy to get a job. I was in experimental animation, so my films, although they both won awards in film festivals, were very experimental. It wasn't the type of thing that you just walk into a place and say "Look!" and then they immediately hire you. I started out doing carpentry by day, because that was one of the things I used to work my way through school. I worked as a carpenter, and at night I found different companies where I would go and work on their computers for free, anything to get my hands on a computer and do some work. This was in 1990.

Then I found George Coates' Performance Works. I went and saw a show there. I thought, "This is so cool, this is what I want to be doing." They had this beautiful mixture of image and film and slides and computer imagery that they were projecting onto different screens. I thought it was fantastic. It just happened that I was working doing carpentry at some guy's house who knew George Coates. Bizarre. One thing led to another and I wound up working over at George Coates. I worked there for about two years, working on Invisible Site and a couple of other shows. I was like a virtual character in their theatrical productions, because I was up there in the booth projecting computer animation that was part of the show. That was wonderful. While I was at George Coates, I ran into somebody who was working at Xaos Tools, where I wound up working and getting into programming. I had taken some programming when I was working on my MFA, so it wasn't completely cold turkey, but I didn't get a computer science degree. I basically taught myself on the job, which had its very stressful moments.

Xaos Tools segued into Xaos Inc, where I did a bit of freelance work. They were known for avant-garde, absolutely amazingly beautiful organic, painterly animation. I did a bit of work for them at the same time that I was writing effects for Pandemonium at Xaos Tools. They were sister companies. This was in '93 and '94. I was at Xaos Tools for a very long time. I was there for about five years. When that company started finally falling apart, I moved on to Kodak and then Phillips and then Thompson.

LM: What did you do for Kodak?

FD: I was writing compositing software. There was this really amazing film compositing application called Cineon. I was writing effects and plug-ins for Cineon.

LM: What is compositing?

FD: Compositing is the basic way that you take film or video images and layer them together in order to create new images. It's very similar to what you do in Photoshop where you've got all the different layers of images that you put together. But compositing often involves moving imagery, and people shoot on blue screen and then key out the blue screen and create mattes to composite people or things into their new environments. It's basically the last thing you do in a production or post-production process. Somebody will create all the 3D elements, somebody will shoot all the backgrounds, somebody will shoot all the people on blue screens, somebody will shoot all the different clouds that you're going to replace into the sky.

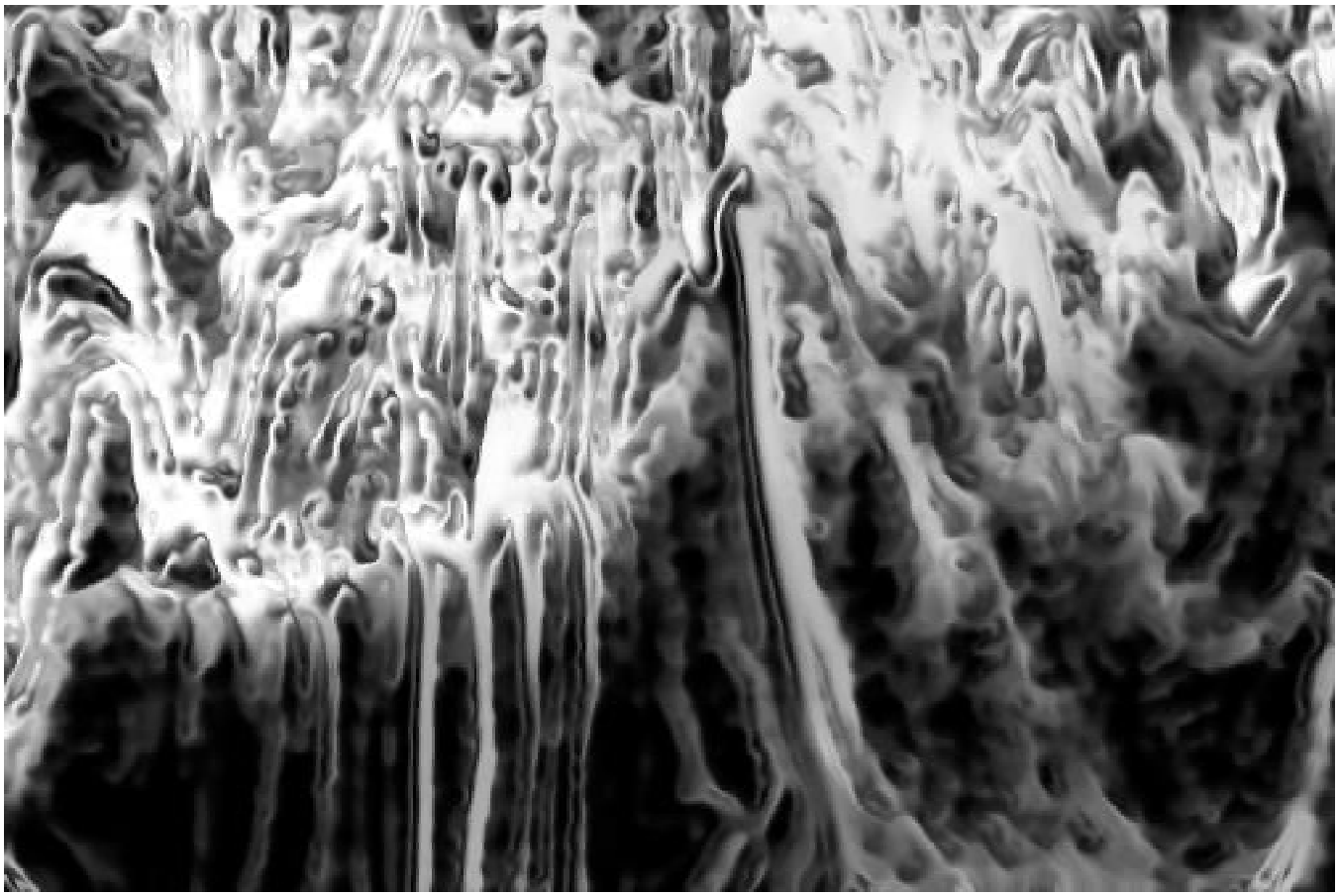
You've got all these different layers of things that have been shot separately, and then the compositor is the person who takes all of those elements and puts them together. It's basically the final product of any effects film or any film, really, nowadays. Most everything is pretty much scanned to digital and composited together digitally. I think that the digital intermediate is going to be the wave of the future. Everything will be shot, film is still currently the best capture medium, and then processed digitally, and then output to whatever format you want to have as your final output format, whether it's video, DV, film, whatever.

LM: Do you find other people like you who are programmers as well as artists?

FD: In the animation realm, for instance in companies like Pixar and PDI and ILM, you find that sort of hybrid person who is both technologically savvy and also artistically inclined. That breed of person is becoming more and more prevalent in that world. If you're working as a software engineer, writing animation software, then it's a little bit less common. I'm kind of an anomaly in my career, having both the art part and the technological part. I work with a lot of people who are incredibly technologically savvy, but have very little artistic sense. That's mostly in the software realm. When you get into production companies, animation houses, then you very much have these hybrid types of people who are very technically savvy and also very artistic.

LM: There doesn't seem to be a market for digital art.

FD: I think digital art and technologically oriented art is still in its infancy. People are just as confused and concerned about buying digital art as they were with photography years ago. The whole controversy about "Is this art?" comes up. The whole controversy about what's the original, how many prints can be made, what are you actually buying? That's very closely parallel to what happened in photography years ago. People are wary,



Frances Dose: EdgeFall

because it's still so new, because they still don't understand it, and because of this quandary about whether it is art or not. It's amazing how often one hears the old "Is it art?" question. Once that starts to settle down and once people start to accept it as an art form, accept it the way photography was accepted, then it's going to be great. People are definitely intrigued. People are definitely wondering what it's about. When you hear about a digital art show, there are always people who are going just to see what in the world that is. It's very intriguing to people, yet it's still an unknown. Because it is an unknown, it makes collectors very leery of what it means to invest in it. It's just going to take time until that blows over and it becomes validated.

LM: Even though you're working with a computer, you have a lot of control over the creation of the imagery

FD: Especially when I'm writing my own plug-ins that actually process the image for me. In Photoshop, for instance, you can paint with an electronic brush. Not too many people would have a problem accepting that as art, because instead of working with a paintbrush, you're working with an electronic brush. If you paint the entire

Frances Dose: Fountain

For myself, if I'm writing my own filters, I can just say, "I wrote my own filter, and I wrote the algorithm that's working on the image, so I had my hand in the whole process. I told the computer what to do, as well as pressing the button to send that filter into its process."

thing from scratch yourself, most people in the art world would say, "We can probably accept that as art." However, if you're taking a photograph and filtering it with different filters, people have a more difficult time at that point saying "That is definitely art," because there's an algorithm in the filter that is actually doing something to the entire image. Unless you had written that algorithm yourself, people might say "It's just the computer doing it, it's not you doing it."

Of course, that's completely missing the point, because the artist still has to decide how those filters are going to be working with one another, which different filters are you going to use, how are you going to paint them onto the image, how are you going to "composite" them together. That's basically where the whole issue and argument comes from. For myself, if I'm writing my own filters, I can just say, "I wrote my own filter, and I wrote the algorithm that's working on the image, so I had my hand in the whole process. I told the computer what to do, as well as pressing the button to send that filter into its process."

LM: Of course, most artists don't write their own algorithms.

FD: There are degrees, too.

Fraces Dose: Softice

Some people consider themselves algorithmic artists. For instance, Mandelbrot, who created fractal art. That is purely algorithmic art, where you start coding the numbers in the computer, which then creates a piece of artwork. Then you have the people like myself who are sort of in-between. I use Photoshop, I use off-the-shelf software, and I write my own plug-ins, but I don't do entirely, one hundred percent algorithmic art. I do kind of a combination of the two. And then you have people who don't do any algorithmic art themselves, they use the algorithms that other people have written, and they use Photoshop to do their work. So you've got a whole continuum. At Siggraph, I saw a talk by algorithmic artists who would never think of using a software application that somebody else had written. If they didn't write it themselves, then it's not their art. You've got purists to whom algorithmic art is the only way to go, and if you're doing anything other than algorithmic art, it's not art. But then, who's to say that's right? I certainly don't agree with that. But it's interesting to note that there are people who are in technology-driven art who do think that way

LM: Then there are artists like Clint Sprott, who create neural networks to make fractals with out human intervention.

FD: That's where the whole interesting thing about genetic algorithms comes up. When I was working at Xaos Tools we had this thing called Genetic Brushes. They were based on an evolutionary model, where you could breed two brushes together, and they would make a whole new brush. You could then brush over the entire image algorithmically. No human intervention other than setting up the basic parameters. The brush size, color, angle etc. was calculated based on information from the image, whether it was luminance or hue or something like that.

There's something very intriguing about that whole process. But then you're talking about randomness and chance, really. And yet at the same time, there is the person who originally created the algorithm, stipulated how the genetics were going to work, and created all the rules.

Beyond the rules though, it's pretty much random chance. There are a lot of people on the algorithmic level of things who are looking toward this whole notion of genetics and how to have your artwork genetically breed itself. It's a very intriguing idea.

LM: One of the disadvantages of being a computer artist is that you constantly have to buy new hardware and learn new software. Is that a problem for you?

FD: Absolutely. I am an expert right now on Flame and Flint. These are high-end compositing and special effects packages. I've been working with them for seven years, and I've been teaching them for seven years. I know them inside-out, and I absolutely love working with them. But they unfortunately cost about a hundred thousand dollars a pop for the lowest end that they possibly have. That's not counting the thirty-thousand-dollar machine you need to run them, and all the other equipment. Needless to say, I obviously can't afford it myself, which is very, very frustrating.

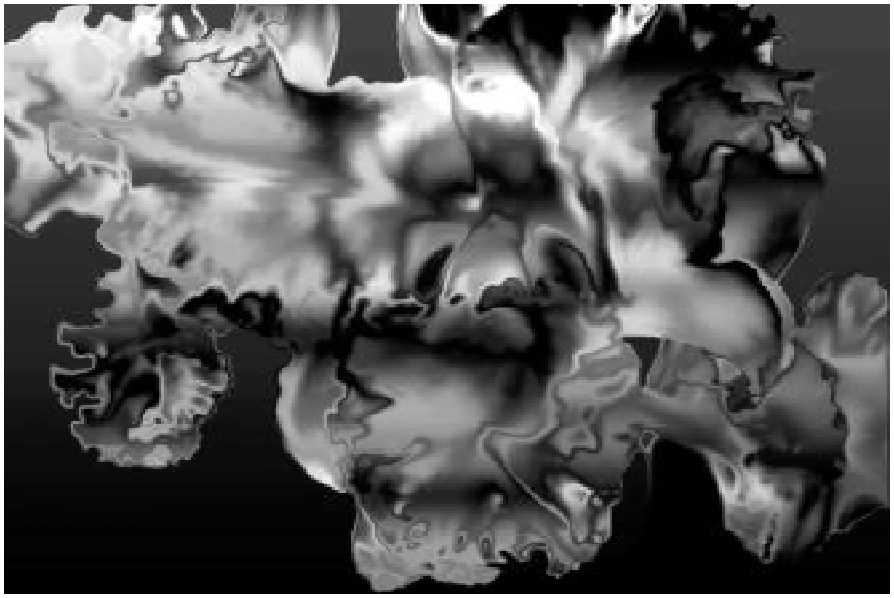
So right now I'm in the process, because I can't get my hands on the equipment enough at school, of having to learn new applications: Discreet Logic's Combustion, and Adobe After-Effects. I have not used either application very much in the past, but they're both lower-end compositing effects applications that run on the Mac and the PC. So now in the middle of my animation production, I have to learn two completely new software applications, and I'm finding myself really irritated by it. It's extremely annoying to have to go through the process of learning completely new applications because I can't get my hands on the one I really want to use.

LM: They don't have it at Thompson?

FD: No, they're too cheap to buy it at work. It's extremely expensive. A hundred thousand dollars is just something that you don't buy everyday, even if you're a company that has the money. I managed to get an Avid non-linear editing system at work, and that's what I did my last documentary on. I managed to finagle that one. And that was sixty thousand dollars. But that's not really good for animation and effects.

LM: What do you do for Thompson?

FD: It's hard to explain. I write a non-linear editing system to do real-time, high-resolution film editing and conformance editing. What that means is that people scan their film, and create high-resolution 2K files out of it. Then these files are real-time conformance edited on my system. Sometimes I have to go talk to the customers, down in LA or wherever, and help them with setting up their systems and troubleshooting problems.



Frances Dose: Orchidac

LM: What kinds of companies are your clients?

FD: These are all large post-production companies, like Technicolor, Warner Brothers, Sony Pictures ImageWorks.

LM: It sounds like your company is doing fine.

FD: I wish, but it's not. They got bought out, and what the new company has done with us has not been good. We went from totally profitable to totally not profitable in one year. So things are not going well, unfortunately.

LM: That's one of the main problems with the computer business—it's very unstable.

FD: Yes, it's very volatile. Companies are buying each other up all the time. In one year you can work for three different companies, because people are buying each other up so quickly. The best applications, the applications you can't imagine the industry doing without, will suddenly fall apart because of bad business decisions. It's really sad.

LM: What are you going to do next in your art?

FD: I'm going to be doing more animated films. My area of interest is the whole notion of non-photo-real rendering and making my 3-D graphics look very much like I've drawn them by hand. I'd really like to do more work with writing plug-ins for other software applications and creating a whole set of non-photo-real rendering filters that people could use with their compositing applications. I really love Surrealism, so I want to continue that trend in my own artwork. I would also love to create interactive artwork. Sort of in the game arena, but where you're actually creating a whole new world. I love the whole notion of legends and worlds that are created entirely from the mind.

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INTERVIEW WITH MARIUS JOHNSTON
–Loren Means

LM: What are you working on right now?

MJ: I'm working on a couple of things right now. I'm working on my Polaroid prints and my QTVR movies.

LM: What's QTVR?

MJ: Quick-Time Virtual Reality.

LM: This is the 360 degree environment on your web site at www.ylem.org.

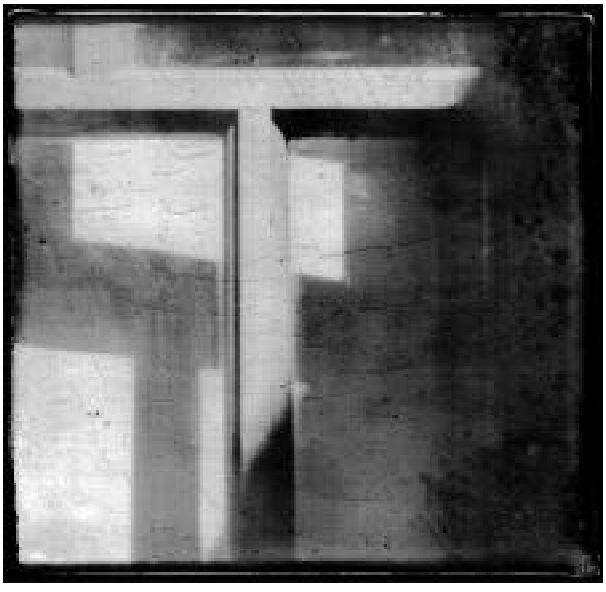
MJ: Yes. There are two parts to QTVR. One is the image that makes it, the Panorama, and two, the QTVR movie. The panorama has its own kind of visual experience. It is analogous to taking a Grecian urn with painted scenes and rotating the urn around while photographing all of its sides, then printing it out in a long strip. The beginning of the print is really the end, the end a beginning. It is an infinite loop laid out flat. To make a QTVR movie, the panoramic image is processed by the QTVR software.

When you see it on the monitor, you're sitting in the "center" of the movie and have the ability to go to the right or to the left, up or down. It's an interactive kind of thing. It has a very different kind of quality to it than a printed panorama. I love paper, and I love stuff printed on paper, so somehow I can't give that up, nor do I want to. But on the other hand, the QTVR movie has a strong sense of space that you can travel through. So, for me, the QTVR movie and the printed panoramas are both ends in their own right.

LM: And you also have Polaroid images that you took with a camera?

MJ: Right. I have an old SX70. Often I'll split the film, peeling off all the tape and stuff that's holding it together, getting two things. There is the primary image and its backside, and then a kind of negative in an emulsion on the other piece of material. All of these are useful in the process of making the final image.

The flip side of the primary image is useful, but the stuff on the split material is even better, because by using Photoshop and a scanner you can dredge out not only the image but all sorts of collateral stuff. Or you can do various combinations of them all. So it has a lot of interest for me in that way. Some images come from the back side, some from the negative material of the Polaroid. That's where the texture, the tactile sense of cracking emulsion, flecks of dried emulsion, all that stuff in there comes from.



Marius Johnston: Window, (tiled digital print on paper, 36"x30", 1997)

That's a four-by-four Polaroid, enlarged and manipulated. It's enlarged in Photoshop. I have the basic Polaroids that I work with, and they're enlarged in

Photoshop through a scanner. That was back when I had the Alps printer, and I could only print about 7 x 9, so I was stuck with tiling them. Which was no loss. I took advantage of piecing them together. I have a large printer now, an Epson that will print 17 x 22, so I can print that image almost in its entirety or make larger tiles and larger images. There's a limit to what the Polaroid will put up with before the image really breaks down. I want to find a way to make the tiling a more active force in the picture. I want the viewer to have an intense feeling of space.

Marius Johnston: Shard 49 (digital print on paper,15"x18", 2000)

That's a scanner image that I re photographed from the computer screen with a digital camera. I photographed it from different perspectives, allowing parts of the original image to remain in the original one-point perspective. It shows what happens when you introduce multiple perspectives when looking at the same thing. I hope by that, tiling, and putting it together in a wall-sized way, will create a much more intense sense of visual space.

LM: In the Quick-Time movies, there really is a feeling of space, in a manner of speaking.

MJ: Yes. Particularly as you're moving it around and looking at it.

LM: You used to use the scanner and interrupt it while it was in the process of the scan...

MJ: My scanner prints extended out of Muybridge's series of 8 photographs of a nude descending a staircase. I noticed that each photo making up the series was done so that it retains its own perspective, a one-point perspective. It's not like filming someone going down the staircase from one spot. Muybridge set up a series of cameras and trip wires that photographed the nude as she went down the stairs. Unlike a movie camera with a single point of view many cameras were used each with a unique point of view.

They're in a line, and, because of the power of one-point perspective, you find yourself moving along as you move from picture to picture right to left. I thought that was very powerful. If you force people into seeing something in a certain way because of one-point perspective, then you can move them around in the way Muybridge did. That became the really active force in my scanner prints. I'm really in many ways moving the viewer through the print as the elements scanned go through their changes. Muybridge's nude was photographed 8 times as she trips the trigger wires, my 12" flat bed scanner scans 600 "photographs."

In the scanner images, I'm not giving the viewer much of a choice. It is a performance through a period of time on the scanner of objects and spatial considerations moving together. A lot of my QTVR stuff

Eadweard Muybridge: Nude Descending Stairs (1887)

comes from my scanner. They seem to go very well together.

Ambiguity can be a way of creating a sense of space. Certain parts of a picture can break with the predicted point of perspective. Here's an image called Pear. It's a still life of a single pear, and yet it's set up in such a way that the window creates a sense of ambiguity. You're not sure where the pear resides. You're almost sure, but not quite.

LM: What do you scan in to get these images that you use?

MJ: I have objects that I use. The scanner images are a performance piece. I have a scanner that's sitting on top of a table, its top is off, there's an extra piece of glass on top. I have a variety of tools that I use: mirrors, pieces of cardboard, matte board with mattes cut out, different colored things, sometimes some objects, whatever comes to mind. In many respects it's a chance operation. I do a performance. I look at it. Was it good? Can it be improved? Which way should I go? Sometimes I put dirt on top of the glass or I've also drawn on top of the glass creating movement through a static element. There are lots of different things that can happen that way. I guess it lends itself to QTVR movies so well because it's really basically the same thing. A scanner starts at the beginning and moves ever so slowly to the end of the scan. It may take thirty seconds or so. That is just like what the QTVR movies do, but on a horizontal plane. You join the ends, so you just flip around in an infinite loop.

The objects I use are often three-dimensional which become two-dimensional by scanning. The scanned image is restructured in making the panorama for the QTVR movies. There are armatures, much like a sculptor would use, that allow you to predict where things will lie in a QTVR perspective field. I have a variety of armatures, the first one I got from the Internet, which was an interior of a room. I then constructed my own armatures, using a variety of techniques which break down or bring out the scanner pieces so that they will become an event in QTVR space as they were in scanner space.

LM: How did you make the stills that you took from the QTVR movies?

MJ: There are two kinds of stills that I use for my art. One is the panorama and the other is a screen shot of QTVR movie as it is being played. Flash-It is a shareware program that I use. You find what you like in the movie and then you just click and then drag a selector of the part you want, let it go, and it converts it into a Photoshop document. The only problem is that you can't enlarge them. You are left with a 72dpi image the size of your computer screen, which is a shame, because I could do a lot more with them if I could get bigger ones.

Although both the movie and screen shot are seen from a single perspective, the screen shot seems more so. So it's very strongly based one-point perspective rendition of the movie, which has its charm. The original panorama is a lot flatter in many respects, but it has a very quiet quality about it. Maybe it is because the beginning and the end (left and right) join seamlessly. Often people looking at the panorama prints are not immediately aware of this but the effect is there. It's almost mystical in its own right. A QTVR movie is somewhere in between. Because of the Epson, I've only been putting the panoramas on a single sheet of paper. In my new studio I'm looking forward to doing a lot of cutting and pasting. Too bad I can't make the screen shots large also.

LM: The images you've been framing are pretty big.

MJ: They're approximately the size of the original images, 30 x 36. I'm making them as big as I can. They're in PICT format, not Photoshop. They're loops. There are ways that you can sensitize various parts of that loop so you can move to another loop, or move to an image, or move to other things. I have considered doing that.

LM: How long have you been doing computer art?

MJ: My first computer piece was in 1987. It happened because like all good parents I thought that we should give every advantage to our child. We bought her a computer so she could be computer literate. This was a Mac Plus. I didn't care about computers then. I was busy painting. Painting was everything. The computer was a machine. But the computer looked interesting, because although I had painted for a long period of time after school, I got my degree in printmaking doing photo silk screen. So I noticed that on the Mac I could actually print photographs, cut and paste…. I started playing around with it. It was the beginning of the end. I started realizing all the neat stuff you could do with it. My daughter still got to use her computer, but for me it was no turning back. We bought a second computer.

There's something about the photographic image that has a lot of power. I'm interested in its power. It represents reality, doesn't it? It's the nearest thing that we can come to in terms of capturing reality, it freezes moments in time. I realize that's kind of a naïve way to look at it, because you can manipulate the hell out a photograph, but it does have that quality nonetheless. Everyone thinks of it that way. There's magic there, and there's things that you can do. It goes back to my desire to use ambiguity in a photographic image to bring out the senses of space that I want to do. It is difficult to do that painting. A photograph can fool the eye, a painting rarely can.

LM: Some of your work is abstract, some of it isn't.

MJ: The scanner pieces are all effectively abstract. I've done a couple where you have an idea of what the object might be. But most of them aren't recognizable as such. As an example of recognizable imagery I did what I call "rolls." I took objects and turned them with my hands on the scanner top, trying to make all sides come out on the scanner. Those are recognizable objects "unrolled". I only did a few of them. This led to the pieces I am doing now where many elements interact as they are moved, or not, on the scanner top. I'm very utilitarian about that. I have the basic thing that I want to do, and if a real object helps me do it, fine. I think a real object is more effective, frankly. I like to work on lots of different things. I learn a lot from it. I like working with color composition, random events, interacting with random events, trying to ride the wave of a random activity to my advantage. That's a joy unto itself too.

LM: What was the software you first started making digital images with?

MJ: Mac Paint. The Mac Plus was a black-and-white Mac. Colorit was the name of the software which

allowed you to print four colors on top of one another, CMYK, with an ImageWriter Two. You could get color prints. Then I got Photoshop, but that was also black-and-white. Then Digital Darkroom which was also black-and-white. Also Laser Color Two, then all the Photoshops after that. Photoshop is the king and queen of image manipulation and paint stuff. It's wonderful. The ImageWriter Two, what a funky thing that was. It had a multicolored ribbon, and it was a dot matrix printer. It would print red, yellow, blue, and black. The resolution was awful. You got a lot of lines. But that's what I could afford. There were good color printers early on. Techtronics comes to mind. But they were very expensive.

After that somebody gave me an Ink Jet color printer. That was my first break into something that could print color fairly well. The problem with it was that the inks were not stable. You would lay one out for a couple of days in the sun and it would severely fade. So I would print them out in panels with the ink jet and go get them color Xeroxed and then use the color Xerox joined as the final piece. That was reasonably light-stable. So it's been an evolution of taking what's at hand that I can afford and trying to make art with it.

LM: And now you've found printers that are stable…

MJ: The Epson with third-party inks. Epson claims now that they have inks that are stable. I use third-party inks, and they're certainly within the realm of classical printmaking in colors, or watercolors. They're that stable.

Marius Johnston: Pear (digital print on paper, 21"x14", 2000)

LM: Did you get the Quick-Time Virtual Reality software free?

MJ: No, I had to buy that. Apple makes it. They're the ones who started it. It's an Apple product, not expensive. The way it works is fairly primitive, at least the part I use most. If you have an image that's the correct ratio of height to width, you can plug it into the software, and it will turn it into a Quick-Time movie. Just like that. At its base, it's fairly crude. The software not only has the capacity of placing you in the center of an image loop where you can move yourself about, you can also make a movie where you are outside rotating around an object. You can take a pot and photograph it from all sides, and you can use the cursor to travel around the pot. Or you can be inside the pot, take your pick. I work inside the pot. It seems like reality to me.

LM: Where did you get your degree?

MJ: California College of Arts and Crafts. I got my MFA there in printmaking. I got it in the middle Seventies sometime. It was great. Before, I'd gone to University and had that kind of structure to my endeavors. Going to art school was unnerving, because they would ask me what I wanted to do. They weren't telling me what to do. They weren't organizing my activities by giving me papers, asking me to research things or readings. They would ask me what my project was. It took about a semester to see the light. To be an artist, you have to find inside yourself whatever it is you want to do, and then do it, with full attention. It was a good experience. I also taught there as a teaching assistant, and that was fun, too.

After graduating from CCAC, I went to LA as a painter. I did stuff with LA Art Core, and then a bunch of us opened our own gallery downtown, Gallery 318. It went on until I left in the Eighties. Also a bunch of us met as an art group and talked about art issues. We also brought work to talk about. I miss that part. LA is a good art place. It's very friendly art-wise. It's much more friendly in certain respects than here. It's nice to talk to other people about art.

It's also nice to show art, because then you get into dialogues with people. There's something marvelous

about getting your work out there, and it's on the wall, people come up and say things. Often as not, they say something relevant to the work that I hadn't exactly thought about in that particular way, and it will be illuminating. Occasionally you'll get people who are insulting, but only one time has that happened to me. Some guy decided he really didn't like my work, came up and started giving me a hard time. He wanted me to justify a piece I had hung as part of a show. Not a useful conversation. It is not the job of an artist to make everyone happy.

LM: Were you an abstract painter back then?

MJ: Yes and no. I had this idea that I wanted to find images that were very personal to myself in the chaos of starting a painting in a random way. I was very much into doing that. Then I guess I got to a point where I didn't want to know that stuff. I was bound and determined to find the core origin of images and perception, where do images come from, how do they come out of there? My paintings then were internally oriented, and seeing what would come out of that. Like dreams. They were abstract in a sense that elements of the painting evolved into non-recognizable forms, whereas other parts of the painting skirted the real and the unreal.

LM: Did you start doing digital work when you came up here to Northern California?

MJ: I started doing digital work in South Pasadena. There was a gallery that was started by a woman whose husband was a graphic artist, South Pasadena Gallery. That's where I started. I had several shows there until I left LA.

LM: Were other people doing digital art there too?

MJ: There were other people working with technology, and some digital artists. In fact, I curated one of the shows there. I got some digital, some sculptural kinds of things, some installations. That was fun. I'm not sure I'd want to curate a show again, but maybe.

LM: I keep reading that if you're a digital artist you've got it made, but I find that there isn't really an audience for digital art up here, or anywhere else for that matter.

MJ: That's the way it used to be. People didn't take digital art seriously. I thought that was the status quo now. So I made my work, not thinking about advancement. Maybe the rest of the world is accepting it a little bit more…I subscribe to an Epson printer list and some artists on there, ones doing photographic work, seem to be finding more acceptance. I find that kind of strange, because I never did it for acceptance or whether people would buy it. I did it because it suited my needs. Digital work will find its place in the art world I am sure. It takes time. That's the way artistic media happen. It isn't just one artist all of a sudden creating a magical method. It's more like lithography or other printmaking methods whose origins were commercial.

LM: There seems to be a strong element in technological art toward the conceptual. Is that your orientation?

MJ: I like paper. That's what I want to work with. Art has been taken over by the universities, and is becoming much more academic. That's kind of a shame. Art needs to have both an intellectual component to it, as well as craft or "making." For me there should be that good-old-fashioned paper, touching, color, a lot of the standard art concerns should be there. Of course there are a variety of ways to do that.

Marcel Duchamp once submitted a signed urinal as an art piece. He called them ready-mades. It was a conceptual piece. He was trying to tell us something of the nature of art. Unfortunately people have been submitting "urinals" ever since. There are times when idea art is engaging but often, like a one-trick pony, it grows tiresome.

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STEALING FROM LIGHT
Cameraless Photography by Jon Lybrook

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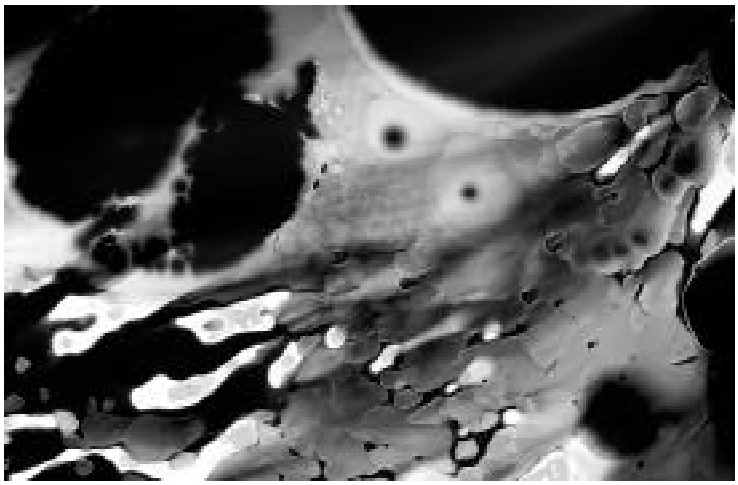
In 1900 when photography first became accessible to the public at large through Eastman Kodak's first camera, the Brownie, the consumer never touched the film. After shooting 100 photos, the customer would send his or her entire camera back to Kodak for processing. The company would then return it with a stack of fresh prints and a roll of film already loaded. The printing industry adopted photography soon after its invention, but due in part to this quick commercial acceptance, light-sensitive film itself remained largely unexplored as an art medium. That is to say, film without camera. The technology used in making today's black and white film, and the approaches used in creating photographs on film, remain essentially the same as a hundred and fifty years ago: Fine-grained silver reacts to light, development produces the image, and first-generation richness, depth, and graphical accuracy is achieved. Yet "film as canvas" is merely a metaphor, one that is applied almost exclusively to



Jon Lybrook: Kirin Lyte-Ray #2 2002

motion picture films. Film serves as a means to an end, to capture an image using light and lens, and is not considered a medium upon which one could work directly.

The advent of the photographic camera was a natural evolution of the camera lucida, an optical projection device made of prisms often used by artists to trace from life. It's easy to see how camera-based photography evolved to become so accurate in capturing images. While a gifted painter or writer may be able to better describe a moment in time, none can do so with the speed and technical accuracy of a photographer with a camera. The importance of good optics and mechanics is obvious, but what about the film? What are its qualities and how do they contribute to the inherent beauty of a photograph, other than technically? Why can't the sheer richness, graphical accuracy, subtle tonal gradations, and illusions of depth be employed in creating images directly on film, without the intervening hardware? Perhaps a better question is, why would one choose to?

I set up a turf-battle on the emulsion, in that some of the silver particles turn dark as others partially developed become fixed in place at their current level of density or are stripped away entirely on the microscopic level.

Man Ray and Hollis Frampton are two of only a very few serious pioneers who worked directly with black and white photographic emulsion, though there are of course others, but it was this anemia of creative exploration coupled with a deep love of the photographic process (as well as poverty) that led me to pursue making images on film without the use of a camera or darkroom. By working directly on film with concentrated photochemicals, I have developed a variety of techniques to create images that look both natural and chaotic. The intensity and subtlety that can be achieved through these methods rival the dynamic potential of any paint-based media, albeit with less control. This discovery was the result of my interest in bringing the media of film and photography beyond their formal place as documentary or demonstrative tools, allowing for greater content potential through the promotion of mostly non-figurative images. Capturing spontaneity in clear detail and celebrating "happy accidents" are parallel elements, both of which have become integral parts of my artistic approach. My work has evolved over nearly three decades of work, experimentation, and research in the areas of filmmaking, painting, computers, and photography.

After receiving my B.A. degree in 1989, I left the film school of Bard College in upstate New York, where I had learned of Stan Brakhage, Jordan Belson, and other abstract expressionist motion picture film visionaries. I had also learned about the Surrealists and their ties to psychologists Sigmund Freud and Carl Jung. I briefly studied mathematical fractals and their relationship to spiral and bifurcation patterns and weather systems. Never fully able to explore these areas to my satisfaction as an undergraduate, I remained intrigued by these connections among the arts and sciences.

With no money, but a sincere interest in pursuing and better defining my personal vision, I attempted around 1990 to create images on black and white, 16mm movie negative film with photochemicals. Moving along the lines of traditional film processing, the random application of chemicals such as developer, stop bath and fixer solutions resulted in a relatively stable, yet unconventional, method of image creation and processing combined.

Encouraged by what emerged by painting on the narrow strips of film, I washed, dried, and was quickly able to project the effort. The result was curious; it had a charm, but something was missing. The imagery passed by too quickly, breaking the persistence of vision, in vibrating blobs of light. Still, I genuinely liked the way the imagery looked on the surface of the film stock as I was creating it.

A couple of years later I came across a box of large-format, high-contrast, ortho-litho graphic arts film and began experimenting and applying black and white photochemistry to it. The results were intriguing and I began taking notes on different types of chemicals, film, delivery tools, and other elements I was introducing to the process. The depth and level of abstract expressionist imagery possible in the fine-grained, black and white film was astounding, and I soon found that different concentrations of developer and fixer would produce amber and magenta hues that did not fade even after fixing and washing the film to archival standards. Remembering that gold toner produces a blue hue as well, I soon had a reasonable array of subtle color, all possible using black and white film and photographic chemistry.

Under normal circumstances, photosen-

sitive material is taken out of the box in complete darkness or under safelights. I start by taking a piece of black and white ortho-litho film directly out of its light-proof, black bag and bringing it into my "art lab" under full room lighting. The film, for most purposes, has been ruined at this point. However, instead of depending on light to form the image on the film, I depend on the chemistry to form the image. In my process, light merely regulates the image, as opposed to conventional photography where it dictates it.

Since the silver halide crystals in the emulsion have already been exposed, any area of the film that has developer applied to it will turn dark - either gradually or quickly, and produce varying tones, depending on the chemical concentrations, order in which they are applied, amount of light in the room, temperature, and dozens of other variables. The developing area turns dark as the silver halide is converted to metallic silver. I try to mix a developer concentration that provides me with enough time to catch the transition to dark and, when desired, stop it in its tracks with a traditional stop bath solution.

I can then wash and go over the partially developed area with fixer to strip out any remaining silver I do not want to darken further. I apply fixer directly onto the film where I want the film to become clear, or less opaque. Fixer is also used as a final step in the imaging process to remove undeveloped silver from the emulsion; those areas that haven't become dark, turn clear with the final bath of fixer.

A favorite technique of mine is to load two syringes, one with developer and one with fixer, and apply the chemistry in equal amounts to the film. By flooding the film with both developer and fixer simultaneously, I set up a turf-battle on the emulsion, in that some of the silver particles turn dark as others partially developed become

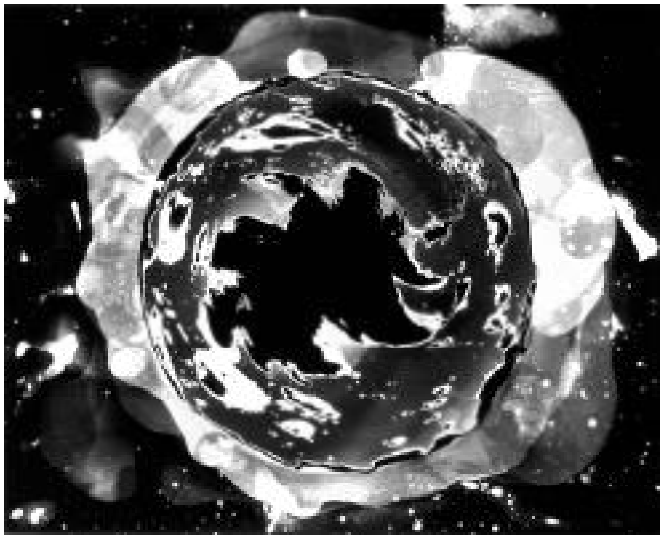
Jon Lybrook: Dog Star

fixed in place at their current level of density or are stripped away entirely on the microscopic level. These naturally opposing acid and base solutions fight to either stabilize or wipe away the silver, contradicting each other like warm and cold fronts countering each other in the atmosphere, resulting in highly detailed, whirling, cloud-like images floating in space. With this approach, which way any particular area of the film will turn out is left almost entirely up to chance. Conceptually, it is a visual rendering of the kinds of tension that exist in nature. Theoretically, it is the result of an actual chaotic system, frozen on film. What is a chaotic system?

Rising smoke from a cigarette clearly illustrates a transition from an ordered system to a chaotic system. Initially the smoke rises in a smooth, predictable, upward flow, which breaks down a few inches above the tip of the cigarette into disordered, turbulent motion. Deadly heart arrhythmia, called ventricular fibrillation, which results in sudden cardiac death, is likewise said to be triggered by an intervening chaotic system overtaking our normal, predictable, heartbeat pattern.

Thus it is a controlled system through which I set up chaotic systems and allow chaotically derived patterns to occur. To dynamically create natural-looking art without random mathematics through computer, and without copying directly from nature, has been a driving goal behind my work. Like with most Zen paintings, my "paintings" can be performed relatively quickly, and about 80% of the work is thrown out. Zen painting is a traditional Japanese method of painting where there is no pre-planning put into the work, and an emphasis is put

on it being free, effortless, and natural. It is also performed quickly. Unlike in traditional Zen painting, however, in my art I can control the design somewhat by masking off certain areas of the film using liquid frisket or rubber cement, in order to apply different



Jon Lybrook: Matter (1999)

techniques to different areas. I can then perform a technique, process and fix that area of the film entirely, then strip off the masking and perform another technique to the unmasked portion of the film.

After fixing, washing, and drying the film, a replacement toner can be locally applied using a paintbrush to add color. A replacement toner such as gold toner, replaces the silver with gold, by bonding with the silver and hence, replacing it. This is as opposed to destructive, acid-based toners, which effectively stain and eventually decay the media in order to create the color. The number of imaging techniques and tools is limitless.

I have found that lightboxes are the best way to view the finished work, as nothing compares to looking at original art under carefully balanced lighting conditions. This kind of display makes the finished transparency three dimensional, but not for the reason you may think. Because of the physical orientation of the silver, it being suspended in the gelatin above both the film plastic, and the glass surface of the light box, parts of the image are literally floating in space above the light source. For this reason, the original film has an unmistakable 3-D quality.

Despite the unmatched depth and resolution inherent in the film original, modern giclee printing also offers many advantages. Giclee is an inkjet printing process using high-resolution, digital images which are usually derived from 4x5 photographic transparencies to create larger, archival prints (see www.fineartgicleeprinters.org for more information). Generally, an artist would have a large format slide photograph taken of their artwork, and this slide would then be given to the printer to be scanned and printed. In my case, the transparency is my original, so it allows me to bring the vivid details in the work even closer to the viewer. My newest work involves zooming in on regions of the images, digitally tweaking their contrast, color saturation, and density, and cropping to leave an image that is more compelling to me. Through this approach I am able to create larger, cleaner, more colorful, archival prints, lasting up to 75 years under “gallery conditions,” and make the work more accessible. In this way, the computer has finally entered into my workflow.

What began as experiments on tiny pieces of movie film has evolved into much larger frames combining textures, figures, color, and light. Using essentially the same black and white photochemistry that has been available for the past 150 years, my work also employs traditional archival treatment techniques in the case of the original film, and in the case of giclee prints, archival inks and paper to ensure longevity. The "magic" behind the work lies in how it makes use of the dynamic capacity of black and white film's grain structure, which can react richly and dramatically, as well as subtly, to the direct application of photochemicals. Each finished piece is a self-contained, natural system, process, scene, or relationship frozen in time.

In my work, I strive to bring images and ideas from the subconscious to the surface, combining both planning and gestural "improvisations" as part of the process, and ultimately allowing viewers the joy of discovering meaning behind each piece for themselves. The history and concepts of Zen painting and eastern thought have largely influenced my work, as well as the western exploration of Chaos Theory, and the Abstract Expressionist and Surrealist art movements. The use of the dream and symbolism theories of Freud and Jung is indispensable in interpreting responses to my work. As I create and further push the envelope of film’s ability to produce these images, I aspire to engage, explore and bring forth a personal and powerful essence of the human subconscious.

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INTERVIEW WITH SUSAN RANKAITIS
Loren Means

LM: I understand you’re starting a new project?

SR: I’m starting a collaborative piece, tentatively called "SPR Synthesis" with scientist, Robert Sinsheimer and dancer/choreographer, John Pennington. One of the things I’ve finally realized after twelve years of working with some ideas relating to science and technology is that it's important to let the scientists do the science. No matter how much I read and did research, I still came nowhere close to the level of scientific comprehension that I desired to accurately understand the science behind some of the questions

that held the most fascination for me. This has been true with regard to both neuroscience and genetics. I also have some friends who have been extremely generous in explaining their work in physics or medicine or biology, without which I probably never would have ventured into science in the first place. I loved both art and science when I was in high school but made a full commitment to art when I started college.

The advantage of actually working with a scientist became very clear to me in 2000 when I collaborated with neuroscientist David Somers, who was then at MIT and is now at Boston University. David's research focuses on areas of visualization in the brain. We met very accidentally. I was applying for an Avery grant to visit China in order to walk in the winter landscape painted by the Song Dynasty artists. The Avery Foundation had a web site for people who had received the grant to China in prior years. One of them was a man named David Somers who was a graduate of Harvey Mudd College. Harvey Mudd is the science and Engineering College in the same consortium as Scripps College where I teach; both institutions are part of the Claremont Colleges.

When I first came to Scripps in the early 90s, I had a student named David Somers (Summers). So, I emailed him and asked, "Are you the same David Somers who took my drawing class at Scripps College? I'm an artist, and I'm applying for one of the Avery Foundation Chinese grants, and I'm wondering if you could give me a little feedback on my proposal." He replied "Oh, yes, I took a drawing class and I love art." Since I told him that I was very interested in science, he kindly said, "By the way, if you ever need any images of the brain, let me know. I'm a neuroscientist now, and I work in brain imaging at MIT."

So we emailed back and forth a little about our respective work and about three weeks later I got an email that said, "I looked at you on the web, you're an artist, but I realize that you are not the person I took the class from. I graduated from Mudd in 1985 in mathematics." I hadn't started teaching at Scripps until 1990, and the former student that I remembered was then a physicist. But by that point in time I'd been asking David so many questions about his research and was so enthralled by what he was doing that I boldly asked if he would like to consider doing an Internet collaboration with me. I'd been asked to be in an exhibition at Scripps College about art and science, and had never collaborated with a scientist.

In working together via email, the first thing that we determined was that we would have to learn the clichés of each other's fields. The first eight months of planning our project "The Problem of the Homunculus" were done entirely via email and the web with one of my students, Edy Moulton, acting as courier and assistant when she went to visit her boyfriend in Cambridge. Edy was a biology and art major and was a great intermediary in providing translation of our two perspectives. We had a dialogue over the course of a year about clichés in each other's fields. It was fabu-

Susan Rankaitis: Rocket Lure (1990)

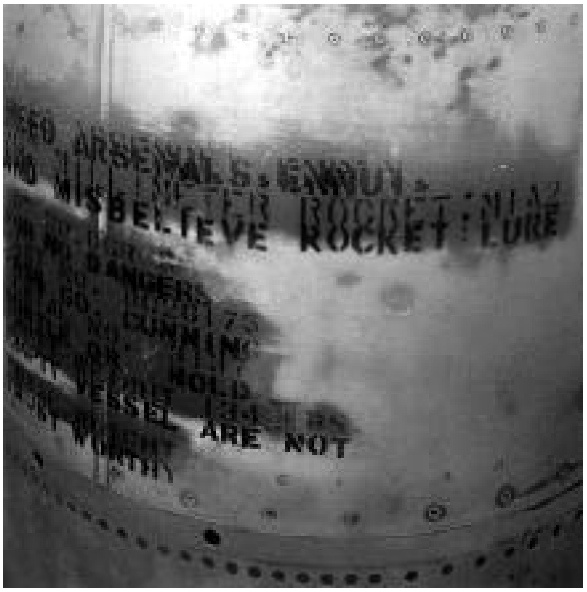
lous because we got to know each other just through talking about our work and trying to figure out where it would connect. Over the process of emailing, we decided on a topic. It took a long time to get to this. This was the problem of the homunculus. This was the whole idea of the little brain within the brain within the brain that makes all the decisions. For centuries this has been a great question in terms of brain research. We were devising a structure. We figured out that we could make a homunculus, so I had this big, forty-foot circular structure made.

I received a little grant money from the Scripps Faculty Research program to bring David out to California for a brief period of time so that we could put the work together and then do a couple of public talks with the installation. Harvey Mudd College and Scripps College were both great and helped us hobble together the resources to make it all work. The President of HMC, Jon Strauss, invited David to do the Convocation Address at Harvey Mudd that fall so that the Mudd students got to hear about his brain research in great detail. Nancy Bekavac, the President of Scripps, had known David when she was Director of the Watson Foundation, and she was a tremendous help in bringing our installation to fruition.

Each of us made 250 small images based on our conversations, his directly from his research, mine using images from his research in my own way. Ideas would come across in terms of researching the homunculus and the problem of the homunculus. So we had a little gallery, and we had a videotape of actual moving brain imagery from his research going in the middle. Anyone who came to sit down and look at all of these little images that we made would have a changing brain image among it all.

David came out to LA and worked with me in my studio that August, and then the show opened in the beginning of September 2000. We did a gallery talk about working together. I taught a seminar based in part on our collaboration, with half art students and half science students doing semester-long collaborative projects. Every aspect of this collaboration, including the related class, remains one of the most fulfilling experiences of my professional life. David is about fifteen years younger than me and is now a tenure track professor at Boston University in the Cognitive Psychology Department. David Somers is incredibly committed to his brain research and we live and work on different coasts. I'm hoping we can continue our project at some point in the future but thus far I've been unable to secure funding to spend a summer with David in his Boston laboratory, which is what I need to do in terms of the next phase of our co´llaboration. I need to be the subject for a series of experiments that he will devise about visualization, sequencing and brain function.

I felt that as an artist trying to read and understand some aspects of contemporary science, even though I'm generally well educated, I was falling into traps of stereotypes and cliches. A great benefit to working with a scientist as generous as David Somers was that we each operated from our own realms, yet were able to connect our respective areas of expertise for the work. For me it was also an extraordinary educational experience–a private tutorial from one of the great young neuroscientists in this country who also happened to like contemporary art a great deal. He is

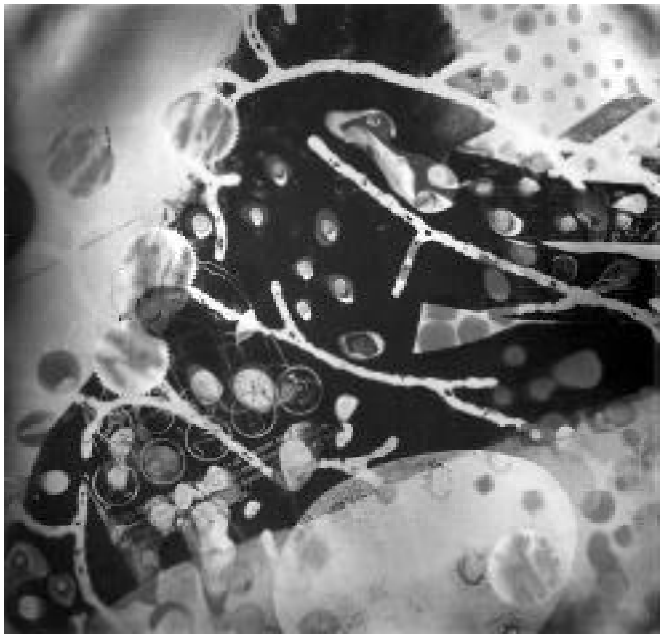


Susan Rankaitis: Rocket Lure (detail)

one of the most creative and insightful individuals that I have ever encountered.

The satisfaction in working on the Homunculus project led to the different collaboration that I am doing now with Robert Sinsheimer and John Pennington. Recently, John, the dancer/choreographer whom I first met in 1989 when we were both artists in residence at LaNapoule Foundation in France, (he was then a young dancer with the Bella Lewitzky company), contacted me about working on something together. I had continued to watch him perform at various LA venues during the 90's but we weren't in touch again until we realized that we were teaching at neighboring colleges (Scripps and Pomona). We had started to work together a little bit when we were at LaNapoule. I had photographed some of the members of the Lewitzky company in France and used abstracted images of them in some of my genetics work in 1992 through 1994. I love contemporary dance and spent most of my break time watching The Lewitzky Company rehearse.

Coincidentally, I'd been invited to be in an exhibition on art and science at the Santa Barbara Museum of Art that opens in November 2002. I suggested to curator Karen Sinsheimer that John and I do a collaboration, because he was very interested in how dance could address concepts in contemporary science. Ours is now, very fortunately, a three-way collaborative project, with the inclusion of esteemed biologist and science policy expert Robert Sinsheimer, who is co-incidentally Karen's husband. I had done a public museum talk panel and more recently a C-span interview with Dr. Sinsheimer and am in awe of his contributions as a scientist and educator. He is not only a highly-regarded geneticist, but also one of the developers of the



Susan Rankaitis: Brain 2020 #2 (2000)

Human Genome Project. He is also extremely generous in explaining complex scientific research to the general public and to artists like me. Robert Sinsheimer provided a text, a statement on the human genome project. Both John and I are going to use that text as a pathway to our respective pieces and are hoping to have Robert's voice as the audio for the piece.

LM: How will you and the other collaborators work together?

SR: My work is primarily abstract, not illustrative or traditionally narrative. I work primarily with fragments, so I'm going to use fragments of the Sinsheimer text in my wall component. I will also use imagery from genetics and of John dancing. I'm going to make a large curved piece that is somewhat related to a piece, "Peripheral Memory" that I spent all of last year completing for a City of Los Angeles (COLA) grant. John is going to choreograph and also perform based on selected segments from Robert Sinsheimer's text. We are going to test our installation/performance as a prototype at the Williamson Gallery at Scripps College in September. The gallery Director, Dr. Mary MacNaughton, also has a very strong interest in linkages between the arts and science, and is generously allowing another of my "laboratory" collaborations.

LM: You mentioned an interest in ancient Chinese art and culture…

SR: Something totally unrelated to science that relates to my art practice and the way that I live my life goes back to my interest in early Chinese painting. The painters of the Song Dynasty of a thousand years ago were often artists who were also very involved in political life as well as cultural life in China. Song painters would go out and sit in the landscape and contemplate it for days or weeks or months. Then they would come back to their studios and make paintings that were an evocative–which is a really important word to me–rather than a literal representation of what they saw. The subtlety and nuance of that work remains breathtakingly beautiful for me.

The Song artist's attitude about the importance of contemplation has been a key influence on my work as is the model of involvement in policy. They were involved in politics, many of them wrote poetry–I love to read contemporary poetr–*f* or they did calligraphy.

LM: Do people think your work is digital?

SR: No one ever thinks my work is digital if they see it in person. People always ask if it's painting or if it's photography. Yes, it's painting, and yes, it's photography, and yes, it's drawing. Maybe some people think parts of it are digital. I use computers a lot for research but I hate sitting at a desk. I've had eye surgery because my eyes are so weak, and still get terrible eyestrain from too many hours in front of a computer screen. I need the physicality of working with my hands (i.e.,drawing) and I love working in the darkroom.

If I could ever envision a really innovative way to successfully use new technologies as a tool for what I want to do and I had the resources to do so, believe me, I would go for it. I think that if I had grown up with computers the way that my niece and nephews have, that ease of use might have enabled me to look at things differently. Digital is perfect for the work of my spouse, Robbert Flick, because he needs to capture and store so many images in order to make one of his pictures. He could not do what he does now without digital technologies. Many artists are doing extraordinary things and I am a great fan of art that pushes technology, particularly the way that some of the groups and collaboratives are really pushing all sorts of boundaries.

My background is in painting and later, also in photography. I approach everything that I make from the perspective of a photographer/painter. I think there's a lot of good digital art out there, but the digital art that interests me is not usually the work that is primarily PhotoShop-heavy or printmaking-type digital art as much as it is the work that I see at Siggraph that's three-dimensional or not meant to be seen on paper output. I have always loved what Ken Goldberg is doing with robotics and the web. That's the kind of innovation I find fascinating. The artists that are searching for the new possibilities–©and I think the YLEM Newsletter you sent me reflects this–it addresses works that deal with the inner workings of this technology and are about the use and implications of technology. It is art that is so inherent and invested in new types of information flow and programming, rather

than things that are often generic-looking duplications of other already existing art forms like painting.

LM: You were influenced by Moholy-Nagy, who was a pioneer in the concept of an open approach to expression.

SR: Absolutely. The event that got me truly interested in doing photography was being taken into the photo vaults at the Art Institute of Chicago, just before I got married. My husband, Robbert Flick, had worked on an exhibition with David Travis, the Chief Curator of Photography at the Art Institute, and Robbert wanted to introduce me to David. I had brought some slides of my paintings, which were then very abstract, large and painted with automobile spray–silvers, golds, and bronzes. When David Travis saw these, he said, "I have something I bet you'll be very interested in."

He took me to the vaults and showed me some of Moholy-Nagy's photograms that had gotten a slight tarnish. These were colors and forms that I related to but it was a type of art that I had never envisioned doing before. Although I had taken a basic photography class with Bart Parker when I was in college and liked it, nothing had prepared me for the physical presence and luminosity of real Moholy-Nagy prints. David Travis had piqued my curiosity.

This was in the early summer of 1975. Robbert and I got married a day or two after seeing David Travis and then went to Colorado Springs for the summer, where Robbert was to teach at Colorado College. Since I couldn't do my large-scale paintings there, the late Ben Benschneider, who was the main photo teacher at Colorado College, suggested, "There's this really old darkroom in some old building you can use if you want to. Just make it yours for the summer."

That's when I started all my experiments. That summer spent in the old basement darkroom got me hooked on trying to link painting and photography. I've been interested in both fields historically and in terms of their contemporary linkages throughout my entire professional career. I love painting and I love photography. I think the arguments about painting being dead are specious. There is wonderful painting going on. Painting is always going to evolve. It may not be technologically innovative, but painting always changes and shifts. The only difference is that it's not one of the only games in town any more. When I was in college, painting and sculpture were the great arts. Artists now have many more options and should work in the areas that interest them the most.

LM: When I first saw this work on the walls, I wanted to touch it. It looked to me like metal.

SR: Please don't touch it. It's paper, and almost any photographic paper will fingerprint if you touch it. If I could get imagery like this on metal, I would, because it would be more durable. I've tried for twenty years to get a good, permanent image on metal. I get some emulsions to adhere for about a year or two, but I just can't get good long-range results. I've been doing a couple of casual, long-range technical experiments for a number of years with no satisfactory results. Sometimes I can get things to work for a month or a year but as you know materials expand, contract and age very differently. I still won't laminate any of my work and I'm still afraid to have my surfaces directly touch Plexiglas.

LM: Are you working from a negative, or do you work directly on photographic paper?

SR: I work from a large series of various sized negatives, both contact negatives and enlargements. I have two 4 by 5 enlargers, and I'm hopefully going to get an 8 X 10 enlarger too. I do multiple enlarging, which is challenging. The great technical challenges that I have are primarily in the darkroom, because when you're balancing this many types of images and masks and filtration, there's a strong potential for failure. I've always had a huge failure rate, which I now take for granted. I always feel like that's part of my process. No matter how much I plan and pre-conceptualize, I still have a lot of glitches where I do something backward or miscalculate timing. Certainly I can work with some accidents, but I still have a great many disasters, usually from pushing something too far. The large pieces take a particularly long time to do and I have to do a lot under safelight. I love making pictures that take months to finish. I think that has to come from my training in painting.

LM: But you also apply paint to the photograph

Susan Rankaitis: C and A (1992-94)

itself?

SR: Yes, sometimes, but if you see the work, hopefully you can't tell the difference. Every piece is different. It used to be when I was interviewed twenty years ago, people would always say, "What's the formula? How do you do what you do?" How can you answer something like that? People never ask painters things like that. Can you ask a writer "how you write?" I think that all of us in the arts use every facet of our lives, whether consciously or not to do our work.

One of the things I've finally realized after twelve years of working with some ideas relating to science and technology is that it's important to let the scientists do the science. No matter how much I read and did research, I still came nowhere close to the level of scientific comprehension that I desired to accurately understand the science behind some of the questions that held the most fascination for me.

In every series of work I've been grappling with different observations and questions in terms of the underlying content area, approaching each new series conceptually, and technically. I do have an inherent aesthetic, which is subtle. I've never really gone into color photography simply because I like black, I like white, I like grays, like simple metallic colors. What I do isn't much about color. I've found this territory that still has so many questions and challenges for me that I suspect that any real forays into newer technological realms will be via more collaboration with artists or scientists who have access to and experience with those tools.

LM: It seems to me that many artists working with photo-based materials are interested in working with forces outside themselves, whereas many painters are only interested in expressing their inner selves.

SR: I respectfully disagree with both aspects of that observation. I view both fields as having many very diverse practitioners and I think that most art has much more complexity than most of us recognize. It's a little bit easy to generalize but I could think of artists off the top of my head that reverse what you just said. Eileen Cowin and Judith Baca immediately come to mind and in neither case of both of those wonderful artists would I use the word, ONLY. First of all, no matter how technological or conceptual any work is, there's something inherently internal and external about all of us because of our various life experience, our genetics, our brains. I don't think I know any artist who is not interested in some aspects of the external world. Even if one is a totally abstract painter, there's still strong interface with the world. It's all different means of coding, understanding and interpreting the world at this particular point in time. There are many different ways to generate meaning.

One important word for me that you brought up is the whole issue of materiality–physicality. For people who are still doing what one would call traditional photography in any sense, whether it's darkroom work or the act of taking a picture, that physicality is usually important. Physicality is a huge part of painting. Through praxis, one gets to the point where the internal and the external connect so fully. To me that's the raison d'être for wanting to make art, that one is able to connect one's intellect with what is around one. It gets back to the whole question of nature/nurture. What's more important, the genetics or the experience? They're both important. No matter how you look at it, that's the answer. They're both important. They operate together. I like the quote from biologist Paul R. Ehrlich, "Genes do not shout commands at us–at the very most, they whisper suggestions".

LM: Then there's the question of control versus chance.

SR: That gets back to the genetics versus experience. How can one possibly measure? I don't think we have the tools yet, both in terms of brain research and in terms of the human genome, and in terms of our interactions with everyday life to put things into percentages. It's a synthesis of those things, and for most artists it's fine-tuned. For some conceptualists, perimeters of working may be very tightly controlled. Even John Cage, who is considered to be so committed to chance, was one of the most intellectual figures in the art and music worlds. He thought out pieces to the nth degree and was very specific about the way that his pieces were to be performed. Yours is an impossible question to answer. Some things simply are, and you go forward from there. Perhaps an easier way to approach this is to ask whether some artists create conditions where chance becomes manifest.

LM: Is space still an important issue?

SR: It's something that I'm interested in–the flow of imagery across a surface, forward and back, in and out. One of the reasons that I wanted to join painting and photography into a combined medium is that there were things inherent in both fields that I wanted to work with. Doing separate bodies of work proved unsatisfactory for me. Why shouldn't I explore spatial issues in photography, and why shouldn't I apply specific painting techniques to photographic paper, since it provided an extraordinary surface that I was simply unable to replicate in painting on canvas? If I could do what I do with acrylic or oil painting on board or canvas or linen, I would probably still be working in "painting" because the end product would be less fragile.

One of my problems working in photography is that I can't get paper large enough to do what I want to do. I've been trying since about the late 80s to get really large photo paper. They just don't make the paper that I need. At one point I met someone from Agfa who was going to go to go to Germany and see if they could make me a large paper. I love scale. That was one of the things I helped bring to photography. In 1980 I started working on really large-scale (12 foot long) pieces. I want to do pieces the size of this wall (20 by 20 feet). I feel that the type of ideas that I work with oftentimes demand a really large scale or an incredibly intimate scale. I have some drawings that are very, very small. I like those shifts.

The whole idea of "experimental" is really important. When I started working in photography, I was calling myself an "experimental photographer", simply because the other terms that were out there were so limiting. Mark Johnstone and I ran a panel in about 1980 for the Society for Photographic Education on experimental photography. Ken Gonzales-Day and I did a re-examination of that idea and contemporary practitioners at CAA in 2000. We were curious whether "experimental photography" was still a valid term. There are new artists now who are finding different ways of using photograms and doing performance photography. But with the term "experimental photography" right now, it's gone beyond the technical and is entering into different conceptual realms that don't fit comfortably under the aegis of traditional or documentary photography. I love the term "experimental," because it allows a certain leeway and flexibility. Two of my favorite video artists, Tran, T. Kim-Trang and Ming Ma refer to their respective bodies of work as "experimental video".

That's why I'm interested in what you are doing with the YLEM publication. The more that I continue to work as an artist, the more I want to work with scientists as well. There are a few individuals now who have training in both science and art but the artists such as David Kremers and Warren Neidich who so brilliantly encompass both fields are still quite rare. If I were twenty years old and in college now, I would major in both art and neuroscience or genetics. One thing that I have done is to mentor the Scripps or Harvey Mudd undergraduates who are seriously interested in both areas. We continue to look for good graduate programs in this new arena, where students can pursue research/ practice and policy issues in both science and art. If your readers were aware of graduate programs like this, I would certainly love to hear about them. There is so much interesting art being done right now across a wide range but I agree with just about everyone who says that we are in the midst of a sea change. I see these changes as providing a bright but challenging future for artists.

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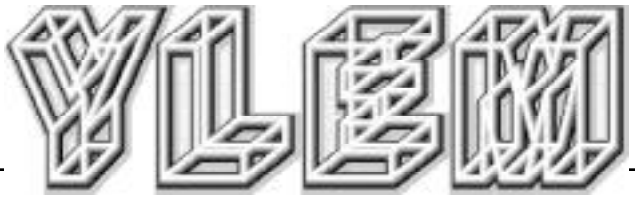

n. pronounced eylum, 1. a Greek word for the exploding mass from which the universe emerged.

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