

Art Gallery: Global Eyes

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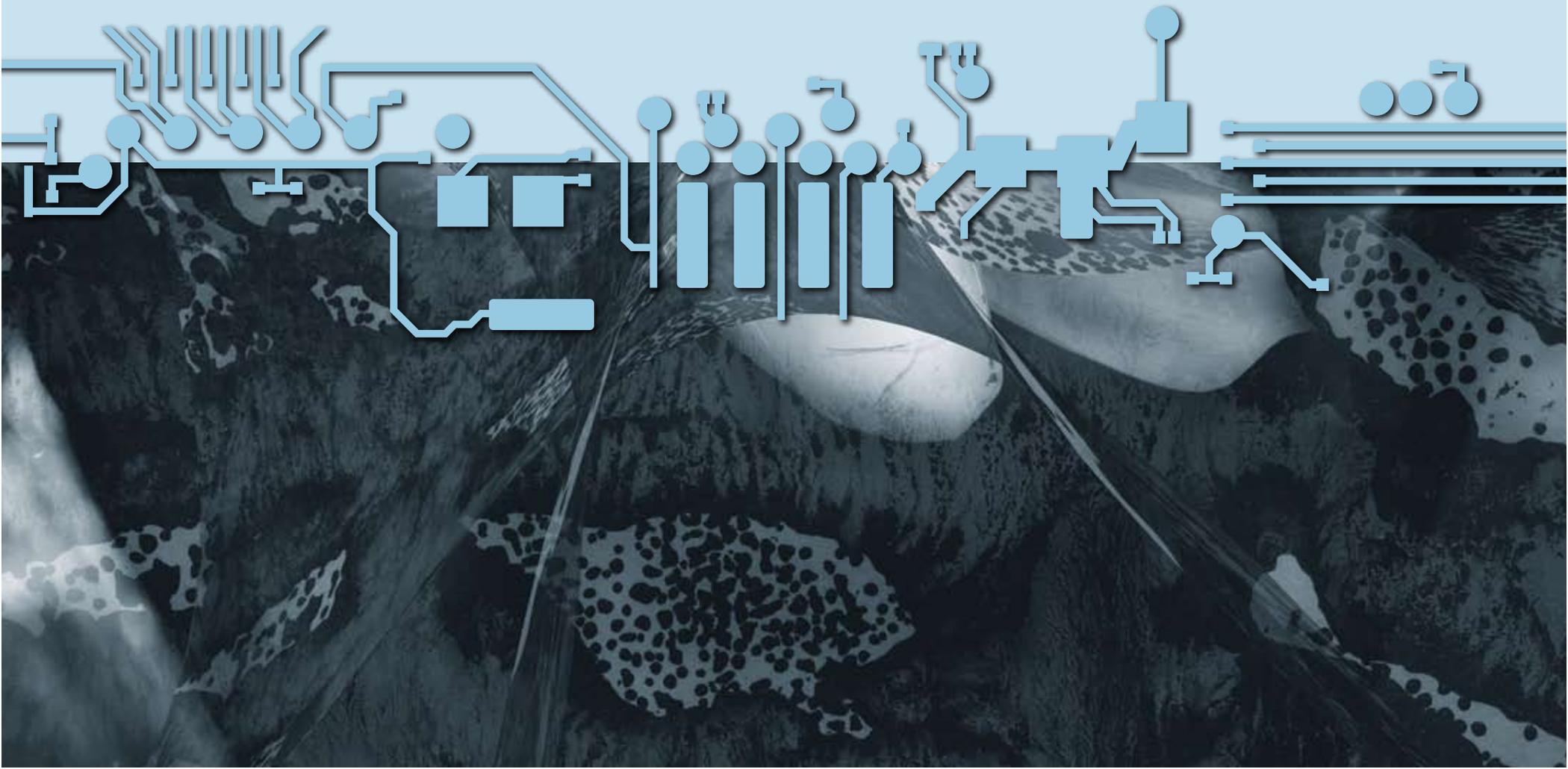


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SIGGRAPH 2007 Art Gallery: Global Eyes

Welcome to Global Eyes, the 2007 Art Gallery. This year's show focuses on transdisciplinary and transcultural approaches to digital art created around the world. Many countries and cultures are represented, including Argentina, Australia, Austria, Bangladesh, Belgium, Brazil, Canada, China, Colombia, Croatia, Egypt, England, France, Germany, Hong Kong, Hungary, India, Iran, Ireland, Italy, Japan, South Korea, Latvia, México, New Zealand, Romania, Russia, Taiwan, Turkey, Ukraine, Venezuela, Wales, and the USA. We tried to be as inclusive as possible, welcoming artists from communities that are historically under-represented at the SIGGRAPH conference. Through rigorous and energetic reviews by the Art Gallery Jury and the international Art Gallery Committee's thoughtful curatorial work, we succeeded in extending our scope to new communities in the developed and developing world, including indigenous communities locally, regionally, and internationally. Our delight with this greater participation is mitigated only by the fact that enormous disparities still exist in resource availability between nations and populations, which limits digital visual culture's potential to become more globally democratic and inclusive.

We are happy that so many mature artists from around the world submitted work for jury review. The Art Gallery Committee augmented this process by inviting artists whose work directly relates to this year's global theme, many of whom work in emerging areas of digital art. Growing from transdisciplinary activity across fields as well as cultures, digital ethnographic multimedia is one such area developing in the space between digital photography and video, animation, interactive art and performance, and ethnography.

We are delighted to welcome indigenous artists working in San Diego, México, New Mexico, and Australia, including Cedar Sherbert (Kumeyaay), Damián López Castillo (Zapoteco), Anthony Deiter (Plains Cree / Ojibwe), and r e a (Gamilaraay / Wailwan). In addition, Roderick Coover, Toby Lee, and J.P. Sniadecki are producing important work at the intersection of interactive art, digital video, and anthropology. Kooj Chuhan and virtual migrants work with immigrant communities in the United Kingdom and perform work that gives greater insight into the condition of people in the diaspora.

Because 75-90% of the earth's people are still not connected by digital technology, and express their knowledge and culture in material media, most of their knowledge remains outside the digital realm. However, important work is being done to preserve and expand our collective human heritage using hybrid physical-digital processes. A transfer and transformation is taking place that expands the language and creative potential of digital media art, making it more intelligent and responsible, providing entry for people in many walks of life. That is why we are welcoming folk as well as fine-art approaches, handcraft and design, artist books, sculpture, and mixed media, while also showcasing contemporary digital artwork that is unique unto itself. This includes Most Wanted by Taraneh Hemami, a handmade curtain of 87,000 beads; World-processor by Ingo Günther, a series of more than 25 illuminated modified globes; as well as beautiful limited-edition books created by artists who are collaborating around the world, in some cases extending the concept of the travel diary to new forms of collaborative and mobile media art.

Some pieces in the gallery comment on political, social, and environmental problems, and question human relationships to nature, both actively (as our environment faces destruction and species extinction), and in personal, introspective, and philosophical terms. Artists working together with scientists externalize their deepest beliefs and doubts about the mysteries of life and existence. Some take the form of abstract images to reveal underlying organizing principles of the mind, body, and nature; others use visualization, real-time 3D animation, dance and performance, robotics, and interactive installation. Online and immersive works challenge definitions and categories, transcending boundaries of language, time, space, and location in their beauty and daring. Some are meant to make us question our assumptions, while others show us our human frailties and contradictions in playful and humorous ways. Ben Maggos (1981–2005), whose memory we are honoring, created the prescient and moving work *What About Job?* that explores many of these ideas in interactive, cinematic form.

This year's show features several invited special exhibitions. We are honored to include a selection from the online international photography collection ZoneZero.com, directed by acclaimed photographer Pedro Meyer, as well as 20 works from the 2007 Visual Music Marathon (held at Northeastern University) curated by Dennis H. Miller. The Japan Media Arts Festival has provided a special selection of work from their most recent show, including digital prints and animation by the talented 14-year-old artist, Shunsaku Hayashi. And for the first time this year, we are working with the Guerilla Studio to show the work of six Artists-in-Residence: Harriete Estel Berman, Matt Hamon, Philip Mallory-Jones, Mike Simonian, Maaiké Evers, and Michael Wright.

We are especially pleased to present an exciting program of innovative electronically mediated performances and site-specific installations by leading international artists. They are taking place in a special weekend engagement (4-6 August) at the state-of-the-art facilities of the California Institute for Telecommunications and Information Technology (Cal-IT2) and the Center for Research in Computing and the Arts, at the University of California, San Diego.

Papers were curated by media scholar Cristina Venegas, whose expertise is in global and indigenous media, particularly in Latin America. She brings together writers and theorists with fresh perspectives on our field. Panels were curated by the Art Gallery chair, with a special contribution from Roger Malina and ISAST Leonardo.

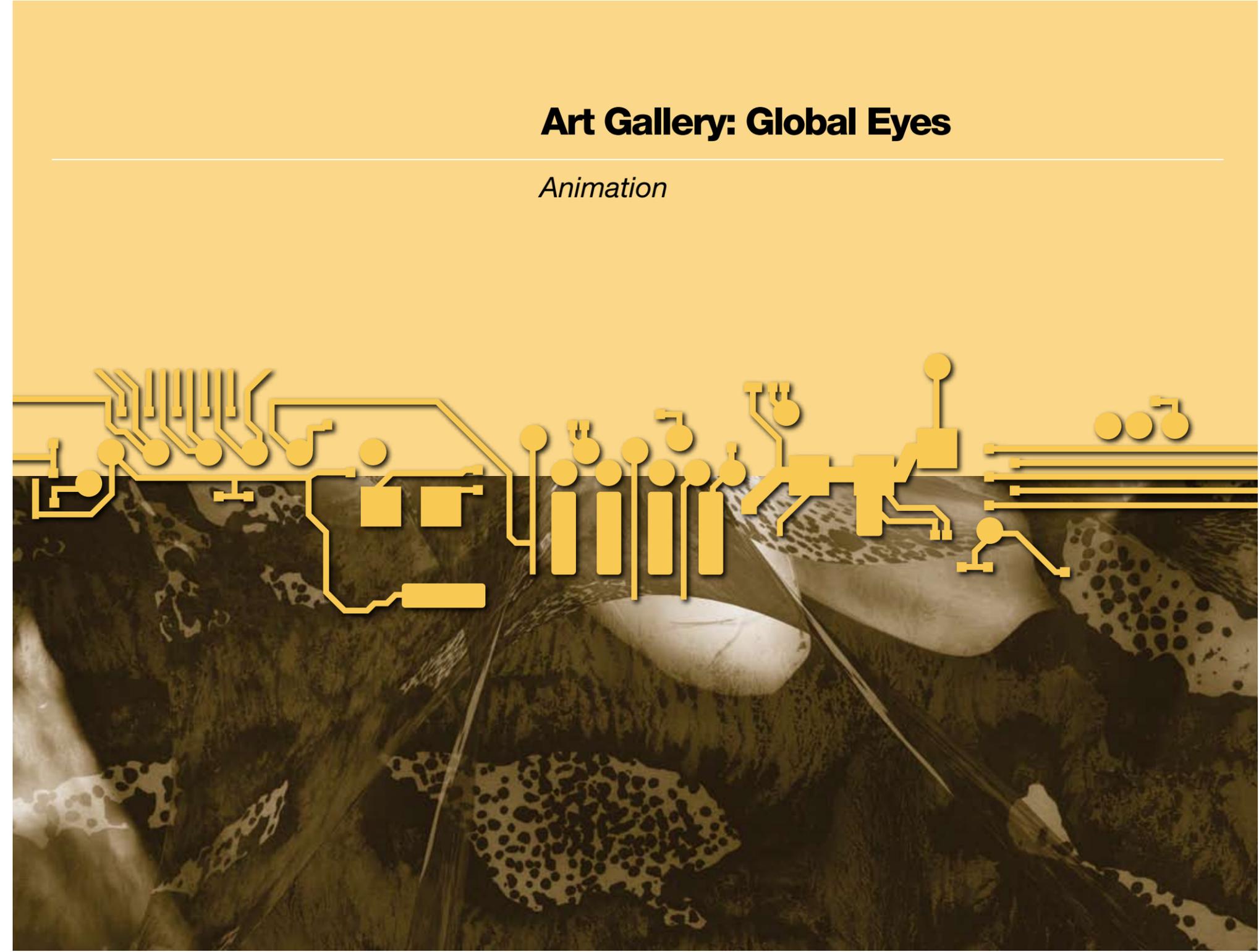
Finally, as 2007 is the 25th anniversary of the 1982 SIGGRAPH Art Show, we are exhibiting an electronic archive created by 1982 chair Copper Frances Giloth.

Please join us in celebrating these and many other participating artists whose work has inspired us through the years and help us welcome new people and ideas into our growing global digital art community.

Vibeke Sorensen,
Global Eyes Chair

Art Gallery: Global Eyes

Animation



Vladimir Bellini

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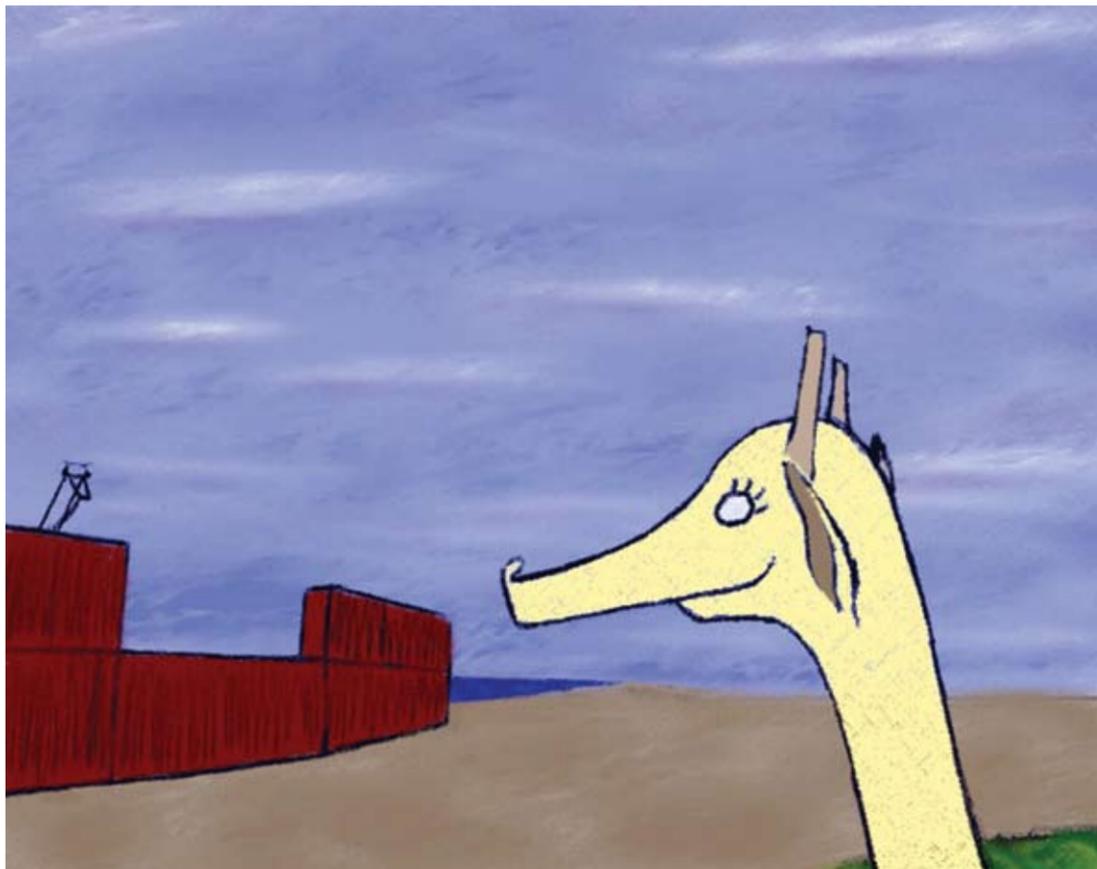
Original music

Eduardo Bellini

Produced by

Vlasvlasvlas, Argentina

La grua y la jirafa (The crane and the giraffe)



Artist Statement

This is a love story about a lonely port crane and a cute giraffe. 2D digital animation, 100-percent hand-made. Dedicated to Spanish writer Gomez de la Serna's greguerias.

Shunsaku Hayashi

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www1.odn.ne.jp/~haya4hello

Ireva
Animation cover



Artist Statement

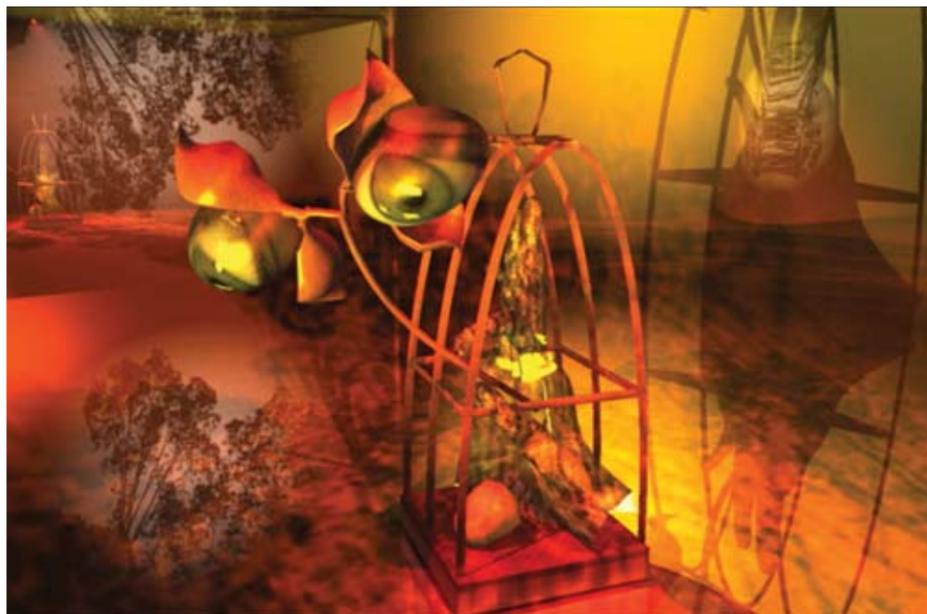
The artist is a ninth-grade student in Osaka. His personal exhibitions in Osaka and Tokyo in 2006 were well received, and his work is included in the Epson Color Imaging book published in 2007.

Technical Statement

This work is based on watercolor drawings produced at the EVA animation school.

Arina Melkozernova

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Artist Statement

Arina Melkozernova applies her fascination with the women surrealists to her chosen medium of 3D animation. She uses animation to make the invisible become visible. She is interested in visualizing mental space and spiritual connections in the quest for herself. Three-dimensional animation allows her to create symbolic models and surrealistic environments by extending and contracting time, space, and movement.

She is not interested in technological wizardry for its own sake but rather as a medium to express her personal sense of displacement, identity issues, questions of otherness, and self-reflection. Through her art, she wants to impart this emotional condition to her audience. She looks for interactive structures to create a metaphor of mutual influence of the

real and virtual world, human inner and outer space, actual and spiritual connections of people. She is currently teaching 3D animation and video at Arizona State University.

The award-winning *Self-Transparency*, dedicated to painter Remedios Varo, incorporates aspects of the surrealists' iconography that relate to the artist's own experience. The film was nominated as best short film at the 2003 DAMAH Film Festival in Seattle and received a 2004 Individual Creative Excellence award by the National Broadcasters Association in the Graphic and Animation/Student category. *Self-Transparency* has been chosen by industry leaders as a premier example of digital artwork from one of the country's best and brightest digital media artists.

Technical Statement

This work was created with Softimage software.

2007 Northeastern University Visual Music Marathon

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Artists & Works

add.value 5 more
Gerhard Daurer
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Afterlife
John Banks, images
Fritz Heede, music
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All That Remains
Stephanie Maxwell, images
Michaela Eremiasova, music
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All the Possible Braidings
Betsy Kopmar, images
Jami Sieber, music
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Cinepainting
Simon Goulet, images
Sandro Forte and Simon Bellefleur, music
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Cortex
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Daydream Mechanics V Sketch 3
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Michael Oesterle, music
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Erev Shel Shoshanim
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Per Bloland, music
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IV.6
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Lajka's Memory
Eva M. Toth, images
Gyorgy Kurtag Sr. and Gyorgy Kurtag Jr., music
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Navigating the Pearl System
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Nebula
Suzie Silver, images
Suzie Silver and Hilary Harp, music
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Rain
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Yan Jun Hua, music
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Retz/distrans
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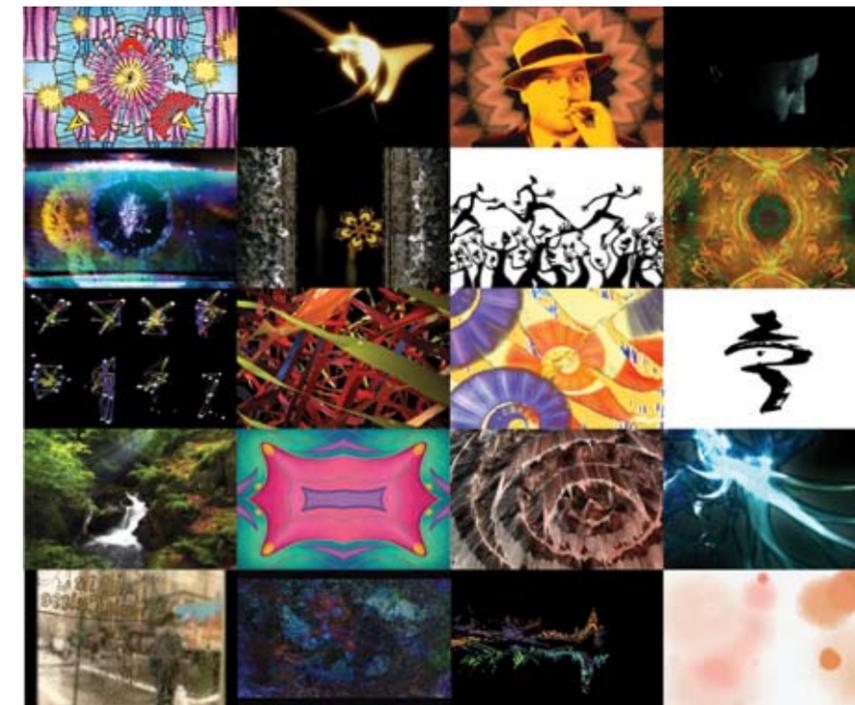
Sensorium
Karen Aqua, images
Ken Field, music
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Sports and Diversions
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Erik Satie, music
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Ugoku
Kasumi, images
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Variation #4 from Variations
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White Noise
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Artist Statement

Visual music is an interdisciplinary artistic genre with roots dating back hundreds of years. The emergence of film and video in the 20th century allowed this genre to reach its full potential. The concept can be applied using a variety of approaches: for example, works in which the images and music are directly tied by sharing parameters or works in which the images "interpret" the music (or vice versa). A third category is pieces in which the visuals are edited in tight synchrony with cues in the music. The common theme is that the music and images are closely related in some form.

Nagata Takeshi
Monno Kazue

eleqitel@tochka-factory.com



Artist Statement

This animation was created from a lighting doodle project through which we met various people in various places. The surprise and joy that brought life to the doodles linked one person with another. This communication naturally took form in the work, which received the Excellence Prize in the Animation Division at the 10th Japanese Media Arts Festival.

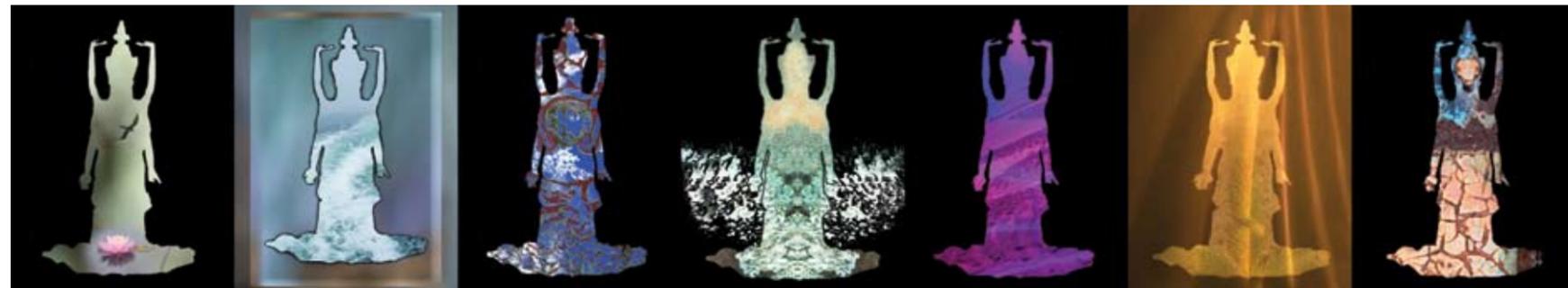
Art Gallery: Global Eyes

Artist Books



Kathy Beal

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Artist Statement

Seven Sisters is a cross-cultural, photographically based piece dedicated to Quan Yin (she who hears the cries of the world), Goddess of compassion and a guiding spirit in my life. She is often found in my work as I continue to explore the connections between spirituality and creativity.

In these seven transformations, I have merged various organic and spiritual elements across a template created by Chinese art students, creating mystical, multi-dimensional environments for the goddess, suggesting her many levels of existence and understanding.

Like the great thangkas (deity paintings) of the Buddhist traditions, I hope these seven transformations, Seven Sisters, will awaken compassion in viewers' hearts.

Reverend Dr. Katherine O'Connell had this to say about my work: "The work of Kathy Beal is inspired in the true sense of the word. Her understanding of light and the magic that travels within its shafts and molecules is true celestial physics. This work is co-creative, groundbreaking, without boundaries, and multiplies exponentially in power and effect over time."

Technical Statement

Seven Sisters exists because of the digital processes available in the world today. The Quan Yin template was digitally created by two students at the Central Academy of Fine Art, (CAFA) Beijing, Wanxi, and Chendu, and transmitted to the SIGGRAPH 2004 Guerilla Studio via an FTP site. We (the Collaboration Area of the Guerilla Studio) communicated with CAFA (and fellow guerilla Lyn Bishop) via an Apple iSight camera and iChat software. The images used in the seven transformations of Quan Yin were obtained through digital camera capture. The final piece was produced in Adobe Photoshop and printed digitally with an Epson professional inkjet printer.

Seven Sisters
10 inches x 36 inches x 10 inches
2D print, folded, accordian-book style

Lyn Bishop

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Artist Statement

If Dreams Could Talk is a collaborative project that looks at the concepts of dreams and specifically the dissociated images and impressions that quickly fade upon waking.

The journey is the integral inspiration that propels my art. Traveling throughout the world, I look for the simple, unsophisticated, and organic details that define the beauty of human culture. I am always intrigued by the differing human elements and visual stimulation that I encounter.

Often the creative process is singular and individual, but when the work becomes collaborative, the resulting imagery becomes more than the sum of its parts. The artistic journey begins with a feeling or thought that is communicated between the collaborators until the work takes on its own personality.

If Dreams Could Talk
Pigment prints, 20 inches x 20 inches
Accordian book, 6 inches x 6 inches x 1 inch



Technical Statement

Using common consumer electronics (iSight, iChat, FTP, computer, and printer) the SIGGRAPH 2006 Guerilla Studio collaborated with Srishti School of Art, Design and Technology (K. Nadig, P. Mukhopadhyay, P. Agarwala, P. Kaul, R. Pande, R. Kakde, S. Gupta), Adobe Design and Achievement Award winners (S. Powilat, M. Vogel, A. Wang), and fellow Guerillas (K. Beal, L. Danque, P. Zimmerman) to create an edition of pigment prints and handmade books.

The working process began with collaborators uploading personal source material to a shared directory of images. Each artist chose an unfamiliar image to begin a new work of art. Each morning at 9:00 Boston time (7:30 pm in Bangalore), the teams connected via iSight to share artwork and discuss strategies for completing the project.

On Saturday, the teams tested the internet connection. On Sunday, they reviewed the project and brainstormed ideas. Monday and Tuesday were dedicated to image creation. On Wednesday, the German collaborators designed the cover and interior. The book was printed overnight and then hand-assembled by a team of volunteers in the Guerilla Studio on Thursday morning.

The project served as a powerful connection across cultures. New communication technologies enable us to collaborate in ways never before imagined. By reaching beyond borders and time zones, we gain greater cultural awareness, which leads to a better understanding of the beautifully diverse world we live in.

Dena Elisabeth Eber

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These are Some Jews that Hitler Did Not Get:
American Jews and the Survival of a People
Digital mixed media



Artist Statement

Digital media content and the internet are having a profound impact on our society, especially the identities of entire groups of people. The connectedness, the ability to edit, and the storage capabilities of digital media are, in a sense, helping to recall and even shape cultural memories. These memories, when shared, provide political and ethnic understanding in new ways that reach different audiences. This series of work is one such celebration of a people.

These are Some Jews that Hitler Did Not Get: American Jews and the Survival of a People celebrates life and hope using one representational horrific event. The Holocaust is recent enough to be part of a contemporary shared experience, one that can capture the past and

digitally fuse it with the present, thus implying hope for a future. By celebrating the survival of American Jews, we remember all the times through history that we were threatened yet were not destroyed. It gives us strength and anticipation for generations to come. It reminds us to respect the survival of all peoples and the importance of their identities. Digital technologies will enable these memories to move forward in time so we may always have a sense of *tikvah*, or hope.

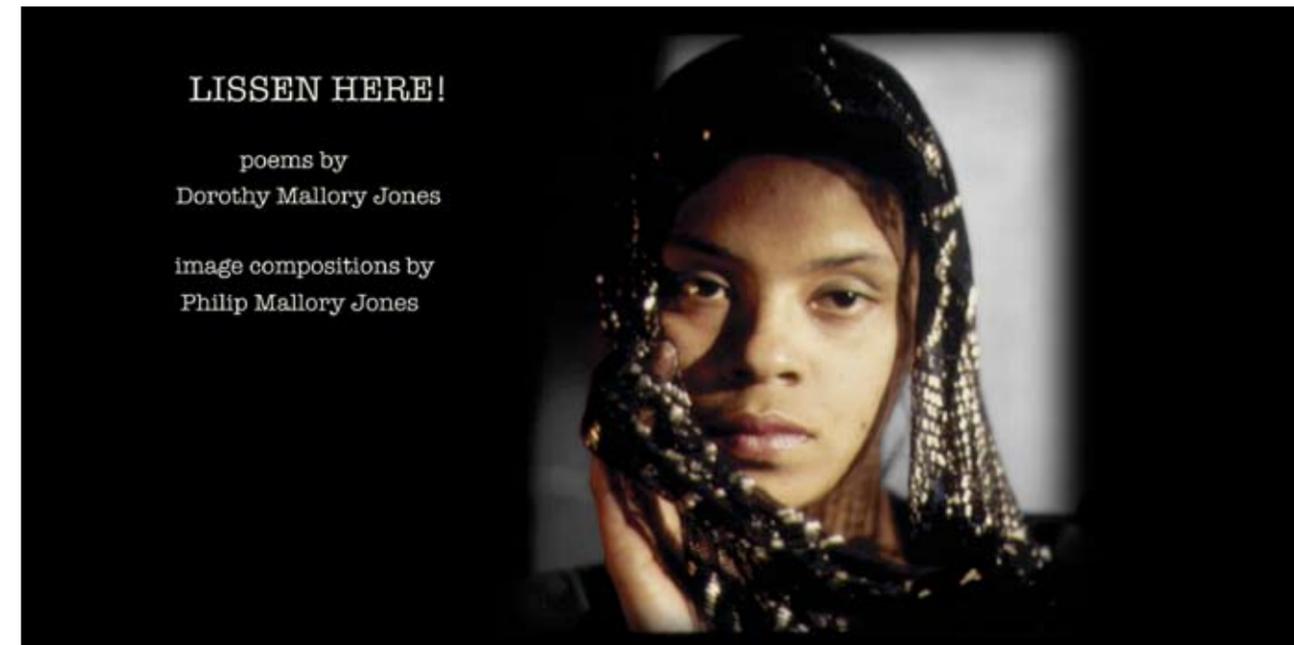
Technical Statement

These works were constructed digitally by fusing imagery and symbols from the past with imagery from the present. Many of the pictures from the past came from online digital storage banks. All of the works were constructed from numerous sources, including visible digital collage and seamless digital montages of photographic forms. The works have various elements of mixed media, from custom substrates and hand collage to coated hand-made papers, that together provide layers of information to the overall story.

Philip Mallory Jones

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LISSEN HERE!
Giclée print portfolio book, 50 pages, limited edition (100)
19 inches x 13 inches



Artist Statement

LISSEN HERE! is an evocation of African-American life and culture. It is a hymn of nuanced harmonies and discords, a blending of voices, some sweet, strong, and leading the way, others rough, off-key, and wandering.

“This book began life as a meld of black history and a celebration of black womanhood. It is factual, anecdotal, autobiographical. It is born of remembered snatches of my own, and anybody else’s family lore; of provocative family nicknames; of the knotted, worked-out hands of my grandmother, folded so patiently in her lap. It is the fruit of a lifetime of standing back and watching the relentless energies of a race of stricken people, steadily galvanizing toward liberation. It is listening, always listening, to the cadence, the flow, the pungent getting-to-the-heart of it, that is our speech.” — *Dorothy Mallory Jones*

LISSEN HERE! was composed with several audiences in mind. The first is ourselves, our conversation, a play of words and images that resonate in each of our cores. Our intention was to speak clearly, simply, and without equivocation, to the truths we know. This we could do because of our shared language, experience, and perspective. Though separated by a generation, gender, and the particularities of our lives, we are both of the South Side, and the extended neighborhood that reaches into the Mississippi Delta, Kentucky, the Carolinas, rural Ohio...

If we can truly express our selves, then we can also speak to the other audience, those for whom these are not retellings of family lore, heard while eavesdropping on the grownups talking in the kitchen.

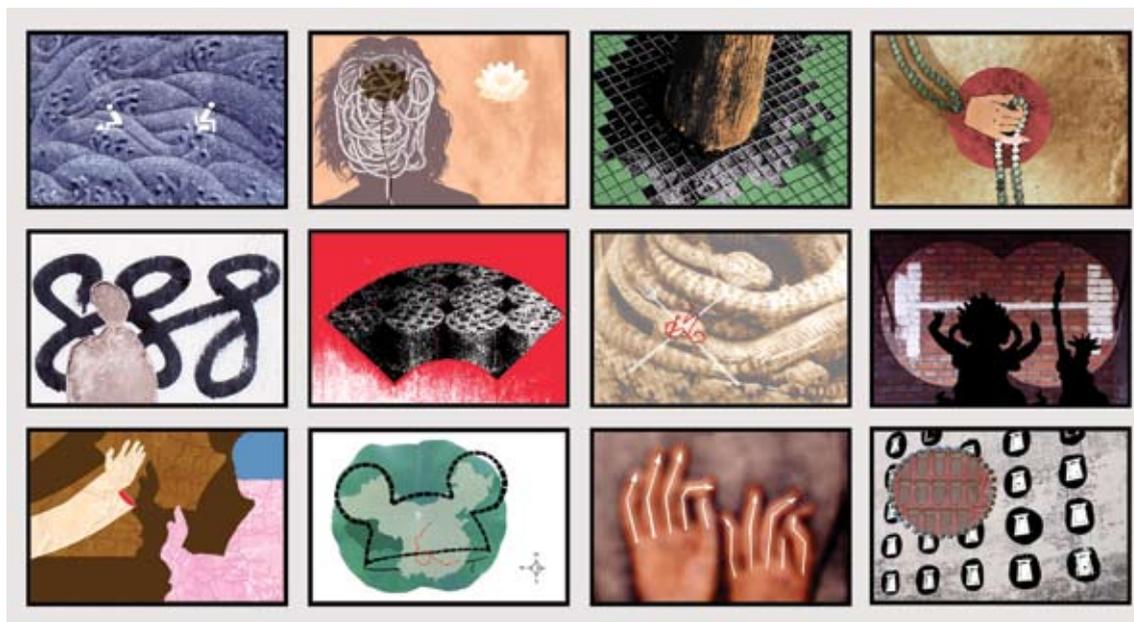
West meets East: Artworks based on a journey to China
 Framed print installation, 44 inches x 84 inches x 3 inches
 Artist's book, 12 inches x 23 inches x 1.5 inches

Archival pigment prints:
 mounted and hinged on canvas.

Book covers:
 painted wood with screenprinted logo.

Kent Manske

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 kentm@preneo.com



Artist Statement

Introspection drives my need to create. Processing thoughts, ideas, and observations is the nature of my art practice. Through creation of images and objects, I explore my being and belongingness. This investigation helps me access my own truths and facilitates my understanding of the world in a broader context.

In July 2005, I traveled to China. Upon returning, I mentally processed the trip by working with images I photographed. Thirteen new prints, in an edition of four, were created. Two sets of prints were bound as books. The images created reflect my feelings about the cultural, political, and natural landscape I explored.

The title references my introduction to China's mysterious and historically rich culture. The book's logo presents East moving toward West, referencing both western culture's influence on China and China's emerging influence in global politics.

My visual narratives function as conscious maps, providing visual routes for interpreting ideas and making meaning. Each mark metaphorically documents an experience, comments on a situation, or reveals a process of thinking. In this series, restroom signs acknowledge differences in everyday practice and customs between the West and East. The cultural icon of the fan becomes a dirty window addressing environmental issues. Chopsticks merge with forks to signify China's adoption of American fast food. Chairman Mao meets the Buddha to symbolize the hybridization of the sacred and the popular. A self portrait explores spiritual practices researched on the trip. Several prints explore China's pains as it adapts to modernization, capitalism, and colonialism. The works seek not closure but further inquiry.

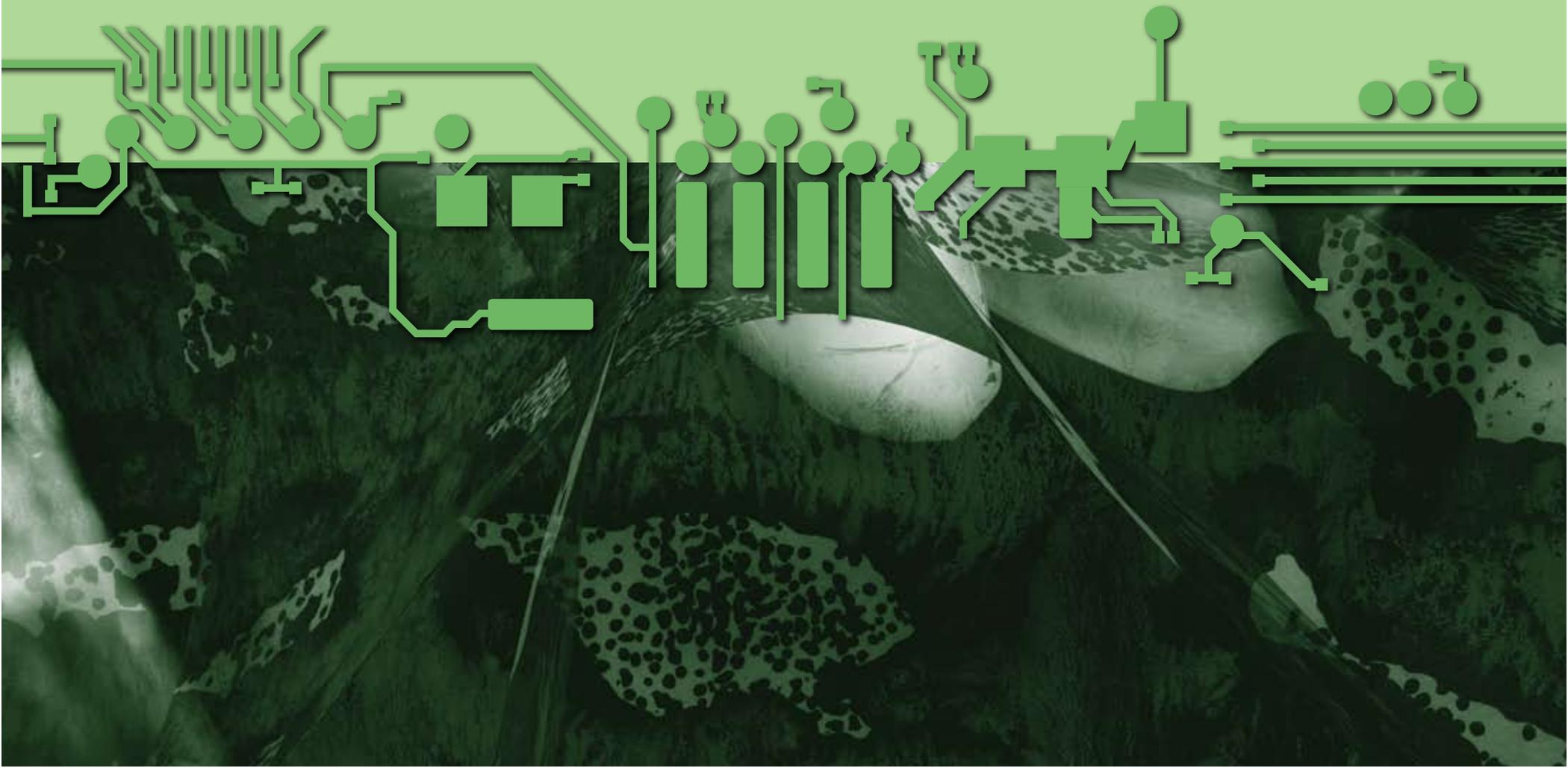
Technical Statement

Images were captured with a digital camera, imaged in Photoshop and printed on 285 gm2 Hahnemühle Torchon Watercolor Paper using an Epson 2000P inkjet printer.

The artist books are hand bound by the artist using stab binding techniques common to Asian cultures. Prints are mounted and hinged on thick cotton canvas. Book covers are painted wood with screenprinted logos. The book includes a title page and colophon page. The books provide a functional and inhabitable space for the images, thoughts, and language of the artist to form. Each page provides a private space for contemplation. Within the conceptual space of the book form, relationships emerge, narrative evolves, and meaning manifests.

Art Gallery: Global Eyes

Digital Performance



J. Walt Adamczyk

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jwalt@spontaneousfantasia.com

Artist Statement

This piece is a continuation of my ongoing Autocosm project, in which I create artificial worlds in solo live performances. An "autocosm" is a self-contained personal world, apart from the world we all share. In this case, it is a world of growth and evolution, of life and transformation.

Evolution requires death. It requires erasure. There can be no evolution without a continual process of creation and destruction. To make room for the new, we have to let go of the old. But we try to have the new informed by the old, so the new will be better. Life ends, and so we can only overcome death by starting the next generation.

Performance is a fitting way to depict this instancy, for a performance is a fleeting moment in time, an iterative quest for perfection. It's an act of a life caught between celebration and desperation.

I attempt to create and perform and evolve a world in Autocosm. It's about life. It's about making a better world. And it's about me, the performer, on my iterative quest.

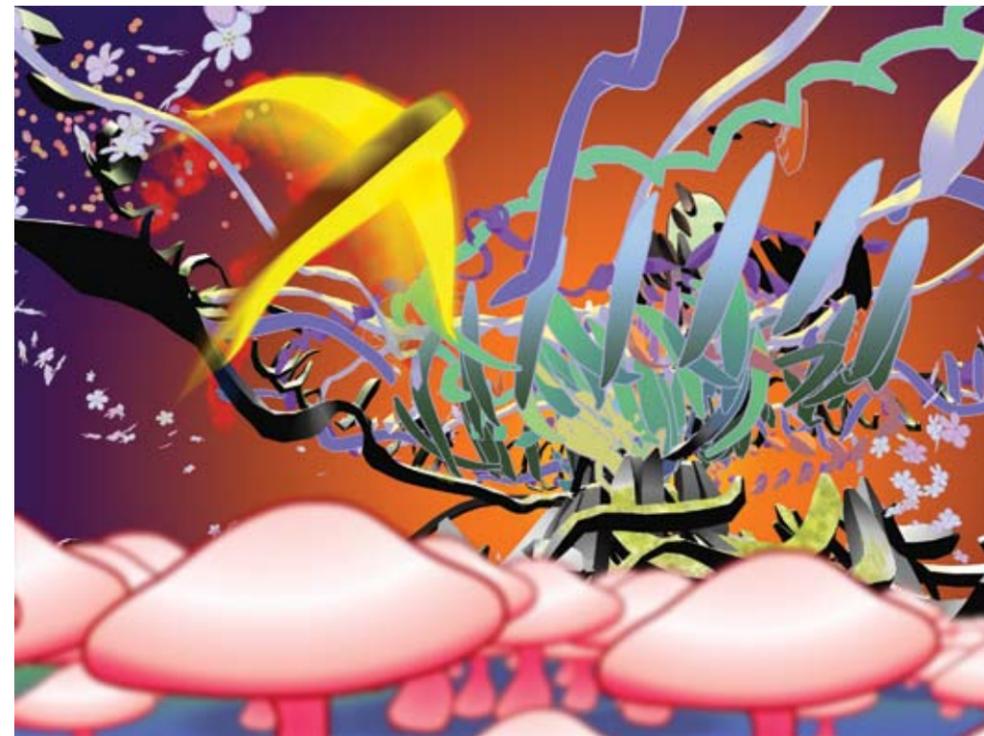
The world I create is only temporary. At the press of a button, all objects and beings, the whole of creation, are gone. Only a memory remains. But don't worry. The next one will be better.

Technical Statement

Over the last few years, I've been exploring the domain of live-performance animation. I want to keep my performances fresh for both the audience and the performer, so I utilize captured gesture, which allows me to improvise. But improvisation is foreign to CG production, so I've been developing ways to create and animate CG scenes with a "straight-ahead" approach.

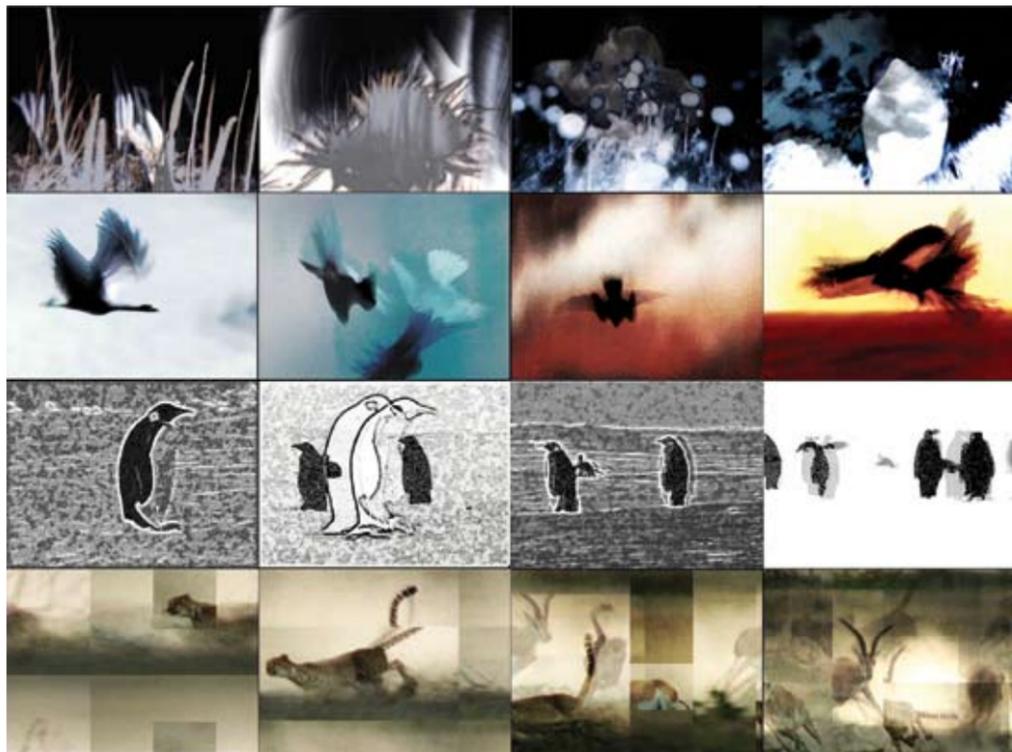
Because software design determines the methods of interaction, I perform using my own software, which I've tailored directly for my own use as performer. The core is written in C++ on top of OpenGL and DirectX, with the front end written in Python. The system runs on a Windows box.

My main input device continues to be a drawing tablet. Sometimes I use it to puppeteer my creations. Other times I draw in 3D while moving through and around the space (using a joystick or other device). This technique integrates placement of objects and creation of spaces with continuous changes of viewpoint. It allows for creating a space while simultaneously exploring it.



Mariela Cádiz
Kent Clelland
Denis Lelong

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 e_scapes@parismadrid.net



Artist Statement

e*scapes is a live audio/visual performance that reflects on an electronic vision of nature.

Taking live cinema to a new level, the Cádiz/Clelland/Lelong trio performs live electronic music to live remixed footage and vice versa.

Kent Clelland (aka LapCore) combines contemporary dance music structures and sounds with traditional electro-acoustic music techniques to create a recombinant computer music journey that is dynamic, ever-evolving, and potentially fragile.

Mariela Cádiz and Denis Lelong use excerpts from nature documentaries and take the images out of their scientific and pedagogical context to process and remix them in a real-time, musically inspired flow. By deconstructing the common use of nature documentary footage and exploring its cinematic qualities, their live mixing thrives on mesmerizing, forceful, and unexpected relationships.

Since both music and video are being performed live in conjunction with one another, it is no longer possible to tell if the music is inspiring the video or the video is inspiring the music. The result is a feedback-driven, multi-sensorial exploration into future-stained natural habitats.

Technical Statement

The Cádiz/Clelland/Lelong trio considers their collaborative technique that of fusing together different ideas, perspectives, and audio/visual real-time techniques. They refer to this as a "confusion." Confusing a large collection of both commercial and home-brew software, hardware controllers, intranet communication, and human-response feedback, the artists create audio/visual narratives by interpreting their source materials from the natural world around us. Clips from nature documentaries and scientific research video clips are processed, edited, and remixed live in direct response "to" as well as in direct response "from" the development of the musical composition, which is also being created live.

The instruments played on stage are constructed from computers running software such as Max/MSP/Jitter, Reaktor, and Spektral Delay, and using protocols such as MIDI and OSC to coordinate computers and hardware controllers.

In the trio's live performances, control signals are shared between the musical workstation and the visual workstation, creating an artistic feedback level supplementary to the natural sensory-reflex feedback already being shared among the performers and ensuring that each performance is unique.

The ability of the artists to communicate onstage and interpret through their respective instruments in order to generate real-time live cinema blurs the boundary between technology and the art of creating an entertaining performance on the fly.

Maja Cerar
Liubo Borissov

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 http://2rem.net/projects/autopoiesis

Autopoiesis/Mimesis

Live, amplified violin with electronic music accompaniment, choreographed movement in darkness with electroluminescent wires, projected live video processing



Artist Statement

Autopoiesis is a work that imagines realities and is, in part, a humorous document of the discussions between the two authors about the beginning of the universe. It tackles the idea of existing in more than one place at a single time and coping with a duplicate of oneself. It is also an exploration of degrees of and limits to comprehending relationships between cause and effect, mass and vacuum, and is played out in a dialogue between a physical figure and its virtual (projected) manifestation, in which both of them constantly move and change without evolving. One can see the lines projected on the screen as the reality created by force and matter acting on stage, which in itself is an illusion orchestrated by the performers.

Autopoiesis is followed and complemented by Mimesis, a more serious exploration of the ancient tension between imperfect reality and ideal form as furthered by art's mimicry. Two-dimensional representation is challenged in a quest both rational and irrational to tap into the essence of the eternal. In contrast to Autopoiesis, which is performed in complete darkness, Mimesis is enacted in full light, to make palpable the physical challenge of the material.

Technical Statement

For Autopoiesis, the violinist wears a uniquely designed set of glowing electro-luminescent wires in a dark space. A video camera is trained on the violinist, and a computer tracks her movements. As she moves, the computer uses her location data to process the sound of the violin and the moving image of her figure. These computer-generated materials are then projected back into the performance space via loudspeakers and a large video screen located onstage behind the violinist.

For Mimesis, the violinist is well illuminated and the general lighting evokes daylight to the extent this is possible without obstructing the video projection.

Kooj Chuhan

virtual migrants
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projects@virtualmigrants.com
www.virtualmigrants.com

Collaborators

Tang Lin
Aidan Jolly
Jilah Bakhshayesh
Miselo Kunda
Hafiza Mohamed



Artist Statement

Three masked figures on rafts at sea appear on each of three screens arranged as a circular triptych: an official, a migrant parent, and a child. The anxious official denies the parent access to safe land and community while engaging in lucrative military games. The conclusion poses an inevitable consequence of current conflicts.

In the absence of dialogue, the installation uses poetic devices to depict asylum in the new world order, and each repeat loop of the work has a different soundtrack, suggesting alternative meanings for the same reality.

The double-edged uses of blood (symbolising both life and death) and water (allowing respite from land conflict yet denying longer residence) are strongly influenced by the equality-of-opposites concept common in China.

During a two-year development period, the collaborating artists, who come from wide-ranging global geographies, collectively discussed aesthetic and social issues to create a work that can be understood through many layers, that is sensitive yet brutally powerful, and that connects with a broad cultural experience.

Technical Statement

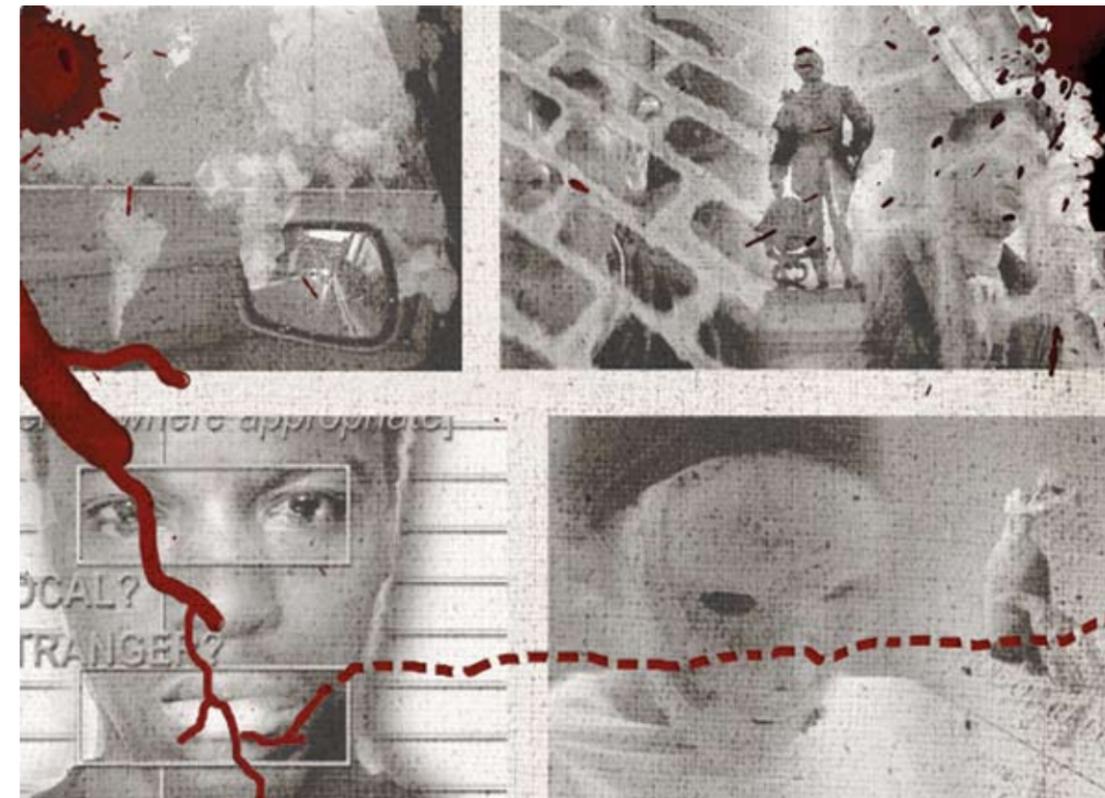
What If I'm Not Real involved shooting carefully scripted and rehearsed footage on location using digital video and photography. I used Adobe Premiere and After Effects with Canopus filters and keys to create film grading and tonal colour effects and give it a rough, slightly harsh, and alienating look. The music tracks were configured to represent the audio character of each of the three screens along with an ambient atmosphere, resulting in four-channel playback on discretely and spatially positioned speakers. This establishes the audio landscape for the work. The music and audio were produced by Aidan Jolly using Apple Logic. The music changes with each repeat

of the visual cycle to create four different impressions of the narrative, and occasional live music performances add to this re-interpretation.

The use of sharks-tooth gauze suspended between bamboo batons for the screens was critical to the final look because it allows the screens to be seen through each other. It creates a rough-hewn look and provides continuity with the simple, hand-made feel of the costumes – a sense of cultures in which hand-made stuff is still a key part of the developing economy. The rocks beneath the old TV below add to the washed-ashore feel.

Collaborators

Keith Piper
Tang Lin
Aidan Jolly
Jilah Bakhshayesh
Miselo Kunda
Hafiza Mohamed
and others



Artist Statement

Exhale: local streets, global waters, bloodstained papers. This is an electronic publication covering five years of video, music, and electronic art engaging with asylum and migration in a new world order, by virtual migrants. It includes a DVD of short films and artist interviews. In the DVD-ROM section, there are two interactive works: Keith Piper's Local-Stranger and an interactive audio remix version of What If I'm Not Real .

From 2001 to 2006, virtual migrants engaged with UK artists and communities intent on reconstructing the polemical landscape and varying experiences of asylum in a globalised post-9/11 world. In doing so, we blurred various boundaries of established art practices and steered well away from the dominant, patronising, and sometimes sensational depictions of migrant people as victims or ogres.

Using moving image, video, interactive multimedia, photography, audio, music, installation, and collaborative practice, the key methodology of many of these works looks at ways of colliding personal/community testimony and documentary realism with poetic imagination and art, while retaining an intimacy between the personal and the epic.

Technical Statement

The various Exhale works use differing technical methodologies, yet in approach and process I was keen to maintain an immediacy with the subject matter that is common within the documentary genres which the works draw from. The use of video with simple key effects and layered imagery allowed some films to be completed from concept to final edit in just a few days. On the other hand, with pieces such as Piper's "Stranger" and the collaborative "What If I'm Not Real", even though the post-production phase was lengthy, including interactive work in Director, the works still maintain an immediacy at the stage of footage acquisition that comes through in the final work. The software included Premiere, After Effects, Photoshop, Sound Forge, Logic, and Director, but throughout the process, the aim was to avoid a sense of over-manipulation.

Joreg

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Collaborators

Performer

Dietmar Bruckmayr

Audio

Michael Strohmann

Programming and Animation

Joreg

Modeling

Diane Preyer

Lars Oeschler

Michael Höpfel

Artist Statement

Imago is a piece for a solo vocalist about multimedial representation and reproduction. The singer is reduced to face and voice and stylized as a triptych: in the middle, the real head of the singer is flanked left and right by three-dimensional representations of him.

The singer relinquishes himself to the point of self-abnegation. Digital machines dismantle, transform, and duplicate his voice and ultimately merge it in its frequency domain with other sounds. The recursive relationship between voice and machine leads to successive dissolution of the difference between analog and digital sound sources for the listener and the singer.

Although the singer remains outwardly the creator and authority in charge of the acoustic events, the purported expansion and enrichment of the vocalized expression ultimately turns into manipulation and estrangement.

This process of representation, reproduction, and estrangement is continued on the visual level. The digital portraits of the singer begin to develop lives of their own. They cease functioning in accordance with the norms of self-representation. Under the influence of the music, they undergo changes and deformation, raising the suspicion that the deformations represent the singer's actual situation, which is to say his loss of control.

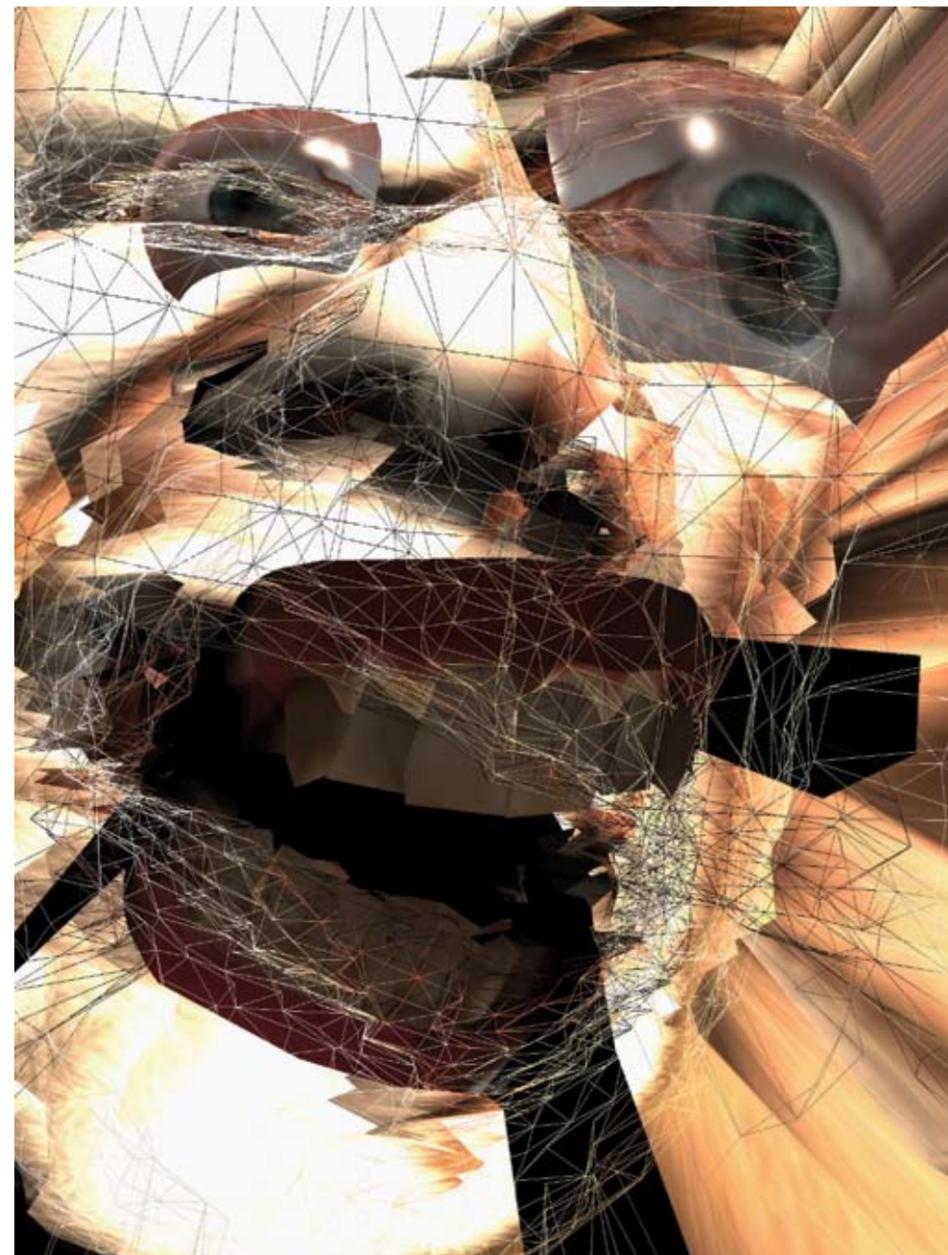
Technical Statement

The task was to duplicate the head of a live performer and animate its facial gestures in real time. We wanted to be as realistic as possible but also find ways to extend and finally abstract the expressions of the real protagonist. The animation is controlled by a joystick and various parameters extracted from a live soundscape. On the other hand, the sound is generated from prepared beats that are transformed by the singer's voice and spacialized to a multichannel audio setup surrounding the audience. Audio programming is done using software like kyma and max/msp.

For the animations, the performer's head was digitized using a 3D scanner, which produced a high-resolution but partly buggy mesh. Instead of cleaning this mesh, it was easier to build a mesh from scratch and align the vertices to the shape of the scanned mesh. For the texture, photographs were taken around the head and stitched together. Normal maps and ambient occlusion maps were generated and used in a pixel shader during lighting calculation.

Animation is done using 16 morph targets of the head in different shapes. For maximum flexibility during performance, all morph targets were put into one large vertex buffer. A custom vertex shader was then used to animate between any of the shapes in real time. Programming is done with our custom software called vvvv (vvvv.org), a multipurpose toolkit and graphical programming language for real-time video synthesis.

imago



Takashi Kawashima

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Collaborators

Togo Kida
Yoshimasa Niwa

**Artist Statement**

Over the past century, it has become ordinary to experience motion pictures on large screens in movie theaters or as video projections. These modern projection instruments developed from what was called the “magic lantern,” invented in Europe during the second half of the 17th century. While the magic lantern was invented in the West, it influenced the emergence of a new type of entertainment in 18th-century Japan known as Utsushi-e, an original hybrid of the ancient Asian shadow play and the Western magic-lantern show. It can be considered a close ancestor of movies, preceding them by a mere century. In Utsushi-e, instead of merely projecting a series of pre-fabricated images on a screen, artists created “motion pictures” via a mixture of live art, light manipulation, narration, and painted images. Artists built on audience response, and an interaction developed between the two.

Takashi's Seasons is a sequential live shadow-puppet show/video performance in which various scenes interpreting the four seasons are performed by a modern Utsushi-e artist. Children are seen walking back to school with their school bags in the spring (the academic year begins in April in Japan). The proud performance of cicadas can be heard on a hot summer evening. Dragonflies smoothly glide in the cool air of a fall afternoon. On New Year's Eve, the chimes of temple bells are heard in the freezing winter night.

This work does not intend to offer a common point of reflection for all to understand and cherish. Rather, the piece intends to evoke personal memories that are strongly tied to the four seasons, interpreted through a Japanese cultural perspective. Through the presented vignettes, this piece vividly brings back those personal memories, presenting them as a unified experience.

Technical Statement

In creating the performance, all props and characters were first sketched on paper, then created in Adobe Illustrator. After all elements were placed on a 640 x 360 pixel grid, props and characters were divided into physical puppets and video animation. After adjusting the scale of the puppets so the cast shadows would match the scale of the projected imagery, the puppets were output to a laser cutter. The animation was developed in Adobe After Effects using both traditional keyframing and programming in After Effects Expression. The blending of digitally generated animation and projected shadows produced a unique hybrid animation style.

A custom switch is connected to two microcontrollers that are in turn connected via a serial cable to a computer mounted on the ceiling. The first AVR microcontroller is directly connected to the switch and is programmed to read electronic signals generated by the switch, converting them to serial messages. The second microcontroller translates these serial signals to Windows OS keyboard commands.

Software programmed in Macromedia Flash triggers animations and sound effects based on keyboard commands from the second microcontroller, allowing synchronization of video animations with the shadow puppets via the switch. The microcontrollers were programmed using C and C#/NET respectively.

Hyung Min Lee

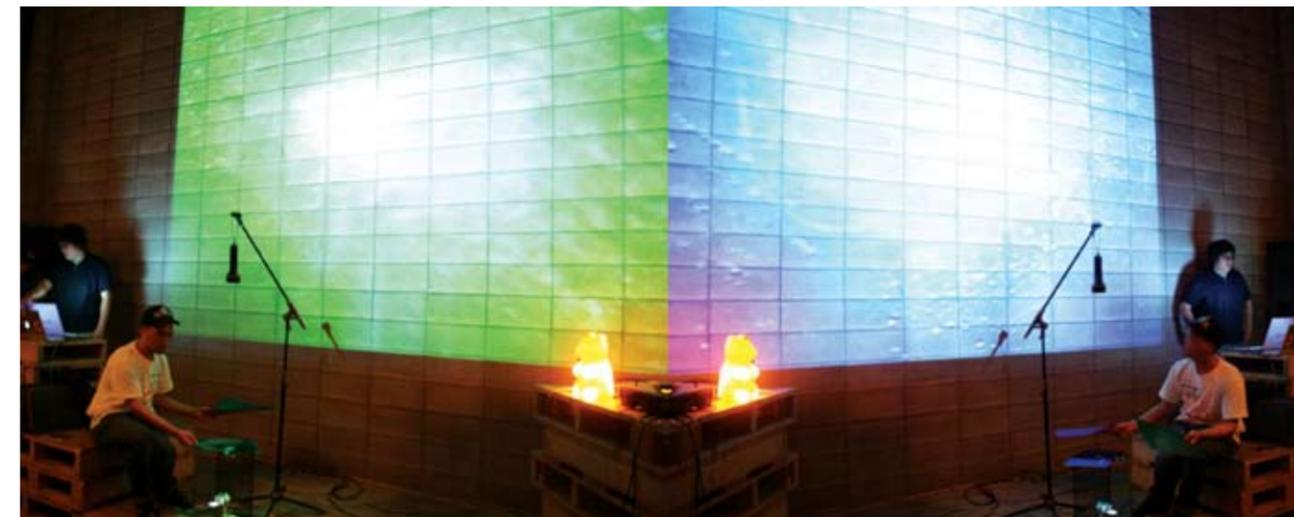
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Collaborators

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Bibigi

Theremin Based on Computer-Vision Technology

**Artist Statement**

Bibigi is a music-scoring and sequencing device based on computer vision technologies. Pitch, timbre, and loudness are computed based on the hue, saturation, and intensity of images.

This performance poses questions about the similarities between animals and autistic human beings. It recognizes the differences among autistic patients and seeks to understand their behavior and psychology by analyzing animal neurology, zoology, behavioral science, genetic biology, etc. The result is a conversation among different species that mixes three sources with an interaction in one space.

Technical Statement

RGB images are transformed into the HIS model with hue, saturation, and intensity. Pitch, timbre, and loudness are computed based on the transformed images. Pitch is mainly decided by hue, timbre is mainly decided by saturation, and loudness is controlled by intensity. This conversion rule is based on the analogy of color and sound, in terms of physical properties.

Steve Mann

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and Computer Engineering
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Collaborators

James Fung
Raymond Lo
Chris Aimone
Mir Adnan Ali
Sadek Ali

Artist Statement

Camera phone images and video are used for social interaction. Constant mobile connectivity has become more than just encyclopedic "computer-like" knowledge, but rather is a tool for greater understanding of the perspectives of others. P2P, often known as peer-to-peer, has become people-to-people, or "power-to-people," instead of people-to-computer.

Through the Global Eyes of camera phones, a new Globaleyesation results: all-seeing eyes, not in the traditional panoptic sense, but rather the inverse panoptic (SOUSveillance rather than SURveillance). SOUSveillance supports selective self-representation, where people choose what they upload. With SOUSveillance, so long as you are alone, you are not being watched or observed. You are only being observed in social situations. SOUSveillance alters the power dynamic of traditionally disenfranchised communities, particularly in the developing world and indigenous communities, to establish a new relationship between the "ruled" and the "rulers."

There is a tension between SOUSveillers and SURveillers, creating a need for a fair balance: Equiveillance. This work examines the evolution of a social norm for image capture and transmission. Attendees take part in SOUSveillance and

negotiate, between phones, when and where image capture is desirable and what images should be shared. The work evolves throughout the duration of the conference, exploring how the community reaches a state of equilibrium: Equiveillance.

NGOs often work in hostile environments that undermine existing civilian authorities' efforts to promote humanitarian agendas. The arms race has become the information race and images the new ammunition. We propose a perpetual stalemate in the form of Equiveillance. The accessibility of inexpensive off-the-shelf technology capable of transmitting live video and images brings about the democratic order of the new media militia.

Constant connectivity with mobile imaging has applications for citizen journalism in environmentalism, micro-capitalism, and social-justice, empowering many communities by bringing their messages to the world stage.

Technical Statement

Attendees use their camera phones to participate in exploring the concepts of cooperative SOUSveillance throughout SIGGRAPH 2007. A camera phone program, called Glogger, allows conference attendees to either engage in the taking and sharing of images or prevent it.

Unlike other programs, Glogger must obey community standards to take or share images. This interaction is distributed, so no one person can stop or censor the process of image capture and sharing. This group interaction creates a mutually agreed upon "sight"-licensing scheme between users. Moreover, the system uses a continuous rather than binary sight-license permission to set image legibility. Sight-licensing provides different levels of image clarity so it may be apparent that someone is in an image, but not apparent who that person is.

Images are spread wirelessly between phones to be accepted or rejected. The community chooses the images that propagate further. This negotiation process evolves over time, perhaps reaching a state of Equiveillance. Globe-shaped SURveillance domes are re-situated, and attendees are invited to mount them on conference bags to create SOUSveillance eyes.



Michael Masucci

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Collaborators

Choreographer
Donna Sternberg

Digital Artists
Michael Masucci
Kate Johnson
EZTV

Live Dancers
Alheli Montano
Vincent Hederman
Samantha Hazan
Stephanie Reilly



Artist Statement

Rage to Know is a living art installation consisting of dancers, sound, and 2D, 3D, and digital video projection.

Current concepts in contemporary physics, including quantum mechanics and string theory, are bombarding humankind's understanding of time, space, and spirituality. How do artists interpret these concepts and serve as both translators and commentators in reaction to ideas that few can actually ponder? How do these concepts intersect with day-to-day living and the socio-political problems facing the world?

This project is an experiment through modern dance and digital art to create a living expressionistic environment upon which to reflect and ponder the nature of existence itself. The very process of collaboration is experimentation in itself, and in a way shows the similarity between the creative processes of art and science.

Technical Statement

For this performance, in addition to one static projector, which serves as contextual landscape, EZTV uses two modified camera-support systems that allow video projectors to follow and move more smoothly with the four dancers, who are used as projection surfaces. This technique, called LightCrane by Masucci, has been evolving since his collaborations in the mid-1980s with multimedia dance pioneer Zina Bethune.

No lighting design other than video projection is used to light the dancers, who are enclosed in several prototypes of mesh fabric costumes/sets, which change shape and therefore change the shape and size of the projection surfaces. This Butoh-like performance, created especially for SIGGRAPH 2007, features digital music created by Masucci, Johnson, and Sternberg.

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Umika Obata



Artist Statement

The mobile phone is rapidly evolving and changing our lives. Not so long ago, it was hard to imagine that telephones could carry a video display. But now, almost every mobile phone is equipped with video display capability, and the quality and performance of these phones continues to be enhanced more and more.

Future mobile phones will have a much larger and much more comfortable video display. They might even include a video projection function. In our research, we focus on the ever-evolving mobile phone and use wireless display panels and projectors to realize works of performing art that predict innovative methods of interaction and play with mobile phones.



Technical Statement

The artists created two new kinds performance:

- A wireless mobile display panel based on LCD. The panel has a 17-inch display area with a one-centimeter-wide frame.
- A wireless mobile projector system. This system uses a projector unit with LED as its light source and DLP as its light valve.

In both cases, performers can create collective and synchronized video images. The images can be controlled by the performers as they move and arrange the panels or change the orientation of projectors that synchronize with the video content.

For example, as they follow the capricious movements of a person in the displays, the performers arrange the panels to continuously display the person's whole figure. They may have to quickly change the configuration from vertical to horizontal when the figure moves from a standing position to a lying position.

Pauline Oliveros

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Collaborators

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Jonas Braasch
Chris Chafe
Tomie Hahn
Soundwire Ensemble
Tintinnabulate Ensemble
Dan Valente
Bart Woodstrup



Artist Statement

Musical performance usually takes place in a static, unchanging space. The acoustics of the space are coupled with the instruments and/or voices to create the sound of the music, which has always posed a challenge regardless of genre. For example, the right balance of reverberation is needed to ensure both clarity of the performance and perceptual fusion of the musical instruments.

This project explores the relationships within an acoustic and electronic performing ensemble for improvised music in virtual environments with deliberately varying characteristics. Variations in acoustics provide a new dynamic parameter of music in addition to harmony, melody, and rhythm. The performance is enhanced by dynamic visual elements with interwoven artistic images and views of the performers in a shared virtual space.

In implementing a live, co-located music-performance space, a central question is: How can we capture the aura of a remote environment and bring it back to life during a concert? Although our work incorporates reproduction of recorded spaces as well as real-time creation of virtual spaces, the concept of reanimating previously experienced venues goes well beyond the physical reproduction of the space and enforces creation of an abstract but functional audio/visual environment.

Technical Statement

The Tintinnabulate Ensemble performs improvised music with traditional and non-traditional acoustic instruments. Live electronics play a central role in the concept of Tintinnabulate. The ensemble uses two software environments to create functional virtual acoustic spaces that are projected by up to 24 loudspeaker channels.

Pauline Oliveros conceived of the Expanded Instrument System (EIS) in the 1960s as an interactive electronic sound-processing environment designed for improvising musicians. ViMIC is a computer-generated concert space based on an array of virtual microphones, with adjustable directivity patterns and axis orientations. The design allows creation of sound imagery similar to that associated with standard sound-recording practice and goes beyond pure recreation of physical acoustic spaces.

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Artist Statement

The main idea for this work is to use the performance of the dancer, the dancer's shadow, and interactive real-time-generated graphics as equally important components in the visual composition. This is exemplified in different sessions of the work. For example, in the beginning section, two stripes are animated in imitation of dialogue with the movement of the water sleeves of the dancer. In the second section, graphics like smoke and waves are designed to express the essence of the dance in an abstract way. In the last section, the dancer "controls" her shadow to "dance" together with video captured from her dance and her shadow. Special attention was given to show the styles, patterns, and sounds that are characteristic of the Tang Dynasty (A.D. 618-907) of China.

Technical Statement

Various types of audio/visual interaction techniques are used to generate music and graphics for the performance. Through analysis of the scene captured by a digital video camera, the amount of movement and the position of the dancer are used as parameters to animate two stripes that echo the movement of the water sleeves of the dancer. Those parameters are also used to generate abstract smoke and wave graphics and to adjust the music effects. Music and sound are used to affect the appearance of the wave graphics. A Wacom tablet is also used to generate graphics in accordance with the movement of the dancer.

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Ross Karre

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Performer

Ross Karre



Artist Statement

This piece explores the synchronization and hybridization of media for the creation of a unified and balanced work of art. Jeffrey Treviño created *Substitute Judgment* as an autonomous solo multi-percussion work, inspired by his readings of philosophical inquiries into the ethics of Alzheimer's Disease patients' legal status as decision makers. Ross Karre created *Metal Catalogue*, a synchronized video response to Treviño's work.

Substitute Judgment presents four very simple compositions as one composition in which four different pieces interrupt each other. The piece focuses on the profound changes that come about by an apparently simple, even trivial change in priority.

The goal of *Metal Catalogue* is to create an entirely new piece that utilizes the hybrid of both media, live percussion and video. The concept for the video is derived from the concept of *Substitute Judgment*. Hyper-simultaneity guides the temporal construction of the imagery. A sectionalized formal structure, consisting of four seemingly disjunct cells of musical materials, is represented graphically by a catalog of metal objects.

Comprised entirely of still photographs of decaying metal farm equipment, *Metal Catalogue* displays images in motion through a variety of graphic manipulations. First, a moving collage appears as a backdrop for overlaid images whose perspective is twisted and turned in response to the resonance of the tam-tam. Next, the surprise introduction of a mechanical drum groove is represented with shifting and fading colored pencil drawings of the photographs. The materials gain more clarity in the next section, when the twisting images are transferred to a single-layered unity on the screen. At the entrance of the penetrating wood block, the audience flips quickly through the pages of the catalog while the sound of glass bottles evokes memories of images as they pass quickly by, twisting in and out of sight. The music and video permute these previous materials. Finally, a choice is made: The glass bottle remains as the decisive final sonic element, resting uneasily on the resonance of the tam-tam and the fading imagery of the metal collage.

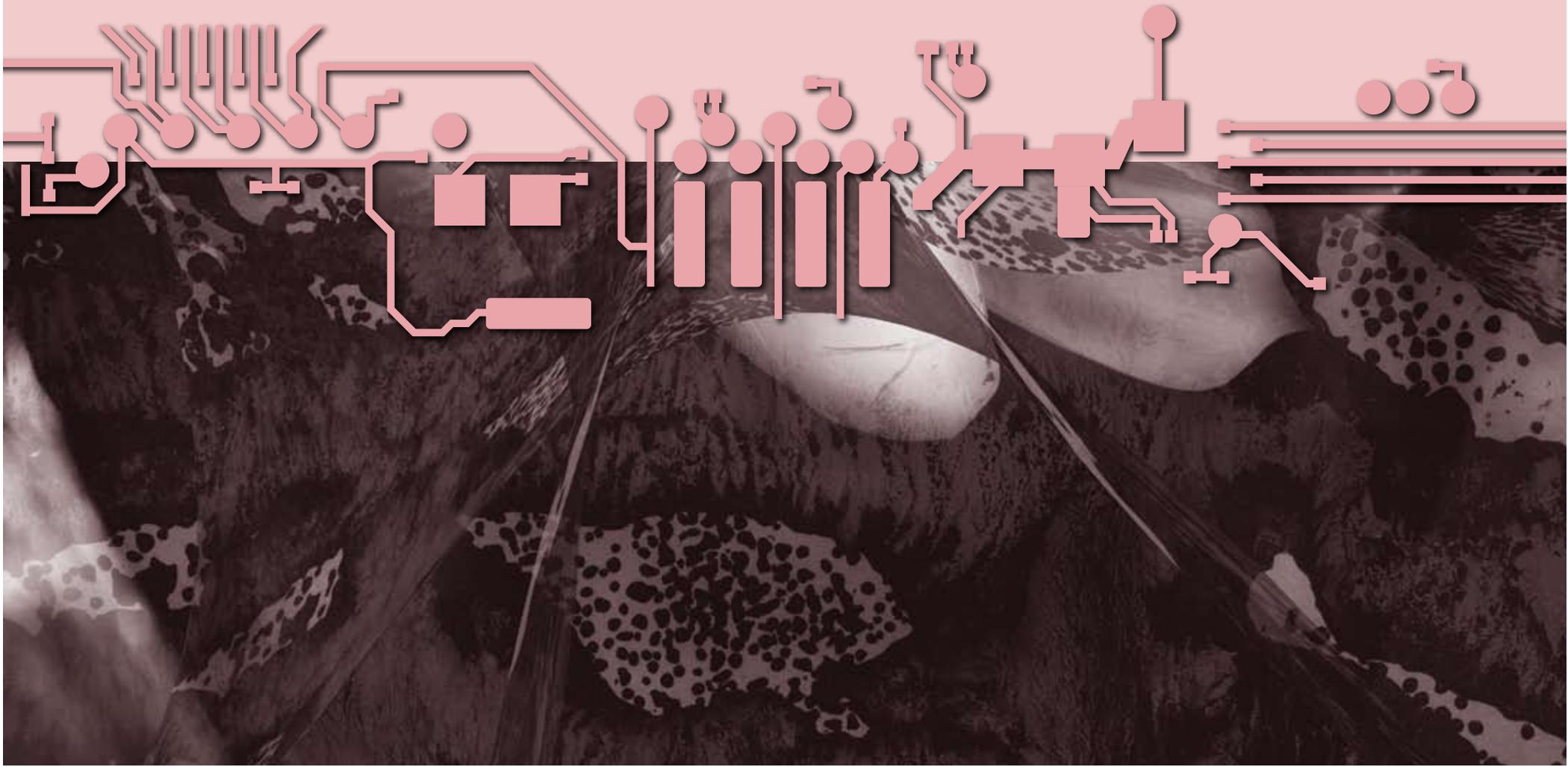
Technical Statement

The artists designed chains of communication between various industry-standard applications. Treviño's solo multi-percussion music was originally notated in Sibelius, a commercially available music notation program. Then he exported the notated score from Sibelius as a MIDI file and imported this file into ProTools, the industry standard for mixing and editing audio. He used ProTools to create a click track from the imported MIDI file and exported the click track, a beat-by-beat representation of the musical composition's metric skeleton, as an audio file.

Karre imported this file into Final Cut Pro and, with reference to the musical score, was able to create a video that synchronizes exactly to each and every audio event in the piece of music. He then authored a DVD in which the soundtrack is this click track. In performance, a Macintosh laptop plays this DVD. The laptop sends its video to a projector, which throws onto small screens integrated into the solo multi-percussion setup; the laptop sends its audio, the click track that is the DVD's soundtrack, to Karre's headphones. In this way, Karre is able to perform the composition in complete synchronization with the video.

Art Gallery: Global Eyes

Installations



Caitlin Berrigan

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Artist Statement

These designer chocolates illustrate the inventive protein structure of the hepatitis C virus. A model of the virus was printed as a rapid prototype from a 3D illustration of the virus, from which the chocolates were cast. These delicious truffles do not carry hepatitis C. Each one was lovingly handmade from 72-percent Belgian roasted cocoa in an attempt to befriend the virus.

The desire to eat the enticing chocolates is mixed with a repulsion for the infectious virus. This unnerving dialectic has proved to be an exciting and approachable way to ignite discussion and create awareness about an extremely prevalent and under-reported disease. Over 200 million people worldwide are living with hepatitis C.

This work is part of a series: Sentimental Objects in Attempts to Befriend a Virus. Living with a chronic, virtually incurable virus can lead to a certain identity crisis in which one's occupied body is seen simultaneously as enemy and victim, friend and abuser. Weary of the rhetoric of war and fighting used to describe the illness, I wanted to domesticate my untamed virus by offering it comfort, bread and circus. Instead of starvation, I offer it delicacies. Instead of deprivation, I offer it handmade garments. Instead of exile, I offer it whimsical shelter. These domestic objects are created in its image, based formally on the virus's protein structure. Perhaps the virus will be seduced by its own vanity? Or perhaps we can construct our own survival out of its image?

Technical Statement

A cryo-electron micrograph of the protein structure of the virus was retrieved from the online Protein Data Bank and manipulated in Maya and form-Z 3D software to prepare it for printing. A 3D plaster model of the virus was printed directly from its digital illustration using a Z-Corp rapid-prototyping machine. Food-grade silicone molds were then made from the rapid prototype, from which the chocolates were cast into this molecular representation.

Many thanks to Richard J. Kuhn in the Department of Biological Sciences at Purdue University for providing information about the virus, to Alex Gibbons and the New York University Arts Technology Group for providing the rapid prototype, and to Vijay S. Reddy and Ian Borelli with the Protein Data Bank.

Viral Confections

Edible chocolates cast into the molecular structure of the hepatitis C virus from the Protein Data Bank



Chiara Boeri

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Boscometro: More Than a Green Belt for a City

2D and 3D software, integrating cartography, 3D models of trees, and a simple interface



Artist Statement

Milano is a grey, industrial city, with alarming pollution levels. This project concerns a wooded area surrounding the city: a green belt, punctuated by clearings with farms, abbeys, rivers, playgrounds, and educational and social spaces, but also a place to enjoy leisure, a place of silence, contemplation, and full immersion in an individual and collective memory of our region.

This is not a nostalgic project. To look at a city from the viewpoint of open spaces means to invert the perspective of a polycentric and functional practice of building, and direct one's attention toward social relations and the vital flows of a metropolis.

Boscometro is an interactive installation that creates places of discussion and reflection around the project and its deeper meanings. On a screen, viewers see aerial views of Milano, Turin, and other cities. At first, the chosen city looks grey and covered with smog. Viewers choose trees from a side menu and drop them in the Boscometro area. As the trees multiply, the city looks cleaner and brighter. This installation has profound social and ecological value, and it is a joyous way of involving people in a very serious project.

Technical Statement

The application manages real-time interaction with high-definition, multi-layer maps of a fairly large urban region. At the same time, a geospatial database of thousands of complex 3D objects (trees) is interactively created and maintained. As an additional feature, the visual effect must be scale-dependent so it can produce views that dynamically change according to the zooming level.

These features are best fulfilled in a true GIS environment rather than a general-purpose graphic engine coupled with a DBMS. The general drawback of most GIS-based applications is a poorly designed user interface, which makes them appropriate mainly for technical uses.

ESRI's ArcGIS Engine makes available the ArcObjects Library through API support for all major programming environments: C++, Java, .NET, ActiveX on Windows, Linux, and Solaris. It is also embeddable in web applications (the ADF web-development framework and ArcIMS web services).

This project is in progress, sponsored by several Italian cities.

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Artist Statement

The Scalable City extrapolates the cultural condition arising from the interaction of users, data, and algorithms. As our world becomes characterized by this equation, we inhabit the artifacts of these relationships. The Scalable City is urban design as choreography of these artifacts.

The work includes five components: Landscape, Roads, Lots, Architecture, and Vehicles, each created by a process in which real-world data are subjected to algorithmic transformations before being re-deployed as elements of the urban condition of software I/O. For instance, the landscape (a complex natural form) is transformed by a simple algorithmic process, creating a new form that retains naturalism in its details but with a high level of algorithmic decorativeness in its larger-scale structure.

Space-filling road systems are “grown” into this landscape, located via computer-vision analysis. The resultant decorative forms are evocative of nouveau iron grates, illuminated texts, and Oriental space-filling spiral patterns. Vehicles, lots, and architectural forms follow similar paths of manifestation, each demonstrating the embrace of software as the script of spatial experience. Interactive users control a vortex of flying automobiles. As they navigate this vortex, road systems grow and detritus is flung into the air, where it attempts to self-assemble into an ersatz structure.

In The Scalable City, a variety of computer-concept buzzwords take on physical form. All processes encode their results with artifacts that express their virtues and shortcomings. Culture has been undergoing a transformation from analog to digital forms and methods for several decades. These transformative moments produce tensions between speculation and anxiety.

Technical Statement

The Scalable City is created via a data-visualization pipeline. Image data from satellites and on-the-ground photogrammetry are the seed of algorithms that re-articulate these forms with overt artifacts. The use of L-system algorithms and Archimedes spirals to form the roads, and the image-processing cut, copy, and paste mechanisms to construct the landscape, overtly engage this process.

The software is a series of programs written in C++. External libraries include CGAL, OpenCV, Maya API, MEL, OGRE, ODE, and Cg. The interactive environment provides the platform for the generative relationship among these elements in a form similar to a 3D computer game. The user controls a vortex that utilizes physics simulation to interact with the elements in the world. Each architectural fragment is subject to these forces. As users move through the environment, their positions cause a network of roads to grow into the environment. When house fragments land in lots derived from these road positions, they attempt to assemble themselves, connecting into a kinematics structure. The connective forces on these pieces eventually dissipate, and the vortex can eventually redistribute the pieces back across the landscape.

The Scalable City

Interactive 3D computer game environment



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Artist Statement

Nou La combines imagery from two religious traditions in New Orleans with documentary photography of the Ninth Ward shot seven months after the 2005 hurricane season. The altar imagery is based upon transformations of two traditions: African Vodun in New Orleans, specifically Priestess Miriam's New Orleans Voodoo Spiritual Temple, and the Italian-American celebration of St. Joseph's feast day.

The St. Joseph's Day altar tradition was brought to New Orleans by Sicilian immigrants. It celebrates gratitude for St. Joseph's intercession during a famine. These public altars are open to the public on St. Joseph's feast day (March 19) and focus on distributing food to the poor. The 2006 feast day also marked the third anniversary of the invasion of Iraq, when the Veterans and Hurricane Survivors March from Mobile to New Orleans passed through the Ninth Ward.

Montages in the installation (Expedite, Oya, Obatala, St. Lucy, Erzulie Dantor) invoke intercession for protection against hurricanes (Oya, Dantor), protection for children, calm in the midst of chaos (Obatala), action on behalf of those least empowered (Expedite), and protection for the poor (St. Lucy).

A statue of St. Expedite in the church of Guadalupe, originally the mortuary chapel for the famed St. Louis Cemetery Number 1, is an apt symbol for the many community-action organizations in evidence during St. Joseph's weekend 2006. He is the patron saint of prompt solutions to problems.

The fabric, ribbon and Expedite-stamped fringe on the installation borrows from similar flag and fringe traditions seen in Vodun altars. The waving fringe activates ashe, the sacred power to enable healing transformations.

Technical Statement

Nou La references a SIGGRAPH 96 installation, photography of 12 St. Joseph's Day altars, and four Vodun altars taken over a 10-year period, and recombines all of these with imagery from a visit in March following the 2005 hurricane season. The primary medium of the St. Joseph altar is food. Vodun altars are set apart from each other by fabric draperies, hence the use of fabric here. Images of saints with the symbols specific to the loa (spirits) are combined with food and coded offerings.

The altars are reinterpreted as montages that include the St. Expedite and Obatala lenticular prints and the St. Lucy image printed with acid dyes on Habotai 10-millimeter silk. Two additional composite saints' images date from the 1996 Altar installation. All of the Ninth Ward shots and most of the New Orleans altar shots are presented with minimal manipulation (cropping, exposure correction). The remaining still images are printed on matte paper and overlap one another in the installation at varying depths from the wall (from flush to two inches). The succession of images in the monitor is organized as a screensaver. At some points, only details are presented, and at other points, the monitor presents a wider-angle view.

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Artist Statement

Future Perfect is an interactive audio/video installation that contemplates the proposed Atlantic Yards development in the Prospect Heights neighborhood of Brooklyn. If it is built, this astonishingly large-scale development will include 17 high-rise buildings and a sports arena, and it will be constructed in a neighborhood that consists primarily of low-rise, residential buildings and local businesses. The architectural shape of the neighborhood will be drastically altered.

The Atlantic Yards development is currently a controversial issue in Brooklyn. Walking around the neighborhood, it is difficult to envision the enormity of the proposed architecture and to construct an informed opinion about the suitability of the proposal. The only images available of this suggested future are the architect's renderings, which are necessarily drawn from a partisan perspective that presents the designs in a positive light.

With a desire to fill this information gap, we created an installation that visualizes the developers' plans from many angles,

allowing people to interactively compare the proposed future with the present reality. Feeling the lack of community voices, we posted fliers all over the area surrounding the site, asking residents to phone in with personal opinions about the development, and about how they would ideally like to see their neighborhood developed. Recordings of the many calls that we received create the audio soundtrack to the piece. We also invited local schoolchildren (the people who will have to live with this architecture) to visually imagine how these streets would look if they had the power to shape this future.

The installation is interactive in that both these "futures" are only revealed by someone's physical presence. When viewers step into the installation, a video layer of an architectural future is interactively revealed in front of them and follows them as they move through the room. By exploring the width as well as the depth of the installation space, viewers can dynamically compare and contrast these different futures with the architecture of the present. In this way, the installation serves as a critical document of this moment in Brooklyn's history.

Technical Statement

Future Perfect combines 3D modeling, motion tracking, live-image processing, and internet telephony. Architectural models were constructed in the Maya 3D environment, built to scale, and textured based on the architects' plans, which are publicly available online. The video system consists of two tracks of synchronized video. The first track shows digital video taken from the neighborhood's streets, and the second (which is hidden by default) presents the same footage with 3D models composited in the background of the first video's scenes.

As viewers move in front of the video projection, a camera above tracks their positions along a horizontal axis parallel to the screen. Where viewers appear in the camera's view, a computer equipped with Max/MSP/Jitter software unmasks vertical slices of the second "future" video track above the first. These slices fade away when a viewer leaves that position.

ARTIST IN RESIDENCE, GUERRILLA STUDIO

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Artist Statement

Designed for both public and private spaces, Windowseat Lounge is a comfortable refuge from the hustle and bustle of lobbies, airports, or busy home environments. The wrap-around design creates a sub-architectural room-within-a-room. A swiveling base provides full control over the framed perspective, allowing you to pan 360 degrees to take in the environment or block it out.

Technical Statement

Windowseat Lounge was designed using 3D CAD. During the design process, multiple test prototypes were created with laser-cut plywood sections to check ergonomics, comfort, and design. Once the design was refined on the computer, foam masters were milled from the 3D files using a CNC mill. The foam masters were used to create the molds. A fiberglass shell was created from the mold, then upholstered.



Jun Fujiki

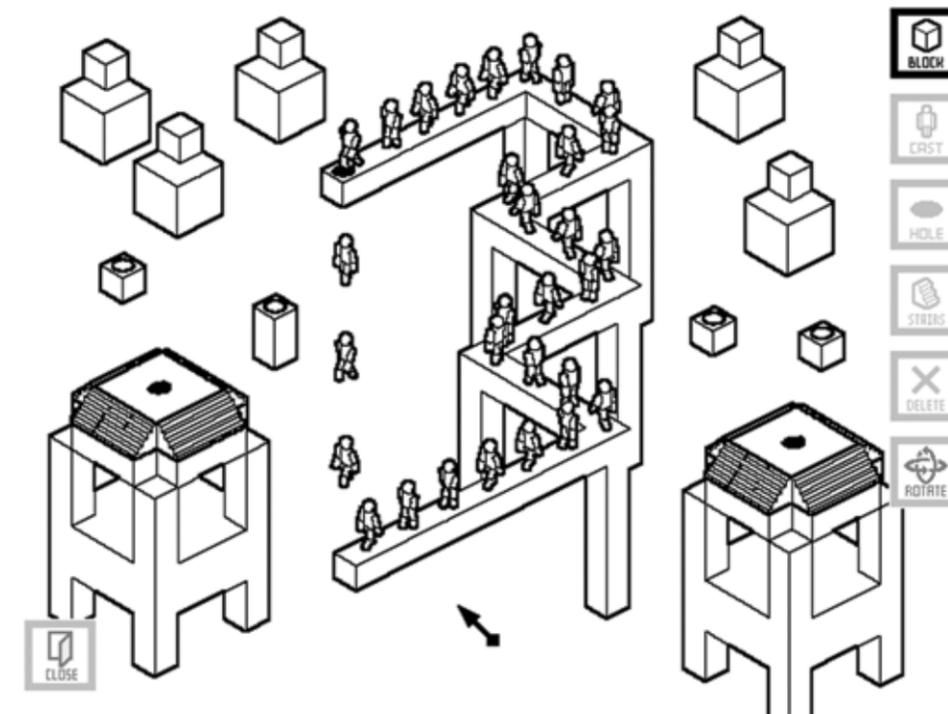
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Artist Statement

Optical illusions, which are not possible in the real world, are often used in still images and animation. With computers, I transform a static optical illusion into an interactive optical illusion and allow the character in the image to perform “impossible” movements in a virtual 3D world.

The character moves automatically on the block and the stairs. Not only can the character move according to physical laws in the virtual 3D world, but he can also pass between separate blocks that seem to be connected. When the object is behind the falling character, he lands on the object even if the object is behind him in the 3D world. When a hole is not visible, the character ignores the hole as if it does not exist. When the character jumps, he is always in front of the objects.

I hope that this work will release viewers from the preconceptions that surround us.



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Artist Statement

“But what if God himself can be simulated, that is to say, reduced to the signs which attest to his existence?” – Jean Baudrillard, *Simulations*, 1983

“The human speaker will contribute much to clothe ELIZA's responses in vestments of plausibility.” – Joseph Weizenbaum, discussing ELIZA in 1966

“Hence, I have no doubt but that every one is absolved from his secret sins when he has made confession, privately before any brother.”

– Martin Luther, *The Babylonian Captivity of the Church*, 1520

The Automatic Confession Machine (ACM): A Catholic Turing Test is a computerized confessional designed and fabricated to resemble an automatic banking machine (ATM). This work is inspired by memories of the Catholic Sacrament of Confession and the Turing test for artificial intelligence. In his 1950 essay entitled “Computer Machinery and Intelligence,” Alan Turing replaced the question “Can machines think?” with “Are there imaginable digital computers which would do well in the imitation game?” With this maneuver, an intractable philosophical problem becomes a simple problem of interface design. This artwork should not be misunderstood as an attack against religious faith. Rather, it serves as a warning of the potential of technology to intrude into the most private sphere of our personal convictions. The doubting Thomas kneeling at this automated confessional must make a digital leap of faith and surrender to a belief in the power of silicon absolution. Thus the user/sinner can experience the ecstasy of forgiveness in a Manichean system governed by the binary logic of good and evil, where guilt, shame, sin, and salvation are all input variables that determine the catechism of output: namely how many Hail Marys and Our Fathers must be said for redemption.

Technical Statement

First deployed in 1993, ACM Release 5.0.1 retains the look and feel of the original user interface design. Originally developed using Hypertalk/HyperCard running under OS 8.6, it has been converted to SuperCard and repeatedly upgraded and now runs under OSX and will be soon available on many mobile devices. A sinner's spiritual accounting requires selections from a menu of the seven deadly sins and the Ten Commandments. When the Amen key is pressed, forgiveness is computed, and the user receives appropriate penance as confirmation of the transaction.

The Automatic Confession Machine: A Catholic Turing Test
iMac, keypad, plexi-glass, wood, carpet, fluorescent light, neon light, faux leather
96 inches x 36 inches x 48 inches



Adrian Goya

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Artist Statement

FACES is an interactive video installation that explores the otherness contained in each one of us. The Other, so often an anonymous and distant being, is carried inside me in a way. Differences between humans are merely a product of chance. Too easily, we distance ourselves from the suffering of people, ignoring the tragedies of mankind, ears deaf to the pain of the Other. We forget that the sufferers could be “us” or someone we know, someone with a face.

Levinas said that being in a face-to-face relationship with the Other makes it impossible to kill him. He also considered that his relationship with the Other as neighbor gave meaning to his relations with all the others. A neighbor relationship requires one to know the Other's face.

Every day, we look in a mirror and it's always the same face, the “Self.” This installation tries to briefly change that everyday experience. When looking into the mirror, the viewer discovers other faces watching him, faces that get mixed-up between them and the viewer's reflected image. The Self encounters itself face-to-face with the Other, previously a stranger.

Inside the viewer's own reflected image lies a small, ever-changing sample of the Infinite Otherness.

Technical Statement

Motion detection registers the viewer looking into the mirror and records a small loop that is maintained in a database. As viewers watch their reflections in the mirror, their own images are video-projected over his reflection with similar dimensions and with a small delay. As viewers move around in front of the mirror, previously recorded loops are projected inside their reflections. The projected video loops are contained inside the reflected mirror-image by a series of masks. With a series of motion blurs and masks, the viewers' movements determine the discovery of new faces.

FACES was entirely programmed in Pd & GEM.

Completion of this project was made possible by the Centro Multimedia, Centro Nacional de las Artes, México DF, México.



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Artist Statement

Leibniz is said to have been the last man to know the entire body of available knowledge. That was in 1716. Today, we as individuals can only hope to know a fraction of human learning. As a result, interfaces, symbols, and navigational tools have become critical to establishing our sense of place in the world – intellectually, physically, and ultimately emotionally.

The speed of change in knowledge and the overall expansion of information is clearly increasing at a greater rate than our ability to be informed. The Worldprocessor project, currently in its 19th year, acts as an instant, if unusual, interface. Each individual globe, and there are now over 300, presents a specific aspect of the geopolitical and/or socio-cultural condition.

At the same time, each individual sphere also represents a race against time. This is because each and every globe is inherently outdated the moment it is completed. Data collection, analysis, and publication have a built-in time lag, which is actually increasing every year, despite the fact that humans as a group collect and disseminate data faster than ever. In fact, I am beginning to believe that Worldprocessor globes might need an expiration date: “Note to Viewer: Do not exhibit/view after this date.”

I do believe I am in good company, though. In 1492, Martin Behaim, a German navigator based in the Azores, completed the very first globe still in existence. The “turning encyclopedia” was a useful tool to persuade German traders to invest in a Portuguese expedition to China. The Behaim globe became almost instantly obsolete, as Columbus “discovered” America that same year.

Nevertheless, the power of the globe form continues to inspire me to comment on the human condition.

Technical Statement

Most of the conditions and factors that are commonly accepted descriptors of reality can be considered quantifiable; however, datasets don’t come in elegant forms and shapes. Each Worldprocessor globe requires invention of a new code or language to represent the data as accurately and appropriately as possible. But, as an interpreter of life, it is important, yet somehow impossible, to quantify concepts, such as elegance, love, flavor, temptation, despair, hope...

Most of the topics I address through these globes require a degree of decision-making that has me caught between aesthetics, visual effects, symbolism, and relevance. Further reduction, selection, and regrouping of data is almost always necessary. A worthwhile analogy is the father of documentary film making, Robert Flaherty. Back in 1921, he would arrange every scene in his documentaries, because reality and truth needed to be created specifically for the medium that documented it.

Indeed, there is no straight naked truth, and art has been described as “the lie that tells the truth.” While that may be true, the fact is that I very consciously do not impose an artistic lens when it comes to choosing, representing, or rendering the data. I make a conscious effort to let the data speak and not to make a personal statement. This “just facts” approach is inspired by journalistic neutrality, and my primary sources for the data are highly respected institutions, governments, factbooks, newspapers, and magazines.

Most of the data are publicly available and from established sources. However, incompatible and incomparable datasets do present a challenge. For example, statistical methods sometimes vary from country to country and, frequently, the selected timeframe is different as well. Criteria are likely to vary from year to year and, worse still, there is actually a huge lack of data for some countries and, indeed, sometimes entire regions. Additionally, some countries or regions did not actually exist until very recently and, thus, clearly do not have a statistical history. I do my best to generate comparable and therefore meaningful datasets for this ongoing series, challenging as it is.



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**Artist Statement**

My most recent work engages conceptual themes of distance, scale, time, and experience. Topography Drive puts the audience in an imaginary driver's seat, and the route of exploration is as geographically real as it is a conceptual meditation. The trip begins smack in the middle of the Pacific Ocean, just south of the Aleutian Islands. We are traveling southward along the International Dateline. Looking westward, you see the night-lit topography of Japan emerge from the ocean; looking eastward, you see the topography of the West Coast of the US lit by the sun's rays. In essence, you see day and night landscapes together in an exploratory scene that both flattens the earth and eliminates atmospheric effects – a view of our world that is dream-like but underscored by very real data points. The artwork is, in fact, based on what one really would see if one could flatten space, eliminate natural atmospheric distortions, and see across planetary-scale distances.

The first iteration of the Topography project was exhibited at the Yokohama Triennale in 2005. There the entire Pacific Rim was mapped in this fashion, yielding a 160-yard-long image (4 inches in height) at a scale of 1:170,000.

A very different version featuring moving projectors, a moving landscape, and an HD rendering of the flyby was shown at the Tokyo National University for Fine Arts in 2006. The most recent piece depicts the Vietnamese coastline from the same International Dateline viewpoint. Etched in black marble, the work is a 120-foot-long permanent public sculpture in the coastal town of Hoi An in central Vietnam. It "captures" the entire Vietnamese coastline at 1:50,000 scale (documented at www.hoian-horizon.org).

Acknowledgements of support: Shinobu Ito, Sumiko Kumakura, Franz Xavier Augustin, Markus Cornaro, Viet Bang Pham, and Kasuken Kasuya.

Technical Statement

This installation uses digital elevation model data (DEM). The data, originally recorded by a radar sensor on the US Space Shuttle, represent elevation measurements taken every 90 meters of Earth's entire land mass. The image of the Pacific Rim's horizon line was rendered from the perspective of the International Dateline, as if the Earth itself were flat.

The installation consists of a large wall-size projection and depicts Japan's horizon line as one moves southward along the International Dateline at 1,000 km/h (600 mph). Japan is approximately 3,000 km (1,800 miles) in length, so the movie is approximately three hours long.

The opposing projection, which is also from the same International Dateline perspective, again traveling from north to south, represents the day scene of the American West Coast. The source for this image is not a movie. It is a live image captured via video camera of a rendered image, mounted on a lightbox. The lightbox is moving slowly but visibly past the camera perspective.

The actual image object that is moving past the camera is almost 30 feet long, 4 inches tall, and 4 inches deep, and it moves at a scale speed of 4 miles per second. This speed is equivalent to rocket speeds, approximately 30 times faster than a jet airplane.

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**Artist Statement**

This work was inspired by the traditional Japanese Yukimi Shoji screen commonly used in rural houses. Yukimi means watching a snow scene, and Shoji means paper door. On a Yukimi Shoji, paper is replaced by transparent glass so people can view snow scenes.

I am deeply impressed with this enjoyable way of spending time. When I started producing this installation, the first thing I did was make a covering box like a Yukimi Shoji to hide computer devices. Next, I created three types of snow scenes by programming with OpenGL and C++. I created snowflakes in four-dimensional hexagons, letting them move and rotate in four-dimensional space, and projected the snow scene to three-dimensions.

Second, I created a scene of snowflakes in the form of alphabets. I set a slow falling speed so that people could read the alphabets and even solve a word puzzle. Third, I made a snow scene in which everything (for example, snowflakes, trees, and houses) was shown in wireframe. These floating wireframe snowflakes present a novel and particular sense.

In addition, I created a virtual cloudy glass and put it in front of the snow scene. When people touch the panel and move their fingers, a transparent stroke appears on the virtual glass. Through the stroke, people can see the falling snowflakes. With time, the stroke disappears, and the glass becomes cloudy again.

Technical Statement

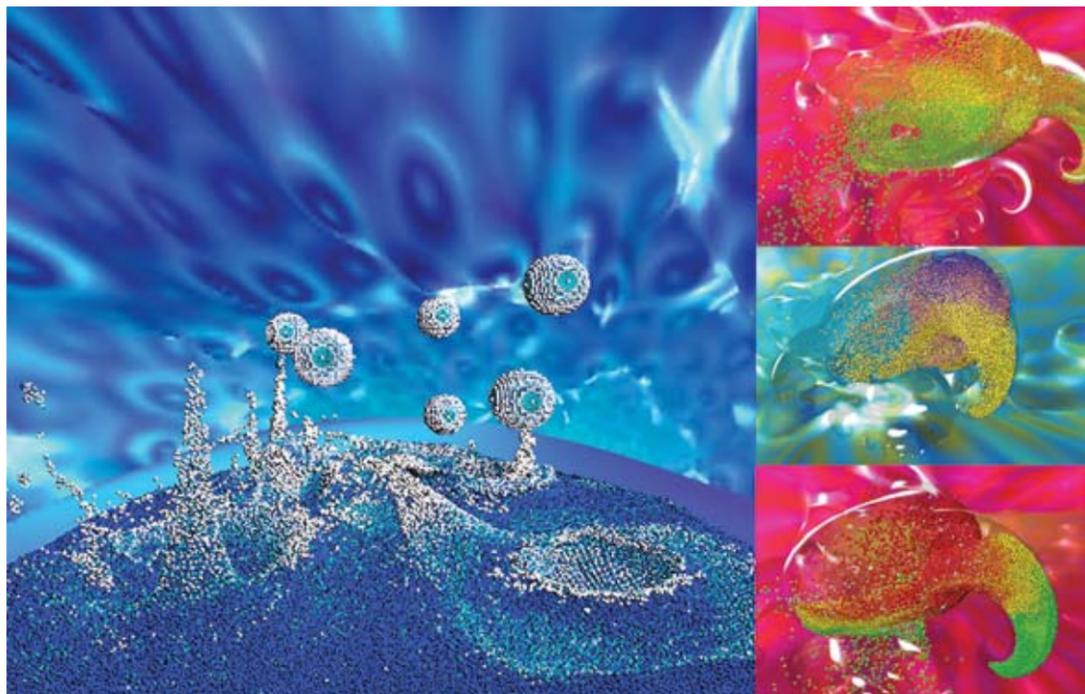
A series of 3D animations of snow scenes was created based on an original design by programming and coding with Open3D and C++. Snowflakes can be formed in alphabets, polyhedrons, or four-dimensional hexagons. All of them are 3D modeled, based on calculated coordinates, and composed of semi-transparent polygons. Snowflake movement is controllable through parameters such as falling speed, floating vectors, and rotations.

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Artist Statement

In Hydrodynamics Ocean, big waves roll toward viewers from a calm ocean. Drops of water fall from the sky. Viewers enjoy an experience of scientific beauty, as if they are visiting a stormy ocean. They can even create their own storms.

Technical Statement

This work uses a real-time, particle-based hydrodynamic simulation: an algorithm implemented on GPUs. This is the first time that neighbor-particle search has been realized on GPUs. Since all the computation is done on GPUs and no CPU processing is required, this algorithm can exploit the massive computational power of GPUs, and the animation speed is dozens of times faster.

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*This project was commissioned
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ZeroOne San Jose Festival*



Artist Statement

SEEN – Fruits of our Labor is an interactive installation that reinvigorates a public plaza through an alternative form of communication between its citizenry. It was commissioned by the ZeroOne San Jose festival and installed in the public plaza in front of the San Jose Museum of Art, facing Cesar Chavez Park.

The monolith is a communication device reminiscent of the ubiquitous obelisks, plaques, and sculptures that populate public squares. These traditional monuments carry messages that sanctify historical moments or a set of values upon which the city has been built. Similarly, SEEN – Fruits of our Labor looks to broadcast a variety of unshared principles from the mouths of everyday citizens about their projected hopes and the

American Dream in light of globalization. The project asks members of three communities that falsify San Jose's labor requirements (Silicon Valley's tech workers, undocumented service workers, and outsourced call center workers) one question:

What is the fruit of your labor?

Their responses are displayed on a 4-foot x 8-foot infrared LED screen whose content is visible only through the audience's personal digital capture devices (cell phone cameras, digital cameras, DV-cams, etc.).

The relationship that binds these disparate communities is that they labor in San Jose. The city is a global actor whose products are consumed the world over. Their reliance on the

city's economy is clear, but their understanding of this mutual engagement is less obvious. Some of the contributors to this wealth are not even present in the city. The commodification of labor through globalization has allowed an unprecedented population to engage in the global market place. The results are both exploitative and liberating. Not judging the nature of the work that people do, the project surveyed these different communities to get their response.

The project resulted in vibrant interactions between people, who shared their viewing devices with total strangers, discussed the streaming messages, and telematically shared their viewing experience with others in their phonebooks.

Technical Statement

To the naked eye, the monolith is a blank surface waiting for information to be carved on it. However, when viewed through any CCD device, its messages magically appear on the user's screen. It is only through the digital apparatus that the messages can be read. The audience is encouraged to photograph and share these messages: the fruits of other's labors. What was previously hidden from their view is revealed through the technical device. They become complicit in the most personal way through this exchange.

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Collaborators

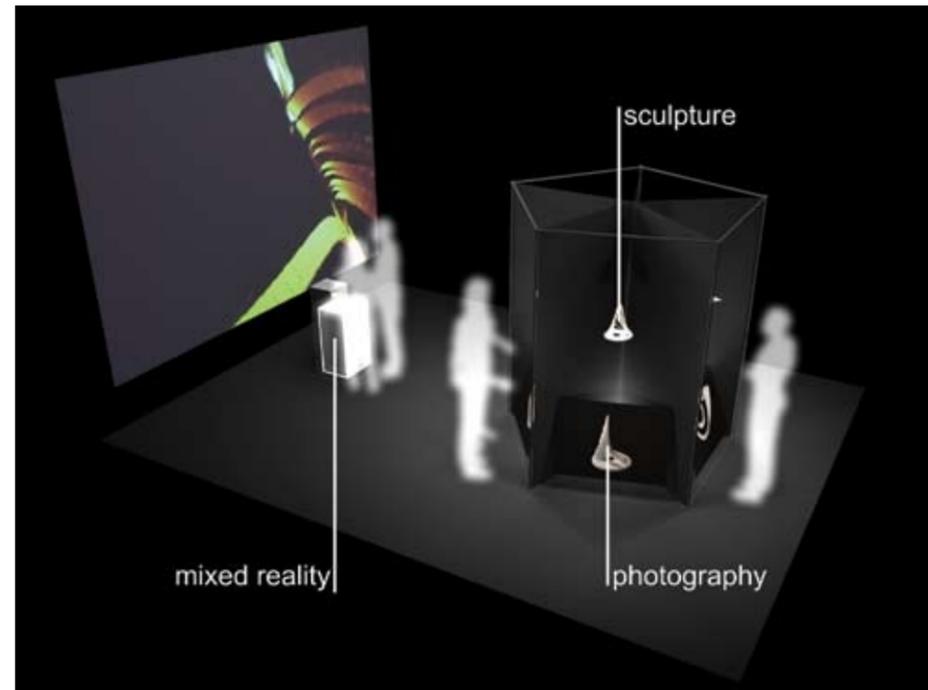
3D programming, interaction design

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Otti Brosch

Kamil Jozwiak

Peter Uray



Artist Statement

This project is a collaborative mixed-reality media installation by Florian Grond, Thomas Kienzl, and Gabriele Engelhardt. It originates from Florian Grond's diploma thesis concerning the stability of strange attractors.

All three of us share a fascination for strange attractors, since visual media observation reveals the underlying differential equation to be far less abstract. During the 19th century, 3D plaster models of mathematical functions were produced in Germany and globally distributed. These forms later inspired numerous 19th- and 20th-century artists and were for us the starting point for the concept of our project.

In German the word "begreifen" (to understand) means literally to grasp an idea. This is what we want to make possible for others with this project. Transforming formulas into forms also emphasizes the original meaning of information, which is "bringing into form."

With Thomas Kienzl's experience with mixed-reality setups, we developed a way to use the tangible interface (MRI) as a didactic framework. Hands-on experience with the MRI showed it to be a fascinating interface that encourages a wide variety of people to engage with and manipulate virtual reality.

Technical Statement

In addition to the MRI, rapid prototyping is a key technology in this project and is used to produce the 3D mathematical forms. The mathematical forms are strange attractors from the field of nonlinear dynamics. Their forms are calculated through a particular algorithm that accents their curious topological structure. At SIGGRAPH 2007, the MRI serves as an interface of high usability that enables the user to manipulate the dynamic strange attractors in real time.

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Dreaming a Fingertip Conversation with You _ tactual. [si:gak] series

Mixed media installation, porcelain plate, unglazed, 1300°C, digital printing, LED display panel



Artist Statement

시각 [si:gak]

1. 視覺, the sense of sight; vision
2. 視角, one's viewpoint, a way of looking
3. 始覺, through experience we escape ignorance and attain awareness (a Buddhist word)

This project was inspired by the challenge of finding the meaning of extending human senses in the area of new media art. By utilizing the interactivity of digital media, it presents a new way to understand how the visually disabled perceive the world.

This series is an art experiment that was created at the point where the boundaries that divide art from science and design disappear, due to technological development. We tried to go beyond traditional methods of visual information processing with a technique called physical computing. And we hope that the experiment extends beyond technology to present an aesthetically engaging experience.

Technical Statement

This fundamental technology is a visual-touch communicating device that uses a touch sensor connected to Braille. Each artwork separates each type of visual information, creating a haptic interface.

The input signal from the touch sensor senses the static electricity in fingertips and transforms it into LED power-control output signals or sound-output signals. The signals from the serial port also directly affect the elements of constituent change.

This series uses the software that implements dynamic graphics on display panels and a hardware-control program called Wiring, located inside the I/O board.

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Artist Statement

Psychophysiology is the study of the correlation between the human psychological and physiological domains, exploring the intricate interface of mind, brain, and body. This field of study is concerned with how mental events, such as feelings and thoughts, affect bodily processes.

As an artist and researcher, I design pilot projects (CASE STUDIES – performance-like interactive, video-kinetic electronic installations) as experimental models to explore the field of psychophysiology in the context of electronic media. These studies investigate virtual and real experiences while examining the art of perception. The exhibition venue provides a platform for clinical observations of social and cultural interaction.

Bridging the fields of art and science, these pilot studies exemplify scientific theories. In the era of techno-driven culture, art as a discipline of research broadens the interpretation of visual literacy to include multiple areas of study.

Technical Statement

With the aid of technology, CASE STUDY 9983 & 9983-B creates an environment in which virtual and real experiences merge, addressing the perception of virtual danger and risk.

CASE STUDY 9983 is a modernized version of an electric massage chair. The chair is equipped with concealed commercial-grade vibrating devices designed to massage different parts of the body, creating unexpected physical stimuli and responses.

Adjacent to CASE STUDY 9983, CASE STUDY 9983-B is a wall display of video monitors and bio-feedback modules, depicting facial and polygraph recordings of the voluntary subject's reactions to virtual and perceptual experience.

The data collected from this pilot study will address two objectives:

1. To research the autonomic nervous system and somesthetics senses and observe whether perceptions of virtual reality can in fact influence physiological responses. The data collected may provide both psychological and physical information for the multimedia, computer video/interactive designer, especially for the "haptic learner."
2. To investigate the differences and commonalities from the data collected for each stimulus and response as reported in each category (for example, sex, age, race, etc.) and the different types of stimuli that may motivate and entice voluntary participation and social-kinetic energy.



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Artist Statement

Wu Wei is the fundamental Taoist principle meaning "without action." This interactive work requires the viewer to act, without acting. Physical stillness combined with contemplative meditation entice the viewer in this 16th-century Chinese painting. Consistent attention gradually encourages the painting to appear. When it has fully appeared, specific elements begin to animate: clouds roll with the wind, water laps on the rocks, leaves descend from the trees, and birds navigate the horizon. Additionally and almost imperceptibly the sounds of the painting accompany the animation.

This work asks viewers to invest a few moments of their time. It does not respond to quick movements or to anyone standing near the bench. In either of these situations, the work will fade out and become silent.

Technical Statement

A camera, directly above the bench, is used by a computer-vision algorithm to track visitor presence and movement. The result then determines the progression or regression of the visual and audio. The animation is randomly generated on demand. It is never the same twice. This diminishes any noticeable repetition that may occur during the viewer's experience.



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**Artist Statement**

This work revisits A Bar at the Folies Bergère by Manet (1881-82) by enabling the viewer to interact with the characters in the painting. When they enter the space, viewers may notice the barmaid moving about and preparing for the evening. Viewers see themselves reflected in the mirror of the painting. The previous patron, seen in the upper right corner, leaves. The barmaid, if not already “alive,” comes to life. She refuses to offer service. If the barmaid is annoyed or tired, she will leave, only to return when everyone else leaves the space.

Technical Statement

The work is comprised of static images, live video, and movie files composited together in real time using OpenGL. Through vision-tracking algorithms, the computer determines the number and location of viewers, then updates the appropriate action for the barmaid.

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Palavrador

Interactive book with multisensorial pages
32 inches x 40 inches x 72 inches

**Artist Statement**

Palavrador is a poetic cyberworld built in 3D. It was conceived and implemented from a synergetic collective assemblage of ideas and activities contributed by a group of researchers. Authors with backgrounds in the arts, literature, and computer science worked together to conceive and produce a cyberworld interface that is as interactive as a game interface, as dynamic as motion pictures, and as deep as poetic discourse.

Free from the constraints imposed by written texts, the poetry in Palavrador flies, using computer graphics and artificial intelligence to achieve new articulations in its aesthetic structure and unveil new conceptual possibilities. Poetic verses constructed as graphic images achieve a scenographic dimension, surpassing ornamental features and acquiring strength as interactive actors.

Six flocks of meandering poems wander autonomously through the three-dimensional

space. The movement logic was implemented with artificial-intelligence procedures based on swarm behavior and the steering behaviors of autonomous locomotion agents. A labyrinth architecture is generated by mathematical procedures. The models in the labyrinth receive texture maps organized through a procedural poetic logic engineered for computational systems. The logic allows real-time actualization of the words and makes the poems, mapped over the faces of the models, change from time to time according to the positions occupied by the avatars.

The interface between users and Palavrador is a physical multi-sensorial that “displays” a variety of poems, such as drawing poems (functional electrical tracks as in printed circuits) and electromechanical sound poems. Each page has sensors that capture user actions and react by generating responses in Palavrador. It is an environment of multi-sensorial poems.

Technical Statement

Palavrador is programmed in Lingo, which uses AI resources as swarm behavior to create autonomous poems. It also uses systems based in rules as structure to procedural poems that compose a 3D labyrinth. Data communication between Palavrador and the book pages is fostered by a serial port controlled by an Arduino microcontroller, which deals with control programs developed in C. Pages react in different ways to user interactions by producing real sounds and movements. The book has two folds, so it is a book with three leaves: two regular pages and one throw-out, where the LCD monitor is located.

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Mobile Heart Health

Metaphorical representations of emotional and cardiovascular health states displayed on mobile phones.



Artist Statement

Mobile Heart Health, an exploratory research project, applies biosensing and mobile feedback to preventive cardiology. Cardiovascular disease, the leading cause of death in the U.S., demands innovative approaches to prevention. This project targets psychological risk factors such as stress and conflict with mobile feedback. Practices that facilitate self regulation – such as cognitive behavioral therapy, biofeedback, mindfulness, and yoga – are transferred from rarefied clinical and teaching settings into the flow of daily life. The mobile therapies appear when they are most needed, as determined by individuals' physiological and subjective stress signals.

A key design challenge was translating interpersonal healing practices, such as psychotherapy dialogues, into brief experiential interactions with a mobile device. Ethnography, participatory design, and secondary research inspired a visual language, framework, and portfolio of mobile therapies. Heating and cooling dynamics emerged as central visual metaphors for autonomic imbalance and the subjective experience of anger. A spectrum of fire stages, from an unlit

match to forest-fire aftermath, represent the user's immediate state and tailor the therapeutic intervention accordingly. The intent is to help people "catch the flicker before the flame" – that is, to recognize early signs of stress and modulate their emotional and physical reactions. The visual appeal of these elements may allow people to acknowledge their attraction to states and behaviors that are damaging over time. The fire-and-water-based imagery was also selected for its cross-cultural resonance.

This system integrates typically disparate healing practices: psychotherapeutic techniques, individualized coping strategies, and complementary approaches of mindfulness meditation, yoga, and Ayurvedic medicine. Mobile-therapy concepts range from animated breathing exercises and cognitive reappraisal tools to mood-determined music and imagery selections. Concept feedback has been gathered in the US and India. The full platform of monitoring and therapeutic feedback is in development for trials.

Technical Statement

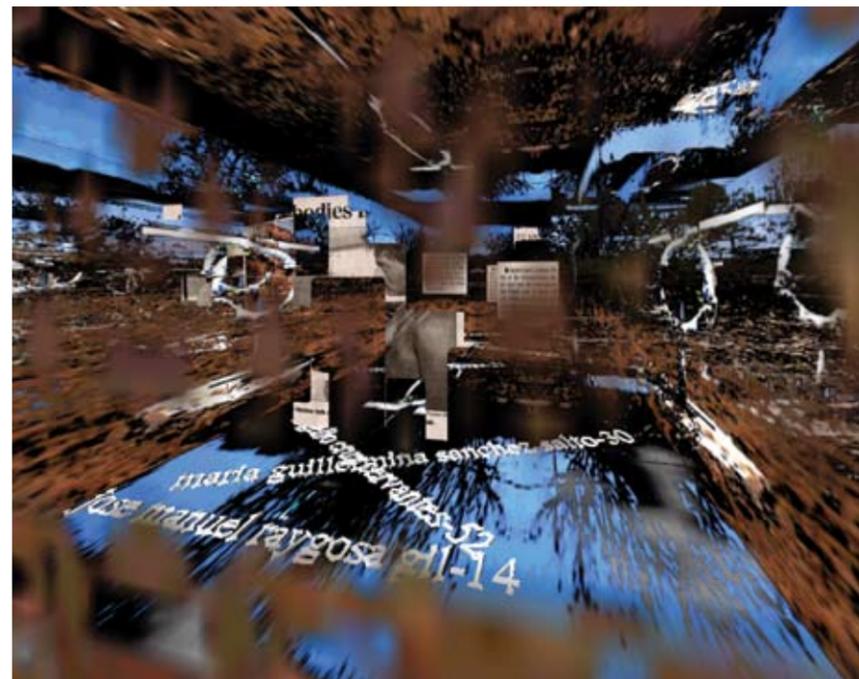
Mobile therapies respond to moment-to-moment variability in physiology, subjective self-assessment, and context. Physiological stress is indicated by a wireless cardiovascular sensor that detects deviations from an individual's baseline ECG. Subjective assessment occurs through touch-screen adaptations of clinical scales such as the "mood map." Contextual changes associated with stress are detected by location-sensing, calendaring applications, and experience-sampling methods. Variability in these triggers allows the system to determine the stage of stress and appropriate flow of mobile therapies. Flexible software permits highly configurable, personalized mobile-therapy protocols. The system is currently running on a smart phone.

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This project was made possible by the Treistman Center for New Media at the College of Fine Arts, University of Arizona, and VRCO, Inc.

Desert Views, Desert Deaths



Artist Statement

Desert Views, Desert Deaths is an ongoing memorial for those who are dying in the Sonoran Desert while crossing the US-México border.

Strict enforcement of border crossings has forced immigrants away from the main routes they have taken in the past to more remote desert locations. In the summer, daytime desert temperatures reach 100-120 degrees F. for more than three consecutive months. Every year, a record number of people die of heat exhaustion and dehydration while crossing the border. This year, hundreds more will die.

When you enter this immersive environment, you are in the middle of an elusive graveyard of crosses. In the distance, you can see translucent, overlapping caskets composed of desert images. As you enter the life-size caskets, you see the names of those who have died of heat exhaustion and dehydration while crossing the border. As you follow the caskets, you find more information about those who died along the way. While traversing the surreal landscape, sounds of the desert follow you as you move through your journey.

The goal of this project is to affect our cultural transactions using technology that encourages critical discourse for serious expression. It is designed to promote human collaboration and understanding with the assistance of technology.

Technical Statement

Desert Views, Desert Deaths is an immersive, interactive virtual-reality environment programmed using CAVE libraries on a one-wall CAVE system. It consists of a Linux PC dual processor computer with an NVIDIA graphics card using a passive stereoscopic 5-foot x 7-foot rear-projection screen, two DLP 2000 lumens projectors, two speakers, stereoscopic glasses, and an interactive device. Software includes VRCO, Inc.'s CAVE libraries and SGI OpenGL Performer.

The system allows up to 10 people to experience the work at the same time.

Rudy Poat

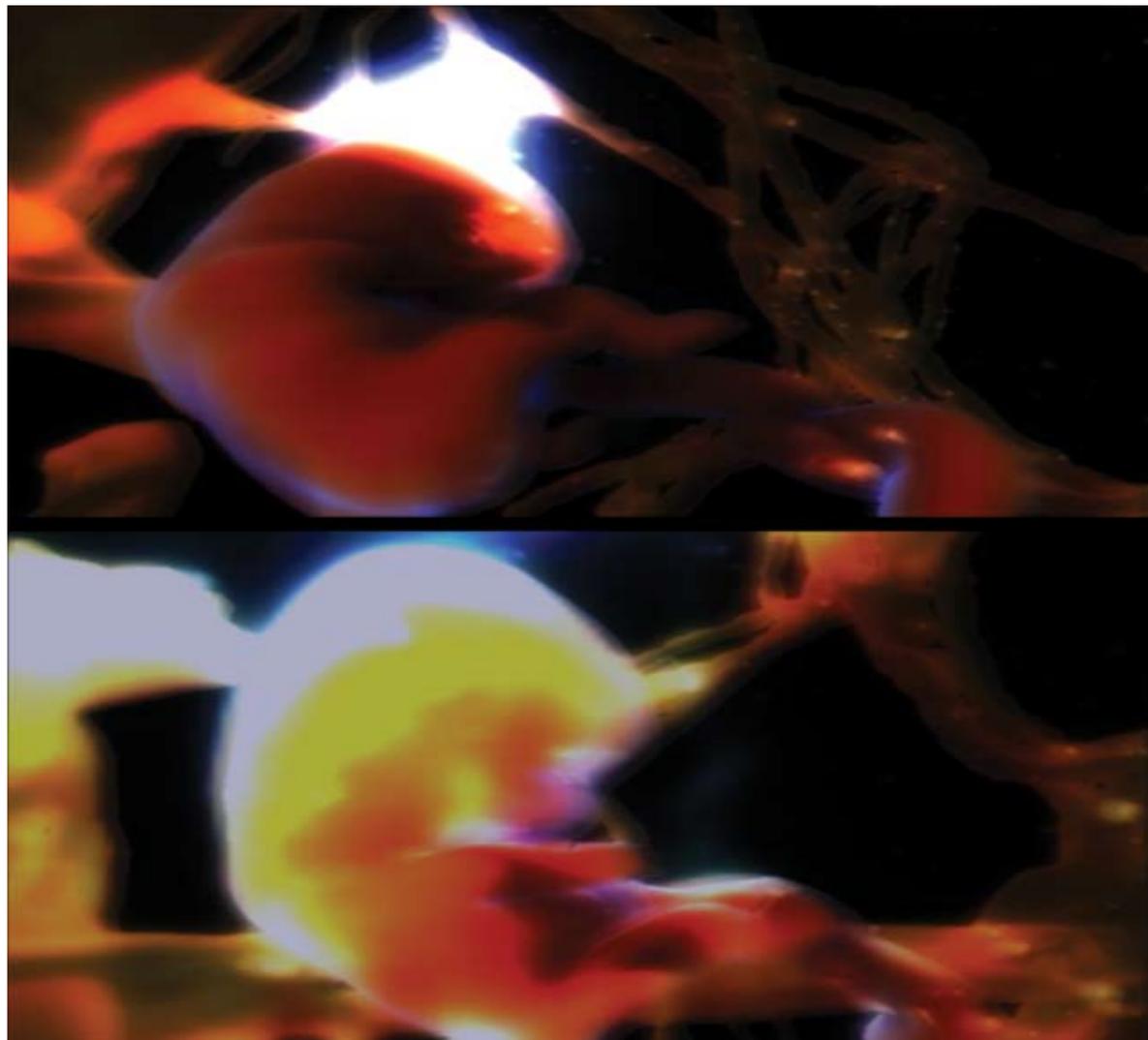
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Artist Statement

A first-step collaboration between John Gaeta and Rudy Poat, producing fully computer-generated content through an end-to-end, real-time process. Creation, composition, and high-definition renders in real time. Output to film and integrated in a widescreen feature.

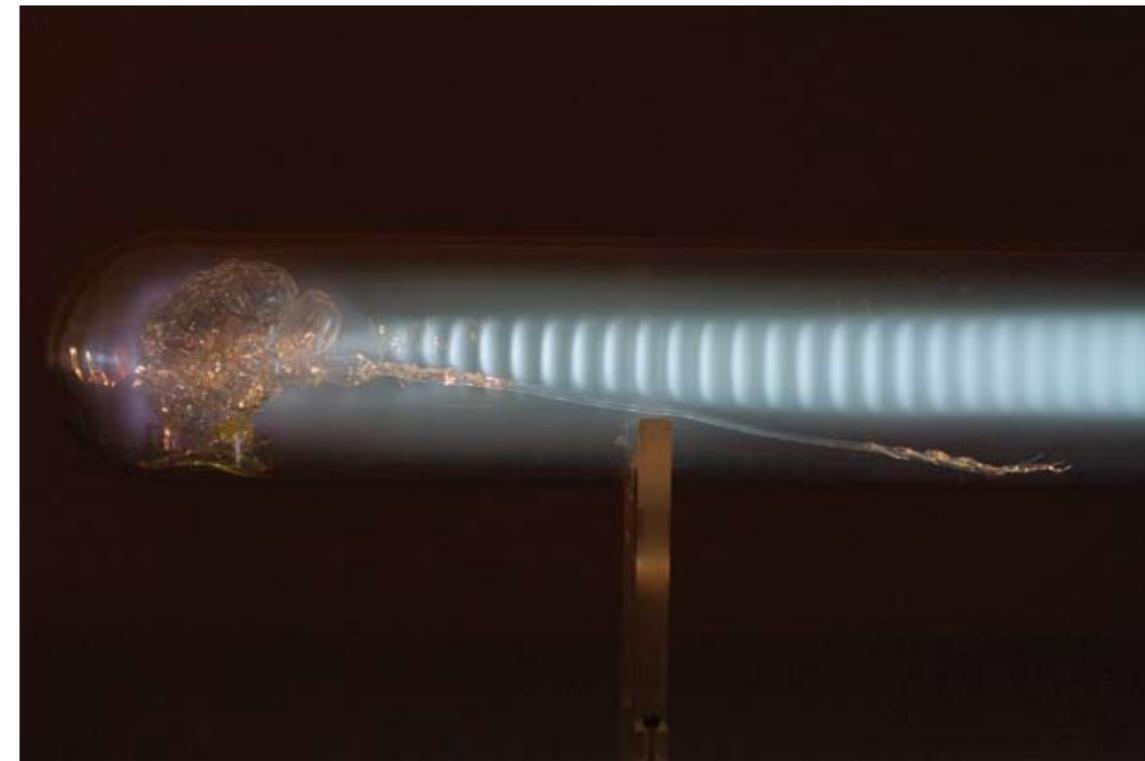
Technical Statement

The work functions as both completed shots within film scenes and fully interactive content within a real-time engine. The film content itself can be navigated and observed in real time beyond the original passive viewing experience. Content is dynamic and alive, and it can be reActed, reDirected, reComposed, and reExperienced in real time.



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Artist Statement

New media is an ubiquitous electromagnetic system, wired and wireless. We are always plugged into an increasingly dense sea of signals. We now have no choice. Global connection means that this is as true in urban centers as it is for “remote” margins. What is it like to plug in our own body?

In a darkened room are two stainless-steel tables, human scale. On the tables are objects that appear to be specimens: two glass brains in glass tubes. These are not inert. The spectator is sensed, the brains excite. Electrons become agitated, and plasma gases flare up in the tubes. The spectator can touch a tube, and the plasma’s energy stream follows the hand, straining for contact.

Finally, the light begins a beat, as if signaling. The empty space between the tubes becomes highly charged as the signals

compete for attention. The electronic pulse is based on patterns claimed to be the timing of neurons firing in certain areas of the human brain. The firing patterns used here correspond to states of haunting or abject fear for one tube and benign enlightenment or rapture for the other. These emotions can be understood as two sides of the same coin, feeling inhabited by something else. The brain (the body’s computer!) may be affected quite directly, through a process called “entraining.”

It was the slippage between electromagnetics, physiology, and emotion that fascinated me. Emotions can be “seen” in the patterns of the brain’s firing. I was scared to death / I could have died of joy is a simultaneous seduction between two extremes: rapture and fear.

Technical Statement

When spectators approach the glass tubes on the tables, they trigger a sensor that fires up custom-designed, high-voltage circuits. High voltages excite electrodes. These in turn excite the plasma gases captured in evacuated glass tubes (5-inch diameter x 4 feet long) and create phosphorescence. When the glass tubes are touched, the trapped plasma is attracted to the hands, which act as a capacitive path to ground as bodies become part of the plasma-path circuit.

The phosphorescent gases begin to pulse. A computer board controls the timing of the rhythm. The pulsating patterns are based on scientific research conducted on the brain’s electromagnetic behavior.

SCENOCOSME

Gregory Lasserre & Anais met den Anex
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*This project was made possible
by Medias-Cité, CNC-DICREAM,
La Région Rhône-Alpes*

Artist Statement

Scenocosme use interactive art, music, and architecture to create evolutionary and interactive artwork. With multiple forms of expression, they invite the spectator to participate in the center of collective musical or choreographic performances.

SphèrAléas is made of a half-spherical structure and an evolutionary device for producing visual and sonorous shapes. This space is ideal for collective performances; it accommodates in its center a constellation of visible shapes, spinning sound loops, and luminous vibratory elements. The dome-bubble hosts universes and objects endowed with life. They are articulated as subtle microcosms in conversation.

Visitors become actively engaged in this matrix space and create sonorous and visual interstices that awaken their senses and open unexpected territories to their imaginations. Visitors (creators) are offered ephemeral face-to-face opportunities for dialogue, and they give themselves up to this sensitive complicity, cradled by flows of random emotions.

The show is ever changing.

Technical Statement

SphèrAléas allows visitors to create moments of interchange and immerses them in spaces that feel like daydreams. Aléas, an original virtual music software/instrument, arose from a reflection on how to materialise or draw sound with 3D images. It's a synthesis software that manipulates sounds and abstract images to create a dialogue with reality. It creates an interactive, sensitive relationship with the audience, and it allows visitors to create, modify, observe, and manipulate moving 3D shapes.

By manipulating the sensors, visitors can continuously change the whole structure by playing with the different variables: order, side-by-side positioning, overlapping, speed, rhythm, harmonic pitch, etc. Thus, as they position new materials, visitors create sustained tunes made of rhythmic relationships animated by subtle temporal intervals. Each visitor appropriates the system to create particular processes of repetitive polyphony, where parts overlap then disappear into hypnotic swirls.

The audience determines the future of the work by experimenting with infinite orchestrations.

SphèrAléas

Interactive / sound / image installation



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Artist Statement

Inspired by a desire to push persistence-of-vision displays into the third dimension, The Orb is an attempt to bridge the worlds of art and design by creating a beautiful object of inherent interest that also functions as a platform for display. Having seen rather low-resolution attempts at three-dimensional cylindrical persistence of vision displays, I felt that concentrating a higher resolution on the surface of a spherical display would be of increased value, since the sphere has long held special significance as the shape of our home planet as well as many of the bodies we know and see in the sky.

The Orb is a step toward re-establishing the relevance of the globe as spherical object for increasing viewers' awareness and perspective on issues of worldwide significance, following in the footsteps of Buckminster Fuller's Geoscope proposal in 1962, which called for a 200-foot-diameter sphere covered with 10 million computer-controlled light sources to be suspended over the East River in full view of the United Nations.

By leveraging the efficiencies of persistence of vision, The Orb is able to produce about one quarter of one percent of the resolution of the Geoscope with less than one thousandth of one percent of the physical light sources. This efficiency will allow future iterations both to add full depth to the display and increase its scale.

Technical Statement

The Orb creates its imagery using 64 RGB LEDs spaced around a 12-inch diameter ring. Each quadrant of this ring, consisting of 16 RGB LEDs, is controlled by a PIC microcontroller clocked at 40 MHz reading from its own independent stock of 8 MB of flash memory, which holds the bitmap data for the animations. Once per revolution, each microcontroller receives a position signal as the LEDs for which it is responsible pass by the rear of the piece. This allows it to extrapolate the necessary timing information to maintain the persistence-of-vision illusion by controlling each individual red, green, and blue element throughout the course of the next revolution. This process repeats continuously as the apparatus revolves at approximately 1700 rpm (about 28 revolutions per second) at a speed of just over 60 miles per hour (nearly 100 kilometers per hour) at the equator.

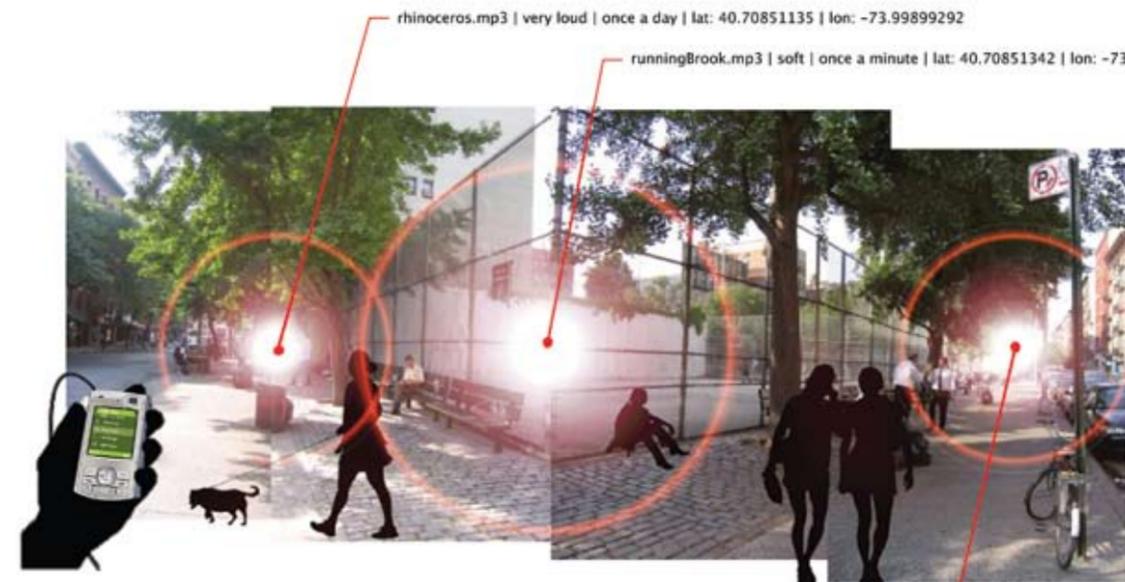


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Matthew Jording



Artist Statement

This project is an open-source software platform for cultivating virtual "sound gardens" in contemporary cities. It draws on the culture of urban community gardening to posit a participatory platform for new spatial practices and social interactions within technologically mediated environments. Addressing the impact of mobile audio devices like the iPod, the project explores gradients of privacy and publicity in contemporary urban public space.

The TSG Toolkit enables anyone living within dense 802.11 wireless (WiFi) "hot zones" to install a virtual "sound garden" for public use. Using a WiFi-enabled mobile device, participants "plant" sounds (or "prune" those planted by others) within a positional audio environment. These plantings are mapped onto the coordinates of a physical location, overlaying a publicly constructed soundscape onto a specific urban space. Wearing headphones connected to a WiFi-enabled device, participants drift through virtual sound gardens as they move through the city.

Where the presence of 802.11 access nodes is minimal, gardens simply consist of plantings along a sidewalk. Where node density is greater, gardens could assume the scale of a neighborhood. In cities where wireless networks are ubiquitous, gardens could extend throughout the entire city.

Technical Statement

The TSG Toolkit is a parasitic technology. It feeds on the propagation of WiFi access points in urban environments as a free, ready-made, locative infrastructure. WiFi access points used to determine the location of a participant may be open or encrypted, and need not be "owned" by those deploying the system. As the hardware component of the infrastructure is tied to the propagation of WiFi networks, the extent of the gardens is cast in a parasitical relationship to that of a specific wireless protocol.

For location-based services, the project builds on Placelab (www.placelab.org), an open-source, privacy-observant location system developed by Intel Research, Seattle. The system samples WiFi node signal strengths over the geographical limits of a specific location and stores them in a database. Placelab-enabled devices compare signal samples taken within a given location with the database of radiometric signatures and, through a process of triangulation, calculate the geographical position of the participant. This positioning information is fed to a listener object within a 3D sound engine running on the mobile device, which then outputs a real-time audio mix based on the position of the participant within the physical location.

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**Artist Statement**

As media technology develops and globalization continues, information technology is gradually becoming society's infrastructure. Demands for speed and efficiency have permeated our daily interactions.

It is important that we live our daily lives at all times and in all places. Perhaps there is a way to go beyond information exchange and restore the pleasure of communication as an expression of consideration towards others. We have always used non-everyday events like festivals, parties, and ceremonies to balance out our busy everyday lives. The Chang-Tei System introduces non-everyday communication into digital communication, as a way to make IT society more fulfilling.

- Communication Grill: Through continuous chatting, participants enjoy grilled meat.

- Communication Tea House: Conversation among those within the tea room is projected on the hanging scroll, making the water boil so everyone can enjoy a cup of tea. In the cafe version, people sit around a table at an internet cafe and chat to boil a pot of water.

One of the really interesting aspects of this work is how it illuminates the Japanese approach to technology. How should humans interact with the machine? An important message in this work is: "The machines have to be understood as a kind of culture" (Gerfried Stocker, Artistic Director, *ARS Electronica*).

Technical Statement

This Chang-Tei System supports communication between unknown users who stimulate action in real space. It provides space where the feeling of sharing, eating, and chatting drifts.

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**Artist Statement**

Diorama Table explores a new way to merge interactive images into daily life.

The invisible technology in the diorama adds humor, makes us comfortable, and stimulates the imagination of those who experience the piece. Interaction with the Diorama Table occurs in public, so it helps bridge gaps between people of different generations and encourages them to have fun together. It merges fine art into daily life and suggests a formerly unexplored method of interaction that ordinary people can enjoy.

When participants place common objects such as cups, ropes, or candies on the table, paintings of houses, trees, or trains appear. These objects can be arranged as a town, which can grow and change as objects are added or removed. In this unique experience, physical objects and fantastic images interact.

Technical Statement

The CCD camera captures objects of various shapes on the table. A computer generates images from the camera data and sends them to a projector. This system consists of two sections:

- Image recognition, which recognizes physical objects on the table from an image captured by the CCD camera.
- A computer-generated image (CGI) function, which generates CGI around the objects and sends images to a projector. The analyzed result of the image recognition process is sent to CGI recognition either via shared memory or the network itself.

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Artist Statement

In the field of computer music, it has been proved that Fourier Transformation can generate all types of sounds. Though some researchers may be puzzled by this fact, in recent work, "how to 'manipulate' sounds" has become an important issue. As artists, we want to help musicians become more familiar with their instruments.

Typically, Japanese take good care of their belongings and treat them as if they are alive. This is especially true of musicians, who tend to love their instruments. In this work, we aim to inject "spirits" into musical instruments. Bogs generate virtual voices by simulating the sounds generated by human vocal cords. They also contain haptic interfaces that are made of new materials called "prosthetic skins." This interface makes the range of manipulations more dynamic and expressive.

There are several kinds of bogs. Some bogs are controlled by human beings (as if they are musical instruments), while others change according to their environments. It is our dream that "the orchestra of nature" will become a reality. These bogs are the first step in realizing this dream. Our goal is to develop "new aliens," a hybridization between instruments and creatures, in the 21st century. We are eager to spread bogs into many places and enlarge their habitats all over the world.

Technical Statement

Bogs have two types of sensors and one type of actuator. The air-pressure sensor detects changes in internal air pressure, and the two-axis acceleration sensor monitors delicate hand movements. The vibrating motor is activated according to these changes. Bogs also use Bluetooth technology to transmit real-time-composited audio data to the computers, and they communicate directly with each other.

An audio processing system, using formant synthesis for "voice generation," works with Max/MSP. Sensor data fill in variables in the formant-synthesis program and generate a complex, continuous variation in "voices."

This project is supported by CREST, JST.

bogs: Instrumental Aliens



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Artist Statement

The Travels of Mariko Horo reverses the "Marco Polo Syndrome," the symbol of Western Man exploring, categorizing, and analyzing the exotic East. The exoticizing gaze thinks itself a magnifying glass but is in actuality a half-silvered mirror. The traveler means to describe new lands, new peoples, new cultures, but in reality sees images of his own culture superimposed over a vague and exotic background.

Mariko Horo was also inspired by Japanese artists who, while Japan was closed to the outside world, constructed the West in their fantasy as an exotic and unknowable universe. They had only a few maps, books, and prints but enhanced them with their own fertile imaginations.

For Japanese artists trying to imagine the West, and Western artists trying to imagine Japan, the power of imagination could often take them only as far as a vague, pseudo-Chinese fantasy – for both Far East and Far West the epitome of "foreign" and "exotic." This geographic confusion finds echoes in Mariko's Last Judgment scenes, inspired equally by Byzantine Christian frescos and Tibetan tankas.

Mariko's vision also reflects the "hidden Christians" in Japan who, while Christianity was forbidden on pain of death, secretly venerated images of the Buddhist Goddess of Mercy, Kannon, as the Christian Madonna. Why did my Japanese-American grandfather convert from Buddhism to Christianity, becoming a minister and intending to return to Asia as a missionary? How did he reconcile his new faith with the darker side of Christianity, the conflict between the American promise of "one nation under God, with liberty and justice for all," and the reality of the Japanese-American internment during World War II, or KKK preachers who burnt crosses and human beings with equal fervor? How does Christianity appear today to those caught in the crossfire of our current "crusades"?

The Travels of Mariko Horo



Technical Statement

A simple joystick enables even technophobes who would never touch a computer to explore the virtual world. Engaging human curiosity and common exploratory behaviour, the system lures users into key locations in the virtual world, where proximity sensors recognize and react to their presence. Switching large amounts of geometry on and off in real time, the program transports users into another realm, in the same way as entering a sacred space in the real world can transport us into a different cosmology.

The program misuses particle systems to populate these realms with clouds of angels and swarms of the damned. Three-dimensional sound enhances the sense of space and presence as users move through a reactive and sensitive world.

Interactivity between the user and the world turns users' decisions into a play on Christian free will and determinism, as users' conscious choices are punished or rewarded, sending them to heaven or to hell. Buddhism, however, is cyclical, so users can subvert the linear structure of Christian theology, even escaping hell to be reborn in the mortal world.

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Artist Statement

Rutopia 2 is an art project built for the C-wall virtual reality system. It explores the aesthetics of virtual art in relation to traditional Russian folk arts and crafts such as wood sculpture, toys, and the decorative painting styles of Palekh, Khokhloma, and Dymkovo. The work's aesthetic is based on the generalized outlines, principles of composition, bright colors, and simplified shapes inspired by these styles.

The project presents a magic garden with interactive sculptural trees. It was conceived as a virtual environment linked to a matrix of several other unique virtual environments that together create a shared network community. A series of 3D modular sculptural trees, each consisting of dozens of rectangular screens, appear in the main environment and serve as portals to the other linked environments. Animation of these dynamic tiled trees is an attempt to break through the static flatness of the contemporary tiled-display grids, architectural façades, and surfaces into the perpetually changing 3D sculptural forms of the ubiquitous public network.

Users can “grow” three trees in the island world by moving within the proximity of each tree. Each tree appears as a rapid sequence of flipping and rotating rectangular screens expanding out and upward. Once all the trees are fully grown, their screens turn into windows, and the island changes from monochrome to color. Each window shows a view of the remote environment connected to it. Just as we can look through a window and see the outside, users can look through each of the screens to see remote worlds consisting of imagery found in traditional Russian fairytales and folk art. When they move their heads completely through one of the virtual screens, they enter the connected environments.

Technical Statement

Rutopia 2 was built using Ygdrasil advanced rendering techniques, the Bergen spatialized sound server, OpenGL Performer 3.2, and the CAVE library. It operates on an Intel Linux PC running SUSE 10.0 and connected to an Ascension Flock of Birds tracker. The user is tracked from the stereo glasses and hand Wanda tracker. Participants control the direction of the movement and interaction with the objects by using only a wand interface and no buttons.

The windows of the trees were made using the new Ygdrasil node stencilBuffer. This node acts as a mask covering the areas outside the windows so that only the selected window area allows a view to the other world.

The storyboard sketches were first hand-painted using gouache and watercolor. They set up the color palette, composition, and virtual space layout and served as reference for development of the scene graph. The 3D models were built using the 3D Paint tool in the Maya software. The details of the decorative ornamentation were painted inside the 3D scene and then exported as models with textures. Other textures were individually painted, scanned, and applied on the 3D objects.

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Artist Statement

As genomics digitizes life, the organism and self are initially lost to data, but ultimately a broader meaning is re-attained. ATLAS in silico reflects upon humanity's long-standing quest for an understanding of the nature, origins, and unity of life by interrogating metagenomics and the resultant shift from an organism-centric to a sequence-centric view of nature. In parallel to challenges that Darwin's work on natural selection posed to 19th-century representations of nature associated with concepts of species fixity, vast and abstract metagenomics data pose a fundamental challenge to our ability, in the 21st century, to represent and intuitively comprehend nature.

This work offers an intimate aesthetic encounter with millions of recently discovered sequences from the the Global Ocean Survey and its associated metadata, within an immersive visual atlas. Eliciting an aesthetically impelled metagenomics viewpoint in order to explore alternative modalities for representing nature, it calls out the relationship between data and understanding, and between data about life and the life that it describes.

Technical Statement

The visual atlas is an aesthetically derived multidimensional visualization of metagenomics data from the GOS database. It is situated within a virtual environment that reveals associated metadata. Both the visual atlas and virtual environment are constructed from a custom computer graphics code, including a unique shape grammar that maps genomic data to visual form. The installation employs an infrared motion-tracking system, together with the Varrier 55 tile, a 100-megapixel barrier strip auto-stereoscopic display.

Participants experience the 3D environment without stereo glasses and by moving within the field of view of the motion tracking system, they interact with luminous three-dimensional forms representing millions of GOS sequences. The interaction software framework is built on the extensible and distributed Collaborative Visualization and Simulation Environment (COVISE) system.

ATLAS in silico is made possible by generous support from:

California Institute for Telecommunications and Information Technology (Calit2), CAMERA (Community Cyberinfrastructure for Advanced Microbial Ecology Research and Analysis), Center for Research in Computing and the Arts (CRCA), National Center for Microscopy and Imaging Research (NCMIR), and Electronic Visualization Laboratory, University of Illinois at Chicago (EVL).

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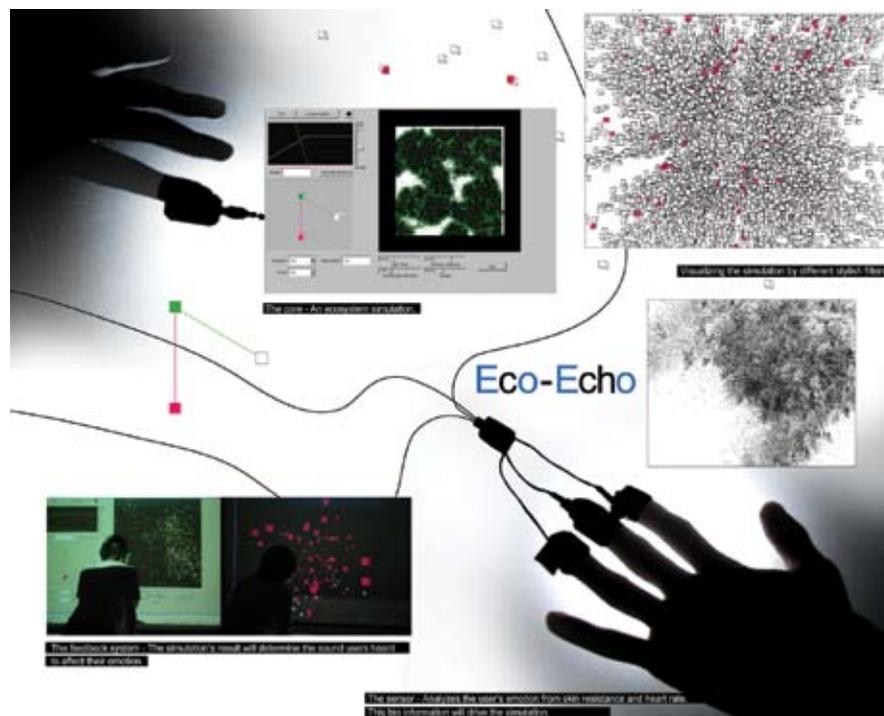
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Music

Lim Giong



Artist Statement

"Heaven, earth, and I are born of one, and I am at one with all that exists," said Chuang-tzu, an ancient Chinese philosopher. In his thinking about Taoism, humanity and nature are inseparable. Every human activity has repercussions. To visualize this traditional Chinese thought with a modern approach, we developed an "ecosystem simulation."

This simulation contains two worlds, virtual and real. In the virtual world, human beings determine how the world develops. For example, all the creatures' behavior in the virtual world is controlled by the viewer's emotional response. The creatures' behavior is displayed on the screen with sound, and this can change the viewer's feelings in the real world. The viewer plays a double character: a member of the real world and a player in the virtual world.

Although the process is composed by hardware and software, "human ware" is the essential element of this process. Using sensors and speakers as media, the viewer is a conductor of both the virtual world and the real world. The viewer can also be a producer who provides spiritual power to lead changes in the ecosystem. And the viewer receives feedback from the system. This endless cycle is just as Chuang-tzu said: "Heaven, earth, and I are born of one."

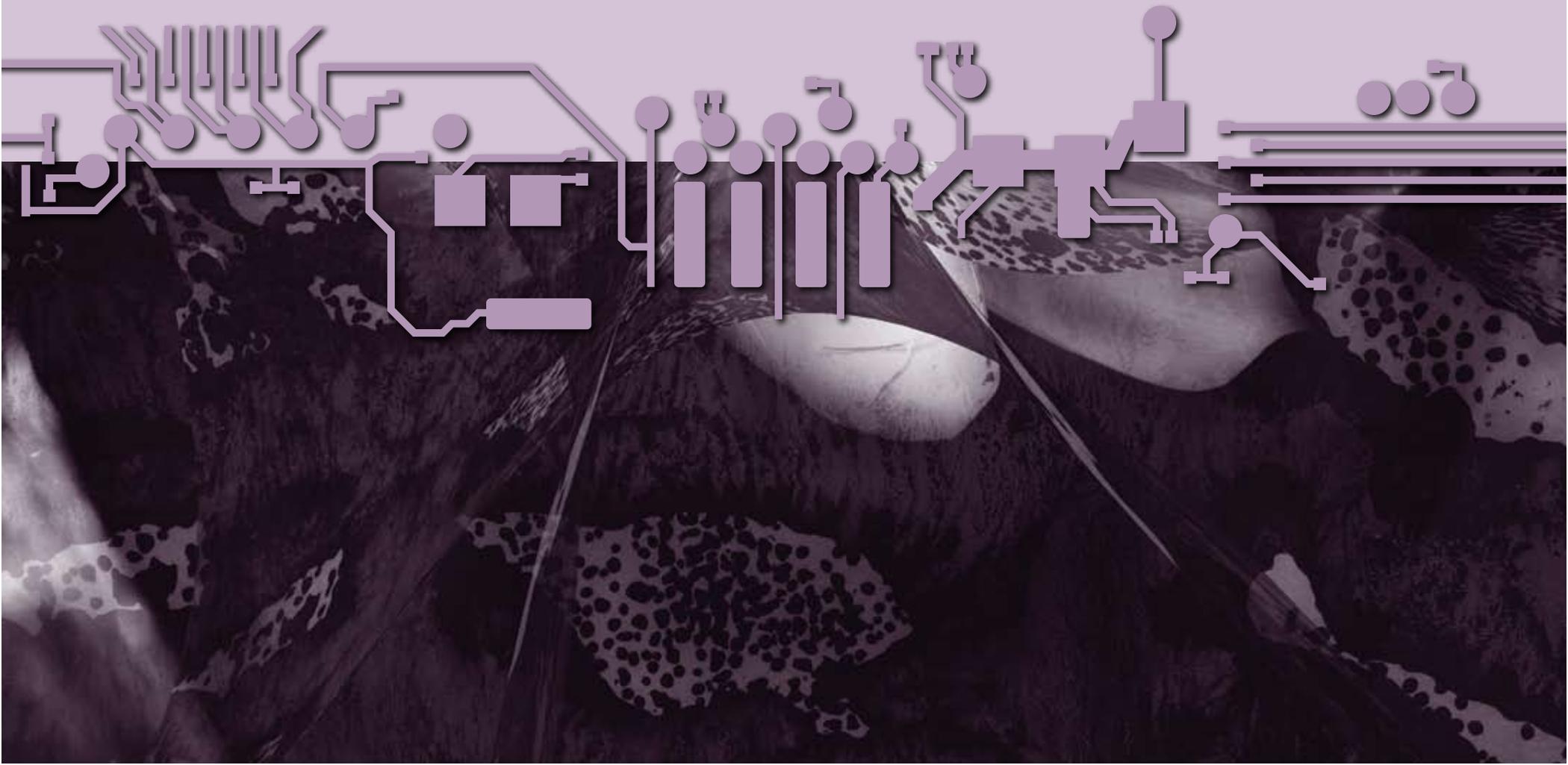
Technical Statement

This system includes three components:

1. The core is an ecosystem simulator. In the virtual world, each creature has its own parameters: life length, food requirements, speed of motion, etc. All creature behaviors simulate the real world. They breed, prey, propagate, and die, and these processes are visualized in an animation that shows the creatures through various filters controlled by the viewer.
2. The sensors detect the viewer's heart rate and skin resistance, which reveal the intensity of the viewer's emotional excitation, which acts as an essential parameter in the feedback system.
3. The feedback system acts as a bridge between the viewer and the ecosystem. The viewer's emotional state changes the simulation, and the simulation generates feedback to affect the viewer's emotion with different sounds.

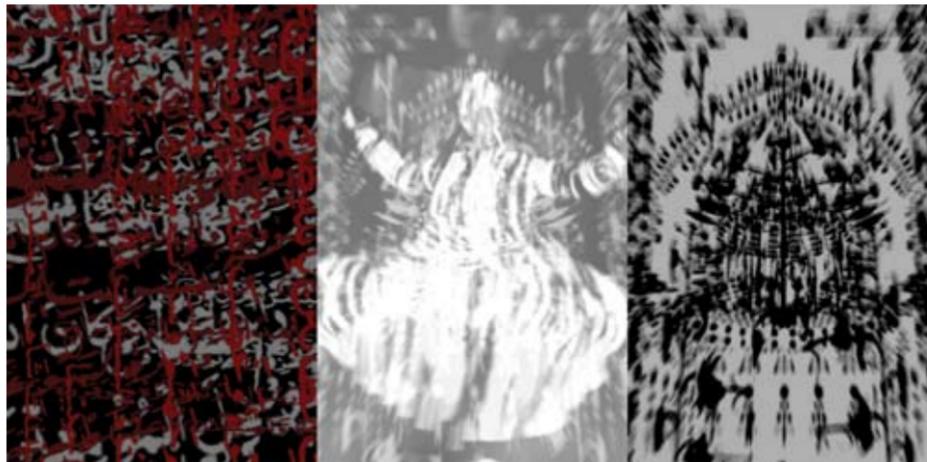
Art Gallery: Global Eyes

Monitor-Based Work



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Artist Statement

In *Crowded with Voices*, Anya Belkina and Scott Lindroth sought to combine their traditional approaches to visual art (painting and graphic design) and music (instrumental composition) with an exploration of recent technologies that have become part of the contemporary artist's toolbox. The technological component is treated as a natural extension of traditional media.

Visually, *Crowded with Voices* is inspired by the poetry of the Sufi mystic poet Mowlana Jalaluddin Rumi (1207-1273), whose 800th birthday is celebrated this year. The piece is intended as a tribute to Rumi's teachings and art, which appealed to people of many faiths in his lifetime and united them at his funeral. Rumi's message of love, tolerance, and

acceptance is as relevant as ever in our era of high-speed connectivity, nuclear weapons, global pandemics, terrorism, and natural disasters. The central visual motif of the film is an image of a whirling dervish whose revolving motion is in harmony with the motion of the smallest particles in nature and the largest galaxies in the universe. The patterned imagery characteristic of Islamic art and textual fragments from *al-Balad*, the Qur'an sung by Ghalwash, are some of the other visual motifs used in the piece.

Music and sound design are based on transcriptions of a magnificent Qur'an recitation by Raghieb Mustafa Ghalwash. Melodic phrases from the vocal performance are played by a soprano saxophone accompanied by two

percussionists and a piano. Such transcriptions inevitably involve mishearing: not only is a Qu'ran recitation not considered "music," properly speaking, but also the performance on a saxophone inevitably indexes other musicians (Coltrane, Coleman, Shepp, Dolphy, and others) whose work participated in urgent spiritual and political issues of their time.

Technical Statement

Animated images were created on a G5 Macintosh using Autodesk Maya, Adobe Illustrator, Adobe Photoshop, and Adobe After Effects.

The music is a recording of a live instrumental performance by *Zeitgeist*, an ensemble consisting of soprano saxophone, piano, two percussionists, and digital sound played in real time from a laptop computer.

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Artist Statement

Places of Memory recreates the emotional and psychological paradox of my experiences watching Hurricane Katrina through media reports and participating in the recovery process as a relief volunteer. I interviewed Wangui Kaniaru, a law student and volunteer in the Upper Ninth Ward. Her words articulated my contradictory experience of being removed from, and simultaneously imbedded within, a community devastated by disaster. As the video plays, Hurricane Katrina, its aftermath, and the recovery process slowly unfold before the viewer in a giant, seamless composite image. The composite represents both my physical and psychological experience of moving through and working within a city still divided by the complexities of race, economics, allocations of resources, and politics. In essence, it is my visual memory of the recovery process in New Orleans since Hurricane Katrina; an archive of an ongoing, evolving historical event that I experienced both firsthand and through mainstream media sources.

Technical Statement

Places of Memory seeks to use multiple points of view to construct new ways of seeing and remembering what happened in New Orleans. The internet provides an opportunity to research how Hurricane Katrina and the recovery process were visualized through images from mainstream, independent, and personal media sources (such as weblogs). Images were appropriated and combined with personal photographs using Photoshop CS. iMovie was used to edit video and GarageBand was used to extract and remix the audio. The composite, sound, and video files were combined together using Adobe After Effects 6.5.

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Artist Statement

Recorded in Coyocán Plaza, Mexico City, this panoramic motion-media work looks at the actions of actors and non-actors recorded on a city plaza on a busy Saturday afternoon. Using dynamic layers of photographic imagery, songs, and found sounds, the work presents lives caught in moments of flux to raise questions about subjectivity, displacement, and travel. The panorama also explores formal relationships between word and image, interweaving seven overlapping narratives that are written by Deb Olin Unferth and put to music by singer-composer Jodi Gilbert and saxophonist Michael Moore. The evocative work follows a female protagonist, a male counterpart, and other characters in a manner that suggests narrative but never becomes it. Instead it's an expression of temperament or a consciousness – a searching, a longing, a loneliness.

Technical Statement

Layers of imagery are stitched and composited from over 1,000 photographs taken in a study of the Coyocán Plaza in Mexico City, following 12 actors who serve as provocateurs interspersed in the crowded space. The photographic panoramas are animated into slowly revolving loops that evolve in time. The individual elements of the revolving panorama may move at differing rates than the whole work, reappearing several times in a single loop. And they move independently of the time set by the panoramic motion: while one character may be concluding an action in a second loop that was begun in the first, the opposite may be true for another, challenging the authority of the panoramic frame. The work was animated and output as a loss-less QuickTime video for projection. This version has two loops that follow the form of a Möbius strip to begin again after 21 minutes.

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Artist Statement

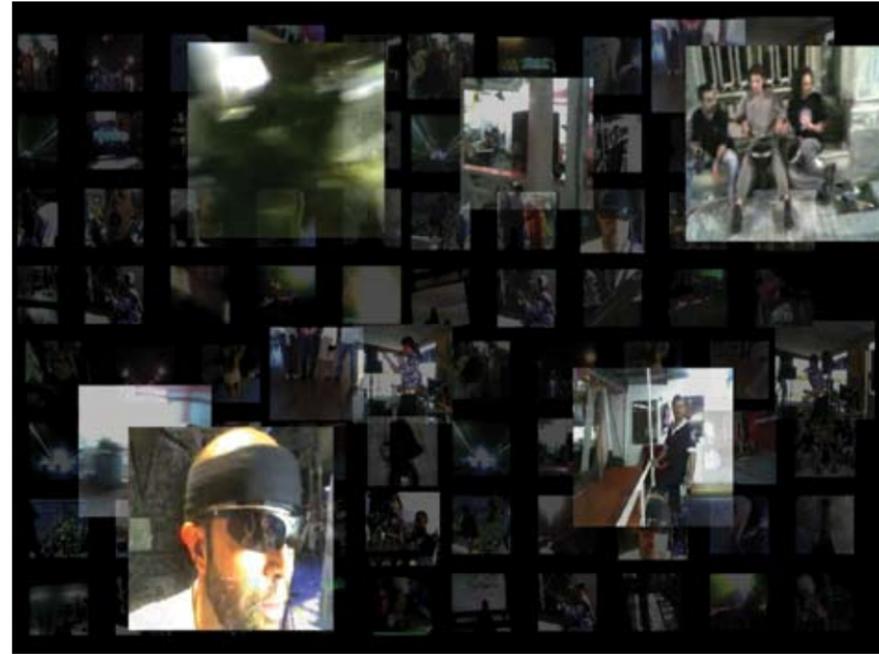
The Night Journey is a video game/art project based on the universal story of an individual mystic's journey toward enlightenment. Visual inspiration for The Night Journey is drawn from the work of Bill Viola. Narrative inspiration comes from the lives and writings of great historical figures including: Rumi, the 13th-century Islamic poet and mystic; Ryokan, the 18th-century Zen Buddhist poet; St. John of the Cross, the 16th-century Spanish mystic and poet; and Plotinus, the 3rd-century philosopher. The interactive design attempts to evoke in the player's mind a sense of the archetypal journey of enlightenment through the "mechanics" of the game experience: the player's choices and actions. A voyage through The Night Journey takes a player through a poetic landscape, a space that has more reflective and spiritual qualities than geographical ones. The core mechanic in the game is the act of traveling and reflecting rather than reaching certain destinations (a trip along a path of enlightenment).

Technical Statement

The game is being developed with videogame technologies, but it attempts to stretch the boundaries of what game experiences may communicate with its unique visual design, content, and mechanics. The team has created a set of custom post-processing techniques for the 3D environment that evoke the sense of "explorable video," integrating the imagery of Bill Viola's work into the game world at both a technical and creative level.

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Artist Statement

WORLD is an interactive display of video and audio memories captured with a cell-phone camera in very low resolution. These personal souvenirs are fragmented into small portions of a larger chaotic and randomized composition. The clips are loaded dynamically, and more elements are added as time goes by.

Being allergic to the chemicals used in photography labs, films, and oil paintings forced me to move into the hypo-allergenic world of video and computers, where I spend hours experimenting with the stroboscopic aspects of a monitor, capturing reality with camcorders, fragmenting information through montage, and creating digital animations, sounds, and scripted videogames.

Growing up as a gay man in Bogotá, Colombia, producing art in a dangerous society, with right wing death squads killing drag queens, HIV cursing my relationships, drug lords blowing up parts of my city, and communist guerrillas threatening my life for being too open about my homosexuality. Under these circumstances, it was impossible for me to separate my artistic creations from the events that were surrounding me. I decided

to express my own point of view using the languages and formats of institutional media like TV and radio.

In 1995, I received a Fulbright Grant and moved to New York to get my Masters Degree in Interactive Telecommunications at New York University. Because of my background in programming and video, the transition into interactive media was a life-changing experience. I discovered that I could use the web to integrate all the other media I had been working in, and it became the perfect space to experiment with interactive video, cyber-activism, digital photography, and interactive narration.

After living in Colombia for five years, and now living and teaching in Tampa, Florida, I am currently working on a project called Discarded Memories that deals with the nature of memory in a disposable society. The project creates interactive video projects about the fragility of love, friendship, and life; web sites criticizing the effects of digital media on short-term memory; and objects using mummified pieces of my own skin and blood as reminders of the futility of our physical existence.

Technical Statement

WORLD is an ongoing collection of videos and audio clips (maximum 15 seconds) captured with a cell phone and presented interactively and randomly on a computer screen. Flash allows the use of XML to retrieve and dynamically load the files, separating the visual and audio components so that the image and the sound can never be viewed at the same time. The user needs to roll a cursor over and click on the movies to change their content and appearance. The concept of synchronization and the possible mental associations happen in the user's mind. This de-contextualized group of memory loops becomes a chaotic narration of the artist's life and experiences in the world, presenting images and sounds from Istanbul, Paris, Boston, Bogotá, and Tampa, among other places. The low resolution of the video and audio is magnified with an aesthetic purpose, exploring the beauty of the pixelated moving images and the hypnotic effect of low-frequency noises.

Copper Frances Giloth

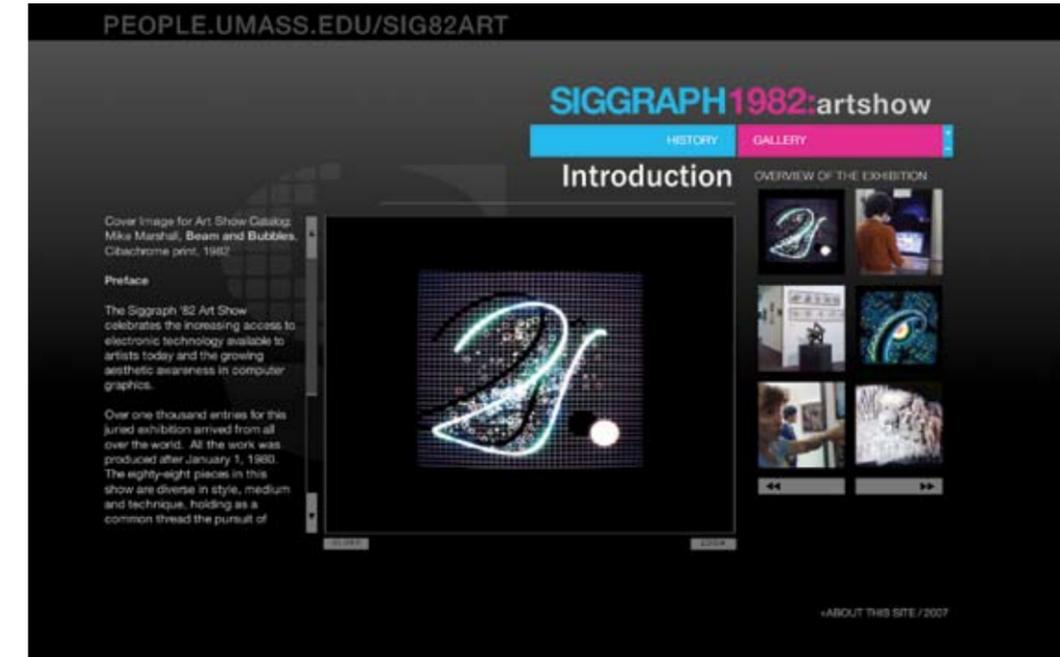
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Artist Statement

Twenty-five years ago, ACM SIGGRAPH sponsored its first juried public exhibition of experimental two-dimensional, three-dimensional, interactive, and time-based works by artists and scientists experimenting with computer graphics technologies. Prior to the 1982 Art Show, several informal art shows had taken place in the late 1970s, and in 1981, Darcy Gerbarg curated the 1981 SIGGRAPH Art Show. The popularity of the previous shows convinced the SIGGRAPH organization to fund the 1982 open competition.

As chair of the SIGGRAPH 82 Art Show, Copper Giloth archived the documents, slides, and videotapes from this exhibition. In the fall of 2007, five senior art students in her information design course at the University of Massachusetts Amherst (Zinj Guo, Dana Ramponi, Jen Zolga, Lindsay Weber, and Vesna Vrankovic) reviewed these materials.

The students' task was to inventory and organize them, and devise a strategy for making them available to the community. Using this information, they designed and constructed a web site documenting the exhibition.

In the 25 years since this exhibition, both the vocabulary for describing the technology and the tools used to make most of the works from the show have changed dramatically. Thus the very process of making the site confirmed the need to document the history of computer art.

Work on the site is ongoing. As we reach back to the innovations of 1982, we continue to add new information to the site and revise the existing content to make it a more complete resource.

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Artist Statement

For over three decades, in performance, photography, installations, artificial intelligence agents, artifacts, web presences, and movies, Lynn Hershman's work has dealt with what it is to live in a world of mediated, surveilled, documented, translated, manipulated, transformed identities, corporealities, and presences. Ninety boxes of the remains of much of this work now lie in an archive at Stanford University: papers, photographs, tapes, movies, sound recordings. Their relationship, as documents, to Lynn's body of work is in question.

Life Squared is an experience in an online world, a prosthetic world of avatars, their buildings and goods. It raises all sorts of questions about contemporary experience – real, synthetic, mediated, technology assisted. What is it to recollect in this contemporary world of mediated and multiple presences? What about the prospect of even greater (bio-info-technological) intervention in our sense of self? Will your clone know you? Will your downloaded memories convey the experience of what was? Indeed, with our identities today distributed through all manner of records and documents, our sense of self maintained by all manner of goods, technologies, and media, did you ever know who you were?

Technical Statement

Life Squared is about building an experience in an online world. How is a work of art such as a transient installation in a hotel room to be curated by a museum? How is an experience that takes no particular material form to be documented? Memory and document, memory practices and material archives, how they revolve around characters and architectures, stories, scenarios, and game play. In this important relationship between "new media" and senses of self (under this matter of memory and document), our argument is that digital worlds, games, online chat rooms, and forums like Second Life are not "virtual" worlds, but are precisely "life to the second power" – augmentations, mixed realities (as are memory practices), enriched encounters.

More prosaically and technically, we are exploring a 3D interface for this archival encounter that challenges the metaphoric basis of current machine/user interfaces. For a couple of decades, the human-computer interface has been commonly presented as a metaphor: a desktop, with documents, files, trash cans. We are building instead a mixed reality, and it is arguably not an interface with a machine at all, but an extension, a prosthesis, an augmentation of experience, of self.

Life Squared





Artist Statement

IN THE SWEET BYE & BYE SL (a Second Life installation) is a fusion of visual art, literature, and digital media that composes an immersive memoir. It is a dialogue between traditional and contemporary creative and cultural practice, themes, and threads derived from personal and family anecdotes, African-American/Diaspora lore, and allegories that reside deep in the human psyche. It is a continuation of my four decades of art-making and research, and my creative collaborations with poet/novelist Dorothy Mallory Jones, my mother.

IN THE SWEET BYE & BYE SL illuminates a process of migration, transformation, and convergence of concepts and designs through technologies and temporal terrains. It is part of a larger project that also includes a real-life gallery installation and a limited-edition portfolio book.

Developing IN THE SWEET BYE & BYE as an immersive environment in Second Life marks a paradigm shift in vision. It begins my investigation of narrative compositions that are to be read in three dimensions: the XZ plane (normal text reading), the Y plane (reading layers in depth), and the time plane (memory).

My process is intentional and intuitive. It derives from the shared language of family and cultural heritage, and the retained secrets of ritual practice. My work is intended to serve the function of the ritual mask, as the membrane interface of the seen and unseen worlds. It is alchemy, a catalyst of transformation, releasing hidden qualities in the mundane.

Technical Statement

IN THE SWEET BYE & BYE SL is a synthesis of 2D digital paintings and photo/image collage compositions, 3D digital models, animation, video, sound scapes, and text in the immersive, real-time, online environment of Second Life.

Julian Konczak

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Artist Statement

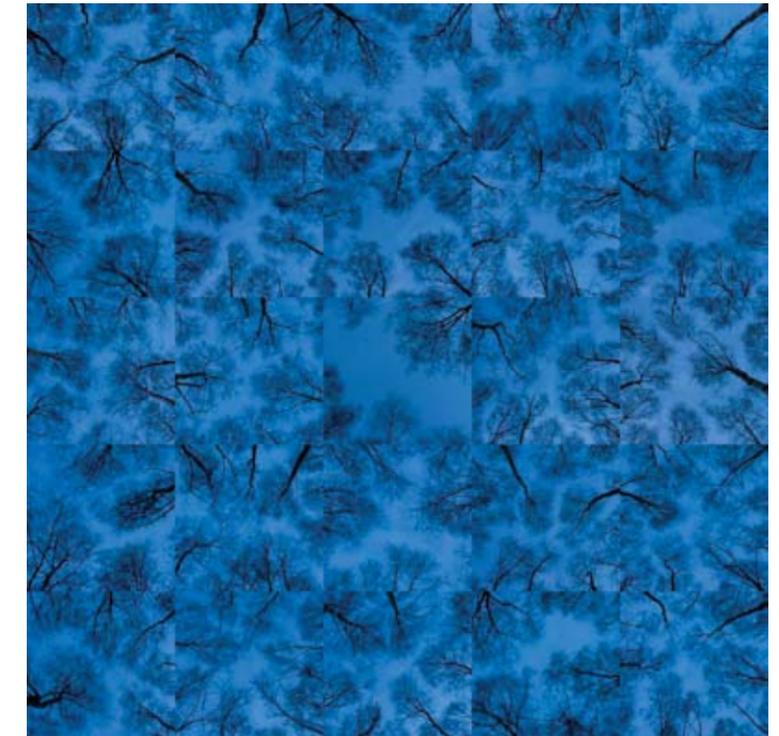
Birth and Decay invites the audience to explore a time-sliced anatomy of landscape as it cycles through the inevitable rhythm of change. The vista is hidden, but the proximity and exploded imagery give us an intimate relationship with the environment. The birth-life-decay-death cycle is an inevitable performance that drives the movement of time on this planet. The images offer 25 instances of the same subject, the eye decoding multiplicity and diversity.

My work orients itself around an examination of the visual world that surrounds us and the use of imaging technologies to explore our perceptions. I draw attention to the processes, textures, and rhythms that we take for granted and often overlook. Each work represents a personal journey either through physical space or a closer examination of the world that surrounds me. The composition of the raw material that I gather on field trips (video, stills, or sound samples) involves an evocation of an ambience, a reconstruction of the world. With a sense of simplicity and directness, I use my tools to visually re-create what I see with my eyes. Through montaging this raw material in video, interactive environments, and print, the elements of the image gain a new and distinctive meaning.

The process involves working with an initial conceptual idea and then allowing the happenstance of image creation to define the content. The visual qualities of the image are paramount; the quality of light and tonal range become key factors in deciding when to press the shutter. When subject to the vagaries of weather, the works inevitably become driven by a subjective immersion within an environment. Whether creating work within walking distance of my studio, revisiting the same places throughout the seasons, or travelling across the globe, these lens-based observations are encounters with the unpredictable.

Technical Statement

The work uses basic web technology to allow users to create their own visual fields, the emphasis of the work being to draw the audience into an exploded visual representation of a landscape. The tools are a Nikon digital camera, Adobe Photoshop CS2, and Macromedia Flash MX 2004.



Royal, Nebraska
Category

Toby Lee

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Fotini Lazaridou-Hatzigoga

Program: Initiative for Art + Architectural
Collaborations
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Artist Statement

This short video portrait of a quiet town in rural Middle America is also a study of how the durational medium of the moving image can articulate the relationship between space and time. Formally experimental, playing with framing and long takes, the video addresses the way in which place and public space in this small town can be defined temporally, as well as spatially and socially, and the role of the camera in that process. The artists are currently adapting Royal, Nebraska along with additional footage and interview material from the town, for a multi-channel installation, using the physical space of the installation itself to think about the relationships among history, memory, social space, and the passage of time.

Technical Statement

Royal, Nebraska was recorded in July 2006 on standard digital video using a Panasonic HD-P2 camera. All video was edited in Final Cut Pro, with sound design and mixing by Ernst Karel using Sound Track Pro.

What About Job?

IN MEMORIAM

Ben Maggos

University of California, San Diego



Artist Statement

What About Job? is akin to a Socratic dialogue on the fundamental philosophical question of free will. The work explores how one's own innate response to this dilemma shapes the qualities and attitudes of one's life. The artwork doesn't provide a singular answer to these questions. Instead, the unique qualities of interactive cinema become a tool of inquiry with the same stakes as those that exist in a textual essay. By doing so, those qualities extend the vernacular of interactive cinema through its own syntactical inventions, but, far from developing an obscure lexicon, its form allows the viewer to move through the ideas in ways that unfold its questions.

From this piece, the poignancy of daily activities as a reflection of one's own reconciliation with questions of good, evil, and free will become clear. The interactive form becomes an extension of our own lived inquiry into these questions.

Technical Statement

Shockwave was used to create an interface to dozens of interactive video streams.

Ellen McMahon

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Collaborators

Ben Kirkby
Kelly Leslie

Artist Statement

Faculty and students from the University of Arizona have teamed up with the Intercultural Center for the Study of Deserts and Oceans (CEDO) to promote conservation and sustainable use of Puerto Peñasco's six major estuaries. This multifaceted conservation project, spearheaded by CEDO conservationist Alejandro Castillo López, brings together art, architecture, graphic design, ecology, land use planning, micro-business, technology, and ecotourism.

The tourism industry in Puerto Peñasco is growing at an unprecedented rate. Currently, there are plans to build an international airport, a coastal highway, nine golf courses, over 15,000 new rental units, and a marina in each estuary. One of CEDO's strategies to protect the estuaries from environmentally-damaging tourism development is to support sustainable micro-businesses and ecotourism in the wetlands areas. One of these projects, funded by Global Greengrant, was to build a small building to serve as an indoor kitchen and seating area for Sociedad Cooperativa Única de Mujeres, a collective of oyster farmers in Morua Estuary. At CEDO's request, University of Arizona students created a mural on the new building, illustrating indigenous plants and animals, to serve as an informative starting point for CEDO-led and self-guided tours of the estuary.

Other projects include: a visual identity system for NaturArte by faculty Ellen McMahon and Kelly Leslie; a mural for a Kayak ecotour business in Morua Estuary by Puerto Peñasco high school students, University of Arizona undergraduate students, and alumnus Mike Buffington; La Cholla Museum of Natural and Cultural History, a virtual museum for Cholla Bay and Estuary by graduate students Heather Green and Jeff Case; a web site and documentary video by graduate student Ben Kirkby; an interactive DVD by Kelly Leslie and Ben Kirkby; and interpretive kiosks by architecture faculty member Erin Moore and her students.

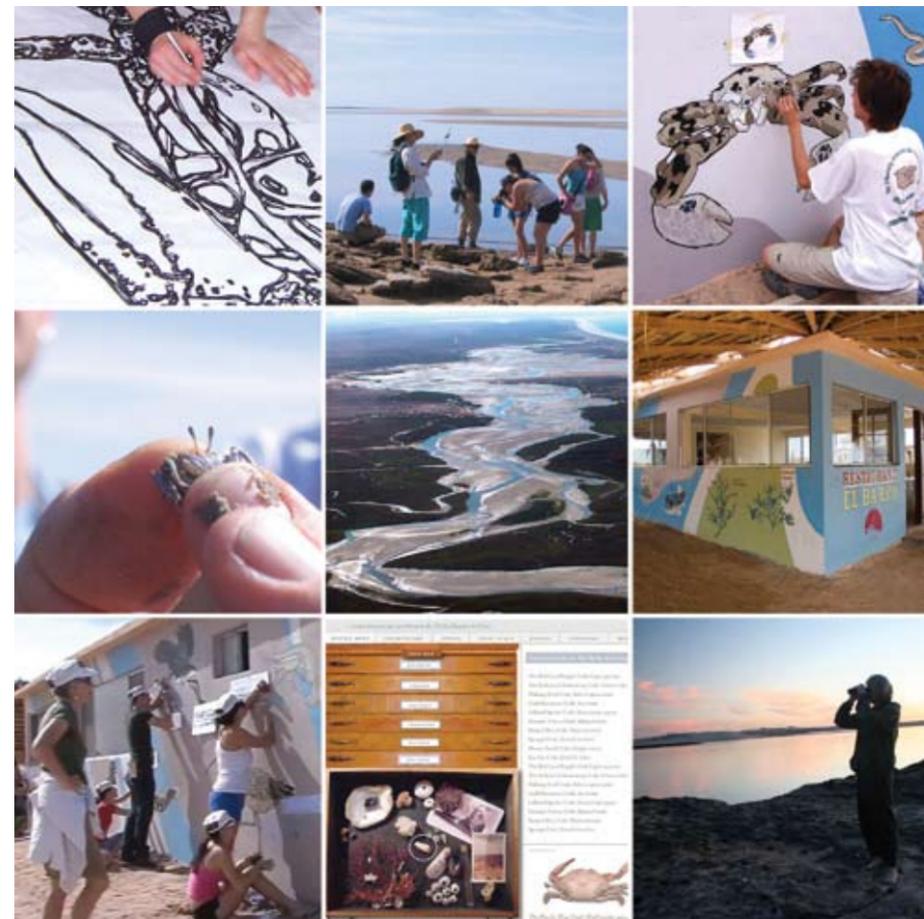
Technical Statement

The interactive DVD is a Flash-based multimedia project that uses RSS feeds to dynamically draw itself based on current tidal conditions in the Sea of Cortez. The project features high-definition digital video, still photography, and audio clips from the six estuaries. Interactive maps of the estuaries provide a visual reference for additional information about the area's natural history, the ecological effects of tourist development, and the role of art in our perceptions about our relationship to the natural world.

Video featurettes capture the images and sounds of the environment and document oyster farmers, research biologists, conservationists, and University of Arizona faculty and students as they work together toward assuring sustainable usage of these wetlands.

Mural

Drawings for the natural-history mural were scanned and imported into Corel Painter IX and converted into flat color. Using Adobe Illustrator's live-trace feature, the drawings were vectorized. Color images were adjusted to black-and-white outline drawings at 1:1 scale, printed on a large-format plotter, perforated by hand using a pouncing wheel, and applied to the wall by hitting the drawings with bags of colored chalk. All of the painting was done by hand.



Pedro Meyer

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Brahmaputra – A Journey to One of Asia's Greatest Rivers
Shahidul Alam
www.zonezero.com/exposiciones/fotografos/shahidul/index.html

Kids
Jean Marc Caimi
www.zonezero.com/exposiciones/fotografos/caimi/index.html

Qajar and Like Every Day (Gallery 1 and Gallery 2)
Shadi Ghadirian
www.zonezero.com/exposiciones/fotografos/ghadirian/index.html

The City of Galvez
Oscar Guzmán
www.zonezero.com/exposiciones/fotografos/guzman/index.html

China 1979-2005 Asian-Americans
Pok Chi Lau
www.zonezero.com/exposiciones/fotografos/chilau/index.html

The Rodelu Family
Daniel Machado
www.zonezero.com/exposiciones/fotografos/machado/inter.html

I Photograph to Remember
Pedro Meyer
www.zonezero.com/exposiciones/fotografos/fotografia/index.html

Ukraine
Uri Nesterov
www.zonezero.com/exposiciones/fotografos/nesterov/index.html

Mexico Tenochtitlan
Francisco Mata Rosas
www.zonezero.com/exposiciones/fotografos/matafco/index.html

Photos of You
Ines Ulanovsky
www.zonezero.com/exposiciones/fotografos/ulanovsky/inicialeng.html

Katrina-Tsunami, Remnants After the Storm
Wyatt Gallery
www.zonezero.com/exposiciones/fotografos/wyatt/index.html

Red Color News Soldier
Li Zhensheng
www.zonezero.com/exposiciones/fotografos/zhensheng/index.html

Artist Statement

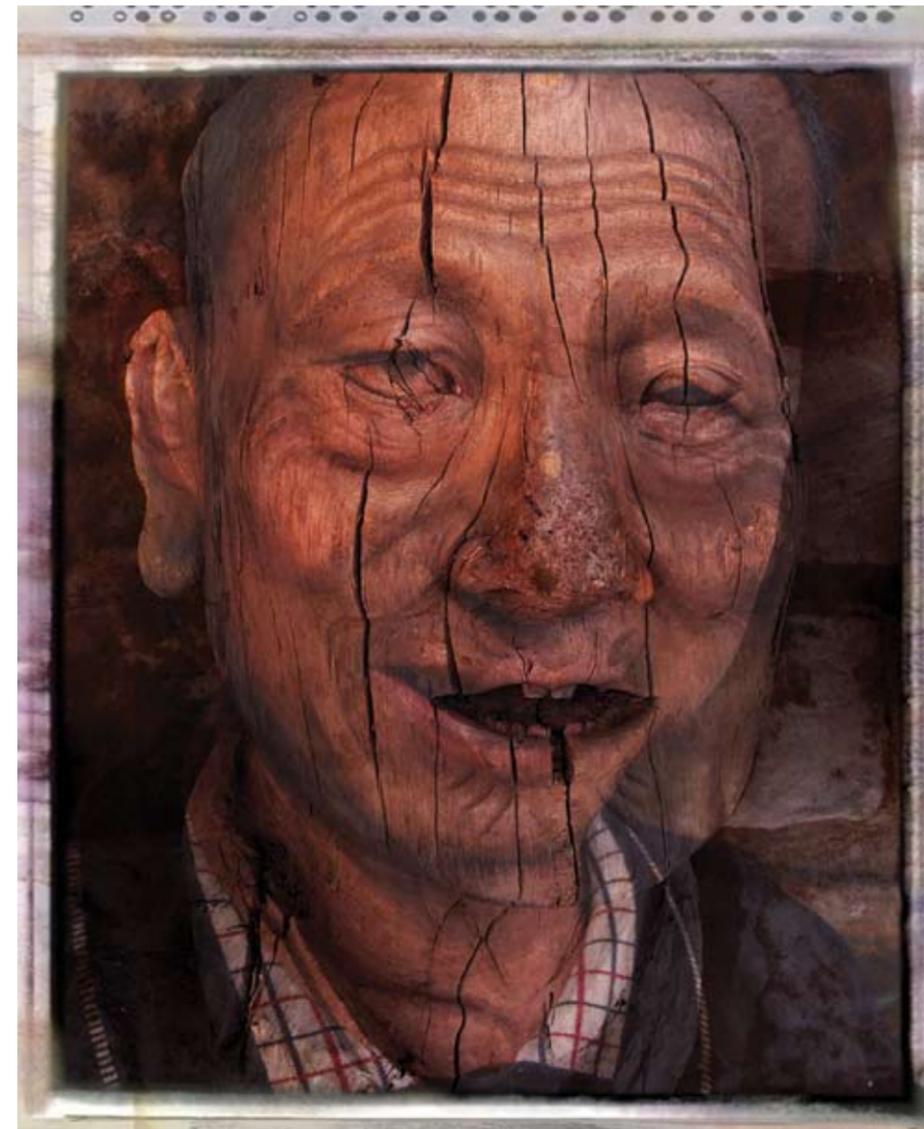
ZoneZero, a web site dedicated to photography, is one of the most visited photography sites on the internet, with more than 114 million page views in the last three years. During the more than 10 years that it has been online, it has generated a community of photographers, art critics, and people throughout the world who are interested in photography as a cultural and artistic manifestation. Its name attempts to be a metaphor for the adventure it is to make images that go from analog to digital.

Altogether, ZoneZero hosts the work of more than 250 photographers in the Gallery section and more than 1,500 in the Portfolio section. It has become an important reference in educational institutions that teach photography, and it has played a crucial role in the de-centralization of photography, creating a showcase for the work of talented photographers outside traditional cultural centers such as New York, Paris, and London.

ZoneZero exhibitions are in a sense a library, a collection of stories, available at all times since the work stays permanently online and always finds a new audience. The images tell stories of loss (of a loved one, of land for which we fought, of ideals or of the world as we once knew it). They also tell stories of love, of everyday and family life, disease and pain, and great joy and empowerment.

Technical Statement

We have never believed that the technical aspect of photography is what matters, but the content of the story it tells. Although technology plays an important role in our exhibitions, we prefer the stories to speak for themselves.



A wooden face
2006 © Pedro Meyer

Alejandro Perez-Avila

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Collaborator

Lucy Petrovich
University of Arizona

*Image of earth courtesy of the Image Science & Analysis
Laboratory, NASA Johnson Space Center.*

**Artist Statement**

This web site highlights alternative networks that connect creative people around the world, including native and indigenous communities that use digital media to bring their voices, memories, and cultures to each other and a wider public, transcending political boundaries.

Technical Statement

The site was created with Flash ActionScript and HTML.

**Andrea Polli
Joe Gilmore**

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N.
Computer projection and sound

**Artist Statement**

“What may not be expected in a country of eternal light? I may there discover the wondrous power which attracts the needle and may regulate a thousand celestial observations that require only this voyage to render their seeming eccentricities consistent forever.” – Mary Shelley, *Frankenstein*

The North Pole. 90 degrees north. A point where the spinning of the Earth slows to zero, where every direction points South, and the sun rises and sets just one time each year. The North Pole is a symbol of the fusion of opposites, combining natural beauty and brutality, “the last imaginary place on Earth.” N., by examining the North Pole in real time, expresses the isolation and environmental extremes of this remote region and addresses the importance of the region to the global ecosystem.

N. is an ongoing, evolving composition. Because it is directly tied to the turbulent weather of the Pole, the composition is ever changing, transforming in completely unexpected ways. N. unfolds and evolves on a climatological temporal scale, far beyond an individual human lifetime.

N. was made possible, in part, by a 2005 Lovebytes Festival Commission, Sheffield, UK. It was selected from over 2,600 entries for the renowned VIPER International Awards and was featured at the VIPER International Festival for Film and New Media in Basel, Switzerland. It was also featured in The Drop, an exhibition of works addressing global water supply at ExitArt, New York, and in an exhibition of Polli's works at the Beall Center for Art + Technology.

Technical Statement

N. presents a sonification of Arctic weather data modeled specifically for this project by Patrick Market, meteorologist and snow and ice specialist at the University of Missouri, and imagery from the National Oceanic and Atmospheric Administration (NOAA) Arctic research program in a sound and visual representation of the climate and conditions at the North Pole from 2003-2006. A portion of the sound used in N. comes from live atmospheric and global electromagnetic transmissions of lightning from the INSPIRE VLF receiver at NASA's Marshall Space Flight Center.

*Audio engineered at Harvestworks, New York City
by Ken Babb*

*Supported, in part, by a PSC-CUNY Research
Foundation Grant*

Joseph Rabie

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Psychogeographical Studies
Interactive, digital photography



Artist Statement

This ongoing work explores the “genus loci” of inhabited cityscapes and natural landscapes. It uses the technique of “interactive photography,” defined as “photographs which are not only sensitive to light, but are also sensitive to the beholder’s scrutiny.” It explores the dynamic, interactive innovations made possible by the encounter between digital photography and computer algorithms, and represents a new paradigm outside the realm of film-based photography, which has as its finality a static, printed work.

Genus loci, or “sense of place,” defines the profound attributes that give the perception of different sites their character and identity. This is the raw material for psychogeographical work on urban or natural landscapes. I have always used whatever means of representation are available (drawing, photography, writing, even sand) to apprehend the form, narrative, and emotion within the orchestration each place conceals.

The practice of interactive photography (making a picture multiple and malleable) enables me to explore a new territory of expression. Programming allows a picture to develop its own dynamic discourse, via the poetic dialogue that an interactive relationship instigates within the observer. Instead of being a passive spectator “over the photographer’s shoulder,” the

computer allows the viewer to play an active, immersive role within the content and meaning of the picture.

Interactive pictures challenge the inert nature of the photographed scene: by recomposing the fragmentary instants of successive views, time and space are deconstructed, disordered, and reassembled in accordance with the observer’s probing. The meaning of the picture is transformed by unexpected juxtapositions and permutations that destabilise the photographic reproduction of reality. The absolute fraternizes with the arbitrary, where the initial, objective photographic recording becomes a zone permeable to irrational artifices privy to the territory of the mind.

The photographic “now,” that instant of shutter release, has always represented a certain tyranny. Why this moment and not another? The same applies to space: though it contains infinite possibilities, any particular moment may only be occupied by a single, unique artifact. Or illuminated in a single, particular way. Using interactive photography, space and time conglomerate within an armature of simultaneity. The techniques put in play, using algorithmic routines to confound a succession of “nows” within a single picture, allow a greater understanding of the genus loci and our relationship to it.

Technical Statement

The arrival of the computer and digital imagery represents a profound moment. But if digital photography simply replicates or augments what has been done previously on film, an enormous opportunity for creative, conceptual, intellectual possibilities is ignored. The replacement of the darkroom by Photoshop and similar applications brings ease and quality, but also artistic possibilities (for example, renewal of the collage genre). Nonetheless, the final objective, a single printed or projected photographic picture does not differ from what came before.

The objective of this work is to utilise the originality of the computer as a display engine, capable of using algorithmic procedures for user-impelled, dynamic image processing “on the fly.” Programming allows one to construct a picture with an internal, procedural narrative that adds a new dimension of meaning and poetry, transcending that which exists within the individual component images.

r e a

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Collaborators

Dr. Christine Nicholls

Gail Kelly

Stephen Jones

Peter Oldham

maang (message stick)

A three-channel video with sound on DVD triptych (10 min-loop)



Artist Statement

r e a is a new-media artist who works in photography, digital media, moving images, and creative environments. She is a descendent from the Gamilaraay/Wailwan people, born in Coonabarabran, New South Wales, and now living in Sydney. She has a MSc in Digital Imaging and Design from the Centre for Advanced Digital Applications (CADA), New York University (2004); MA (Visual Arts) Australian National University, Canberra (2000); and a Bachelor of Fine Arts (Visual Arts) from the College of Fine Arts, University of New South Wales (1994). In 2006, she received a New Media Arts Fellowship from the Australia Council for the Arts, which allowed her to return to New York City to participate in the Live-I Workshops presented by Troika Arts Contemporary Dance Company. Her new video triptych, maang, was shown in the Auckland Triennial – Turbulence 2007.

In maang, r e a has directed her attention away from her own inland home. The setting is La Pérouse, a coastal site on the southern shore of Sydney at Botany Bay. Named after the French navigator who landed there on 26 January 1788, La Pérouse is a place of immense

significance for Indigenous Australians. In 1855, La Pérouse became an Aboriginal reserve that even today has a large Indigenous population, many of whom comprise part of the broader Indigenous diaspora from regional Australia to the cities. One needs to probe beneath maang’s sheer visual beauty and its poetic lyricism to find a way into the work’s deeper concerns, particularly the tumultuous impact of colonization on Indigenous Australians, which is still distorting identities and destroying languages.

Importantly, maang is not only about loss of land and language, and the turbulent times following colonization, but also about the possibility of renaissance, revitalization, and regeneration of people, land, language, and culture. As r e a observes:

“I lost access to my mother tongue as a result of colonization. My great grandparents from both parents’ sides spoke their own languages. From my grandparents’ generation through to my generation we did not learn to speak our language fluently.”

Johanna Reich

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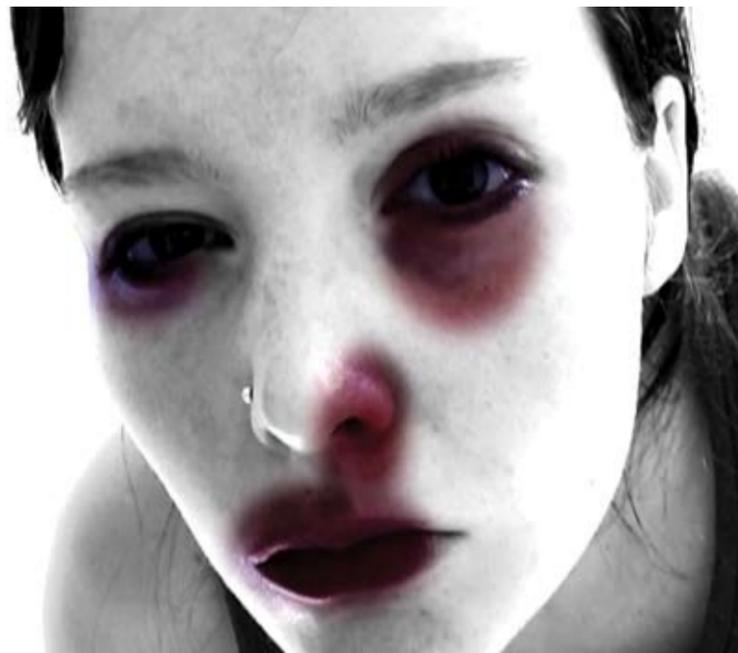
Artist Statement

My video shows a young woman boxing toward the camera and a man and woman speaking. They are both saying the same thing, but in different languages: "The wind doesn't change, bit by bit I learned, the wind doesn't change." Gradually, the black-and-white image acquires colored spots, evidence of an invisible fight. A poetic fight. I combined modern technical effects with an old-fashioned monochrome film style to create a particular mood. This manipulation of colors and style challenges the viewer's perception.

Technical Statement

The video consists of two versions of images: coloured and monochrome. Different masks let the coloured video appear as stains in the beginning and in the end. Every frame of the coloured video is arranged using several edited layers. The coloured stains surface in conjunction with the sound: while the sound of beating is audible, the coloured stains appear on the woman's face.

De Vez En Cuando
Video, experimental



Hitch-Haiku
Computer-generated, semi-automatic Haiku program

Seigow Matsuoka Editorial Engineering Laboratory

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Hideto Obara

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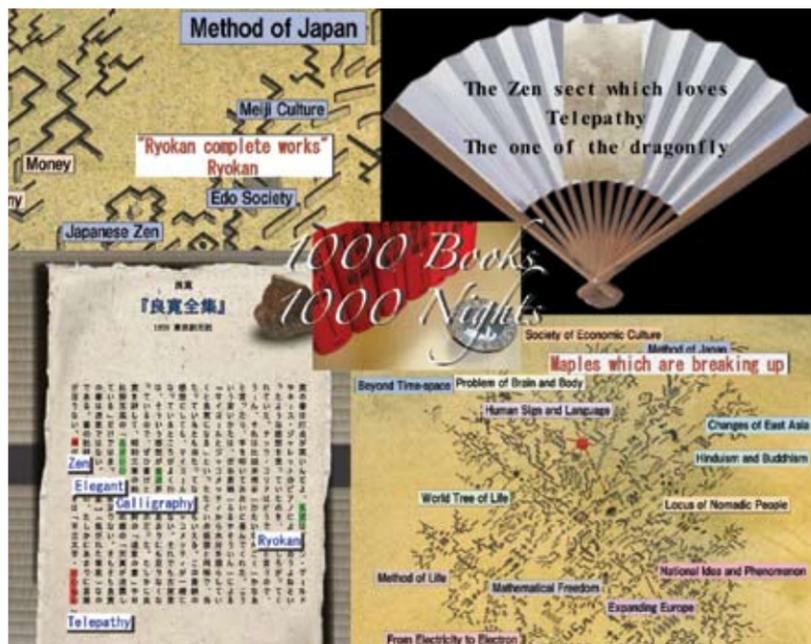
Newton Fernando

Rohei Nakatsu

NICT Toshorium—The Navigative City of Books Project

NICT Language Grid

Special thanks to Professor Toru Ishida



Artist Statement

This example of “cultural computing” condenses the essence of a book into a Haiku, the classical Japanese poetic form of 5-7-5 characters including a seasonal word called “Kigo.” Such imaginative expressions have been applauded by many people. Haiku are stories that generate Context, the shortest stories in the world.

“Hitch” means to connect one thing and another thing. In this case, it connects a phrase and another phrase. A user chooses arbitrary phrases from a chapter of a famous Japanese essay called “1,000 Books and 1000 Nights,” by Seigow Matsuoka, and introduces 1,000 books spanning many genres, generations, and origins. The site registers approximately 200 million hits per day!

The system generates a Haiku by using the corpus of an essay and several databases dedicated to Haiku generation, then translates it into English. Therefore, the essence of a Japanese book can reach those unfamiliar with the language.

Haiku, invented in 17th-century Japan has been recognized as a sophisticated and condensed written form for transmitting sensitive / emotional meaning. It has been expressed in many languages, so it can be a common medium to transfer feelings and bridge the gap of cultural differences.

Technical Statement

The system carries out a syntactic analysis for each phrase and detects a basic form of noun or verb. Then it composes a phrase of a haiku by adding a special propositional particle called “Kireji,” which not only separates a Haiku into three phrases but also encourages imagination.

There are six types of databases in the system: Haiku thesaurus, Kigo thesaurus, idiom thesaurus, case frame of onomatopoeia, thesaurus, and case frame. From the databases, the system searches for the phrases and words most closely related to user inputs. The system chooses the phrase with the highest score and presumes the season of the Haiku poem from the user inputs or the phrase chosen from the Kigo database.

The system translates Japanese Haiku into English Haiku using the automatic translation service, “Language Grid,” at NICT. If users do not like the Haiku generated, they can modify the Haiku and record some new phrases in the system. We assume that the user inputs are closely related to the phrase modified by the user. The system adds the relationship between the user inputs and the morphemes of the phrase modified, then learns their relativity.

Selected Works from the 10th Japan Media Arts Festival

Japan Media Arts Festival Secretariat Office
CG-ARTS Society
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Tokyo 150-0021 Japan
contest@plaza.bunka.go.jp

KEITAIMU(K-TIME)

Amano Yuichi
Japan

La Grua y la Jirafa

Vladimir Bellini
Argentina

La Magistral

Yamakawa Hikaru
Japan
Composer: Shishido Koujiro

Rain Song

Togowa Kei
Japan
Composer: Nagayama Shin

naked youth

Shishido Koujiro
Japan

Quio: So Dazed

Christic Lang (Director)
Maria Schoepe (Production Designer)
Germany
_cam SP PAL 4:3, Mac After Effects

QUE SERAN PASARAN

Ogata Miki
Japan
and others

No Boundary

Cindy NG
Taiwan

D.A.R

Yamamoto Norihiro
Japan

ANIMAL ZONE

Inoue Noriko
Japan

C++

Kuroyanagi Teppei
Japan

Francisco Gilardi House

Usami Takuto
Japan
Composer: Yurikusa Kimihiko

Infinity

Yamashita Mai
Kobayashi Naoto
Japan



Artist Statement

The Japan Media Arts Festival recognizes creative media artworks that utilize the latest expressive technologies. It is also a festival in which we support creative activity and present a broad range of creative work.

Technical Statement

Many of these works use digital composite techniques similar to those used for commercial films, but the works are inspired by unique, personal points of view.

Cedar Sherbert

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Collaborators

RJ Lozada, Director of Photography

Josephy Tsai, Sound Editor

Joe Dzuban, Re-Recording Mixer

Timo Chen, Original Score

Howard Duy Vu, Editor

**Cedar Sherbert, Sherman Alexie,
Lois Welch, Producers**

Artist Statement

Gesture Down (I Don't Sing) is a highly personal interpretation of the poem "Gesture Down to Guatemala" by the late Blackfeet/Gros Ventre writer James Welch. It was one of seven short films commissioned by celebrated author and filmmaker Sherman Alexie as part of a weekend-long tribute to James Welch held at the Richard Hugo House in Seattle, Washington. The poem was taken from Mr. Welch's sole book of poetry, *Riding the Earthboy 40*. It is a stark, beautiful, first-person rumination on place, longing, and identity. These are themes of deep resonance for me, as I am both a descendent of and estranged from the La Huerta Indian community of northern Baja California, México. This is my grandfather's home and the place where *Gesture Down (I Don't Sing)* was shot.

Technical Statement

The short was "filmed" using a Panasonic AG-DVX100 camera and edited using Final Cut Pro.

Gesture Down (I Don't Sing)
A short film screened on a loop



Songhua

J.P. Sniadecki

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Artist Statement

This non-fiction video depicts the busy promenade and sandy banks of the Songhua River in the city of Harbin, China, as an urban sphere of ephemeral sociality and explores the complex relationship between the people of Harbin and their main water source. Through engaging the interface between anthropology and contemporary art, *Songhua* also addresses the possibility that image and sound can serve as a form of ethnographic research. Overall, through long takes of public space, intimate vignettes of film participants, and layers of ambient sound and cacophony, this digital work presents leisure and labor activities as they unfold within the social space of a popular yet fragile environment.

Technical Statement

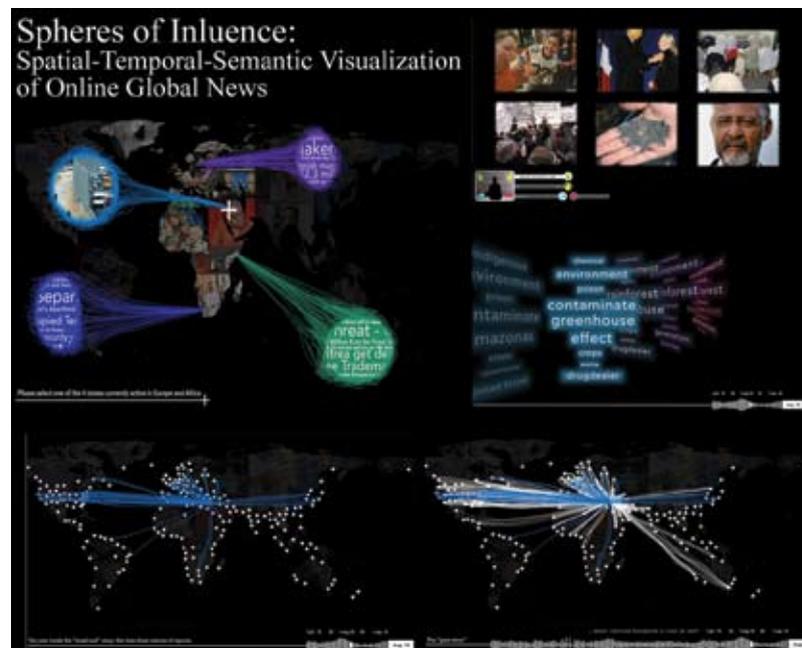
All images and sounds were recorded on standard digital video with a Panasonic HD-P2 digital video camera and edited on a Final Cut Pro editing system in the Harvard Media Anthropology Lab. The final audio design was digitally mastered on Soundtrack Pro.

Alex Villacorta

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Collaborators

Alexander Villacorta
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Jonathan Ventura
Anne-Marie Hansen
Emily Moxley
Joriz De Guzman
Matt Peterson



Artist Statement

The Spheres of Influence (SOI) project is an interactive digital art and information exhibit that visualizes the content and distribution of online world news. News, in the form of narratives and images describing current events, is a vital class of information, which is produced and consumed continuously in time and space. People from all parts of the world rely on news outlets to present relevant reporting on issues that are important to them. However, the topics that are important to one class of people often differ significantly from one another.

To illuminate this difference in perspective, the SOI project measures, compares, and visualizes the importance different countries, geographic regions, and language groups place on news stories, based on volumes of reports and the locations of the organizations disseminating them. The main objective is to present the general public with an immersive

space that allows for exploration of global news coverage within the temporal, spatial, and semantic properties of the reports.

Traditional media sources are often rooted in ethnocentric points of view, but when viewers can visually and spatially interact with the distribution of global news, they may gain a better understanding of the topics important to different cultures. Finally, the news data obtained from this ongoing operation of the installation are captured and maintained as a valuable data source of global information flow. Our goals reflect the interests of seven student researchers from the fields of statistics, geography, computer science, electrical and computer engineering, psychology, and art in addressing the content of web news reporting and the interactive installation (navigation by means of users' movement in the exhibit space).

Technical Statement

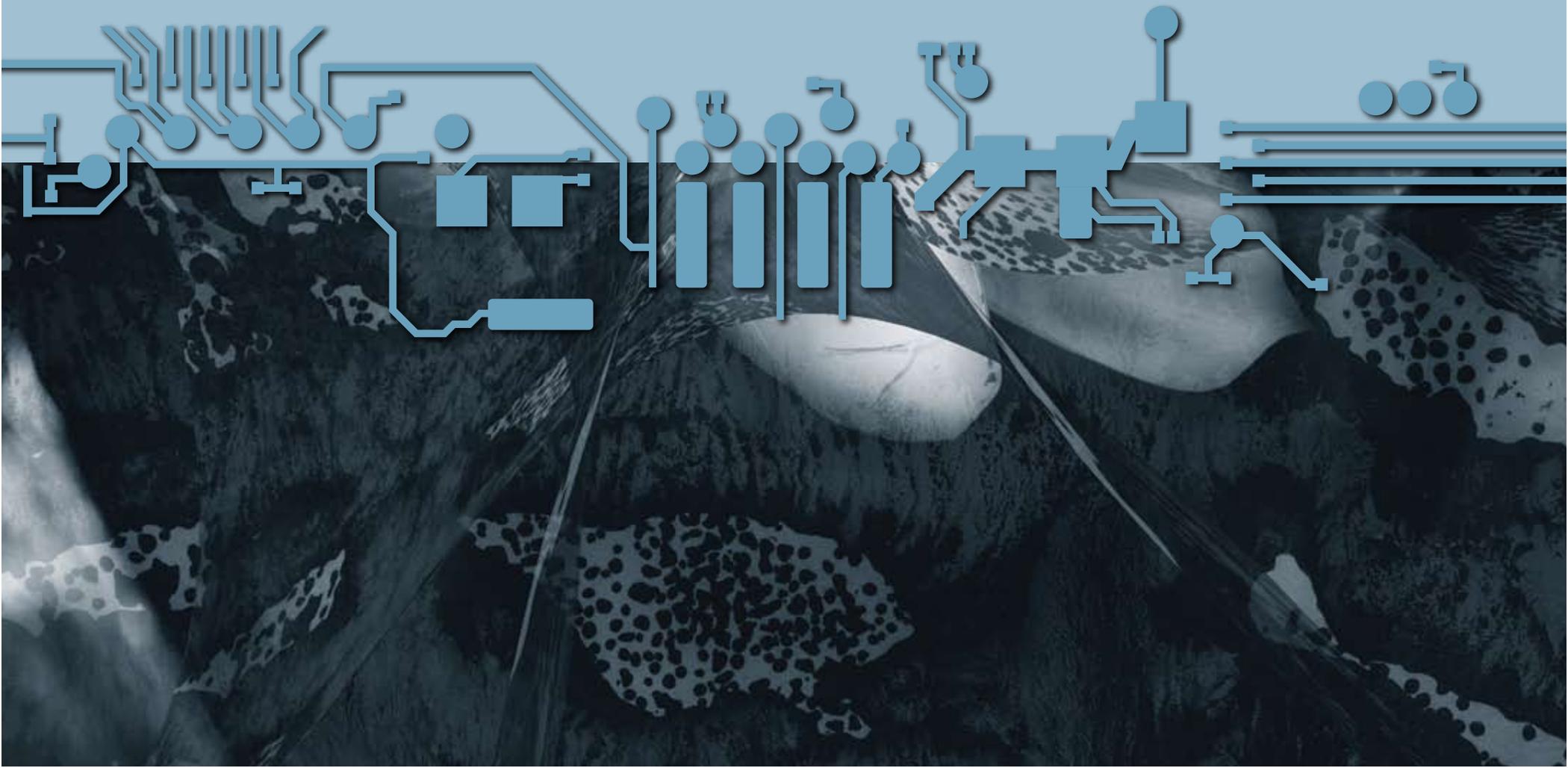
The physical layout of the SOI installation space consists of four side-by-side widescreen LCD monitors with four overhead cameras tracking user movement. The system was implemented in C++, Python, OpenGL, and OpenCV totaling over 6,000 lines of code. Users navigate by moving in the space, literally stepping into news stories of global interest and exploring several possible paths, including the distribution and magnitude of reporting, as well as temporal changes to both its quantity and content.

A PostgreSQL database is filled with data by automated scripts that collect and cluster news reports from the internet. Using the spatially enabled features of the GIS database, the system maps the source and subject locations of the stories and adds animated graphic elements that indicate connections between them. Because the system is modal, the information that needs to be processed and

displayed depends on the position and actions of users. The challenge of this implementation is efficiently coordinating the various subsystems of the installation to create a seamless user experience.

Art Gallery: Global Eyes

Wall-Based Work



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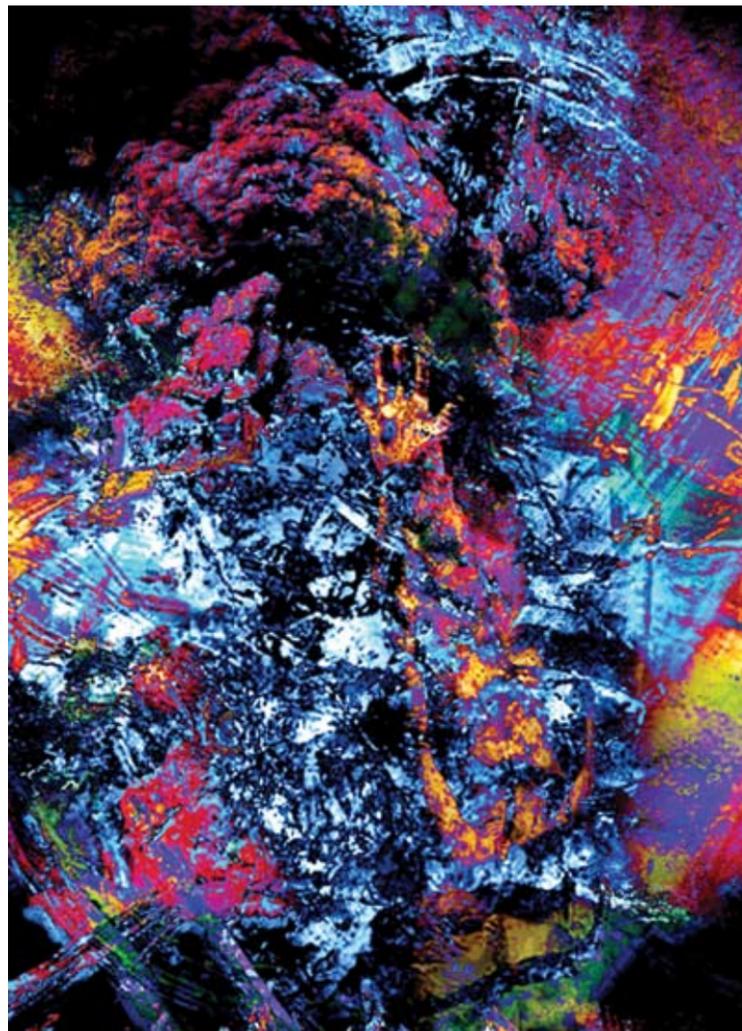
Artist Statement

I began creating artworks early in life, when I was about nine years old. When I was 14, I won a drawing competition organized by the Goethe Institute in Cairo and drawing awards in the Czech Republic, Japan, and Egypt. I studied drawing, painting, sculpture, graphics, and printmaking at the faculty of fine arts in Alexandria (BA 2001), and I specialized in printmaking. During that time, I also showed my work in several art contests and exhibitions. It's not about money or fame. It's about how a good artist sees the world and is inspired by everything. The sense of art is inside all of us, but some of us make it grow, and others ignore it.

Technical Statement

This work was created with Adobe Photoshop. I worked on each channel individually with filters, contrast, levels, textures, transforms, rotating, hue, and saturation. When that process was complete, I grouped the channels into one image and exported the image to Painter, where I added hand work, colors, shadows, etc.

Revolution
Computer graphics on paper
41 inches x 30 inches



Stan Bowman

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Artist Statement

I am intrigued with layers in images. For me, these are metaphors that operate on several levels: layers of earth stratification, layers of human culture, and layers of the human psyche. My work represents the intermingling and dynamics of these layers.

The use of floral objects in my images is also intentional. Flowers show us most clearly the essence of life cycles. They are ever changing, ever evolving, in simple yet powerful forms. But what grabs my attention most are their exciting organic shapes, colors, and textures, and their ability to assume a completely individual presentation without repetition.

The geometrically shaped canvases of my current works also present an outline that is unique, one which goes beyond the more common and expected rectangular character of a picture. It draws emphasis to the work as an object itself. Finally, floral objects push outside the geometric shape to attract even more attention. The result is a stronger three-dimensional visual experience.

Technical Statement

Most of the organic objects I use in a still piece are initially scanned on a large flat-bed scanner because I have found that I can achieve finer detail by scanning as opposed to working from a camera image. I have also found that a scanned image has a special quality of light that is not achievable through other photo processes. I use Photoshop to assemble an image, creating numerous layers that often seem to float in space either above or below other layers. In this piece, I have also used Photoshop to merge two flowers together to create a fictitious Rhodadalia.

I started this work by printing a giclée image as a bottom layer on canvas and stretched it on a specially built shaped wood frame. I then printed a second canvas print of the top flowers, cut these out either singly or in groups, and glued them onto the first layer. However, some of these second-layer flowers extended beyond the limits of the basic shaped edges and needed support, so underneath these I made wood pieces cut to the shape of the flowers and depth of the frame edges. These were attached to the basic wood frame. I then glued the extended canvas flowers down onto them. Finally, I painted the side edges of these wood extensions in acrylic to match the flowers.

RHODADALIA
45 inches x 45 inches x 1.5 inches
Giclée ink jet prints on canvas, stretched on a wood frame, with protruding wood pieces attached



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Algorithmic mirror
18 x 13 x 1
Digital print on paper

Artist Statement

These images represent a fresh view of the human face, obtained through various algorithmic transformations created by digital manipulation of individual pixels or pixel groups of a photograph of a human face. Viewers can imagine that they are standing in front of a curious mirror that shows various views of their own faces.

In the digital era, the human face can be viewed in a way that was never before possible, due to both digital technologies and the ability of the algorithmic approach to dealing with image elements. Algorithmic manipulation of human facial elements enables one to see the face in a new way, due to the fact that the very same pixels that form the image are transformed or regrouped in unexpected ways. Since we are sensitive to even minor variations in human faces, we can sometimes feel uneasy about these algorithmic manipulations; however, even then we understand that we are discovering something completely new in something so familiar.

One more aspect of algorithmic image manipulation is worth mentioning: the fact that one can make a transition from a figurative expression in the photograph to a completely abstract view of the human face. However, the presence of the very same color palette from the original photo makes it difficult for us to believe that new images that arise after manipulation have nothing to do with the original photo.

Technical Statement

This group of images was created using algorithmic manipulation of a single photograph of a human face. Different algorithmic techniques were used, all based on separation of a photograph into individual pixels. The entire area of the photograph was then divided into a matrix of equal squares, each represented by a matrix of pixels from a corresponding part of the photograph.

One type of algorithmic transformation manipulates pixels inside each square via different techniques (for example, by mirroring pixels related to vertical or horizontal axes passing through the center of the square, or by choosing a single pixel in a horizontal or vertical group of pixels in a square and repeating it in the whole horizontal or vertical line inside a square). Another type of algorithmic transformation randomly repositions whole squares of pixels to different positions.



Max Chandler

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Artist Statement

Paul Klee wrote a short text he titled "Taking a Line for a Walk." To give this idea a 21st-century twist, I make autonomous mobile robots that are small enough to walk around the canvas and use paint brushes to make marks. The robots have a small computer on board and sensors that can see the surface of the canvas and the marks it has already made. I use these robots as a tool for painting – as a super brush that can make marks that humans cannot make alone. For instance, the robots can stay much closer to the actual lines of living growing things than we can with hand-eye coordination. They are also capable of truly random behavior that brings them closer to natural variation.

I wish to make art that reflects our common lives. Two aspects of 21st-century life are inescapable:

1. The continuing discoveries and refinement of knowledge through science. I think the contemporary disrespect and distrust of science may be temporarily fashionable, but are certainly eternally foolish.
2. Most of us have become personally engaged with technology. Technology is no longer limited to affecting our work lives. Smart devices have a role in our personal lives as well. Whose life is not changed by one or more of the following devices: cell phone, notebook computer, internet search engines, email?

Smart devices depend on small-to-large computers as part of their make-up and involve a combination of mechanics, electronics, controllers, and programming. Using a similar tool to make art reflects who we are and our lives today. I use simple, very focused, small robots as a tool to integrate both aspects into art that is science-informed and engaged with technology in obvious and not-so-obvious ways.

Technical Statement

This robot-generated art uses behavior-based Java programs that incorporate logarithmic spiral fragments and randomly generated variations. The robots work as a tool or collaborator for the artist and use a large "vocabulary" of paint brushes and painting techniques. Every brushstroke on the canvas was made by the robots, including flat fills of rectangular and organic shapes.

The robots have simple mechanics and electronics but use very sophisticated programming and behavior-based subsumption architecture. Although the paintings can be made by one or more robots, each robot has the same programming. Drivers and configuration parameters change for each individual robot, but the core programming remains the same.

The robots are capable of a number of painting behaviors, including shape following by observing the canvas and following shapes they detect, shape outlining and filling from a stored vector description, and generating lines from formulas for spiral fragments, arcs, and sine waves with phase shifting. The robots have overriding randomized disturbances of their normal behaviors to produce nature-like variations. Although the robot's path remains true to the underlying math, the line produced will have bumps, blotches, wiggles, etc., due to the disturbances.

Silent Dancing

48 inches x 84 inches x 1.5 inches
Robot-generated art, acrylic on canvas



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Collaborators

Graham Olsen

David Smith
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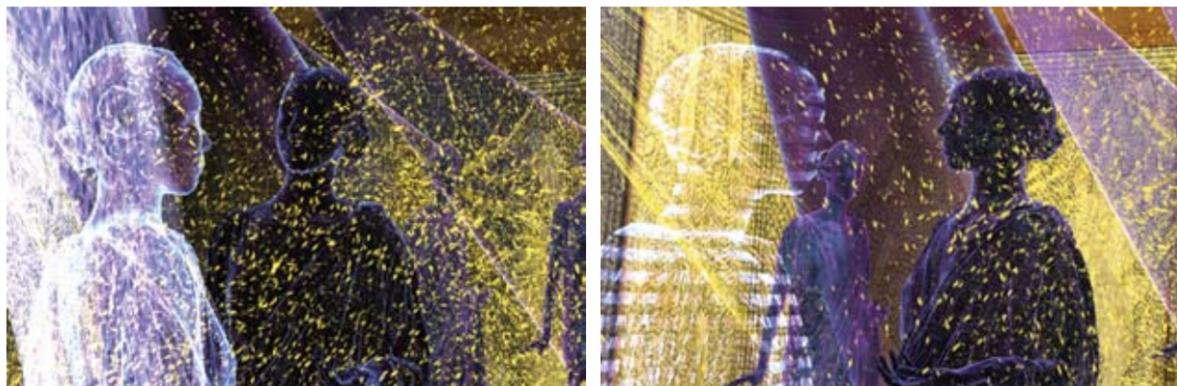
New Dawn Design

Stanislovas Zacharovas and the Team

Geola EU Facility

Vilnius, Lithuania

Luminous Presence
44.5 inches x 66.25 inches
Reflection hologram



Artist Statement

For many years I have been working toward enabling dialogue between real and holographic (virtual) people.

In this work, I'm interested in bringing together elements of the way science fiction films have represented holographic characters and some ancient artistic means of depicting legends and stories of people made from, or surrounded by light, such as ghosts and angels who talk to and influence real people. Consequently, the figures in my hologram are not intended to look like real people. They are designed to look like real holograms! It seems to me that thanks to imaginative directors, script writers, and talented special-effects and CG artists in the film industry, the visual language of luminous transparency of holographic characters is now synonymous with the "real" holographic, autonomous presence of another person. Though my holographic characters are static, animation of light and darkness lends a highly charged sense of communication similar to that described in *The Dawn* by Richard Jefferies.

Technical Statement

To create a hologram from CG data, the virtual camera from which the scene is recorded must mimic the positions of the viewer's eyes. Therefore, the camera used for the final render is NOT a creative choice. To work around this problem, each of the figures in the scene were individually adjusted in scale to mimic a filmic lens look. The CG scene incorporated data from two real sources, laser scans (Konica Minolta Vivid 9i/ Raindrop Geomagic Studio software) of human models (Georgie Dawson and Lexie Hamilton) and photographs of an 18-foot x 6-foot aluminium tessera and pastel drawing. The scene was modeled in Maya using architectural references from Borromini, then textured in Photoshop using reference images of historic gilded mosaics and my own drawings. Procedural shaders were applied to the scan data to give the lined effects of the figures. Particles of varying size and orientation were used to articulate the volume of virtual space surrounding the static figures with a dynamic light field. Finally, 2,057 frames were rendered. From this animation sequence, hundreds of micro-holograms were exposed with six RGB pulsed laser beams. The photofilm was chemically processed, dried, and laminated to black plastic.

This research was supported under the Australian Research Council's Discovery funding scheme (project number DP0452144).

Re-remembered, digital palimpsests
17 inches x 72 inches x 2.5 inches
Giclée on canvas, video, LCD monitor

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Artist Statement

Re-remembered, digital palimpsests is a visual exploration of recorded history and subjective memory. Using the palimpsest as a model for this exploration, each canvas presents a layering of imagery and video to represent mixed memory, a merging of historical and personal perspectives whose partial erasure and rediscovery recedes and re-emerges within a media-saturated environment.

The original material manipulated in each piece is a combination of historical and personal footage and photographs. Digital artifacts and effects represent time, obstacles, and our inability to erase what has taken place. The video set within the fixed image is the essence of memory played and replayed. The overall landscape of re-rememberances depicts our ability to re-present ourselves and the world with our notion of what is actual.

Each day, an array of meaningful and arbitrary images is constructed and deconstructed within our minds and all around us. These works act to question the stability of what we call history and memory, what is remembered and re-remembered, fleeting and enduring, troubling and endearing, written and re-written.

Technical Statement

Images were created with a mixture of shot and sampled photographic and video footage with Adobe Photoshop, Adobe Illustrator and Corel Painter. Video footage was manipulated with Adobe After Effects and Apple Final Cut Pro. Final comps were printed on an Epson 9800 printer and stretched on specifically designed stretchers.

Brian Evans

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Artist Statement

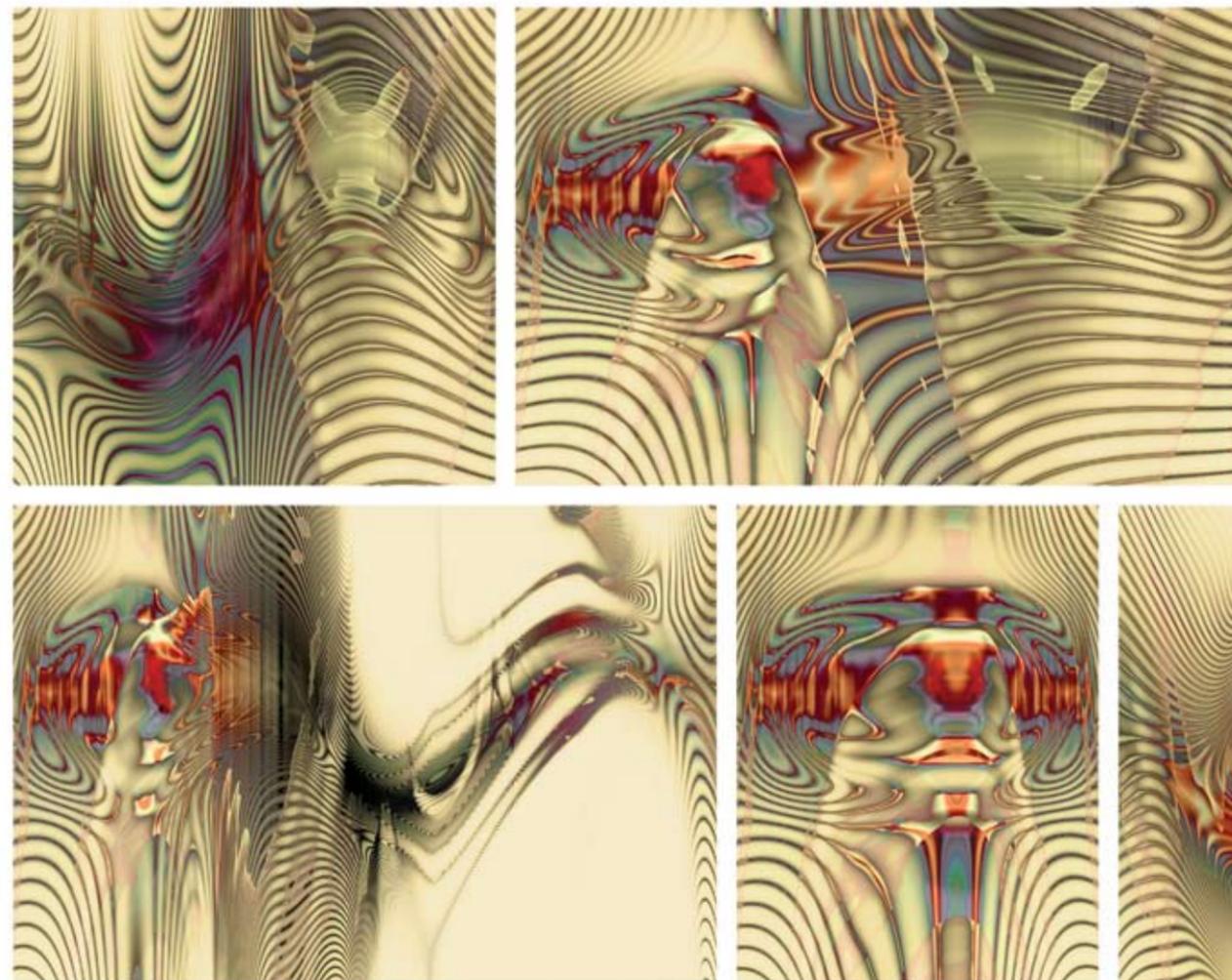
This piece is a graphic musical score, a visual rendition of a classic sonata allegro form. It is music for the eyes, in search of a performer.

A sonata has several sections. This piece shows five sections: exposition, development, retransition, recapitulation, and coda. The thematic variation and development is seen rather than heard. The piece is developed as a graphic score in two musical systems, reading left to right and top to bottom. It can be interpreted sonically in a variety of ways. It is a digital image (patterns of numbers that can drive a synthesizer or catalyze a human performance) or you can silently listen with your eyes.

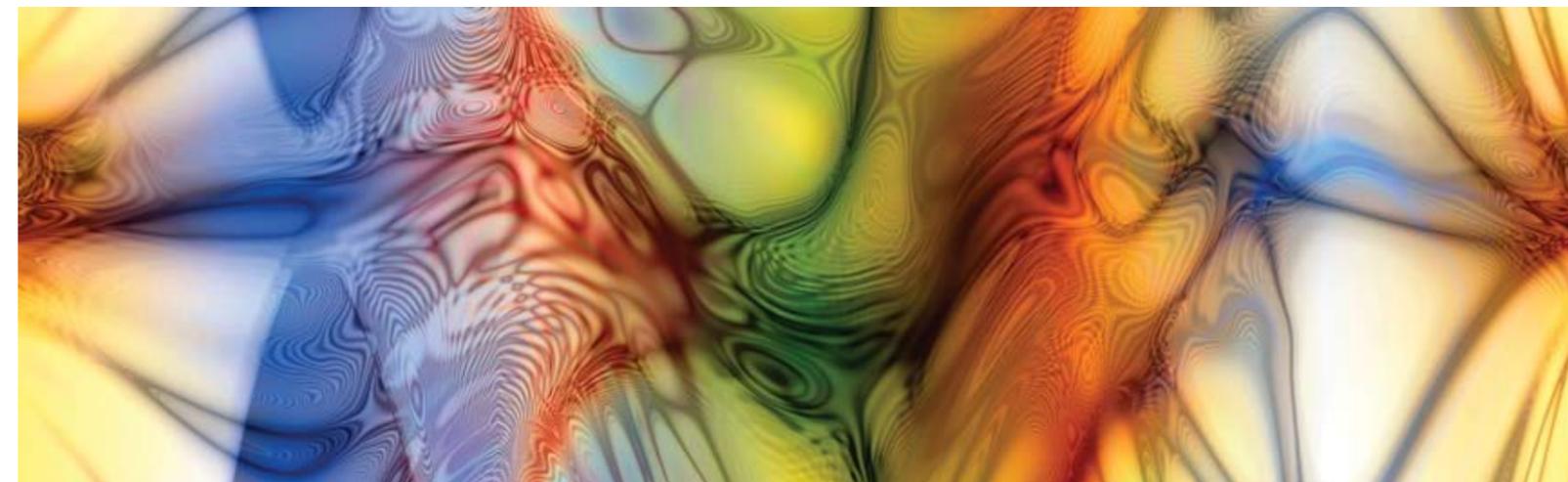
Technical Statement

The image was created by slicing an abstract animation through the time dimension. The score is composed as visual music. The animation is discarded. What is left is the trace, waiting to be sonified.

sonata (pipilo)
 49 inches x 61 inches x 2 inches
 Digital prints on paper mounted on artboard



time slice (meliá)
 13 inches x 31 inches
 Digital print on paper



Artist Statement

Slice an animation through the time dimension, and you can see how a scanline evolves over time. This slice is then sonified to create the music to accompany the animation. We can hear the colors as we see the visual music.

I create time slices to create music. The slice is an interesting image, but it also can be the score to the animation from which it comes. It's a simple technique for creating coherence between image and audio. What we see is the graphic score. We listen with our eyes.

Technical Statement

Using personal software, a time slice was created by following a scanline through the time dimension. These images were all sliced from a series of abstract animations.

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soul of the place - genius loci
11 inches x 16 inches x 4 inches
25 photos in a back-lit multi-layer plexiglass box



Artist Statement

"It is easier to perceive error than to find truth, for the former lies on the surface and is easily seen, while the latter lies in the depth, where few are willing to search for it."
— Johann Wolfgang von Goethe

With the traditional photographic documentation process, you can only capture one single condition of a particular place. But various climatic and seasonal conditions may drastically change the appearance of that same place, since they will render the place differently with different light conditions. Can multiple photography of "reality" allow us to see beyond and capture the spirit indirectly? Can visual accumulation through time give us more insight, more clues, about life in a particular place, and therefore its soul? Can multi-layered photography act as a "palimpsest" that can tell the story of a place?

The motivation for this time-lapse photography of the same place was to accumulate the various conditions of the same place through time to obtain components of the place's identity. Then by layering these components and printing them on transparent sheets that can reveal information behind them, it was possible to obtain a "visible depth." This process can allow us to "reach the core" and understand the essence of the place.

All surfaces are preconceptions ... (after Friedrich Nietzsche's "All words are prejudices.")

Technical Statement

Hundreds of photos were taken at intervals of five minutes during 10 days to capture various moments and light conditions of the same place. Canon EOS 1Ds with Firewire connections and a Windows laptop loaded with DSLR Remote Pro software were used to automate the process. Twenty-five photos were chosen and processed in Photoshop for the final work. The plexiglass box was designed and taken to a workshop that used CNC processes for production. The digital photos were printed on dura-clear sheets in order to obtain the desired transparency.

Kanyon reconstructed
61 inches x 27 inches x 1/2 inch
Photograph etched on 12-millimeter plexiglass using CNC prototyping processes, inkjet

Artist Statement

This photo is created for a concept exhibit by eight invited photographers (including myself) for the Kanyon shopping mall in Istanbul. For the exhibit named "Under Construction," most of the photographers worked with female models, while I personally preferred to focus on the concept of construction and reinterpret it. Construction is a temporary action that exists for a while and transforms itself into another product. This is why I wanted to end up with an architectural piece different from the one under construction.

The concept text that I submitted for the exhibit was: "Went, saw, stopped, attempted to grasp and enter it, looked at construction process and workers with respect, tried to internalize, wanted to claim it for a while, dreamed of creating a microcosmos out of the macrocosmos I was in, shot and shot and shot and finally selected: the created world, though intended for all, was probably quite a personal illusion..."

The construction process creates a different atmosphere, in which planes that we will later see as sterile surfaces are not yet covered, and space emerges with its total openness and sincerity. A construction site can also be seen as a podium, where a play-to-remain-incomplete is being staged. The incompleteness causes us to dream more, due to the fact that a complete building loses its narrative potential as it informs us about all the necessary pieces that constitute the whole: There is no puzzle to solve. Construction in this sense is like a historical ruin; Paul Zucker asserts that:

"Ruins have held for a long time a unique position in the visual, emotional, and literary imagery of man. They have fascinated artists, poets, scholars, and sightseers alike. Devastated by time or willful destruction, incomplete as they are, they represent a combination of man-made forms and of organic nature."

Technical Statement

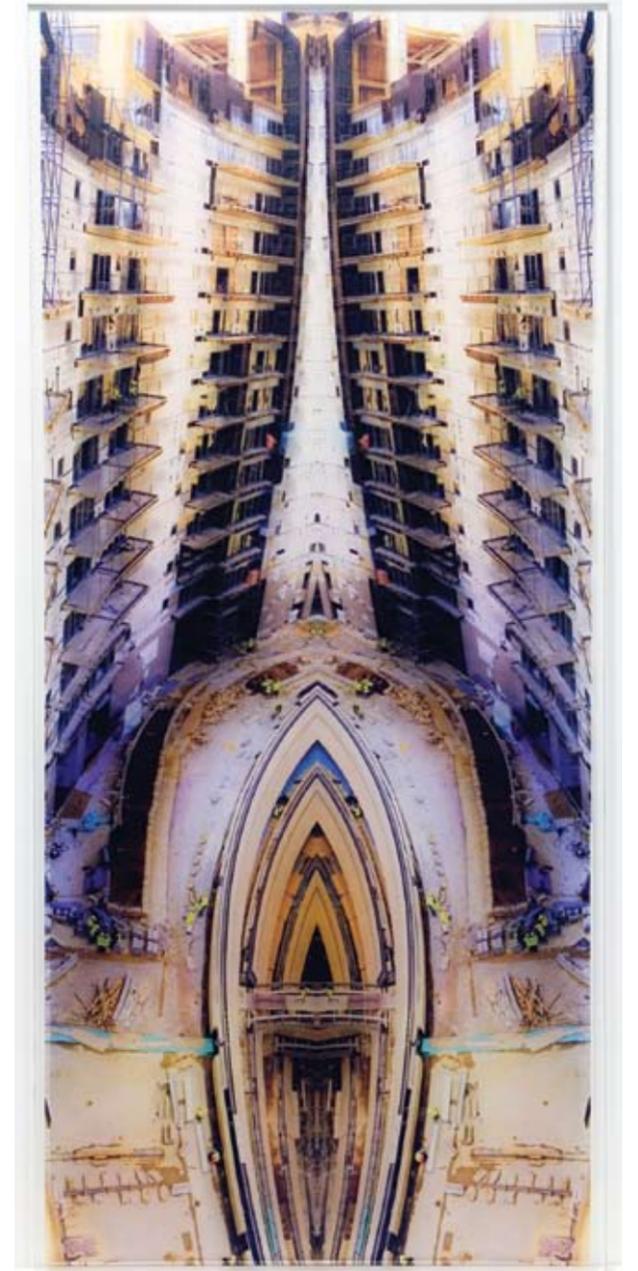
Vertical panoramic photography: Took eight photos with a Canon EOS 1Ds to create a very-high-resolution vertical panorama. Stitched photos using Autostitch, retouched the final image in Photoshop CS2, mirrored the image in order to complete the aimed "reconstruction" process.

Trace bitmap: Saved lower-resolution copy of photo and imported it into various software such as Freehand MX, Illustrator CS2, Adobe Streamline. The idea was to obtain vector information for the CNC machine. The trace bitmap studies were not very successful and created a huge number of vectors that could not be imported into CNC software.

Calling a CNC specialist: After all this waste of time with vectorization, decided to consult a CNC specialist and learned that it was possible to get 3D relief information from bitmap images.

Etching the photo on plexiglass: Using CNC machine's bundled software, constructed 3D relief patterns from the photo, and it took about 20 continuous hours to etch the photo on a 1500 x 650 x 12 millimeter plexi sheet.

Printing photo on etched plexiglass: The photo was printed on the etched side of the plexi using a ZÜND 215 C55 UV inkjet printing system.





Artist Statement

"What interests the historian of everyday life is the invisible."¹

I strive to make that invisible visible in my images. I see nature through our everyday technologies. Rolled strings of electric lights become bird nests. In the afternoon, I watch as people move through the shadows of trees while adding the shadows of their cell phones to the landscape. These composite images capture the poetic juxtaposition of nature with digital technologies in daily life.

"Everyday life is what we are given every day, what presses us, even oppresses us, because there does not exist an oppression of the present. Every morning, on awakening, we feel the weight of life, the difficulty of living, or of living in a certain condition, with a particular weak-

ness or desire. Everyday life is what holds us intimately, from the inside. It is history at the halfway point of ourselves, almost in a recess, sometimes veiled."²

My formal structure is the grid. These grids are as influenced by the data in an Excel spreadsheet as by the thread of fabrics and tapestries and the data contained in a quilt. The rhythm of the activities I capture is simulated using the grid to allow the narrative sequences to appear on paper. This structure enhances the simultaneous abstract and narrative aspects of the images. At a distance, the images appear to be a repeating pattern, a series of landscape elements or a tapestry, but as one gets closer a narrative emerges, and finally one sees the details of the story.

Technical Statement

My works begins as pictures captured with a digital camera. They are about the intersection of our daily experience with digital technologies. Many of the images start as cell-phone images that are immediately sent to someone else who sends back comments or sends other related images. The process of making the final images is mediated by the technology itself. In the final production stage, the Adobe Photoshop Contact Sheet Command is used to build the composite image.

¹ Paul Leuilliot, preface to Guy Thuillier, *Pour une histoire du quotidien au XIXe siècle en Nivernais* (Paris, the Hague: Mouton 1977), xi–xii.

² Ibid.



Matt Hamon

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Artist Statement

I am interested in the effect photography has on narrative when you attempt to fill the rectangle and isolate all that happens outside that defined space. However, I avoid using a strict rectangle in an attempt to represent a reality that appears, in itself, incomplete and indefinable. In the darkroom, I treat the photographic paper as if it were a canvas, creating the image as a painter would, altering it with chemicals, casual toning, scratching and sometimes tearing the negative. This physical manipulation of the photographs is intended to play with the indexical perception of photographic imagery. The manipulation creates a suspension of belief that allows me to transcend ready-made perceptions of the visual world.

I combine the qualities of verisimilitude that are inherent in photography with the nebulous referential qualities of drawing. The unfolding

narrative is based on insinuation rather than representation. I am interested in the malleable qualities of fiction that are invented by the viewer. It is the ambiguity hovering between what is imagined and what one sees, between reality and fiction, that I hope will reinforce the sense of intrigue for the viewer. I attempt to make work that is ambiguously specific, chaotically tranquil, and viscerally banal. For me, the magic is in the in-between places. To a certain extent, the process is revealing the narrative. My time in the darkroom represents pursuit of these images and the evolving narrative. This pursuit of the images continues even as I am printing the negative. Often the result is purely accidental. I pursue them through trial and error. In the darkroom, the images that ultimately reveal themselves to me rarely resemble my initial intent. I have learned

to accept what the images reveal to me and subsequently weave that into the story, thus creating a sort of meta-narrative.

Technical Statement

The foundation for these images is photography. To a certain extent, the process is revealing the narrative. After the photographic prints are finished, I respond to them by drawing and painting their surfaces. I see the drawn elements as having a general iconographic quality. That is, a drawing of a house represents the concept "house," in a general sense, whereas a photograph of a house represents the specific qualities of the house photographed. It is the inherent verisimilitude of photography, and the generalities inherent in drawing, that I attempt to meld or juxtapose.

Peter Hardie

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Artist Statement

This work is based on a visual reaction to waterfalls. The intent is to realise the sensations evoked by fast-moving white water enclosed within a dark environment of rock and trees: the movement and intertwining patterns of water, the water's shape, and the passage defined by the underlying rock structure.

The image is primarily monochrome, reflecting the lack of any strong colours within the water. The play of light reaching the water is weak and changeable. The environment of rock and trees was a secondary influence compared with the water and has been negated in the image, because the waterfall defines the underlying structure. The focus is on the interaction of the water movement and pattern and the light and dark of the scene.

This series of images is evolving from the initial reactive studies of the falls to developing the structure of the image, the vertical line, the black and white, the textural variations, and the strong abstract statements the images are beginning to make.

Technical Statement

The scene consists of models of the underlying rock structure over which the water flows. These models are not directly visible, being black in colour. The waterfall is simulated using a particle system. The primary tool used in the making of the sequence was Softimage XSI. The workflow entails:

Creating the particle emitter and its settings (rate, spread, and speed).

Creating the particle type and its characteristics (colour, transparency, size, mass, shade, shadowing, and noise). Particular use was made of the Perlin noise function. The basic 2D particle shader was used for both efficiency and versatility.

Creating obstacles and natural forces. A number of hidden obstacles were used to control the water flow.

Using motion blur on the particles to simulate the falling water surface.

Creating lighting to simulate the dappled light reaching the water surface.

falling water
40 inches x 33 inches
Inkjet print on aluminium



Shunsaku Hayashi

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<http://www1.odn.ne.jp/~haya4hello>

Artist Statement

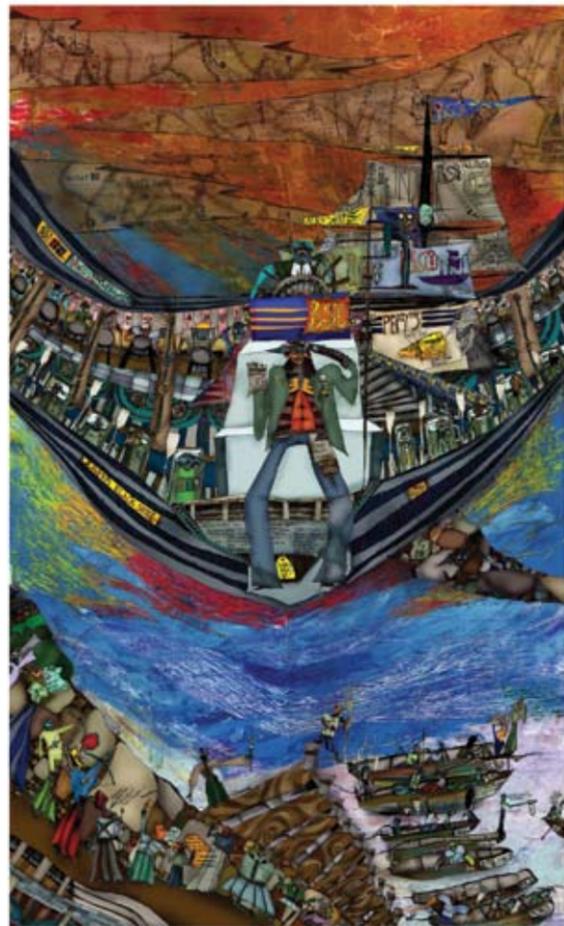
I drew this picture when I was in Yokohama, where Admiral Perry arrived in Japan, for an exhibition of my work. At the time, I was studying this major event in history class.

The artist is a ninth-grade student in Osaka. His personal exhibition in Osaka and Tokyo in 2006 was well received, and his work is included in the Epson Color Imaging book published in 2007.

Technical Statement

This work was drawn with a ball-point pen. The drawing was scanned, then coloured in Photoshop and merged with oil pastel and watercolour.

Perry's
118 inches x 66 inches x 1.5 inches



Artist Statement

In northeastern Japan, there are traditional folkways called Namahage, which I imagined as I drew an old castle on the Oga peninsula. The title of the work, Do-Bu-Ro-Ku, is the name of the local, unrefined sake in Akita Prefecture.

Technical Statement

This work was drawn with a ball-point pen. The drawing was scanned, then coloured in Photoshop and merged with oil pastel and watercolour.

Do-Bu-Ro-Ku
118 inches x 82 inches x 1.5 inches



Taraneh Hemami

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Artist statement

Most Wanted investigates the nature of perception, recognition, and representation while examining construction of the image of the new enemy. Interpretations of a series of faceless portrayals of the most-wanted terrorists as identified by the United States government contemplate the ways in which stereotypical perceptions of people are created while pondering the relationship between image and identity.

A few months after the 9/11 attacks, I came across a comically blurry, low-resolution online image produced by the US government that pictured over 70 of the "Most Wanted" international terrorists. Each suspect was pictured from the neck up. Although individual features cannot be made out because of the extreme pixelation of the image, general characteristics can be seen on the majority of people pictured - darkish skin, men with dark facial hair, women wearing head coverings. Even with such minimal visual information, there is an overbearing sense that these physical traits define terrorism as we know it and characterize the image of the "New Enemy" in the 21st century. Taking off from this foundation, Most Wanted addresses stereotypical misrepresentations of an entire group of people and challenges the Islamophobia and xenophobia that have given rise to distorted images of people of Middle Eastern descent living in the U.S.

Most Wanted explores the idea of portraiture and the widely differing contexts in which portraits can be seen. In the specific context of the U.S. government "Most Wanted" terrorist list, the faces with darkish skin, beards, and head coverings are positioned as individuals who need to be apprehended and brought to justice - the faces of the enemy and the proponents of global terrorism. Yet, without names, gender, or even cultural background, the blurry abstract faces are simply visual representations of unknown people. The absolute reduction of concrete facial information makes them completely unrecognizable and brings forth the question of where the danger actually lies. Are we conflating and equating people with nations?

Drawing upon my Iranian cultural heritage, I attempt to disrupt the tendency to generalize by placing these same abstracted faces into very different contexts, referencing common beaded wall-hangings and rosaries and mass-produced iconic memorabilia of and about religious figures, symbols, and stories available at any bazaar in Iran as well as shrines for those considered martyrs. Most Wanted brings forth the question of context and challenges assumptions that we, as a viewing audience in the U.S., may unconsciously or implicitly bring to these abstracted images of people who could be anyone. The project questions our potential to fall into easy stereotyping and misunderstanding of cultures that are not our own.

Technical Statement

The handcrafted beaded curtain is an exact replica of a low-resolution poster I downloaded from a United States government web site immediately after September 11, 2001. The image was graphed and color-coded, creating a pattern to follow for beading over 850,000 6-millimeter, faceted plastic beads, each representing a pixel in the original image. The heads were individually beaded and restrung together to create the large curtain, resulting in a further-abstracted version of the already-degraded image.

Most Wanted was commissioned by Intersection for the Arts, funded in part by the San Francisco Foundation, and assembled in the gallery with the help of many in May 2007.

Most Wanted
Hand-crafted beaded curtain
9 feet x 7 feet

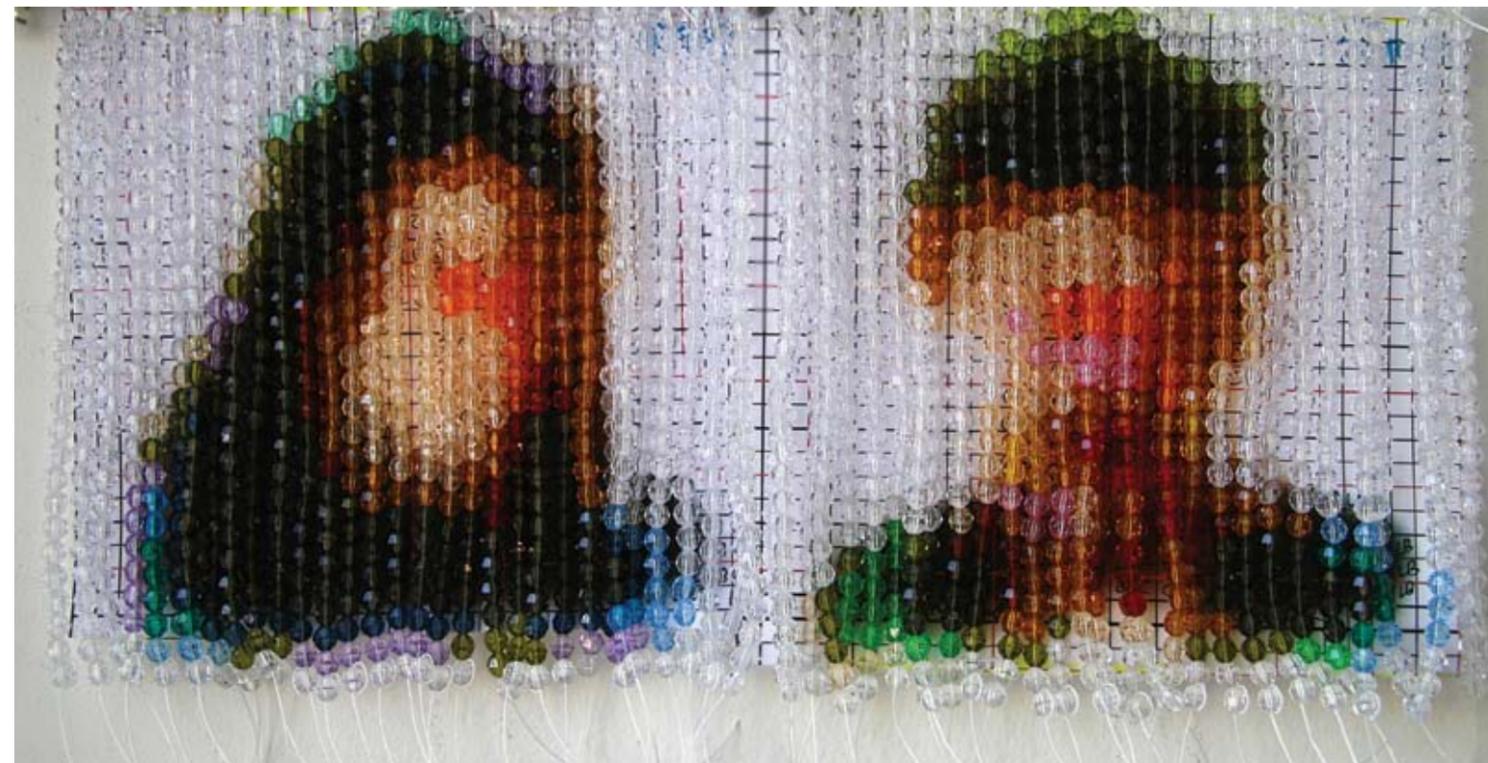


Photo
Shadi Yousefian

Guy Hoffman

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Artist Statement

Time Bracketing is an interactive time-as-space compositing technique intended to photographically depict a time-varying space or object in a single image without spatial distortion or visual fragmentation. One of its main artistic motivations is restoration of the central role of subject over technique in digital time-as-space manipulation. Time Bracketing is also intended as a new way to consider architectural photography, as shown in these studies. The images were created using custom authoring software written specifically for this process.

In the past, various techniques have been employed to represent the passing of time in media. However, most of these applications are procedural in nature, insofar as they follow a strict mapping between time and space. Short-span mappings, such as those employed by traditional slit-scan photography, usually contrast dynamic with static subjects, leading to an intentional distortion of moving scene elements. Longer term time-as-space studies usually focus on static subjects, as commanded by the temporal and spatial resolution of the study, rendering dynamic elements illegible. Additionally, long exposure time, procedural mapping from time to space, and the necessary choice of a static subject often result in seemingly unchanging areas of the image.

In either case, the manipulation, whether it's distortion or fragmentation, and not the subject, is at the conceptual stagefront of the artwork.

Time Bracketing attempts to restore the centrality of the scene's subject to the realm of time-as-space photography, by giving the artist tools to create a seamless study of the changing scene. This results in unique time-as-space photographs that provide for simultaneous faithful depiction of both dynamic and static elements, while retaining a natural-seeming, yet physically impossible representation of the subject.

Technical Statement

Time Bracketing studies time-as-space by combining a set of images of a subject taken from the same or similar vantage point into a single image. Each image covers an arbitrarily sized and arbitrarily oriented trapezoid-shaped slice of the final photograph. In addition, each image slice is gradually transitioned to neighboring image slices by using cross-dissolving superimposition.

Importantly, the number and choice of images, the size and orientation of slices, and the length and direction of transition between the images are not procedural, but instead left to the artist's decision based on the subject and illumination at hand.

By using arbitrarily large segments, the artist can choose to incorporate dynamic elements into the composition, while at the same time using small slices to span a long time period over a short spatial area. By manually extending the spatial transition, the photograph can seamlessly combine temporally distinct and color-distinct image slices. By varying the orientation of each slice, the artist can adapt the mapping to the particular object, disguising the transition in the subject's own geometry.

Time Bracketing is made possible with a new authoring software written in Objective-C using Apple Computer's Core Image Frameworks.

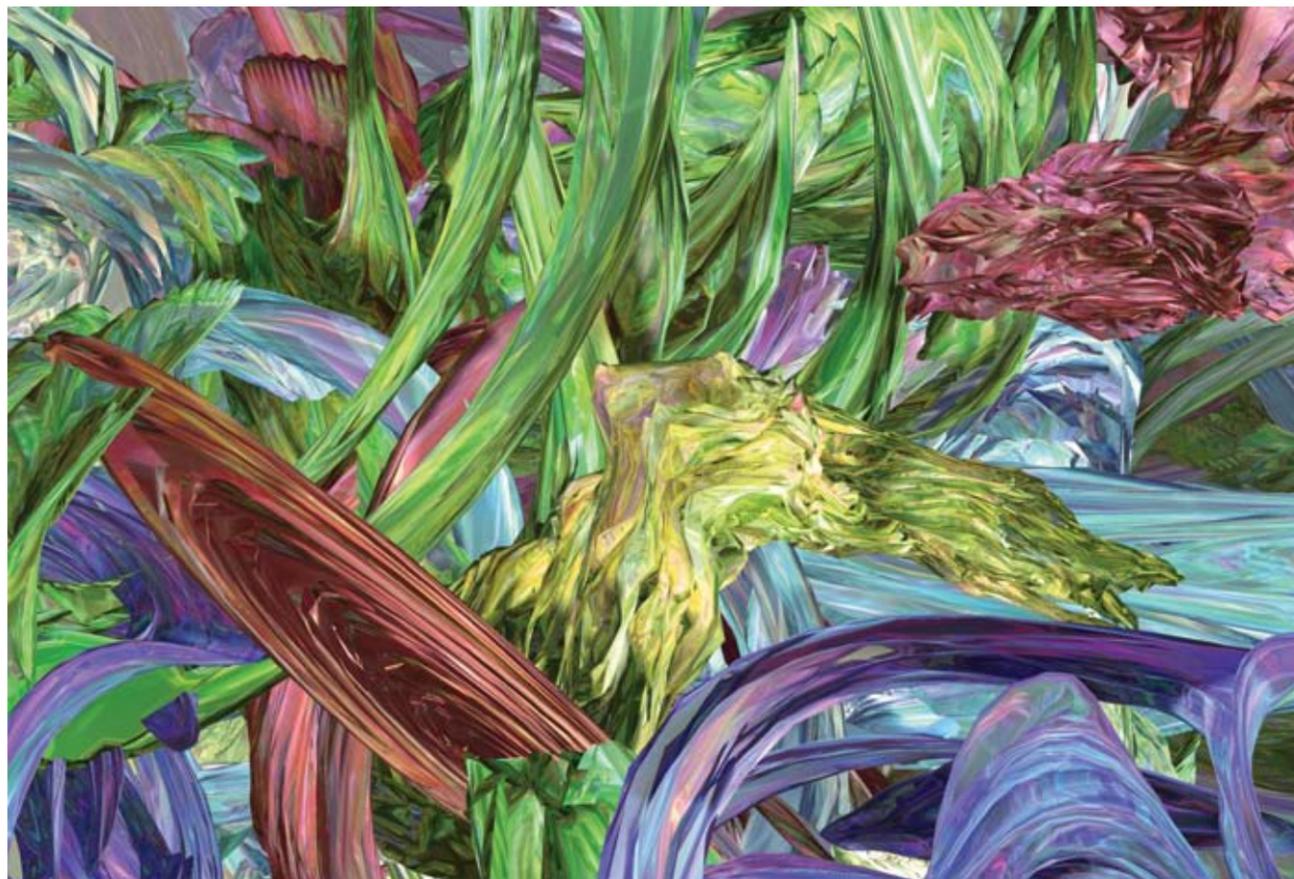
Time Bracketing Study: Stata Latin
18 inches x 32 inches x 1.25 inches



Masa Inakage

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Flow
32 inches x 23 inches



Artist Statement

I have been pursuing expression of abstract realism: an integration of photo-realism and abstract expression. Three-dimensional models are recursively deformed to produce abstract expression while preserving the three-dimensional shading and its crystal-quality material. This series depicts internal emotional states. Calm emotion is expressed as quiet forest and river. Troubled emotion is expressed as swirls and a somewhat chaotic environment. Romantic emotion is expressed as a romantic evening.

Technical Statement

The works are produced by deforming 3D models by recursively twisting and bending. These models are placed in 3D space to show the inter-relationship between the objects. The images used for textures and reflection maps are rendered by ray tracing to create the metallic quality.

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Hawker, Hacker, Herald
Three digital collages



Artist Statement

Terry Eagleton recognizes that “among students of culture, the body is an immensely fashionable topic, but it is the erotic body, not the famished one. There is a keen interest in coupling bodies, but not in the labouring ones.” *Hawker, Hacker, Herald* responds to this neglect. It addresses issues of labor, access to technology, and challenges in communication.

The International Fund for Agricultural Development (IFAD), a specialized agency of the United Nations dedicated to eradicating rural poverty in developing countries, finds that 75% of the world’s poorest people live in rural areas and depend on agriculture and related

activities for their livelihoods. It is often overlooked that agricultural workers, especially women and children, need suitable tools to save time and energy and increase agricultural productivity. Available tools are often too few and inefficient, especially because they are almost always designed to be used by men. *Hawker, Hacker, Herald* is a visual meditation on the gaps between these practical needs and realities and the aspirations of workers in an increasingly globalized economy.

Hawker, Hacker, Herald aspires to the hyper-reality of dramatic 19th-century landscapes of the American sublime, and like Frederic Edwin Church, gives pictorial voice to the

political, social, and cultural issues of our era. It acknowledges the irony in the fact that food production has become a negative economy. In the Sisyphean futility of their tilling, farmers spend more on costly inputs for industrial production than they earn. Until computer hacking destabilizes systems of “wealth creation” that force odious debt on and increase mortality rates among real food producers, the harbingers of vengeance shall hew the horizon.

Technical Statement

These digital collages were produced from source material for an installation in progress consisting of animation video projections. Source imagery was created through low-tech methods and processes. Miniature dioramas, tableaux vivants, shoebox still lifes, and surfaces and textures constructed from cauliflower, pebbles, plastic eagle wings, clay, and Vaseline were fashioned to create cinematic experiences and images. These images were then digitally manipulated in hundreds of layers in Photoshop.

Matthew Kenyon

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Improvised Empathetic Device
22 inches x 16 inches x 10 inches
Telepresence, performance, wearable technology, data mining/data visualization



Artist Statement

The current US-led war in Iraq has suffered enormous casualties. The toll on civilian lives is vague and many times unreported. The number of US casualties, many of which are the result of IEDs (improvised explosive devices), is reported and monitored. Overall, the media coverage of these atrocities is given very little attention, often overshadowed by more personal and spectacular stories, such as child abductions and runaway brides. This project aims to give real and physical presence to the death and violence occurring in the Middle East, by creating direct physical pain from the US military casualties, whose toll and details are silently relegated to small or no print.

A custom software application continuously monitors a web site (icasualties.org) that updates the accumulation and personal details of slain US soldiers. When new deaths are detected, the data are extracted and sent wirelessly to custom hardware installed on the IED armband. The LCD readout displays each soldier's name, rank, cause of death, and location and then triggers an electric solenoid to drive a needle into the wearer's arm, drawing blood and immediate attention to the reality that someone has just died in the Iraq war that is raging far away.

Technical Statement

The IED's data mining consists of real-time data acquisition and automated message generation. These stages are continually executed on a dedicated server.

The first stage uses PHP data-mining software to compile a database of US casualties. A custom program reads and compares casualty data in order to determine the exact number and personal details of new US casualties. The second stage uses automated scripts to open an email application and inserts the new casualty data into specific fields for name, age, cause of death, and location. This message is then sent wirelessly to a repurposed alphanumeric pager.

The IED's data actualization consists of activation of a solenoid armed with a sterile needle and automated archiving of casualty data. These stages are executed entirely within the IED armband.

The first stage uses a 12-volt solenoid driven by a custom-built circuit board modeled on the map of Iraq. Components are placed in accordance with major population centers. When the armband receives new casualty data, it displays the data via an LCD display and then triggers the solenoid. A sterile needle located at the tip of the solenoid penetrates approximately 1/8 of an inch into the user's arm.

Davida Kidd

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Artist Statement

In my most recent work, concrete walls in a small room are covered with dark elements, warnings of a world of transgression, of suppressed violence and sexual ambiguity, aggression and timidity, anxiety and exuberance, resistance and control, playfulness, and ironic humour. Historic and contemporary references jostle against each other. The sense of unease in the room is directly related to the unease of the world in which we live, where unpredictable violence is never far away, particularly in this new digital age, where new strains have been put on the human psyche.

My work combines elaborate staging followed by editing in Photoshop. I create personality "types" that subtly explore the fragility and ferocity of the contemporary human condition. For this piece, I staged friends, neighbors, and acquaintances in the room, and collaboratively allowed them to respond to the environment. The characters are particular to the urban environment of the west coast of British Columbia, where I live.

Technical Statement

Over the span of two years, a concrete room was painted with images "that merge historic and contemporary references with the detritus of Shangri-La: an uncanny mélange of dolls' houses, comic strips, fairy tales, and frightening toys." The texts and images that fill the studio walls were collected, painted, or drawn and meticulously arranged and manipulated using digital scans and traditional collage methods, and then writ large in water-soluble paint.

People were staged in the room and photographed with a medium-format camera. Transparencies were scanned at a high resolution, and Photoshop was used to make additions, deletions, and subtle scale changes. Many times, more than one negative was used in the making of an image.

The Weight of Reason (After Goya)
20 inches x 29 inches x 1 inch
Lightjet digital print on photographic paper



Guns and Kolbasa
20 inches x 29 inches x 1 inch
Lightjet digital print on photographic paper



Kazuhiko Kobayashi

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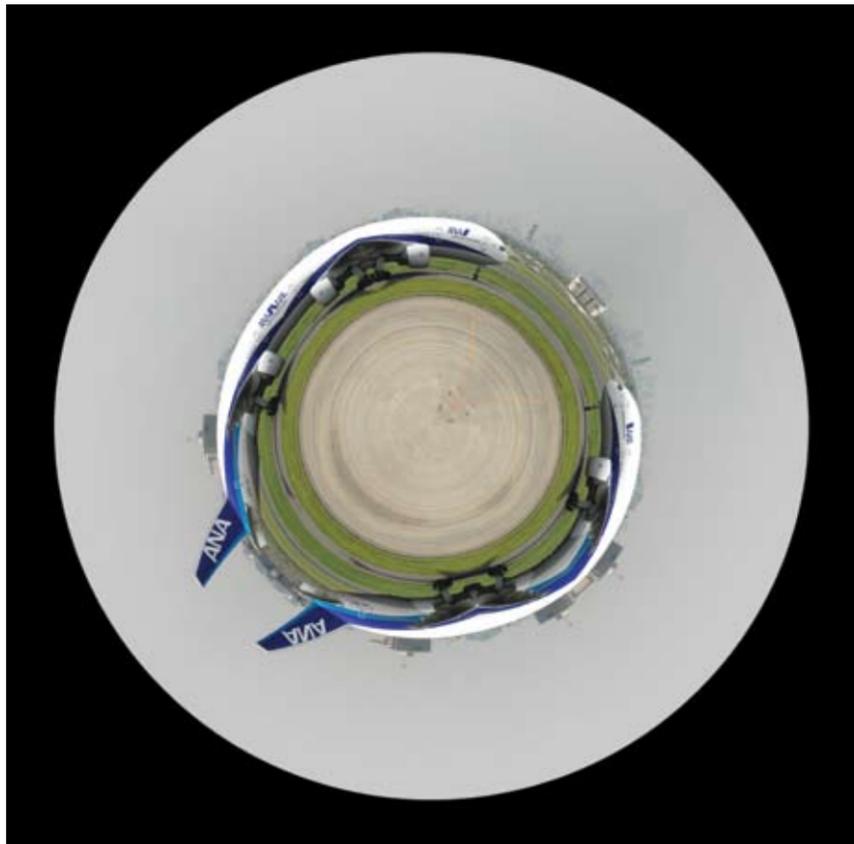
Artist Statement

An original photograph is an ordinary everyday scene. With a computer, I created a surreal world based on an original. Using this new imaging technique and digital technology, I want to widen the possibility of photographic expression.

Technical Statement

I captured a square image with a digital camera, then output the image in a circle. The photograph was processed with Adobe After Effects and color-tuned with Adobe Photoshop.

The finished image was printed by an Epson PX-9000.



Viktor Koen

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Artist Statement

Witness is a series of 12 prints addressing issues of civil and personal responsibility as they develop due to the rapid proliferation of digital media. This proliferation has allowed independent organizations of any size and individuals from around the world who were previously unable to communicate with a wide audience to do just that. This has not only allowed each one of us to express opinions or present facts, but also allowed us to witness more current, past, and future events in a broader arena than ever before. This new-found ability comes with a slew of benefits but also a heavy burden. When we can so easily search and find, we assume responsibilities that were unknown just a few years ago.

The Witness series combines photographs chosen for their graphic symbolic quality. Their darkness reflects the issues confronting the "witness." Their one eye sees it all but unfortunately rarely acts or reacts, like the cyclops that can see but has blind spots that limit his vision. The digital veil covering the entire length of the images serves as a separator between reality and perception. It also brands and deforms the witness in an attempt to show the immediate personal effects of what happens elsewhere, no matter how distant.

The fact that the witnesses have no names, only numbers, makes them objective but also objectifies them, just like exhibits submitted in court. They review and contemplate our traumatic past as a species but also the present that seems sometimes as bleak as our past. They "testify" on environmental issues, technology, and politics. They also criticize traditional media outlets in all of their shapes and forms.

Technical Statement

The digital, on-screen process of creating the images follows loose pencil studies that determine concepts and compositions or hours of mixing and matching parts and objects. Adobe Photoshop 6.0 is used to connect and manipulate old and new sources into seamless visuals. Only the basic set of software filters and effects are utilized on the multi-layered files, some colored artificially and others retaining their original colors. Most shadowing is done from scratch in order to control the lighting (since the different parts were photographed under equally different light conditions, indoors and outdoors) and enhance three-dimensionality (no 3D software is used at any point of the process).

The computer allows for transparent-layered results and incorporates photographic materials that are essential to the creation of surreal, yet momentarily believable, images. Digital photography (an eight-megapixel Olympus E-500) has proven to be an invaluable asset because it allows easy capture of objects and textures for the compositions. The main advantage of working digitally is the freedom to constantly change and adjust any aspect of image making. The ability to combine different sources (digital or not) on one platform pushes the process toward expressive and experimental directions.

Witness No.02 and No.04
13 inches x 19 inches
Digital print on paper



No. 6, from the series Thread and Carbon, Oil and Steel
24 inches x 38 inches
Lambda print



Artist Statement

The images in this series were assembled from fragments of familiar and historically rooted processes. They are imaginary landscapes made solely from reproductions or representations of nature (for example, land as represented in a painting [oil] and flowers as represented by embroidery [thread]). The different image sources are meant to subvert the generally sublime nature of the landscape, one of the most contested spaces in any culture.

The natural world, as observed and recorded by the camera, rarely measures up to our conception of its inherent power or raw beauty, depending on which ideological filter we use

to endow the image with meaning. Because we lack the ability to truly replicate this world – and in the face of our utter failure to fully dominate it – we are left instead to imitate it, to sift through our accumulating detritus to fabricate fictions worthy of our collective ambitions.

The imaginary kingdoms here, though brimming with fantastic narratives and colorful characters, are mere references to the histories they portray. Their world is not of the lens, but rather a fertile proposition of possibility culled from the artifacts of well-intentioned merchants of delight.

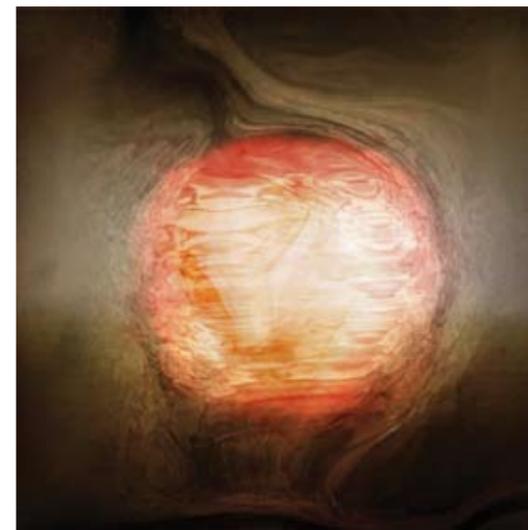
Technical Statement

Digital technology was used to capture (by scanning) and integrate (using Photoshop) the various parts of the images, which come from a wide range of sources. No camera was used, and the final prints are made from a digital file.

Sally Grizzell Larson

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Core
35 inches x 35 inches x 1 inch
Digital print



Qian Li

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Artist Statement

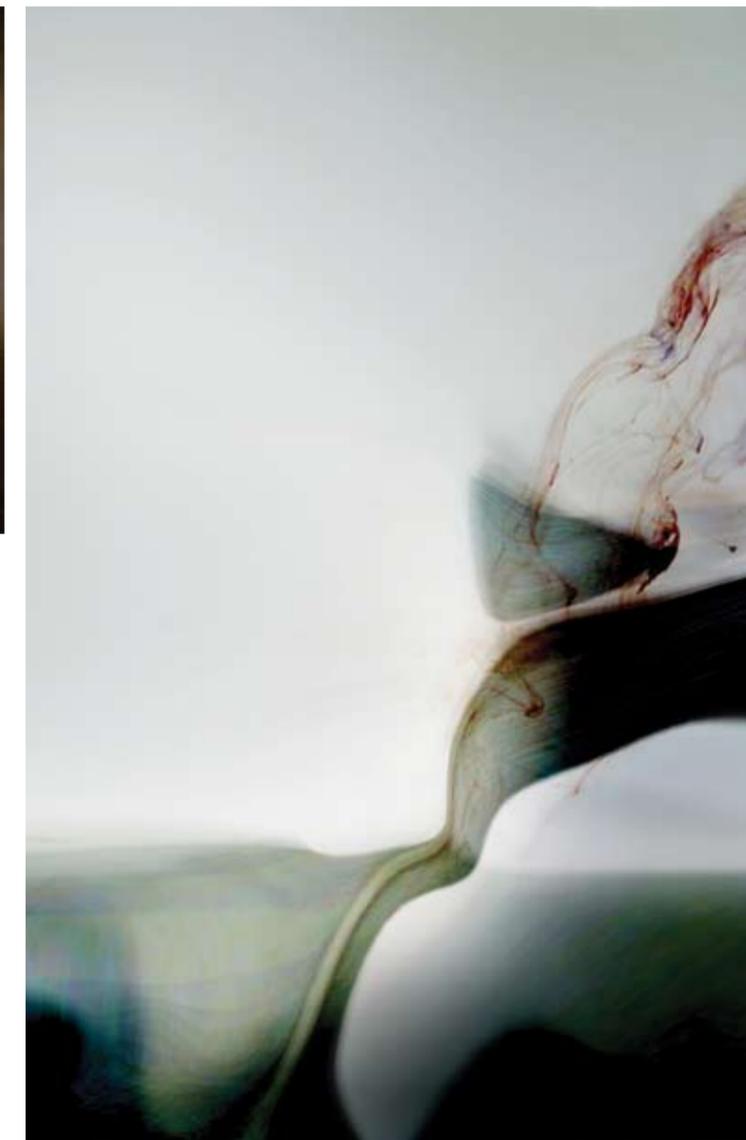
Trained as a traditional Chinese painter, I have adopted the principle of “expressing the spirit through form.” Along with painting, I have studied Chinese philosophy and researched Buddhist art. During the past few years, I have traveled to Dunhuang and Tibet to study their art and attempt to understand their spirit, both visually and philosophically. These themes in art and lyrical composition have served as the foundation for my work as a new-media artist.

My artworks explore the conceptual resonance between contemporary and ancient mythologies of energy. Digital images create an environment that suggests, metaphorically, that the medium can reach beyond the physical world into a realm where matter slips effortlessly into energy, reproducing a world in which breathing is synonymous with peace and beauty.

Technical Statement

Large-scale prints were created with paint, digital photography, and computer manipulation. The complete process included painting on rice paper, scanning the paintings into a computer, adding elements shot from a digital camera, and then layering and shaping these elements in Photoshop using a Macintosh G5.

air
25 inches x 38.6 inches x 1 inch
Digital print



Andy Lomas

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Artist Statement

These images are composed of layered trajectories followed by millions of particles as they flow in fields of forces. Each individual trajectory is essentially an independent, random process, with the trail terminating when it reaches a deposition. Collectively, however, the paths combine to form delicate complex shapes of filigree and shadow in the areas of negative space that the paths don't reach.

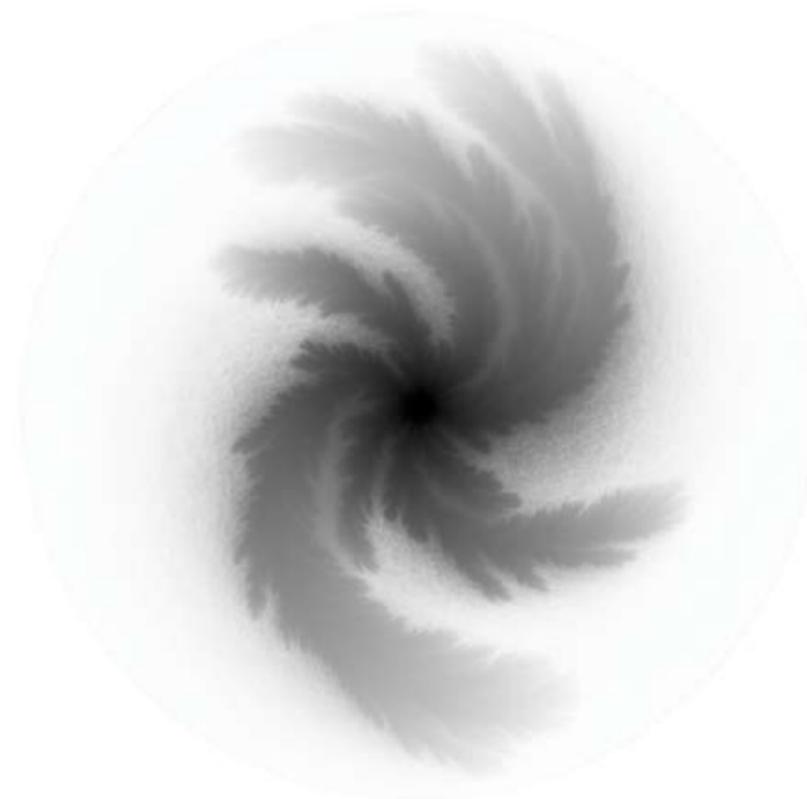
At first glance, there appear to be definite shapes and forms outlined in the final images, but closer inspection reveals this effect to be ephemeral. Over time, as particles deposit they create a growing region that future particles will not be able to enter. Subtle shadow-like structures form in the areas that trails no longer reach, reflecting the growth of the termination zone. There are no actual defined boundaries, simply intricately structured gradients of tone formed by the end points of trajectories.

These images can be seen as the natural duals of the Aggregation images exhibited at previous SIGGRAPH conferences. Whereas the images from the Aggregation series directly show the deposited structures themselves, these images illustrate the other side of the same processes: the paths followed by particles before they deposit.

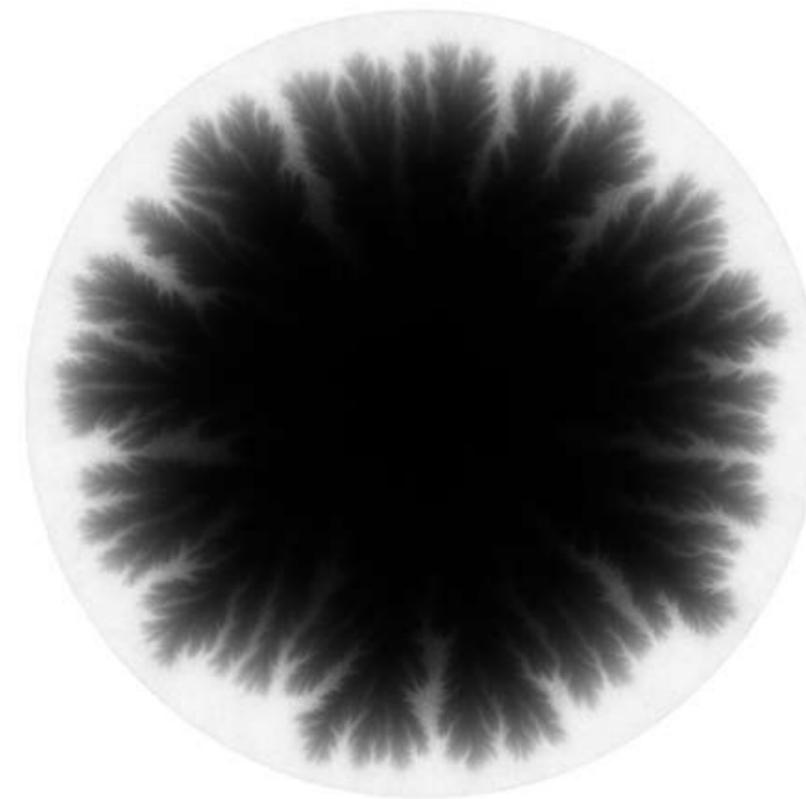
Technical Statement

The base algorithms used to generate the forms are variations on diffusion-limited aggregation. Different structures are produced by introducing small biases and changes to the rules for particle motion and deposition. The growth-like nature of the process, repeatedly aggregating on top of the currently deposited system, produces reinforcement of deviations caused by small forces applied to the undeposited particles as they randomly move. This means that small biases to the rules and conditions for growth can produce great changes in the finally created form. All the software used to simulate the structures and render the final images was written by the artist in Visual C++.

Flow 9
24 inches x 24 inches x 1 inch
Algorithmic image



Flow 19
24 inches x 24 inches x 1 inch
Algorithmic image



Letters I, Letters II
14 inches x 14 inches x 1.5 inches



Dan Lu

Digital Art
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Artist Statement

Chinese calligraphy is the art of making elegant handwriting. It is a rare treasure in the history of civilization, and a unique gem of Asian culture. It is comparable to painting in its ability to evoke emotion and strength through a variety of forms and designs. The primary goal of *Letters* is to affect this cognition through presentation of calligraphy patterns built with procedural letters, textures, colors, and shapes, and to integrate the traditional calligraphy art structures, principles, and historic meanings in a digital way.

Technical Statement

These images were created with Chinese handwriting calligraphy and digital software.

Jessica Maloney

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Artist Statement

The journey of the spirit is woven through this piece. A weathered house is shown, the gaping holes in its wooden exterior allowing the elements in. Clearly, this structure is no longer a home, but is in the process of fading into history. The stories once played out inside its walls are slowly getting lost in time. The house exists in a field, and the wide-open space is a perfect image of memory, expansive and exhausting. Yet overlapping and perhaps entwined with this memory field are the organic lines of a map. The map twists and turns across the surface, intersecting

Intertwined: Person, Place, and Time
38 inches x 36 inches x 2 inches
2D print collaged with a map, found text, beeswax, and oil pastels



Technical Statement

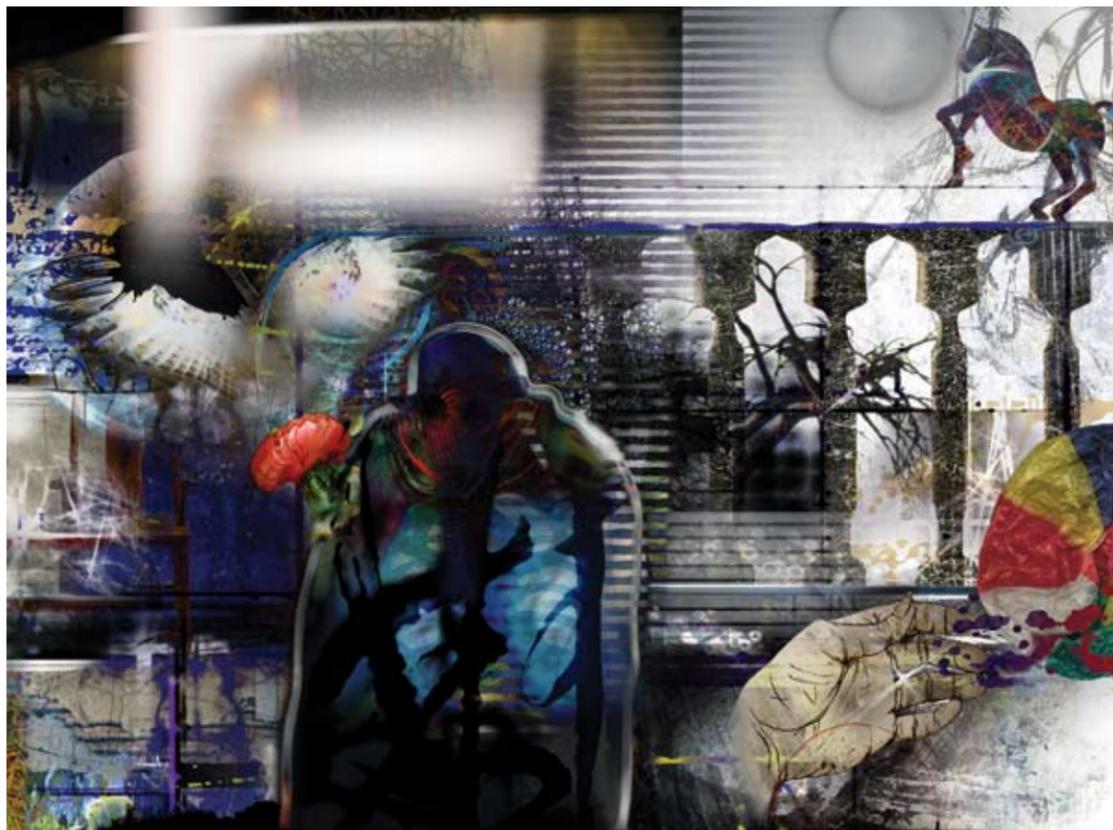
Jessica Maloney works with digital and traditional techniques to create two-dimensional images. She begins by collecting source material, which can consist of photographs she has taken, found objects, found text, or a combination of the three. She then scans all the images and objects that she plans to use and opens them in Adobe Photoshop to begin creation of the image. In Photoshop, she manipulates the scans, rearranges elements, and selectively changes areas of the image until it feels right. Sometimes her composition is planned in advance, but most often

it evolves and resolves itself as she works on the image on screen. When the work is final, it is printed as an archival print using a Hewlett Packard 5500 large-format printer and further manipulated with mixed media.

Chi-wah Man

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SelfPortrait06_Diptych
26 inches x 34 inches each (left & right)
Archival inkjet on canvas



Artist Statement

As a result of the ever-expanding information technologies, “pluralism” becomes a common phenomenon in our lives. For me, reality is many individual components rather than one interconnected thing. I intentionally put fragmented pieces of motifs, memories, different color schemes, some hints of related inner structure, together to make a diptych that can be viewed separately or as a whole to express my attitude toward the ever-transforming surroundings and cultures.

For me, “Art” is a way of promoting the healing, growth, and wholeness of individuals.

All my works are my self portraits: they reflect the inner part of me and give me access to examine my feelings, my thoughts, my experience, my conditions – my life. I strive to overcome fears and embrace discoveries and changes. The purpose of this exploration is to make the unconscious conscious and eventually make a more integrated self.

With technological invention comes an expanding and altering of consciousness. This phenomenon leads to the making of a new, postmodern self – one with many personae but no unifying center. It sounds

like a contradiction, yet to some degree this is true. We are all contradictions, divided against ourselves. But such temptations for distraction and fragmentation will eventually seduce us to look more closely at ourselves and invite us to discover within ourselves a higher power of wholeness and integrity.

Human beings are an exploring species. Searching for ways to understand the relationship between the world and themselves, and to make a more integrated self, seems to be built into the genetic code of most people. That is my goal in making art.

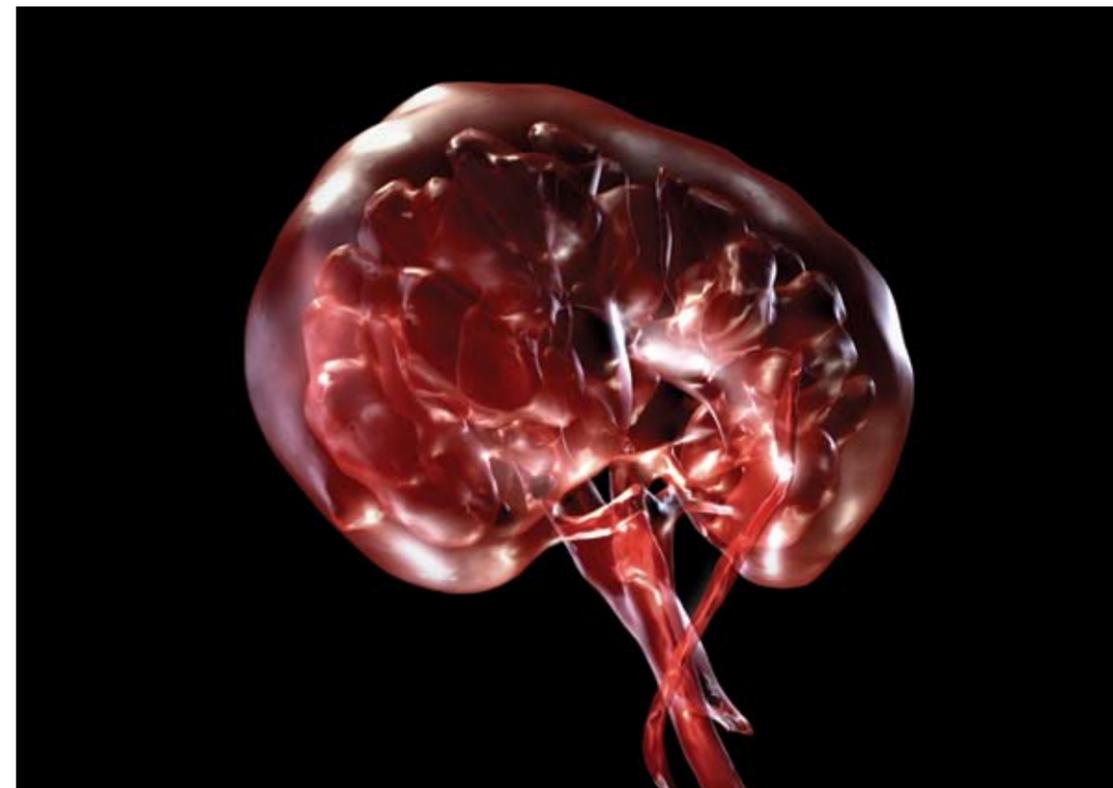
Technical Statement

Each era generates its own languages to synthesize the spirit of the time, and computer technologies change the way we process the world, creating new space for exploration and transformation of consciousness. I search for new ways of generating art works through micro-electronics, to establish new parameters for seeing and comprehending reality. That’s why I use digital technology to investigate SelfPortraits.

John McGhee

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Integrity: structure and surface
30 inches x 40 inches x 1 inch



Artist Statement

These images explore my own interest in beauty, structure, and harmony within the human vascular system, in particular the flow of blood through the human kidney. Medical technologies such as magnetic resonance imaging (MRI) allow clinicians to see ever deeper into our body spaces for the purpose of diagnosis. However, interpretation is restricted to the eye of the trained specialist in a clinical or scientific environment. In this work, 3D computer visualisation techniques were used to create a hybrid image that bridges scientific medical data and artistic imaginative vision to create a new aesthetic.

These images were created as part of an ongoing collaboration with the Department

of Clinical Radiology at Ninewells Hospital, Dundee, Scotland. My artwork has focused on the visualisation of the human vascular system and methods of emotion-based interpretation of MRI scan data. The reasoning behind these particular images was to expose and communicate the fragility of the human kidney. The intention was to suggest an internal jewel-like quality to anatomy, highlighting an inner space otherwise hidden from the human eye. My goal was to produce an image with a degree of sensibility in an attempt to bring the patient closer to the nature and beauty of inner human structure, and also as a means of penetrating the complexity of arterial disease.

Technical Statement

The starting point for the creation of these images is MRI data. In the first instance, DICOM-image-slice data were exported from a Siemens Avanto MRI scanner located in Ninewells Hospital. These cross-sectional slices are acquired during an angiogram procedure performed on a patient being scanned for a vascular condition known as renal artery stenosis. This diagnostic scan involves a contrast agent being injected into the vascular system during the scan procedure. From the DICOM files, the data are imported into a medical 3D reconstruction package (Materialise Mimics) and, through a process of thresholding and segmentation, an ISO surface is extracted. After it is cleaned up, the 3D geometry

is imported into AutoDesk Maya 7, and the anatomy is creatively interpreted with the addition of shaders, lighting, and rendering.

Nataliya Nadtoka

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Artist Statement

This digital work presents a continuum of the past, present, and future of Ukraine in photographs of three generations: an old lady, a girl, and a high school graduate. The Orange Revolution that took place from November 2004 to January 2005 has significantly changed Ukraine, but the question still remains whether future generations born after the revolution will have a better life than the previous ones.

Digital media and globalization changed Ukrainian life in many ways. Borders are more open to international tourists. It's not unusual anymore to hear someone speaking English on the streets of Kiev. People are more tolerant of other cultures as they become more aware of them. We go to Vietnamese restaurants, drink Czech beer, and eat American burgers.

My niece learns the alphabet with a specially designed computer program. My nephew listens to American music. And my parents watch the same commercials as the rest of the world. We get CNN and MTV via cable television. Our streets are full of German cars, and shops sell Japanese cameras. On almost everything you buy you see the tag: Made in China. We have the same prices as Western Europe with Ukrainian salaries. At the same time, we keep our rich Ukrainian heritage, our traditional cuisine, our folk art, and our literature.

Ukraine is still in a transitional period, and a change from communism to capitalism causes many problems, but our children give us hope for a better future.

Technical Statement

This work was made with 2D digital imaging techniques such as blending, image filters, and artistic effects. The photographs were taken with a Fujifilm camera. Images were later digitally processed with GIMP.

Viva la Revolution
9.3 x 13.8 x 3



Joe Nalven

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Artist Statement

Migration has always been part of the human condition. With the advent of written language, we could be identified: identity cards or passports. The next step to evolving a transnational identity, while acknowledging the need for public recognition of the individual as opposed to anonymity, may be a world identity card. These exemplars are drawn from my ethnographic research, photographic explorations, and mixed-media experimentation, and then recomposited as a digital composition.

One might assume that the human condition presents a consistent framework for understanding one another. Yet, at the same time, we recognize the influence of different cultures, family and peers, social class, access to media, and a host of particularities. Into this mix of the common and the particular comes the artist with a question: how to make sense of this “blooming, buzzing confusion.”

I seek to extract the quirkiness of this human condition. At the photographic level, I am mindful that there are millions of pictures snapped every day, so what makes one

particular picture different beyond the fact of my taking it? Digital photography permits real-time monitoring of the flow of events, people, and things – an opportunity to capture the moment more readily with the dialogue between photographer and captured images, an ability to edit within the camera and, time and opportunity permitting, to retake the picture. There is much quirkiness to capture, even as a photorealistic image.

Then there is the second adventure of many digital artists, who are perfecting their style of commenting on those seemingly “real” photographs and transforming them into a “more real” sense of what the artist saw in that moment. This two-fold adventure (and at times a three-fold adventure, when the artist adds new substrates) is my pathway into image intensification. The end goal of this intensification is to portray the ineffable. One might liken this seeking to the “that thou art” (the Ultimate Reality in Hindu tradition). The image speaks for itself and for me. The translation into text is but a shadow of that vision. So look, see, and enjoy.

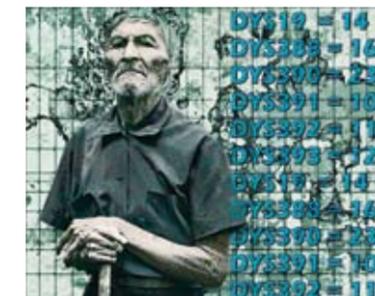
Technical Statement

I frequently work in multiple processes, including photographic capture of textures and typical subject matter with a photographic attentiveness. In this series of images, I imported a variety of photographic imagery (some of which were taken in the 1970s in Cali, Colombia during my research, while others are more current photographs) and a Mercatur map image, and recomposited them in Photoshop. An extensive array of images resulted from image intensification with filters, digital painting, blending layer modes, and color manipulation. Recompositing also included cut-and-paste techniques that I used as a collage artist when working in collage/montage modes.

More recently, I have been experimenting with presentation of the final image, whether face-mounted on plexiglass (as here) or laminated onto brushed aluminum. One of the layers in these pieces was a Jackson Pollock-style painting created by using a controlled-splashing technique of patinas on brushed aluminum and baked in the sun. The resulting images (on the metal surfaces) were then photographed and montaged into the evolving World Identity Cards.

World Identity Cards

8 inches x 10 inches x 1/8 inch
Digital composition, montage, printed on archival paper and face-mounted on plexiglass



Marte Newcombe

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Contributing artist

Greg Shirah

Artist Statement

These works were produced by a collaboration between NASA scientific visualizer Greg Shirah and artist Marte Newcombe. Shirah works closely with scientists and their data to create visuals explaining scientific results for educational purposes. Often in the process of creating and testing visualizations, he encounters interesting imagery that he feels would be useful in their nine-year-long collaboration, so he saves the test images and sends them to Newcombe in Australia, and she adds them to their collaborative projects. In this way, the visualizer and the artist collaborate around the globe using scientific data of phenomena (hurricanes, cyclones, typhoons) that occur in many parts of the world. Visualizations of these types of data are helping to educate the world about how complex planetary systems function.

In the artwork, Newcombe adds her own metal sculptures, which act as the protagonist in the narrative, while the scientific data are used as both the environment and texture. The curves were generated from a scientist's volumetric hurricane simulation, based on data from actual hurricane research. Some of the curves were generated mathematically using parametric equations. Wind-flow field data were used to create the curves. Usually starting positions for each curve are determined based on a scientist's desire to investigate a particular effect (such as how air moves from the surface up into the hurricane). For the curves, the starting positions were constrained to unusual, discreet regions of the hurricane, creating an effect of starting in a tight formation then propagating out and around the storm. These starting regions were chosen to test the flow-field system and achieve an artistic result.

Eleven Fifty Nine
32 inches x 12 inches x 1 inch
Digital print on archival watercolor paper



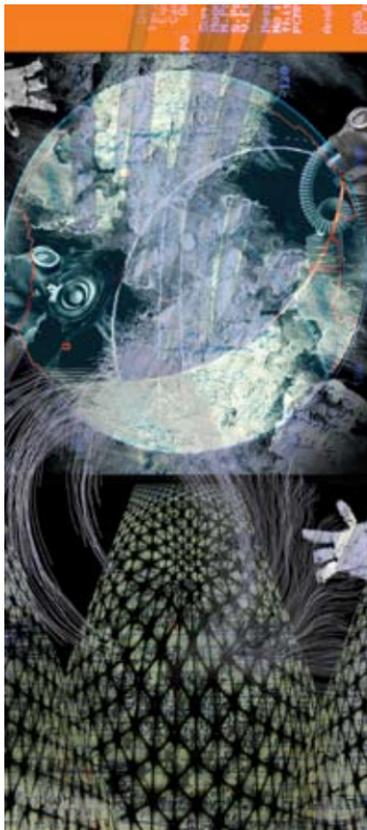
Landfill
41 inches x 10 inches x 1 inch
Digital print on archival watercolor paper



Running on Empty
42.5 inches x 10.8 inches x 1 inch
Digital Print on archival watercolor paper



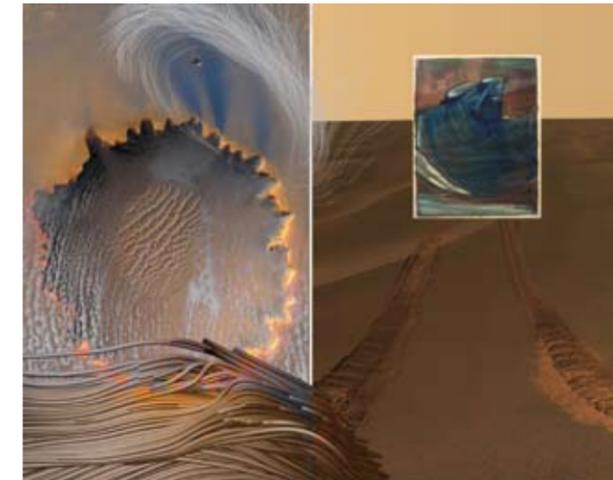
Robotman
27.5 inches x 13.3 inches x 1 inch
Digital print on archival watercolor paper



Drought
15 inches x 22 inches x 1 inch
Digital print on archival watercolor paper



Here, There
21 inches x 26 inches x 1 inch
Digital print on archival watercolor paper



Till Nowak

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Salad
70 inches x 82 inches x 5 inches
High-resolution rendering created in 3ds Max and Photoshop



Artist Statement

Salad contains several twisted connections between our cultural past and present. The veggie monster combines the 500-year-old vegetable creations of Giuseppe Arcimboldo with the more recent surrealist creatures of H.R. Giger. At the same time, it combines the components of a classical oil painting with today's digital techniques.

A common aspect of Till Nowak's work is inversion of the spectator's point of view. Here it is reflected by wholesome vegetables in the role of a bloodthirsty creature. Maybe we can recognize ourselves in this ironic portrait of our society as humans acting like wolves in a sheep's clothing. We are so well off as inhabitants of a wholesome society that we ignore the fact that we also live in a world in which people die of hunger and bloodshed through famine and war on a daily basis.

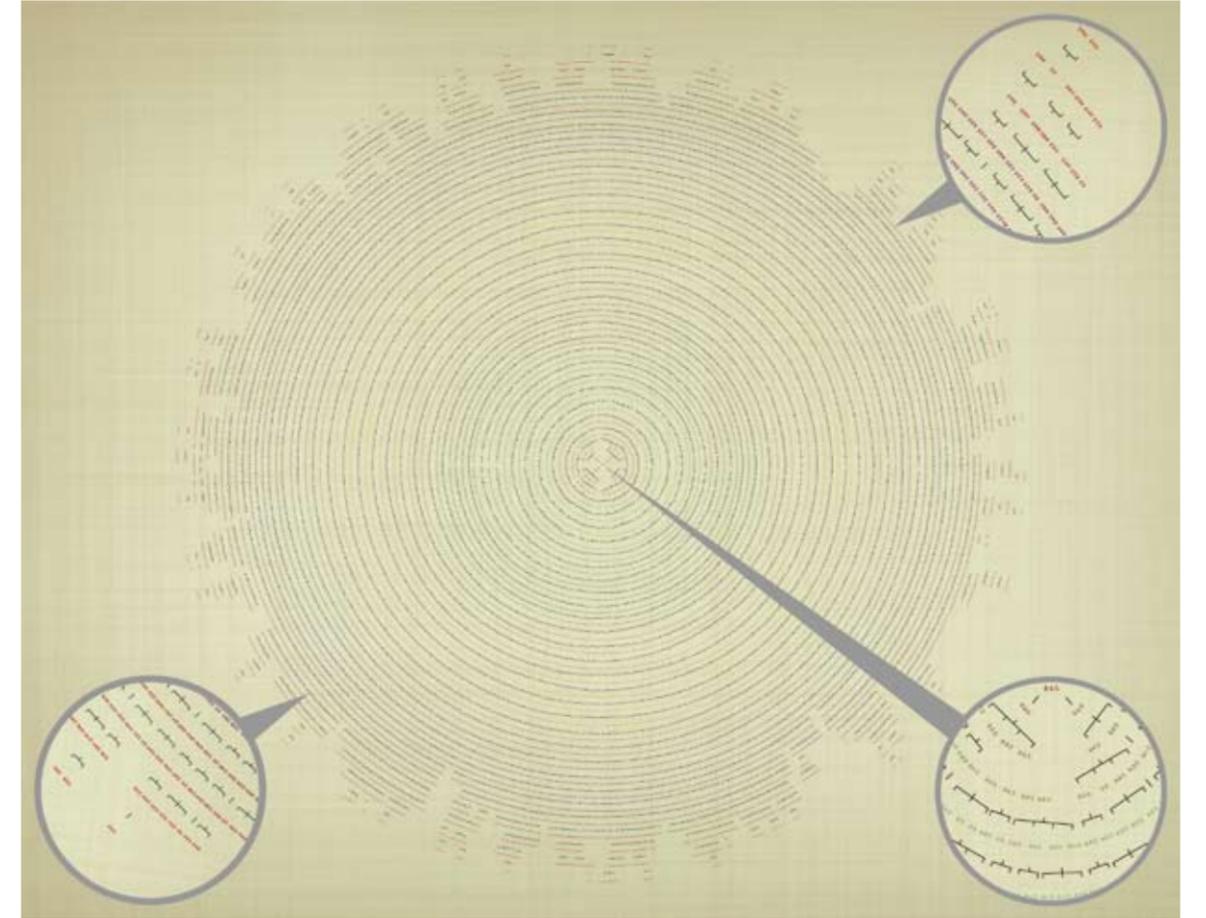
Technical Statement

Till Nowak modelled 12 digital vegetables in 3ds Max using classical polygon-modelling techniques. The 3D models were combined in different sizes and variations to match the shape of a hungry creature. Photographs of fresh vegetables were used for the texturing process. The final image was done by rendering several passes, such as diffuse, specular, and ambient occlusion, using 3ds Max, a Scanline renderer, and mental ray.

Jin Wan Park June Seok Seo

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Visual Genealogy
4 feet x 4 feet x 1 inch
Print on traditional Korean-style paper



Artist Statement

The family tree is a unique theme of study in information visualization. Korean family trees are collections of books that focus on the blood relation on the father's side, records of the family status, and private records on ancestors' behaviors, achievements, and epitaphs, a history book for the clan. Like traditional Chinese family trees, Korean family trees are not simple charts like those seen ordinarily in the West. The names of hundreds of thousands (sometimes several million) of people are recorded in the family trees, so in

addition to their original purpose of promotion of family bonds and respect for ancestors, they are used as precious materials in examining history over several hundred years.

This artwork presents the visual image of a family tree. It enables an intuitive glance at a mammoth dataset and presents a unique visual experience of the history of several hundred years during which the progenitor was multiplied to hundreds of thousands of descendants, who were again split into sev-

eral branches. The innumerable names that I encountered while visualizing my origins gave me an opportunity to reflect on my existence. The people whose names do not appear in this family tree (for example, SIGGRAPH 2007 attendees) have similar family-tree patterns in their ancestries. I believe they will live more serious lives if they recognize this fact.

Technical Statement

This artwork is one successful result of the various attempts to enable intuitive understanding of mammoth datasets. Though the Korean family tree is a huge dataset, visualizing it with a remarkably low degree of complexity is possible since only the blood relationship on the father's side was recorded, and marriage between people who share the same ancestor (those who are listed in the same family tree book) was prohibited by tradition.

Tom Piper Sushma Bahl

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*Collaborators
(Left to right in the compilation image)*

Iwan Parry
Chris Orr
Molly Thomson
Richard Cox
Kivita Nayar
Chris Lloyd
Samit Das
Sue Hunt
Annie Giles Hobbs
Tom Piper
Trupti Patel
Vinnay Sharma
Veer Munshi
Ashok Ahuja
Dale Devereux Barker
Manish Modi

Artist Statement

Nine artists from Britain and nine artists from India, all with widely varied backgrounds and experience, collaborated on this digital research project based at the Cardiff School of Art and Design, University of Wales Institute, Cardiff. The project was initiated by PROOF (V-6), the printmaking research group, during the spring of 2004. The first phase of the project was a series of organization and planning meetings with our Indian partners, Sushma Bahl (formerly Head of Arts and Culture for the British Council, India) and Sunaina Anand (Curator of Art Alive Gallery, New Delhi).

Some of the participating artists were working in digital media. Others had little or no experience with computer-based art, but they were interested in exploring the artistic potential of digital media.

For the Indian artists, the process of exchange and development of the work is as important as the resulting exhibition of their original collages and high-quality digital prints, which they have specially created for this project. The project's networking, sharing of artistic concerns, and exchange of ideas and images are important opportunities, which the participating artists value greatly.

Technical Statement

The "collage original" was considered to be the most creative and efficient way to begin the digital portfolio project. The 18 artists were asked to create collages about "identity" using traditional materials. Then the originals were scanned and proofed via high-quality inkjet machinery in the printmaking studios in Cardiff. Each work is actual size printed on special coated fine-art paper using archival inks. The digital prints in this portfolio are editioned in small numbers (no more than 20 of each) plus artists proofs.

V9-U9 A Digital Portfolio
Sixteen 12-inch squares in a cluster



Dave Poindexter

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Artist Statement

Roadside Artifacts along Old Route 66 is a new image series I began in the last year. These images grew out of an on-going project to document the present-day reality of Route 66 with a pinhole camera. For several years, I have been using a digital camera to record potential sites and then document the process of making pinhole photographs on large format film.

Several of the images I made during the summer of 2006 with the digital camera captured situations that were so transitory that I was not able to make a pinhole image of the site at that time. Many of these images had particularly strong dynamics of light and environment that I felt could best be communicated with a selectively manipulated print. These manipulated images are intended to provide a different subjective interpretation of these sites that will hopefully serve as a useful contrast to the pinhole camera series.

Technical Statement

The images in this series were captured with a Canon Digital XT camera at maximum resolution, then cropped to 4 x 5 format at 4500 x 3600 pixel resolution and selectively manipulated using multiple masks, image filters, and color adjustments. In most cases, several different manipulation strategies were applied to copies of each image, and the best solution was chosen for the series portfolio. The images were then printed with an Epson Stylus Pro 3800 on Arches Infinity Textured archival paper.

Meteor Crater Observatory on Old Route 66, Arizona
22 inches x 28 inches x 1.5 inches
Digital image capture, selectively edited and manipulated, digital print



Joohyun Pyune

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Artist Statement

My work is about encompassing the general human emotions that are multi-layered in all of us. By submerging beyond the emotions of the heart, I come into contact with an inexplicable feeling of melancholy, and my works quietly speak for me through the layering of gossamer fabrics. Also, my experience of Western and Eastern cultures, from Buddhism to Existentialism, from traditional to modern, helps me to realize the differences and to uncover the galvanizing connections among them.

With the amazing flexibility of computer graphics, I share my thoughts, even contributing to some of the burdens we carry, like the weight that Sisyphus keeps pushing uphill. My challenge as an artist is not to make momentary visual entertainment but to create another way of sharing our deeper soul on a spiritual level.

Technical Statement

Dye sublimation similar to traditional print-making is used to capture and present the image. Since they are processed via heat transfer, digital images become friendlier and less manipulated by computers and printers, whereas the final images are intentionally and unintentionally created by the artist's physical intervention. The unique and rich textures in these digital images were created in repeated experimental heat transfer processes.

Blue Faith
60 inches x 36 inches x 5 inches
Dye-sublimation prints on layered fabrics and real branches inside layered fabrics



Don Relyea

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Artist Statement

The hair particle drawing project was originally intended to be and still is a component of a larger ongoing project. It is based around a ParticleFX engine I wrote for a game some time ago. I altered the particles to behave like growing hair. In the early stages of development, the particles rendered long and flowing hair with loose curls. For the Big Hairy Bush application, hair with a tighter, more erratic curl was required. In general, hair growing in darker areas grows longer and thicker and maintains a tighter curl. This is to preserve some of the detail that would get overgrown otherwise. Hair will continue to grow over time. This portrait of President Bush was grown over a weekend.

Big Hairy Bush is intended to be non-partisan and humorous. It is my belief that all career politicians have something unattractive that they hide. Intentional or not, the nature of their careers requires compromise and back-door dealing. President Bush was a convenient subject for this exercise, but it is certainly possible to replace Bush with any career politician from either political party.

The beauty industry and the advertising industry have conditioned us to hide or cover up so called "unwanted hair" such as back hair, pubic hair, arm pit hair, and leg hair. We cover it up, shave it, and wax it off. With the proliferation of mass media, it is desirable to whitewash the unattractive traits of politicians. Using hair as a metaphor for that which is undesirable, what would politicians look like if they did not cover up their unwanted hair?

Technical Statement

A small gif thumbnail of the president was downloaded and used by the application for reference. The gif is parsed by the application at runtime, and grayscale index color values are stored in a lookup table. A particle manager was coded to prevent the application from overloading. The particle manager references the lookup table, and based on the lookup table data, it assigns a group of hair particles to locations in the canvas area and initializes them.

Once a particle has been initialized, it begins to draw itself, maintaining a variety of vectors including scale, opacity, mutators, growth direction, and life span. Mutators are passed to the particles to cause them to grow grayer or more kinky. When a particle has reached the end of its life span, it disposes of itself and messages the particle manager that it is done drawing.

Big Hairy Bush – Hair Particle Drawing Project

20 inches x 15 inches x 2.5 inches
Epson K3 BW matte print on watercolor paper of algorithmic image



Chris Rowland

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Artist Statement

The wreck of the HMS Royal Oak lies on the sea bed in Scapa Flow, Orkney. This image was produced from 3D point-cloud data gathered using high-resolution multi-beam sonar during a survey of the wreck in 2006 by ADUS.

Historic shipwrecks on the sea bed are of significant interest for a number of reasons. They may contain toxic or explosive cargo or may leak corrosive substances that can adversely affect the local marine environment.

However, due to the fact that many of these shipwrecks around the world are not visible to the general public, their environmental and historic significance is often ignored. My work attempts to raise awareness of their potential impact on the environment as well as their place in history, often as tragic memorials to loss of human life, by representing them as monuments, often serenely beautiful, as the sea slowly deconstructs them.

This image is intended to be reproduced as a limited-edition, commemorative print to raise funds for the Royal Oak Survivors' Association and the Royal British Legion, organisations that provide support for ex-servicemen in the UK.

The multi-beam survey by ADUS was commissioned by the Ministry of Defence (UK) Marine Salvage department, which is managing extraction of oil and munitions from the wreck. The 3D visualisation is a result of my research at the School of Media Arts and Imaging at the University of Dundee, Scotland. The ADUS team consists of: Chris Rowland, Martin Dean, and Mark Lawrence.

Technical Statement

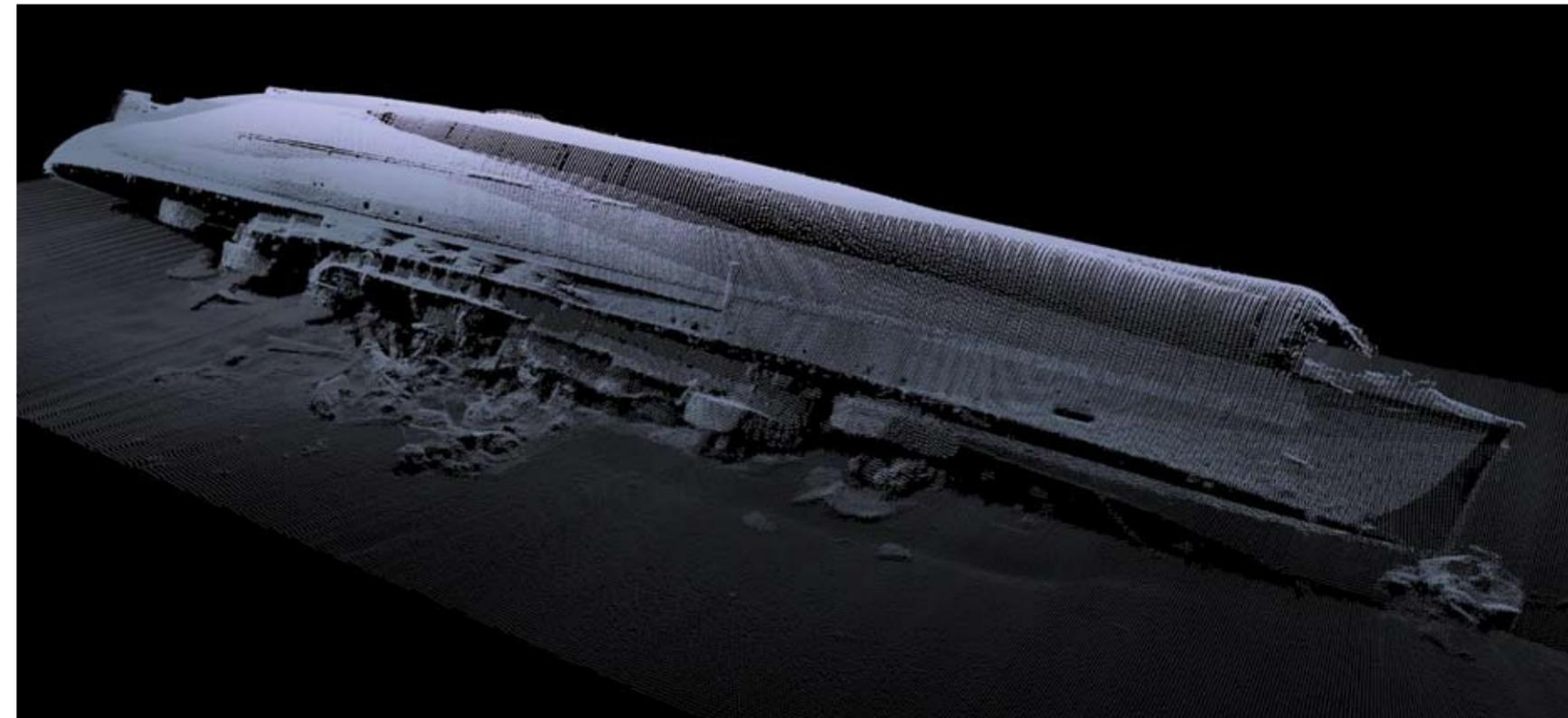
The Reson multi-beam sonar system builds a three-dimensional model of the wreck and the sea floor by collecting many millions of accurately positioned "spot heights" derived from the sonar "pings" sent and returned to the sonar head as the survey boat travels back and forth over the wreck. The millions of XYZ points generated from the survey are edited to filter out digital noise, and the resulting dataset is imported into animation software.

The next step is to align the separate lines of data to piece together a 3D image of the complete shipwreck. Each pass can reveal additional details that add to the overall picture. Our method operates to an accuracy of approximately one centimeter, ensuring that any problem of alignment is minimised.

The final step is to use a proprietary plug-in for Maya to apply colour and the illusion of light to the point cloud (imported as particles) and apply principles of digital cinematography to produce the final image.

HMS Royal Oak

Size: 24 inches x 36 inches x 2 inches
3D visualisation of multi-beam sonar point-cloud data



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Alma de la Serra

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Artist Statement

Linkages combines a topological exercise in dividing the picture plane with half and quarter circles with a play of geometric proportions and colors based on the Fibonacci series and the related Lucas series. Within the armature of arcs and planes are embedded images from a variety of sources: the Visible Human project of the US National Institute of Health, images from the Hubble Space Telescope, high-resolution images of earth from various NASA space flights, and digitized photographs by Alma de la Serra. Algorithmically produced texts add another layer.

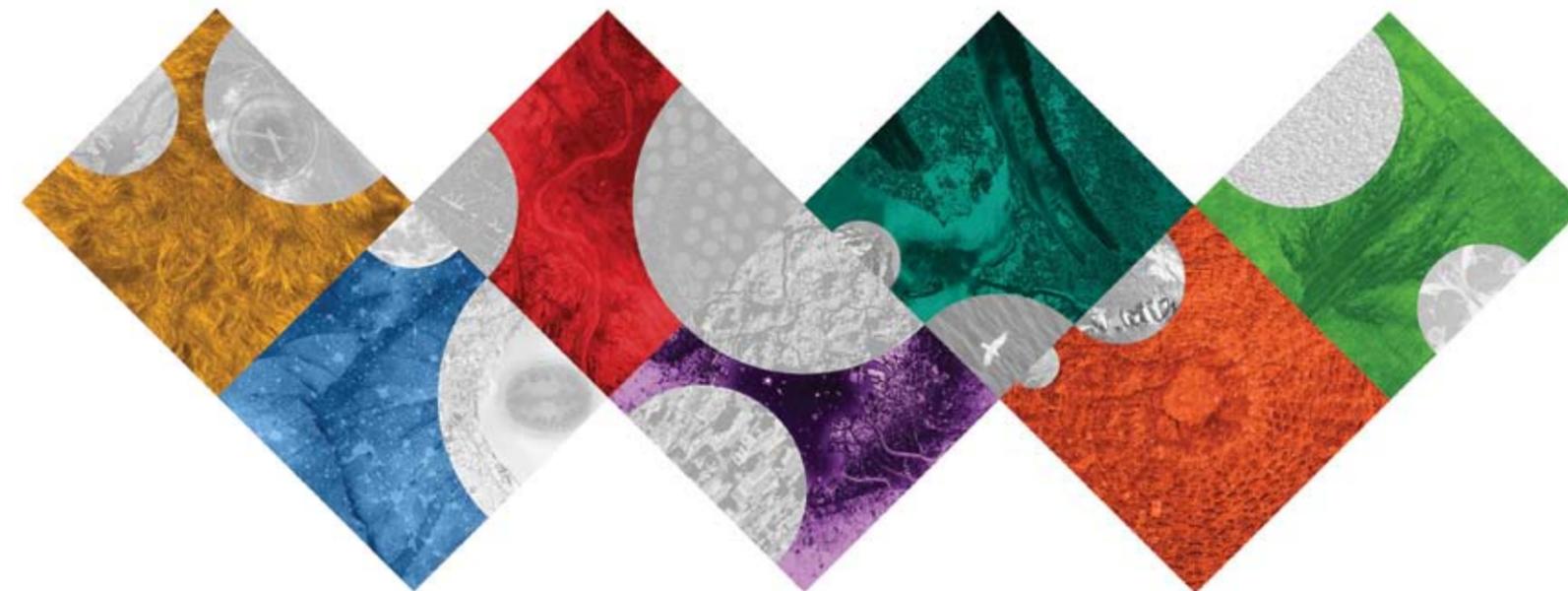
Fictitious artist Alma de la Serra, invented by the flesh-and-blood artist Paul Hertz, is a former high school math teacher turned photographer and a member of the Ignostudio, an artists' cooperative home to three other fictitious artists: dysfunctional fortune-teller Juan Teodosio Pescador, also known as "Ignotus the Mage"; painter Darrell Luce; and digital media artist Paul Hertz. These fictitious artists offer Hertz an opportunity to critique and parody the experiences of artists marketing their art and struggling to survive, and to develop "product lines" very different from his own.

While de la Serra has not yet provided a full explanation of her imagery, it is not out of place to suggest that she is looking for a way to engage social issues while placing her point of departure in a formal idiom. She states of her work: "My premises are simple: the world is deeper than our knowledge, and everything in it belongs to life. I have learned to understand this through number, measure, and reason, and to my astonishment have found that these tools, rightly understood, can speak to the breadth and depth of our experience."

Technical Statement

Linkages consists of seven square modules that can fit together into any configuration, provided they are hung with the diagonals of the squares perpendicular to the floor. Images were digitized from analog film or obtained from public-domain sources on the internet. In Adobe Illustrator, topological divisions of a square by arcs were regulated by Fibonacci and Lucas series to create an armature for images. The armatures and images were combined with texts in Photoshop. Linkages was printed on a high-resolution inkjet printer with an archival inkset on archival paper.

Linkages
17.0 inches x 45.25 inches
Multi-panel collage of digitized photos, texts, and geometry



Mark Stock

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Artist Statement

What attributes come to mind when you think of a tree, a mountain, a river, a cloud, or the sun? It is likely that your thoughts are the same as those of your ancestors, or of cultures living beyond the reach of modern technology. The shapes of natural things such as these compose a language of symbols that is less reliant on cultural context than the written or spoken word. We recognize these shapes because we are immersed in a world that obeys physical laws, each of which manifests in predictable ways, and in doing so recreates familiar objects and patterns. The applicability of physical law to every place humans have lived makes these experiences common, allowing the symbolic language to bridge culture and geography.

One of my goals for *Dynamo* was to use computational science to depict a dynamism that is pervasive and uncontrollable yet confined. The research code that created the shapes in *Dynamo* works very much like a flocking algorithm, in which every particle is constantly affected by every other particle, though with physically motivated interaction rules. The combined action of magnetism, temperature, and convection (which, conveniently, are all amenable to the same computational methods) creates within the sun the dynamo effect. These intertwined forces result in amazingly complex fluid behavior. This image pays homage to the chaotic and powerful mass of hydrogen and helium at the center of our solar system that has historically provided enough predictability and mystery to both soothe and stimulate humankind's desire for knowledge.

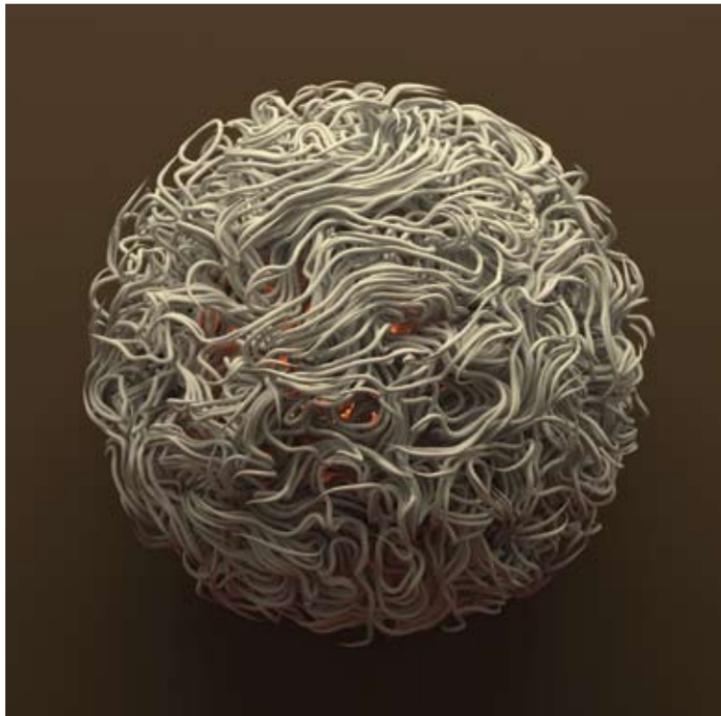
Technical Statement

Digital technology was integral to every aspect of production of *Dynamo*. Once the idea was created, but before any geometry was defined, a detailed computational fluid-dynamics simulation was run. This calculation involved tracking the evolution of vortex particles within a closed spherical volume according to the rules of fluid dynamics. After the simulation parameters were iteratively refined and the flowfield was initialized, a subprogram processed the locations and strengths of all of the vortex particles, and traced curves through space according to the same rules that moved the vortices.

Once the proper environment was designed and lighting fixtures set, the entire scene was passed to the rendering software. The full-size image was created with Radiance, one of the few scientifically validated lighting simulators. Radiance uses a hybrid radiosity algorithm to closely approximate the actual physical light transport and inter-reflection throughout the complex scene. Radiance numerically followed hundreds of billions of light rays in order to create the image.

The resulting high-dynamic-range image was print-optimized and exported to a Lightjet printer, which exposes photographic paper with laser light at a resolution of several thousand pixels per inch.

Dynamo
30 inches x 30 inches x 1 inch
Lightjet digital print



Artist Statement

Green Streamlines depicts flow paths through fluid turbulence. All of us spend our entire lives swimming in oceans of air or water and surrounded at every moment by these invisible, rapidly fluttering paths. They allow hummingbirds to fly, they churn the clouds, and they shape the ocean currents, yet their beauty sadly remains hidden from view.

One theme prevalent in *Green Streamlines* and much of my visual work is the reduction of complex physical phenomena into their constituent parts and the subsequent exploration of those parts. In scientists' language, I eliminate terms in the equations and search for beauty in those limited spaces. This is especially easy with computers, because a simulation that included all of the known terms or phenomena would be computationally intractable. Nature, however, blends them together effortlessly, to be disentangled by clever experimentalists. As a simulationist, I have the easy job.

Technical Statement

Digital Technology was integral to every aspect of production of both *Dynamo* and *Green Streamlines*. Once the conceptual design was complete, a collection of random vortex particles (representing small parcels of fluid with roughly constant rotation) was created to fill the space. Custom software processed the locations and strengths of these vortex particles.

The proper environment and lighting were then designed, and the entire scene was passed to the rendering software. The full-size image was created with Radiance, one of the few scientifically validated lighting simulators. Radiance uses a hybrid radiosity algorithm to closely approximate the actual physical light transport and interreflection throughout the complex scene. Radiance numerically followed tens of billions of light rays in order to create this image.

The resulting high-dynamic-range image was print-optimized and exported to a Lightjet printer, which exposes photographic paper with laser light at a resolution of several thousand pixels per inch.

Green Streamlines
30 inches x 30 inches x 1 inch
Lightjet digital print



Susana Sulic

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Artist Statement

Following a temporal flux, we wander from one space to another through cybernetic windows. Like the projection of an expanded universe, the forms are regenerated and disintegrated. The whole global world is translated to an algorithm. In a metaphoric way, we introduce the concept of reversibility in the viral sequential process.

Two new worlds, a macroscopic one and an invisible one, take life before our eyes. The values of technology and plasticity are questioned by a different sensitivity. Science becomes a poetic concept: notions of dream and unknown heighten in a phantasmagoric way and produce a poetic and scientific decontextualisation.

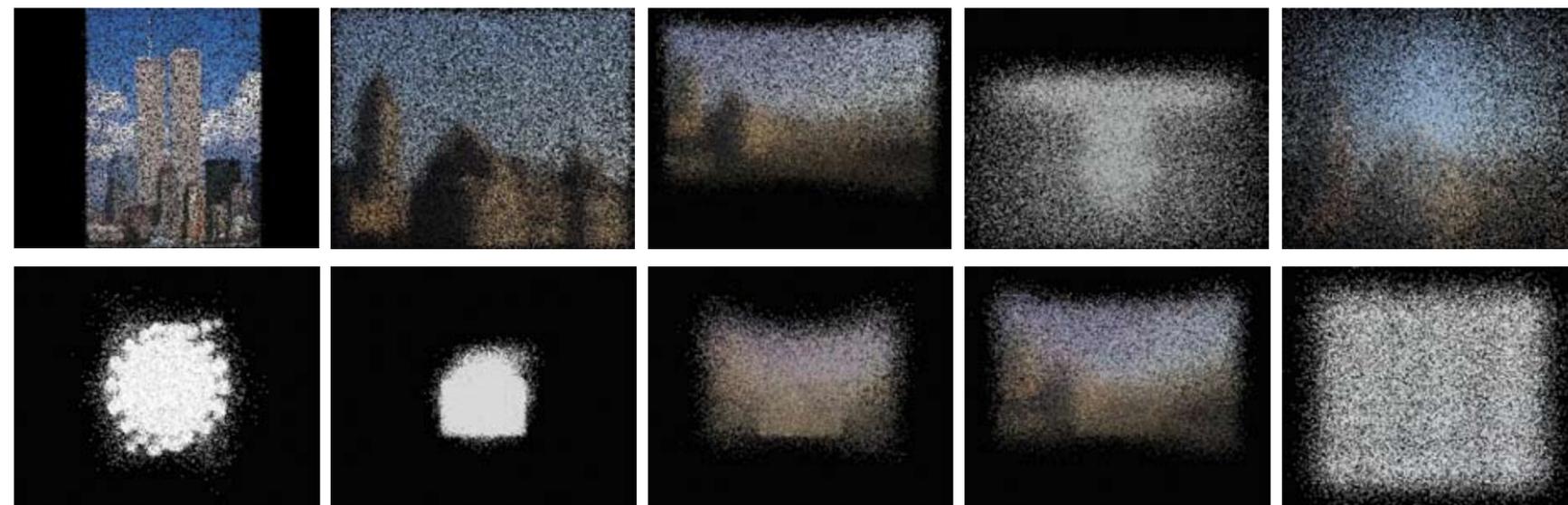
From the algebraic text on the base, a peculiar dynamic in which the words are changed into images is generated: viruses and pixels melt in a hypothetical city. The spectator travels from the past to the present time and from the present to a virtual space. Therefore, those stories reflect a poetic-scientific cosmology.

Since the 1980s, I have integrated scientific content, poetry, and technology. The plasticity of the image is my main concern. I also investigate and create sounds to produce "total environmental" works.

Technical Statement

My objective is to create a kind of generative grammar, by using a grid similar to the one used in biotechnology. In my work, images are considered informational ecosystems; they are generated by the activity and movement of artificial entities.

Cyvers Viral City
0.40 meters x 0.60 meters
Photography



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Re-formation
26 inches x 26 inches x 1 inch
2D imaging and painting



Artist Statement

In my childhood environment, where nature was limited, I spent time stirring up the water in a pond and interacting with a tree in the garden. I hoped for a dynamic reconstruction of their forms beyond future technology.

In Re-formation, I illustrate my idea of a life form regenerated by an imaginary biological fantasy and its process. It develops not necessarily by accumulating particular substances but by a strong hope for the future and its upward energy. In the darkness of extinction and space, it grows by searching for colors.

Technical Statement

The image is composed mainly of digital photographs of a light source moved around by hand. The basic structure is constructed through those pixels to create a path for them to become a life form. The photographs of natural objects such as soils and strata are used to create organic characteristics in the assembled lights.

Transpacific
22 inches x 38 inches x 1 inch



Artist Statement

Every day, enormous volumes of digital data come and go across the Pacific Ocean in the world of the internet. The digital information flies around, and we catch its fragments so that the world can be filled with images and texts in a multicultural realm. I attempt to dive into an exploration of mixed languages and images that make up this new vision and culture. My intent is to visualize, as a metaphor, a landscape of the artificial alphabets and numbers carried by ocean waves and convey them with the antique sensibilities of a traditional Japanese screen.

Technical Statement

Various images were extracted from digital video of water waves and chosen to represent the characteristics of undulation. The shapes were taken out of the original images in Photoshop, and the text layer of alphabets and numbers was created in Illustrator, then mixed with the imagined and generated ocean images.

Robert Trempe

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Connections

49 cm x 69 cm

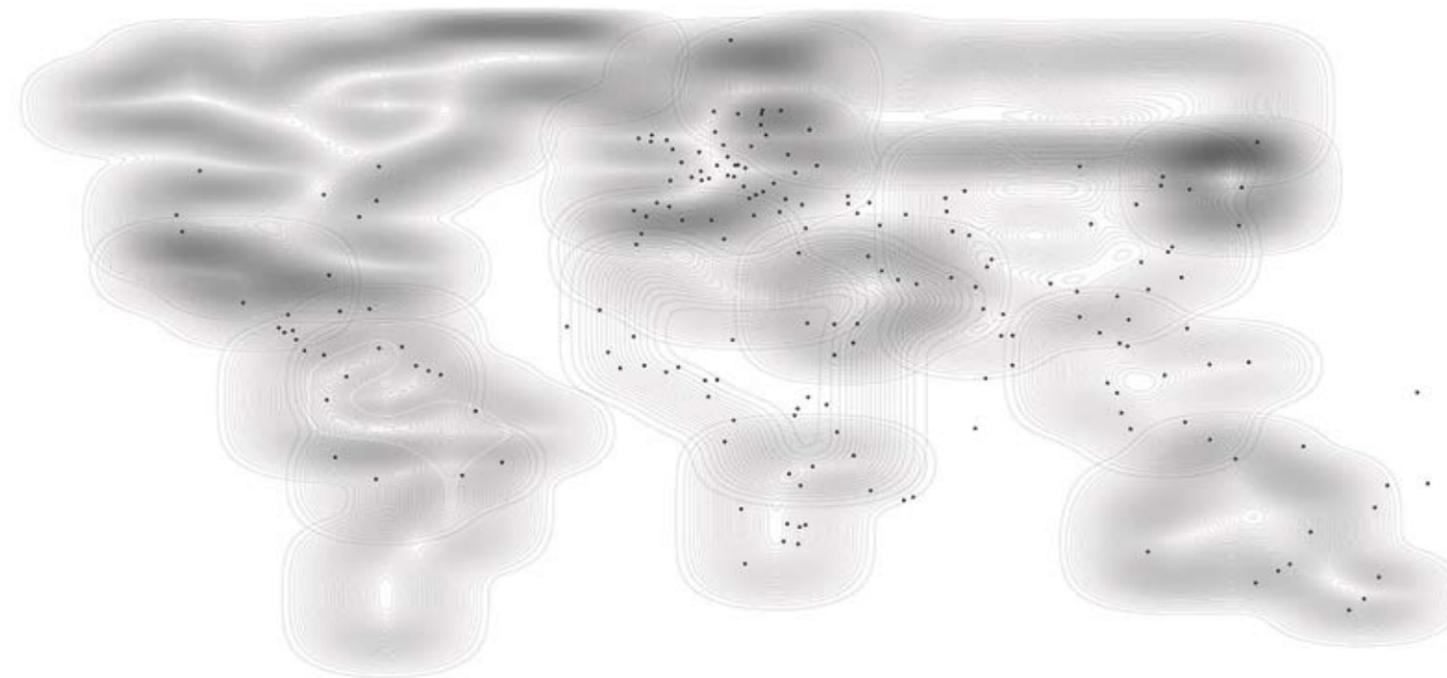
Vector line mapping generated from the contour sectioning of
NURBS-based surfaces, printed on a large format printer

Artist Statement

Mapping quantitative information into a qualitative construction is a powerful means of generating beauty from data. This work maps the relationships of change in GDP (gross domestic product) per country or region over the course of five years (2000-2005). Of great importance to this exercise was determining a method to show both the gradients of change within a country's GDP and the influence and overlap of one country's GDP over another, producing a gradient through lines. Simple dots represent major cities, capital cities, and industrial centers throughout the world.

Technical Statement

Construction of the data began with a series of NURBS surfaces [in Rhino] with identical x/y dimensions, using one surface for each country or region. The CVs of each surface were then pulled about the Z axis (height) in accordance with the numerical value of the GDP for that country or region. A series of contours parallel to the ground plane were cut through each surface at repetitive increments. The resulting NURBS curves were then post-processed in Adobe Illustrator for consistency and transparency.



Anna Ursyn

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Artist Statement

Natural order infuses several levels of both worlds: some determined by human society and some determined by nature. It guides our understanding of big datasets related to network analysis. Acutely aware of order, I examine what technological and human worlds have in common. My task is to juxtapose the regularity of nature with human constructions, both physical and intellectual. The big-city images, for example, combine how humans affect their environment, and at the same time, how a city metaphor reflects rhythm and organization of big datasets and makes data mining easier.

Some of my computer graphics explorations serve as a point of departure for a series of prints and sculptures. Processes in nature and events in technologies inspire my images. I transform an image of an animal into a simple image, an iconic object such as a rocking horse or a symbolic picture of a man or a bird, to present them in dynamic movement as the visible texture of the sky and the ground. Such processes also support my instruction in computer art and graphics, where students learn to create artwork inspired by science and demonstrate what they understand of scientific concepts.

Technical Statement

In my work, I use the computer on different levels. For my two-dimensional works, I create programs to repeat lines and transform, distort, and manipulate images by scaling, rotating, slanting, and changing perspective. I have been setting color combinations, transforming light intensity, applying grid patterns and moiré effects in order to gain composition. The two-dimensional programs serve as a point of departure for photolithographs after computer programs and photo silkscreen prints on canvas and paper; they are included in both my two-dimensional and three-dimensional works. Scanners, digital camera, and a PC provide further image manipulation. All of these approaches are combined for image creation with the use of painterly markings. Printouts were obtained in several ways: black-and white plots from the Versatec plottercolor slides via the Computer Output Microfilmer (COM) recorder, and Inkjet and Novajet printers/plotters.

Clear Water Act
 24 inches x 36 inches
 Computer print



Can we find many rivers, lakes, and bays safe enough for swimming, more than twenty years after the Clean Water Act set up water quality standards?

Wires
 24 inches x 36 inches x 1 inch
 Computer print



Are we connected or are we entangled in global network or local ties? Does it feel safe or make you anxious to see the wires pattern the sky?

Roman Verostko

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www.verostko.com/archive/spalding/spalding.html

Flowers of Learning: "Hortus Conclusus"
 78 inches x 18 inches x 2.5 inches
 Giclée print

Artist Statement

Seven colorful cyberflowers with quotations from diverse cultures and times are presented as a "hortus conclusus," an enclosed garden. The tradition of enclosed gardens has rich meanings in cultures that reach back to pre-history. This "enclosed garden" embraces aspirations symbolized in gardens throughout the world: a paradise of peace and tranquility, the Garden of Eden, a utopia of brotherhood and sisterhood, the place we seek, yet a place of fullness that beckons us to reach ever higher. It celebrates the wide world of learning and culture nurtured at the university – the "Flowers of Learning" that guide us on our journey.

The texts embrace diverse cultures. From Homer, we selected a passage quoting Minerva, who "raised her voice aloud and made everyone pause . . . 'Men of Ithaca,' she cried 'cease this dreadful war and settle the matter at once without further bloodshed.'" Others include Madame Curie on humanity's need for both "practical men" and "dreamers," Lao-tzu on beauty and ugliness, Black Elk on his vision of the "flowering tree to shelter all the children," Hildegarde's medieval hymn on "the most noble greening power rooted in the sun," Shakespeare on the riches of summer earth, and Charles Darwin on the "grandeur of this view of life."

These cyberflowers, achieved with generative procedures, give us a glimpse into a vast hyperspace of form. As a garden of generative form, the permanent installation provides a presence pointing to the emerging biology of machines, a hyperspace bridge in our everyday world.

Technical Statement

The presentation model was scaled from Cruse scans of seven algorithmic plotter drawings measuring 30 x 40 each. The original drawings were installed as a framed mural at Spalding University's Academic Learning Center in Louisville, Kentucky in October 2006.

Each cyberflower form is accompanied by text arranged without spaces in three columns in a glyph-like format. Each of the glyph-like characters is a letter clothed in linear forms created for this project. Algorithms for creating this alphabet are similar to those used for creating the cyberflower forms. This format invites us to ponder the nature of information formats in preserving and communicating ideas. The alphabet and translations are available at: www.verostko.com/archive/spalding/spalding.html



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Artist Statement

"Filament," a term that refers to thread-like forms in astronomy, botany, biology, and incandescent light bulbs, is a useful concept for a series of works that uses filigree patterns, hinting at shifts of scale between plant forms, distant galaxies, and painted marks. It is one way of approaching the question of how "nature" might be visualized with the power of digital tools.

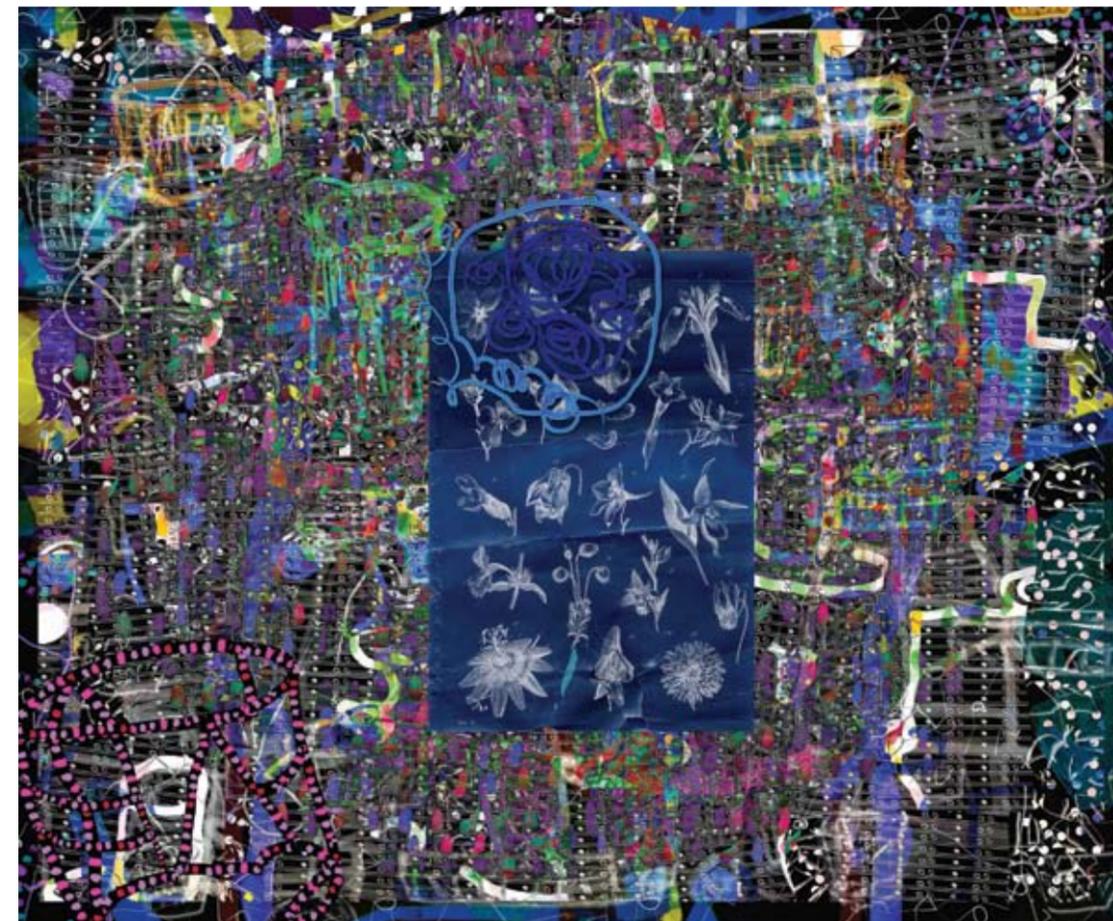
The Filament series alludes to the difference between liquid threads of paint spread by the brush and the filigree patterns of digital drawing, the play between physical material and the electronic image. It represents my continuing project of integrating drawing, painting, and photography into a digital process, a preoccupation addressed in my book *Painting the Digital River: How an Artist Learned to Love the Computer* (Prentice Hall 2006).

The series began as a commission from the London Print Studio to produce four large-scale prints. Beginning with photographed drawings and watercolours, which were re-assembled digitally, the series developed a format where graffiti, folk motifs, botanical illustration, and rapid drawing were juxtaposed. In some pieces, brushes and paints are presented in the role of motifs.

Technical Statement

The Filament series consists of large-scale Epson inkjet prints. Each piece draws from a common set of sources: drawings, watercolours, digital drawings using customised pattern brushes, and photographs of brushes and palettes. Most of the drawing, painting, and assembling were done in Painter IX, but Photoshop and Illustrator were also used. The main point was to facilitate the integration between physical and digital media to allow for structured but spontaneous improvisation.

Dark Filament
44 inches x 51 inches
Archival Epson Print



Mike Wong

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Artist Statement

Elevation #2 aims to de-familiarize and extend photography in an alternative digital image-making process, inspired by the everyday cognitive process of assembling and organizing visual fragments into a complete mental picture of an object or space.

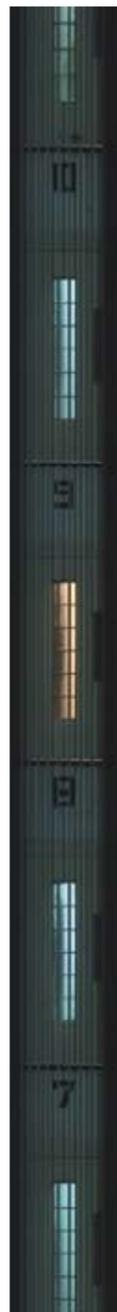
The experience of traveling inside old elevators has always fascinated the artist because the metal gate functions as a window onto a space that is otherwise closed, invisible, and encapsulated. We rely on the elevator trip to understand this closed space, so we develop a complete image of it in our minds on the basis of piecewise information.

Elevation #2 serves as a visual equivalent of the elevator experience, while it aims to extend the limits of regular fixed-point-of-view photography without sacrificing the simplicity and elegance of the art form.

Technical Statement

The digital image-making process used in Elevation #2 is analogous to object scanning but far simpler. A digital video camera recorded the whole elevator trip, and then image fragments were extracted digitally from video frames as elements for constructing the final image. The resulting images offer numerous elements unseen in traditional photography. One interesting example is that the picture looks orthographic in one dimension but presents regular perspective in another dimension.

Elevation #2
13.5 meters x 0.5 meters



ARTIST IN RESIDENCE, GUERRILLA STUDIO

Michael Wright

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Artist Statement

My work looks to represent the spiritual forces behind surface appearance. I believe that there are keys to the understanding of nature, the universe, and humans' place in it. The balance between Yin and Yang and binary math is no coincidence. I choose to see the Universal in, as they say in Zen, "the thousand and one things around us." I'm continually in a state of awe at our place in the universal scheme of things. My work attempts to reflect that awe.

Technical Statement

I choose to work with video imagery at low resolution because the familiar "TV Eye" permeates our culture. I usually have an idea, but it's most likely to be a vague idea, which gives me the freedom to find unexpected depth and layered meaning in the work. I don't seek. I find. It is really a question of perception, in the sense that all visual art starts with the eye. A visual artist spends an entire lifetime developing unique visual eyes or views of the world. The computer is the perfect post-modern tool/medium, because it allows one to explore and create images that are soft, deconstructed information, layered, appropriated, multi-dimensional, almost as fast as one thinks. The changes in the image over time are represented as artifacts. The most challenging aspect of creating digital images is making sure that the art will transcend the hardware and software. I would like people to respond to the image, not how it was created.

Cowboy
Ink on paper
47 inches x 37 inches x 1.5 inches



Guan Hong Yeoh

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Artist Statement

Super*Nature is an exploration of the simplicity and purity of natural forms: how nature can be infinitely simple, how its simplicity can give us new kinds of experiences, and how this essence can lead us to reflection and the quest for experiences that mirror this equilibrium. The work transforms the visual to a metaphorical level and manifests philosophical experiences by presenting connecting organic forms to each person. It allows individuals to travel through the expression of natural forms and, by extension, their peaceful minds and thoughts.

Technical Statement

Plants and flowers are simply found in the surrounding environment, then put into digital scans. Later, the scans are transferred into software to adjust the colour balance combination. Final images are printed on uncoated photography paper for display.

Super*Nature
1189 millimeters x 841 millimeters
Digital scan, computer, and photography



Solvita Zarina

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Artist Statement

This work depicts the intersection between public and private by situating it within the culture of souvenirs. You see a domain from which individuals' subjective life has been removed, replaced by impersonal, stereotypical reality.

Technical Statement

See – Buy – Fly was produced from digital photos taken by the artist and processed with Adobe Photoshop.

See – Buy – Fly
17.3 inches x 24.4 inches x 0.8 inches
Digital art



Andrzej Zarzycki

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Artist Statement

This study juxtaposes visual opposites. It captures the apparent contradiction that an accumulation of multiple objects with one distinct property (being sharp) can, on a larger scale, translate to an object with the opposite properties: a soft, luxurious element.

This apparent paradox is a visual commentary, revealing deeper readings within nature and science, where individuality can emerge from a collage of anonymous components. Stability can emerge from interactions of chaotic states, and certainty can be a product of probabilistic uncertainty.

Texture of Reality No.7 is one of a number of images developed from three-dimensional surface studies that focused on the relationship between the appearance of soft and hard forms within digital environments. The artist intentionally preserved the initial triangulation of the main surface and the visibility of individual faces to use them as visual building blocks for the overall image. These individual triangulations, traditionally seen as shortcomings in digital representation, can acquire visual merit by linking them to the overall composition and the overall intent of the image.

Technical Statement

This imagery was created with form-Z 3D modeling software and rendered with Cinema 4D. The 3D model is made of a number of loft surfaces with spatial NURBS as guides. The final surface was rendered without smoothing or Phong shading properties to preserve the mesh triangulation as a critical visual component for the image.

Texture of Reality No.7
20 inches x 20 inches x 1 inch
Computer graphics



Jing Zhou

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Artist Statement

The Ch'an Mind, Zen Mind series reflects my spiritual experience about Ch'an, known as Zen. It expresses my present perception and intuition toward the ultimate reality. My images form a visual communication that interacts in several collective dialogues. These dialogues are between eternity and transience, oneness and variety, existence and emptiness.

As a Chinese artist living in the Western world, I am aware of art and philosophy from both cultures. Developing a personal visual language that expresses universal ideas, I create artworks for the sake of my own spirit, for color and arrangement in each image, and for making visible the concepts that gave birth to the images. I want my viewers to look at my images through magical windows into a deep, secondary space.

Creating artwork requires me to realize my true nature, which gives me a new perspective on life. It has also challenged me to constantly solve visual problems, learn new techniques, and explore the splendid human heritage.

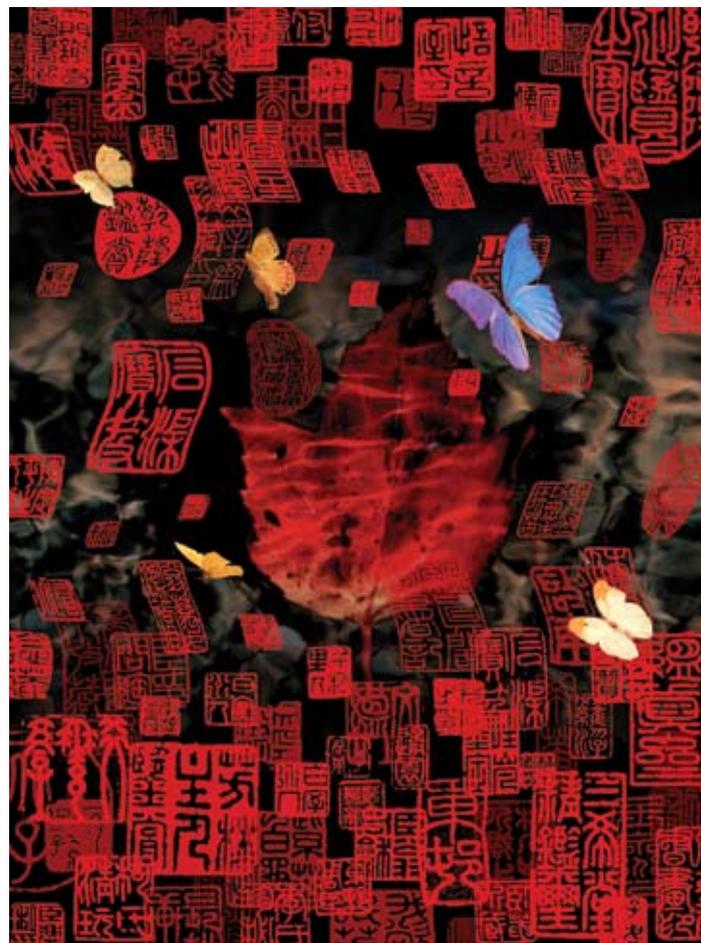
Beyond various techniques and conceptions, the process of creating and making art has enchanted me. At the core of my art is an attempt to attain moments of transcendence, to reach artless-art, emptiness, self-unconsciousness, and self-forgetfulness. In other words, artistic creation is a process of expressing my true nature via "being" human.

Technical Statement

Although the final digital files were created in Adobe Photoshop, traditional media were involved for preparing raw materials before digital manipulation: printmaking, photography, painting, drawing, and natural textures.

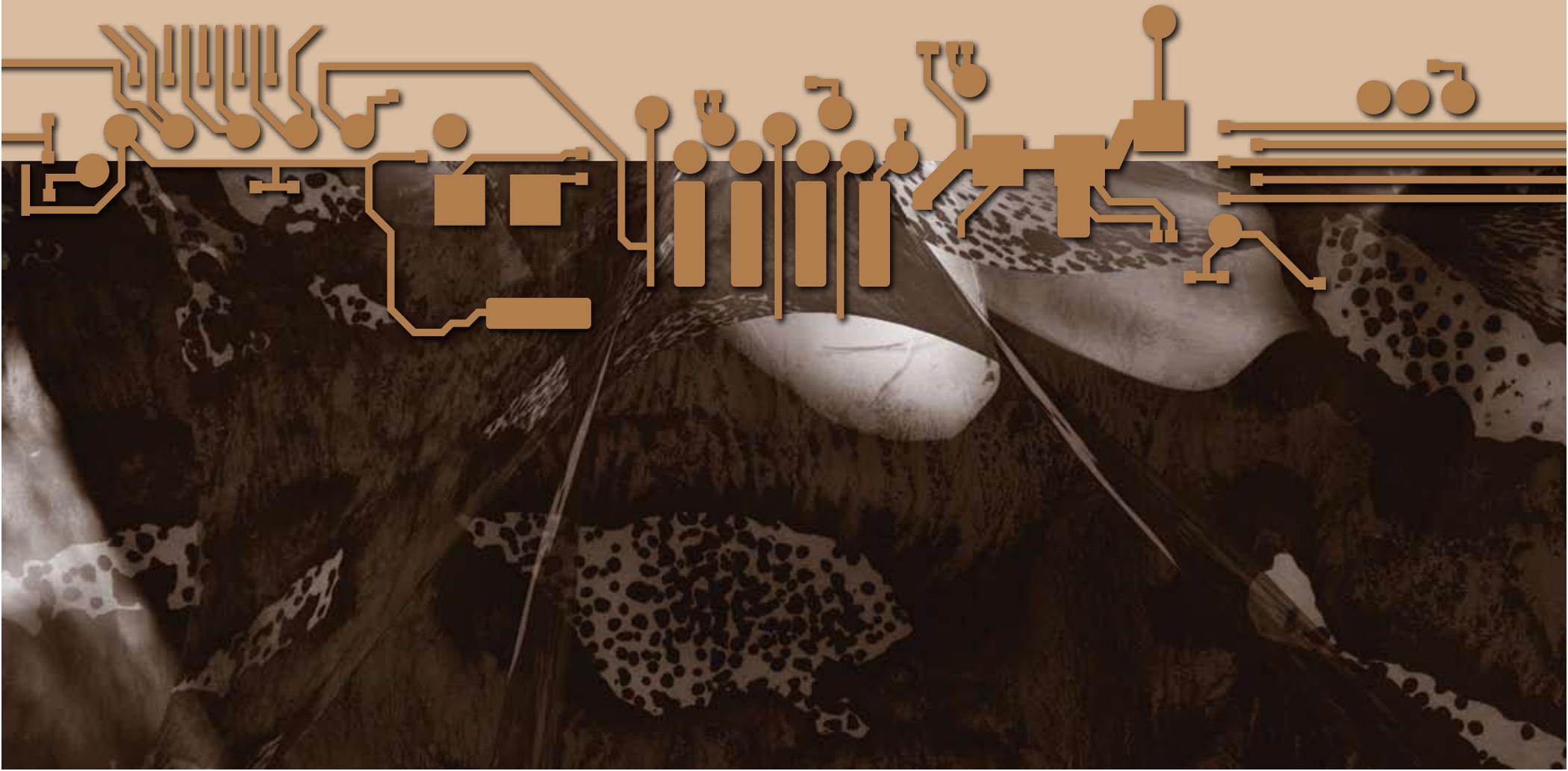
Eternity (Ch'an Mind, Zen Mind Series)

20 inches x 24 inches x 1.5 inches
Digital mixed media on archival paper



Art Gallery: Global Eyes

Art Papers



Transdisciplinarity, Yesterday and Today¹

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Abstract

In the first part, this paper intends to show some reasons for the advent of transdisciplinarity as a strategy of knowledge in the 21st century. In the second part, it develops the basis for a transdisciplinary attitude required to solve complex and contemporary problems, and to promote a new articulation among science, art, technology, and culture.

1. Symptoms and Causes of Transdisciplinarity

Knowledge production, especially since the emergence of universities at the end of the Middle Ages (Bologna, Oxford, Paris), is characterized by a pendulum movement: on the one hand, establishing and developing specialized and deepened disciplines and knowledge, and on the other, gathering those disciplines and knowledge in the same place and unifying their diverse and fragmented nature. It is a production that is created by systole and diastole, amplification and narrowing of knowledge. Modernity could not escape these movements: while knowledge was made vertical, amplifying specialization, it also drew them closer. This can be proven by countless examples: the intercommunication between art, science, and techniques in Leonardo da Vinci and Vesalio, in the 15th and 16th centuries; the 17th-century physicists and mathematicians (Galileo and Newton); the physician Galvani, who revolutionized electromagnetism by observing frogs; Darwin, a lover of coleopterans, who elaborated the Theory of Evolution even though he was not an expert in the field; the meteorologist Wagner, who in 1912 while looking at a world-map, “had the impression that Africa and America once formed a single continent,” and because of that was initially rejected by geographers; the physicist Schrödinger, who in the 1950s projected onto the biological organism the problem of physical organization and promoted cellular biology; the notions of “information” and “code,” proceeding from social praxis and juridical language, which migrated to biology to establish the notion of “genetic code;” the idea of “structure” that Jakobson elaborated for linguistics and that was helpful for Lévi-Strauss as he developed his structural anthropology; “cybernetics,” which results from the union of technical research meant to create auto-controlled machines with mathematical work inaugurated

by Church and Turing; 20th-century psychoanalysis, biochemistry, and anthropology; and information theory conceived by Shannon and Weaver at Bell Laboratories.

As Thomas Khun demonstrates in *The Structure of Scientific Revolutions*, it is that approximation and reorganization of the principles of knowledge, rather than their accumulation, that produced the development of science, culture, and society. And this approximation and reorganization owe less to discoveries and inventions than to new ways of looking at already existing content and knowledge. This view conveys different cognitive schematics, which pass through disciplines “with such virulence as to put them in a trance.”²

This virulence, “trance,” and shock, which pass through knowledge pushed by something beyond and below those disciplines, are symptoms of transdisciplinarity. Other symptoms are the tensions between disciplines and what lies outside them, as in nonsystematic knowledge, between the “expert” and the “generalist,” between longing for deeper knowledge while at the same time giving it unity to prevent it from pulverization; between “method” and “exploration.” Transdisciplinarity is not in one of those poles but the space between them, in the oscillation from one to another, and in its interchange and contagion. Contagions result in profound modifications to the structure of knowledge, and to methods and principles of disciplines, which are not often found in multi- and interdisciplinary approaches. Transdisciplinarity transfigures disciplines internally to bring them closer – not to destroy or deny them, as would pseudo-scientific holism, but to face complex contextualized problems and objects, like the ones that proliferate in the 21st century. But before delimiting what distinguishes transdisciplinarity, the repercussions and functions presently attributed to it, we need to point out some of its more recent causes, for they are forging new meanings for it, for the world and its new problems, for production and diffusion of knowledge required by the 21st century, and for ourselves.

The main reasons for the existence of transdisciplinarity today are the characteristics and sheer size of the challenges that we face in the new century. They are complex and radical problems that emerge and proliferate as much in the academy as outside it. Problems such as diversion of rivers to satisfy an increasing demand for energy; the violence of the metropolis and its expanded urbanization toward the country-

side; genetic manipulation; the cultural and economic effects of globalization; the environmental crisis; the overabundance of often conflicting information, approaches, and technologies (resulting in mechatronics, biochemistry, psycholinguistics, geo-processing, and bioinformatics); the changing nature of warfare since the First and Second World Wars; construction of ever more-technological artifacts, from armaments to surgical tools (namely missiles, magnetic resonance appliances, maritime oil platforms, robots, huge telescopes, satellites, and spaceships); increasingly powerful communication devices; increased verisimilitude of prototypes and simulation in computer games (as in the movements of dinosaurs in “Jurassic Park” and simulated conditions of “exploration” on Mars); and replacement of substantive human connection, freedom, and autonomy with transitory pleasures such as inflatable sex partners.

A second reason refers to the development and deepening of knowledge in several niche areas where it was fragmented, especially since the 18th century. Hyper-specialization of knowledge culminates in the loss of its own object, as is the case in medicine where isolated studies of areas of the body led to a lack of understanding of the body as a total organism. Because of this problem, Oriental medicine found a place in the West’s healthcare system. The desire to reunify knowledge, like the reconfiguration of the body as a totality, is symmetrically the opposite of the fragmentation of modern knowledge.

In its vertical dimension, hyper-specialization stretches the limits of specialized knowledge, creating new communication channels, transferring methods from one discipline to another (as in physics-mathematics), creating new professionals and disciplines (such as mechatronics and biochemistry, videographers, cinéastes, astrophysicists, or geneticists). In this unexplored territory, we find transitory human, social, and natural phenomena of different dimensions and layers that are impossible to split or separate, reminding us, as did Gestalt in Bachelardian epistemology, or the corporal schematic of Merleau-Ponty, to stick to the problem of perception and the relationship between human beings and the world that surrounds them. Advanced study of a field (say, of perception) reaches the borders of another field to recover the notion that the whole prevails over the parts. Another example of the limits of hyper-specialization can be seen in the general theory of systems, in Maturana and Varela’s autopoiesis theory, or in the theory of complexity, all of which are situated at the extremes of scientific and specialized knowledge and forced to interact with, and allow themselves to be contaminated by, realms outside their original systems. In summary, modernity dethroned theology, metaphysics, their sub- and supra-lunar hierarchic worlds, and the Aristotelian and medieval worlds, as sovereign forms of knowledge. Modernity replaces this knowledge with physics and its homogeneous, sensible, laboratorial, one-dimensional, and macrophysical universe. In reaching

microphysical and subatomic levels and further exploring the astrophysical universe, science was forced to break away from modern reductionism and determinism, opening itself to other disciplines and non-disciplinary knowledge; this was accentuated by pressures imposed by technology and its practical applications. However, although the deepening of knowledge creates disciplinary islands that lead to the transdisciplinary sea between them, it does not mean that we should suppress the islands. The transdisciplinary must live with the disciplinary, since they are interdependent, just as the life that circulates in the islands is crucial to the exploration and vitality of the sea between them.

A fourth reason for the current condition of transdisciplinarity is the recognition that it is essential for universities to interact with, and let themselves be contaminated by, their surroundings, to renovate their own objects of study more appropriately. What is at stake here, as Boaventura puts it in *Pela Mão de Alice (By Alice’s Hand)*, is the acknowledgement that the university has lost its hegemonic position in knowledge production, since knowledge is produced, in large part (as in the case of art and technology), outside its walls. It is now up to the university to absorb new knowledge and promote a contagious relationship between academic and scientific thought.

Further reason for the need for transdisciplinarity is the shift of paradigms that has taken place inside the sciences, such as the crisis in classical physics, modern science, Cartesian epistemology and its basilar paradigms and procedures like reductionism, causality, simplicity (clear and distinct ideas and rules), and determinism. Quantum physics, for example, discovered gaps between several physical states and spaces, rather than continuity: the logic of the third included (where a third term is at the same time A and non-A) wave and particle, like the quantum; art and technique as the architecture,³ the inseparability between subject and object, non-determinism, and rejection of a single level of reality thought to be always ruled by the same laws (as in the separation of the sub-atomic and supra-atomic reality). Biology, as Jacques Monod suggests in *Chance and Necessity*, promises to be the new knowledge base in Western thought, replacing physics, wherein chance, the imponderable, wholeness, complexity, and indeterminism are not only more accepted, but also allowed greater interaction with other scientific and extra-scientific fields. That indeterminism, full of disorder, is what is within our genome.

Until the early 1970s, the model we had for the human genome was of a well organized place, more or less static, where each gene had its right place, pre-assigned by its function. [But now] our genome resembles more of a storage room than a library, untidy, with no clear evidence of organization, full of accumulated stuff (the non-coding DNA), since almost nothing is thrown away, even if it has no use. Besides that, the human genome is dynamic, its pieces are shuffled, and change positions frequently, without any reason or rhyme.⁴

To the paradigm shift of the so-called hard sciences, we add the several levels of subjectivity and the fragmentation of modern man, cited by Freud and explored in psychoanalysis and philosophy, and by language, which is equally relativised, contextualized, and fragmented.

The takeover of science by technology and techno-science, which corresponds to the victory of the creature over its creator, displaced the privileged position of reason and Cartesian scientific methodologies, leading them to failure, making room for doubt of general and abstract logics, rationalities, and methodologies. Out of those doubts came reasons for devising new strategies to approach the real, including those not properly technological or pragmatic.

In addition to that failure, causes of transdisciplinarity are found in the swift obsolescence of tools of specialized knowledge, like those created by technology, techno-science, techno-culture, and pragmatism. On the one hand, transdisciplinarity produces instability and insecurity in the content of teaching and professional knowledge. On the other hand, it provokes pressure for acquiring extensive knowledge that is able to build a more enduring intellectual citizenship.

With that opening, we can perceive that there is not one truth but several, whether in the fields of science, nature, and life or in the humanities, art, and culture. The cultural and social cosmopolitanism of the early 21st century allows for approximation of different traditions and epistemological and social praxis, even antagonistic ones, and of conceptions of the world that exceed Western hermeneutics, Eurocentric rationality, the big theories, the scientific, artistic, moral, ethical, and religious systems. This broad diversity of social experiences can not be explained by a monolithic and universal theory, but only by a work of “translation” and transdisciplinarity that is able to create a mutual intelligibility between possible experiences, praxis, theories, and systems, without destroying individual identities. Without mutual translation and intelligibility, we are bound to maintain social and epistemological fragmentation and atomization and fall into post-modern relativism, which breaks new ground for imposition of heteronymous synthesis and systems, colonizers and destroyers of identity, and disciplinary and cultural differences.

From cosmopolitanism and multiculturalism arises the need to give meaning to modern knowledge and the world, leaving behind illusory certainty of the indelible march of progress and development of civilization. There is, therefore, under the tag of transdisciplinarity, an appeal to new meanings that lead it not only to design a “true description” of the world and technical progress, but also to bring science and the world of thought closer to wisdom, phronesis, and action. Breaking disciplinary insularity also means to breach the the boundary of opposite poles: the insularity of technique and science, on the one hand, and the insulation of philosophy and art, on the other. This implies, among other things, ethical and moral regulation. This appeal is subjacent to the appeal for

transdisciplinarity.

We point out here one last reason for transdisciplinarity nowadays: the evidence of savagery, the contra-appeal against the civilized ideal that mixes with ideas of progress, progress that never reaches most parts of the world. The presence of destruction, misery, and the total hecatomb of culture and the environment is more evident now, especially in the periphery and marginal regions of the Occident.⁵

2. Transdisciplinarity, University, and Culture

The transdisciplinary attitude is not new. It can be found in the Renaissance and Romanticism, in Leonardo da Vinci, Alberti, and Goethe. The term “transdisciplinarity,” however, is recent and was coined by Jean Piaget in the First International Seminar on Pluridisciplinarity and Interdisciplinarity held at the University of Nice in 1970. At this conference, Piaget proposed the transdisciplinary model, which could go beyond interdisciplinary relations being discussed at the time. Not satisfied with “finding interactions or reciprocities between specialized researches, [Piaget] would place those connections within a total system, with no stable frontier between those disciplines.” In 2000, Patrick Paul added to this total, global, hierarchical system of no stable frontiers between disciplines the concepts of order and disorder, the known and the unknown, rationality and imagination, conscious and unconscious, and formal and informal.

For Piaget, the focus is the interaction between the formal disciplinary sciences; to Jantsch and Boaventura Santos, the focus is interaction between those sciences, the human and the social, and on opening disciplinary knowledge to non-disciplinary knowledge, most notably in the fields of art and culture, which the academy absorbs only partially and with great strain. The relationship between academic-scientific knowledge and extra-academic and cultural knowledge is also problematic:

Well, the values associated with the scientific fields are exactly the ones with which the heavily bureaucratic structure of the university can assimilate, with inevitable losses for the arts and the cultural themes within the university. Therefore, the agenda that organizes the daily academic life of the university tends, more and more, to reinforce the imbroglia that can already be seen: whether the field of culture bends to the present rules in the management of knowledge and, consequently, whether it loses its identity, or whether it will be more and more pushed toward the periphery of the institution.⁶

Bringing transdisciplinarity to the university implies, therefore, reviewing its structure so as to create the conditions for assimilation of external culture and knowledge, and allowing itself to be contaminated by them.

In the Science and Tradition Congress (UNESCO, Paris,

1991), transdisciplinarity recognized the value of specialization but proposed surpassing it in such a way as to reassemble the unity of culture and find the inherent meaning of life. In 1994, in the First World Congress of Transdisciplinarity, held in Arrábida, Portugal, “transdisciplinarity acknowledges different levels of reality, ruled by different logics and laws.” This attitude does not try to dominate the several other disciplines, but to open them all to what passes through and surpasses them, and reunite the exact sciences with humanities, arts, literature, poetry, and spiritual experience. It is transcultural in the sense that there is no privileged place from which to judge the other cultures. The bases for that “transdisciplinary attitude” are three: rigor (against possible detours), opening (for acceptance of the unknown, unexpected, and unpredictable), and tolerance (to the ideas and truths contrary to ours and to our discipline). Differing from interdisciplinarity and the “weak transdisciplinarity” proposed by Piaget, “strong transdisciplinarity” asserts itself by carrying on a dialog with areas of non-scientific knowledge, toward what is beyond those disciplines, non-disciplined knowledge, and other knowledge. It would imply, for example, the “ecology of knowledge,” our “inverted extension,” proposed by Boaventura Santos for these new-millennium universities.

To prevent turning transdisciplinarity into omniscient, divine, globalizing, holistic, generalizing, and superficial knowledge, we have to keep in sight which specializations to explore, the islands within which to navigate, the discourses and languages of disciplinary relevance, how to proceed with the exercise of translation, and where to build the reciprocal intelligibility between them, the third language, the meta-language, the concepts and the semantic or even metaphoric operation without which the work of the “translator” is impossible. This reciprocal, mutual intelligibility between the disciplines is needed to evaluate the interactive potential, defining possible alliances and hermeneutic operations between them, the possibilities for articulation and aggregation without which the “trans” is not achieved. Since it is not a method or a general theory *a priori*, but a procedure or attitude, we should always consider transdisciplinarity as a work of inter-lingual or inter-semiotic translation, of migration, of navigation and transport, of commerce, dialogue, change and interchange, between the visible and the invisible, art and science, tradition and the new emergent proprieties.

The premise and reason for the transdisciplinary work of translation is the transcultural consensus on the theory of the impossibility of a general theory. The multiplicity and diversity of the levels of reality, disciplines, and social-cultural practices prevent them from receiving broad translations that could entirely recover them. Not everything is inherently translatable, although there are lacunae, silences, and neglected spaces in those disciplines and practices that we are bound to make recognizable. What is possible to translate is that which each discipline, culture, and practice selects to expose to the “con-

tact zone” with other disciplines, cultures, and practice, which are not necessarily the most relevant and central elements of each area. Only the deepening of the work of translation and migration can bring out to the zone what is central and relevant, and what each experience and field of knowledge, at first, won’t risk and give away. Without this interchange, we relapse into hegemonic, one-dimensional, totalitarian, and colonialist culture. Transdisciplinary work is, therefore, patient, respectful, and humble, starting peripherally at the borders of specific, local, and disciplinary knowledge. Each disciplinary and cultural practice must then decide what aspects, concepts, methods, and practices to make available to translation, to collective operation, to transdisciplinary and transcultural confrontation, and to help build with them the topoi and hermeneutic operators with which to populate the contact zones. Finally, those aspects, concepts, methods, and practices must be open, porous, and permeable to a functional, operative, and semantic pluri-dimensionality.

Finally, the translator should be a good representative of the disciplinary field or of the cultural group (that is, he must have good competence in his specific disciplines, move freely in its several levels, be strongly rooted in the practices and knowledge he represents, comprehend them deeply and critically in such a way as to find and to recognize their often hidden deficiencies, to cultivate the feeling of incompleteness and the motivation to search for other disciplines, knowledge, and cultural and social practices whose responses cannot be found within the field of specialization). Again, the “trans” requires disciplinary skill.

In addition to the already mentioned attitudes of vigor, openness, tolerance, and prudence, it is essential to cultivate the ability to listen, to benefit from errors and detours, to grasp concepts, and search for connections between one field and another (that is, a receptivity to the trans-exercise and an openness to concepts that allows them to be transported and inflected within a certain margin). The discourse that donates itself and that means to be transdisciplinary must do so keeping in sight a possible “translatability,” and even motivating it.

The two fields between the translation can be seen, firstly, as the “source” or “destination.” But as the interaction process begins, they both lose their positions and begin to act like two fields in unceasing dialogue and interaction, without original or final terms, endlessly talking to each other, as if at a café table, where a muthos is established, a plot, a net, albeit an intriguing one. And that café table, or the environment where the interlocution between the fields and its subjects is developed, configures itself as fluid, plasma, which is progressively created, molded, and cultivated by the interlocutors and by the changes and reciprocal contribution. We need to not only be attentive to fields that polarize changes but, above all, to caring about facilitating, to functioning as a battery between the diverse voltages of disciplines. For at a café table there is always room for one more, provided he comes to add to the

polyhedron of talking and to the plasma of liquids that convey it.

The disciplinary view leans forward rather than to the original disciplinary field, intending to identify the common point from which to give itself to the encounter with the other. *Intendera*, “stretch toward”, is the proper attitude for the trans-, to agitate and challenge knowledge that is satisfied to rely on disciplinary safety. It is necessary to risk going across the desert, and as Brazilian writer Guimarães Rosa suggests in the “liso suçarão,” what anchors us in that departure time is where we want to arrive, more than the starting point. The fundamentals of transdisciplinary action lie more in the “guessed” horizon of a common arrival point than in the port from where the ship of individual disciplinary knowledge begins.

The “capacity to fecundate and mold knowledge” is the quality that must be pursued in the concepts and the discourses resulting from the transdisciplinary exercise. They must, while trans-, “go beyond” to mold the specific concepts from which they stem to unveil other truths, meanings, latitudes, and horizons, within which new meanings, concepts, and discourse can come to life. In the Greek sense of *aletheia*, concepts following this function produce truths, as they present emergent worlds and visions that were kept latent and inoperative. They indicate and point out, more than describe, contrary to the truth understood as *adaequatio* between representation and reality. Creating a new problem or a new approach to old problems enriches the concept of trans-view. And that novelty does not lie in the advent of new technologies or instruments, like those that succeed with the advent and successive progress of informatics, but, above all, freshness is to be found in a new view applied to the same objects and the arsenal of the past.

In addition to its fecundity, the properties and concepts generated in the transdisciplinary field must be open and porous to being contaminated, redone, and interacting with each other in such a way as to acquire new complexions and metaphors, losing the basilar, atomic, and indivisible units to form molecules and nets within which to acquire new meanings and functions. From the wandering, equivocations, and ambiguity of the discourse emerge the contagious and creative translation of a transdisciplinary environment that always involves, in my opinion, a detour. That ambiguity or opening of discourse to other interpretations and unexpected derivatives seems to me an essential property of transdisciplinarity. It moves away from the extremely disciplinary, hermetic, and specialized discourse that searches for rigor at any cost, drawing close to the notion of error as an “un-rooting” to be applied to concepts and disciplinary properties, and making them migrate, wander a little without direction.

There is not a general methodology, but one that is found in the given transdisciplinary problem. Transdisciplinarity involves a permanent heuristic and invention, and “rebels against” automatic transference of models or previous experi-

ences. There is a specific problem and context on which to build a bridge with available material and direct the resolution of the problem and knowledge in the agenda. Finally, we consider it an economic net that conforms to the object from the sea between the disciplines, and not a general net that is apt to solve any given problem.

Footnotes

1. This essay is part of our work in the research project Architecture, Humanism and Republic, developed in partnership with CNPQ/ Brazil. The author is director-president of the Instituto de Estudos Avançados Transdisciplinares da Universidade Federal de Minas Gerais, Belo Horizonte and teaches history, art, and architecture theory.
2. See Morin, Edgar. Educação e complexidade: os sete saberes e outros ensaios. São Paulo: Cortez, 2002, 49.
3. Working on that logic in architecture and conceiving it as “a dobradiça de um biombo;” see Brandão, Carlos Antônio Leite. Teoria Eletrônica. In: Interpretar Arquitetura: www.arq.ufmg.br/ia
4. Pena, Sérgio. 2006. O genoma humano, Jorge Luís Borges e a Biblioteca de Babel: cienciahoje.uol.com.br/48486
5. Those reasons were exposed, in an oral and summarized session, in the 3rd Week of Architecture in UFMG “Architecture: arc of knowledge”, 29 May 2006, promoted by the Academic Directory of the School of Architecture of UFMG.
6. Fenati, Ricardo. 2006. Cultura e Universidade: www.ufmg.br/dac

Building Possible Dreams

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Abstract

Never before have media had such a strong effect on life as in the 21st century. Looking at the history of moving images in the previous century – the visions and agendas of filmmakers, corporations, and governments – we find evidence of the potential for humanistic inclusion and exclusion. Do digital media increase our understanding of life and cultures? Is there the potential to know ourselves better by recreating life in an artificial environment? Is the fascination with artificial worlds proof of our limited understanding of the “analog” human experience?

It is possible to control and destroy cultures. When it happens, human heritage is impoverished, and the world has less diversity and less focus. The corporate digital media revolution is a kind of involution, a return to the type of destruction of colonial eras that exploited continents. With the current level of destruction at its highest level, our life experience is disconnected from the physical world.

Digital media can be a negative game, entertaining young people with virtual destruction, preparing them for analog wars and a multifaceted system of economic domination. Misinformation, decreased plurality of viewpoints, increased disconnection with life, and the spectacularization of human experience are only some of the symptoms of the strategies used by the corporate media world.

Our analog lives need analog values connected to nature and respect for our planet and its fragile resources. These values must inform our digital world.

Moving images began in scientific labs with experiments by researchers such as Pierre Jules-Janssen, Étienne-Jules Marey, and Eadweard Muybridge. Initially, their goal was to understand natural phenomena more deeply by reconstructing points of view that were impossible to perceive with the human eye.

Jules-Janssen used his “photographic revolver” to register and study Venus’ 1874 transit across the sun. Marey and Muybridge focused their research on human and animal movements. These mechanical devices expanded our field of vision and helped us to deal with the complexity of our perception.

In the beginning of the 20th century, geographic societies sponsored trips around the world, and pioneers of documentary films recorded some of those expeditions. The visual medium was an important instrument to inform and diffuse exploratory travel devoted to exotic places and civilizations. These films documented multicultural encounters between filmmakers and native cultures, expanding our knowledge about countries and people far from urban life in the West. Some of these films are today considered classics of documentary cinema.

After the 1910s, the moving image became a powerful international industry in the US, where it was connected to the idea of entertainment. Films were made like industrial products, although we find many examples that transcend this concept. Of course, some famous film artists had the power to control their works, so their films bore the imprint of their particular worldview. Charles Chaplin’s character, the tramp, became a powerful and poetic metaphor about modern life and social exclusion. The tramp was an outsider, who tried hard to be accepted socially but was always rejected by the system. His empathy with audiences was unique in film history, and it is not a coincidence that the most famous cinema character was a loser. Chaplin is a powerful example of the dichotomy between the human being and the corporate system.

During Lenin’s era in Russia, the cinema, which was considered to be the most important art form, was believed to be a way to synthesize time and space, not only by enhancing our vision, but by visualizing abstract ideas. Dziga Vertov, one of the Russian mentors during the Soviet avant-garde film era, referred to the moving camera as a “mechanical eye.” This central role for the cinema was the first large social experience in which motion pictures were used to represent social utopia,

and later, political propaganda. One of Lenin’s proposals was to use cinema to represent the new Soviet Union, the utopia of a new man, and a new Russian consciousness for a new century. The camera became an instrument for serving revolutionary ideals.

Inside Russia, cine-trains (community productions in mobile projection and lab units) increased the political role of moving images. They connected film with the people who were the subjects of its content. According to the filmmaker Chris Marker, more than giving films to the people, cine-trains gave cinema to ordinary Soviet workers, who made films about themselves and controlled the process.

Aesthetically, these films presented several strategies, such as a focus on the editing process, creating a dialectal shock of images with fast cuts that increased the intellectual activity of the audience. Russian filmmakers affirmed that editing was central to the meaning-making process of the cinema, which is obvious in documentaries that used footage from several sources to create a collective contribution constructed from points of view from the new revolution.

During the same time, mainly in Western Europe, countries such as Germany developed clandestine production to misinform the public about the dangers of communism. Relying on the power of the visual record and on an aesthetic of the documentary, those films fictionalized and staged the “facts,” which inaugurated the use of moving images for Cold War propaganda.

If the motion-picture was a mechanical eye, film editing was considered a mechanical brain: virtual images expressing the analog perception of the world. The power of cinema was taken seriously in several countries, and the history of the 20th century, for the first time in human experience, was registered more in images than in words.

During the 1930s, under the Stalin era, the government adopted radical new policies that transformed the Russian avant-garde cinema into controlled production. Ideas of collective production or intellectual editing were substituted for the classical strategies of social melodrama, to serve Stalin’s new agenda of the cult of personality. The films presented Russia as “the big mother” or “Mother Russia,” and Stalin was “the father” of the people. In these propaganda films, the old role of the czar evolved into that of the new “great father.” As opposed to the slow but careful democratic process of debate and discussion established by Lenin, now the celluloid “father” looked after every detail of daily life. If tractors broke down, Stalin appeared personally to repair them.

Fictional feature films produced under Stalin’s personal supervision suggested the possibility that working people might write directly to Stalin, “the father,” to express their needs, make suggestions, and file complaints about the workings of the state. The result was mass murders in Russia. Cinema helped to detect and destroy “the complainers,” or better yet, people with critical points of view. More than edu-

cating people, moving images were a powerful tool for social control. Stalinist-era films presented happy communities in the countryside singing and working hard to fulfill Stalin’s requests for increased production. United they were, but only on the screen, since prisons were secretly full of what they called “anti-patriotic Russians,” or “counter-revolutionaries.”

Ironically, in these films Stalin was played by Mikhail Gelovani, a professional actor. Audiences believed in this Stalin “clone,” who appeared more convincing than the original one.

In the US, when the economic crash of 1929 led to the Great Depression, the cinema was already a major industry. President Roosevelt proposed the New Deal, a controversial strategy for a new contract between capital and workers to help control the resulting social crises, and major film companies released feature films appealing for tolerance, charity, and Christianity. The work of filmmaker Frank Capra was one of the symbols of the popularization of these policies. The government and the film industry worked together to deal with reconstruction of the national economy, without making any kind of fundamental changes in the economic structure.

At the same time in England, filmmaker John Grierson proposed different strategies for moving images, using film to educate the huge contingent of country workers moving into large cities. Mainly documentaries and docudramas, Grierson’s productions integrated working-class people into modern industrial society. Some of the best international experimental filmmakers, such as Norman McLaren and Len Lye, began their careers as part of this new experience. Grierson also invited avant-garde artist Alberto Cavalcanti to be part of this rare example of experimental and social filmmaking, in which media were used as a powerful tool for social inclusion.

The educational cycle of films produced and supervised by Grierson at the General Post Office succeeded in presenting careful and didactic narratives, teaching workers how to use the telephone, about the trajectory of a letter processed by the post office, about the daily life of fishermen, and how to handle the miracle of having food in the home in an organized and affordable way. Modern cities were new spaces where everybody would need to be connected in networks, collaborating in the collective process of constructing a new and more equal society.

But in the 1930s, words such as equality, collective, and social inclusion were synonymous with communism. Europe was traumatized by the Russian Revolution, and a new age of radical conservative and aggressive agendas was aligned against all manner of worker organization. The first shocking confrontation of these ideas was in the Spanish Civil War, where a left-wing democratic government, elected by a democratic majority, was overthrown by a coup d’état organized by the Spanish army. Young people around the world volunteered to fight against the enemies of democracy, but their dreams of a more just society were destroyed when foreign governments allied themselves with the military coup. European countries

such as Germany and even Russia quietly helped the Spanish military fight against the rebels and the perceived dangers of communism.

Documentary films were used to generate international sympathy and raise funds for the Spanish rebels. In this example, film was not used as propaganda, but rather as a warning about the way international economic power was disregarding the democratic process and destroying lives.

The Spanish Civil War was a macabre rehearsal for the main conflict that was starting in Europe. Hitler became the most powerful dictator in history, and from 1933 until his downfall, the German media were completely controlled by Joseph Goebbels, his minister of propaganda.

Media thus entered a new era. Events were planned and rehearsed meticulously for the spectacularization of the facts. The “truth” was the result of the cynical talent of filmmakers and propaganda professionals such as Leni Riefenstahl, and this evil theater made possible the mass murder of millions of innocent people. In the hands of the German government and the international corporations that supported it, media became an instrument of racism, propaganda, and the Holocaust. With the justification of scientific research, cameras registered the reactions of victims of gas-chamber massacres. Some of the most repulsive images of our time were captured during those indelible and horrible years.

World War II was displayed on thousands of movie screens around the world, and cine-news created a virtual understanding of the conflict. Because of the power of these reports, all nations involved in the war rigorously controlled what could and could not be shown. Editing to filter the facts was always controlled by government strategies.

Canada was one of the countries that decided to create a national office for cinema, and John Grierson was one of the main leaders in developing the National Film Board. Again, his goal was to use media as an inclusive process, rescuing the citizenship of millions of people who had been atomized and traumatized by their experiences in the Second World War.

Although governments were controlling all information rigorously, moving images were for the first time accepted as documentary proof in the Nürnberg trials of German war criminals, where two documentaries were screened about Nazi concentration camps and the Nazi atrocities against the Soviets during the German invasion of Russia. Both films begin with a formal document signed by either the US or Russian governments certifying that all images were taken, edited, and presented without any kind of manipulation or special effect. The power of some sequences cannot be described in words. The unbelievable scale of the Nazi atrocities was beyond human comprehension.

The post-war period would be remembered as the escalation of the Cold War. In the US, the media became transmitters of ideological propaganda, misinforming the public, aggressively cultivating fear and panic, and creating a permanent

state of alert for possible external attacks. The nuclear era produced some ridiculous documentaries that tried to “educate” people against an eventual atomic attack by the enemy. Several pseudo-educational films were screened in schools, teaching children how they could be protected from this danger by ducking and covering beneath school desks. While the anti-communist campaign increased, more than 400 atomic tests were carried out in the Pacific Ocean from the mid 1940s to the 1950s. In the US, several feature films exploited heightened emotions and terror through monsters such as giant spiders, body snatchers, and red aliens from Mars.

The communist media campaign had its parallel strategies, developed mainly by filmmaker Roman Karmen. This Russian propaganda mentor traveled around the world teaching local filmmakers how to best present their revolutionary leaders. A large part of the media material about national leaders such as Mao Tse-Tung, Fidel Castro, Ho Chi Minh, and Salvador Allende made use of Karmen’s guidelines. He personally shot films that were used as propaganda inside these countries, and he was a mentor to leftist filmmakers, providing instruction on the best camera angles, how to show victories, battles, etc.

In Italy, the post-war cinema was reborn from the ashes like a phoenix, giving new life to films about daily life from a strong humanistic point of view. This neo-realist movement was a strong reaction against the emptiness of bourgeois feature production during Mussolini’s era. Cinema helped Italians to understand and reconstruct their own identity. Filmmakers like Roberto Rossellini, Vittorio De Sica, Luchino Visconti, Federico Fellini, Pietro Germi, and so many other talented artists, proposed an aesthetic that transcended the nationalist approach, influencing filmmakers in many countries, including Brazil.

If Dziga Vertov used the expression “camera eye” in the 1920s, Latin-American filmmakers referred to this device as a virtual weapon in the 1960s. “Camera as a machine gun” was the political adjective used to refer to Latin American films made against US intervention in these countries. Military dictatorships governed many Latin America nations during that time, and independent media became an important way to resist so many political murders. The international recognition of Cuba’s new revolutionary government in 1959 renewed the desire for sovereignty. Soon afterward, strong censorship led filmmakers to develop metaphorical narrative strategies as a way to resist and survive in those “black years,” a euphemism for the time when democracy was totally absent. Because of this history, the cinema in Latin America has not had a strong connection with the idea of media as a social control. Such overt techniques were developed mainly as corporate media strategies for television production during the dictatorships.

Control of media products was consistently rehearsed and improved over several decades. Spectacularization increased and with it an interest in high-impact media events,

exploitation, and recourse to easy emotions. At the same time, this process had a complex dynamic during the Vietnam War. Television news presented all kinds of visual information about battles and combat. Attempts to intensify the impact of images on televised news generated unintended rejection from American public opinion. There was too much reality in the shows. Exploitation of bloody and mangled bodies turned into a disturbing spectacle, bringing into US homes what up until then was happening outside the country in Vietnamese territory, far away from home. The anti-war movement grew as a result of how these images were shown, and because of the civil rights movement and independent media groups that defended democracy and free speech. These independent films were powerful in facilitating a realization that the government’s agenda was the opposite of human-rights ideals.

This phenomenon could never happen again. Control of media is much stronger today. During the Iraq war, for example, news coverage prevents the public from contact with the gritty effects of massive bomb attacks. News cameras were strategically positioned to provide aerial points of view that show targets as tiny points on a map.

With the advent of digital resources, equipment is more accessible for alternative groups and independent producers. At the same time, corporate media are able to use satellites to centralize and control production and international distribution. Digital mass media are highly global, which has led to a noticeable lack of diversity in content and aesthetics, while the borders between entertainment and news reporting are increasingly eroding.

Television reality shows continue to capitalize on the idea that everyone is a celebrity and everything is an event. There is no need for content. According to this strategy, daily life can be turned into a spectacular experience. Shows such as Big Brother normalized the idea of surveillance, making it something banal and funny in daily life. According to these shows, privacy is to be avoided, because private events could be suspicious.

These kinds of mass-media products synthesize corporate structures. The products are the “reality.” There is no social responsibility. It is strong, powerful, seductive, and empty. And they are always recyclable as stylish packaging, authoritarian, and predatory. They are techno-fascist structures against humanism and life.

But digital media could also be the synthesis of ideas of past visionaries. Abstract animation and synthetic images were used by experimental filmmakers such as Len Lye, Norman McLaren, and John Whitney. Stan Brakhage defined their films as visual thinking, as they tried to push media ahead as a new language. Using visual resources to understand the mystery of the human mind and the workings of the brain, these artists proposed a visual kinetic dialogue with echoes from dream theory and surrealist experience developed also by the French avant-garde films during the 1920s.

According to the Hollywood film industry, the potential of digital media lies mainly in fantasy: creation of synthetic characters and worlds, war games, and narrative environments disconnected from daily experience. The disconnection between human beings and nature is reinforced by this superficial strategy. There is little room for intellectual activity in these products. At the same time, sophisticated systems are developing conceptual environments such as Second Life when the first “real life” can no longer be maintained due to vast destruction of the natural environment. The idea that nothing is impossible in the digital era is one of the big lies of our contemporary mass culture. The fragile nature of digital tools is announced by the imminent energy crisis, and life on earth is already on the edge of destruction.

Hybrid media present a powerful tool to connect languages and people, expand our senses, and reconnect human experience with nature and life. Virtual images could be a strategy for understanding our subjectivity, our dreams, and aspirations, and helping us to find beauty in understanding each other, not inside patterns, but in a multiplicity of possibilities.

There is still a fantastic opportunity for development of digital media, mainly as resistance to the monopoly of corporate products.

When the filmmaker Ingmar Bergman gave us close-ups of his characters, we felt the infinite geography of the human face. The camera turned into a unique mechanical eye, helping us to see what would be impossible to see without special devices. Bergman’s work is a celebration of the collective invention started by film pioneers Jannsen, Marey, and Muybridge.

It is necessary to rethink the idea of moving images, so we can understand our world from new points of view. It is better to believe that mankind is still reliable. If this is naïve, at least it is better than being cynical. Cynicism is for corporations. Human beings need to be dreamers.

Friedrich Hölderlin, the poet, wrote: “Men are men when they think, and turn into gods when they dream.”

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Identifying New Myths for Convergence and Creative Collaboration in the Age of Digitalia

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Abstract

To assume that it is possible to predict the future of technology innovation beyond the next week, month, or year is sheer folly. To believe that our participation in endless think tanks, conferences, or seminars will shape a consensual vision, one that we all agree may be worth perpetuating, is merely an elitist group exercise in courage. I propose another scenario: that business, educational, and cultural institutions exist as the sum total of the myths they believe about themselves. In this context, myths are not only about who we are, they are essential to the development of all human understanding and belief systems. This practice is not to be confused with acquired situational narcissism, a self-bestowed sense of ingratiation, but a shared belief that the invention of new myths is an on-going design and discovery process unique to all sensing/feeling human beings. Such an enterprise evolves into creation of enlightened and expressive forms through continuous real-time simulation of living and learning in the stacking of moments. The challenge is to prepare individuals to adapt to rapid changes, ones we can’t even imagine, and to prepare to be comfortable living through one’s imagination, and to trust and embrace the inevitable transformations that will challenge future participatory energies.

Part I: A Case for Mythmaking

To initiate this discourse, it is important to clarify the use of the term “myth,” since it has many connotations, some that you will see I find quite acceptable. Yet for others, the term “myth” triggers a negative context, almost a sense of dread that one is abandoning the tried and the true. To me, inventing new myths does not imply that old myths have lost their value or meaning. What myths have in common is that they exist in a particularized context, sometimes fictitious, but not always. When the context changes, the meaning changes. The key word is “change,” a common occurrence that we as human beings often find hard to accept, comprehend, and adjust to. To invent a new myth or to change the context has nothing to do with the presence or absence of technology, old or new. Yet it is the shift from a reliance on tools for extending the limitations of the body, the analog tradition, to the use of meta-tools for the

invention of new procedures that has the potential to redefine all human experiences through digital means of representation. I use the term “myth” to imply the mythical traditions as a celebration of the “fanciful” and the “imaginary.” It follows that new myths perpetuate new practices. Practice in this context implies inventing new procedures and processes for creating, archiving, and communicating the outcomes as either real or virtual forms of experience.

I am often asked what criteria I use to decide if I will fund a particular collaborative research initiative. My response, put in the form of a question: “Is the concept/premise based on the received language from accepted traditions, or daring enough to invent a new myth, one that I find worth perpetuating?”

I recently saw a sign in the local mall that stated: “Make your investments in the future based on the facts, not based on your feelings.” Recognizing that this was a marketing strategy for some investment firm trying to solicit our business, I understood their motive, not to ignore facts when making important decisions. Yet the implication when taken seriously is simple-minded at best. Human beings do not make decisions based on facts, but on what the facts mean. Meaning is inherent in the visceral nature of one’s experience, and foremost it is appropriated from one’s ability to feel everything. Thus the first myth worth perpetuating is that feelings are essential to the discovery of meaning and synonymous with our ability to imagine possible, probable, and preferable behaviors, leading to practices that nourish personal growth.

Part II: On the Nature of Imagination and Feeling

In the following excerpt from Arthur Miller’s play, *Resurrection Blues*, he presents a dilemma: that for some, feeling everything can be a curse rather than a blessing. The character Henri is a cousin of the repressive general running the country in which *Resurrection Blues* takes place.

Henri: “I am convinced now, apart from getting fed, most human activity – sports, opera, TV, movies, dressing up, dressing down or just going for a walk – has no other purpose than to deliver us into the realm of the imagination. The imagination is a great hall where death, for example, turns into a painting, and a scream of pain becomes a song. The hall of the imagination is really where

we usually live, and this is all right except for one thing – to enter that hall one must leave one's real sorrow at the door and in its stead surround oneself with images and words and music that mimic anguish but is really drained of it – no one has ever lost a leg from reading about a battle, or died of hearing the saddest song ... This is why this man must be hunted down and crucified; because he still really feels everything. Imagine ... if that kind of reverence for life should spread! Governments would collapse, armies disband, and marriages disintegrate! Wherever we turned, our dead unfeeling shallowness would stare us in the face until we shriveled up with shame! No – better to hunt him down and kill him and leave us in peace."¹

Moving from the sensibility of the playwright to the realm of the philosopher/esthete, Suzanne Langer, we discover from her essays on "Creative Processes in the Arts" that "art is created for and by the senses through imagination and the forms that are expressed tell us what we know about the nature of human feeling."² Interpreting the playwright's as well as the aesthete's vision in the context of creative collaborations would suggest that knowing about and celebrating the nature of human feeling is equally, if not more, essential than one's ability to assimilate facts. Our ability to be unique or peerless human beings challenges us to experience, recognize, generalize, and integrate shared meanings into perceptible images: ones that validate, contradict, or challenge our assumptions about everything. For those of us who choose to participate in transdisciplinary collaborations where the convergence of disparate ideas and ideals is celebrated, the positing of the notion of multiple universes as a theory of everything may be a useful new myth to consider.

Part III: How Might a Theory of Everything Nourish Transdisciplinary Conversations That, in Time, Morph Into Creative Collaborations?

From his book, *The Fabric of Reality: The Science of Parallel Universes – And its Implications*, Oxford scholar David Deutsch addresses relationships among quantum mechanics, the theory of evolution, epistemology (a theory of knowledge), and the theory of computation. He suggests that the four theories taken together form a coherent explanatory structure that may be the first theory of everything:

Every new idea will automatically tend to illuminate not just a particular subject, but all subjects ... for what we shall see not only in physics, that is being unified and experienced here, and not only in science, but also potentially the far reaches of philosophy, logic, and mathematics, ethics, politics and aesthetics – perhaps everything we understand, and probably much of what we don't understand.³

At a recent think-tank in which I participated, a distinguished group of scholars was attempting to imagine how technology innovation has transformed and will continue to transform the uncertain future of "higher education." My first thought was: "Who knows, anymore, what sort of education is higher than another?" Just this week, over three million individuals were exposed to a home-produced video on YouTube created by an anonymous individual in his kitchen, bent on creating a myth about a certain politician and one of her opponents. The three million viewers soon morphed into many more millions once the major networks belatedly picked up the story and aired the short video. As scurrilous as this activity might be, the results boggle the imagination when facts are invented, imagery is pirated from a former Apple marketing ad, and our potential for feeling becomes the receptor for one's biased, un-censored imagination. Dare I suggest that this somewhat subversive activity will probably only be discussed, if at all, by less than one percent of the education, media communications, and social science courses in higher education? The myth is that learning in proximity may be more real than learning gained from the world of virtual reality. What is known is that the future of all education must deal with issues of reality and virtual reality as competing spaces for learning and discovery.



The Environment for the Interactive Development of Emergent Art (EIDEA) is an artificial-life community composed of imaginary creatures and plant life, influenced by real-time climate variables that simulate life cycles. Human participants create original virtual creatures, introduce them to the environment, and interact with the virtual world in real time. The virtual and real circulation patterns are mapped as dynamic tracings projected on to a sand box and captured as video snapshots of an emerging archive depicting the growth activity within the environment.

Robb Lovell, a computer scientist/dancer was project director with eight artists and technologists at the Institute for Studies in the Arts, Arizona State University, 1998.

Deutsch states:

Virtual reality is not just a technology in which computers simulate the behavior of physical environments. The fact that virtual reality is possible is an important fact about the fabric of reality. It is the basis not only for computation, but of human imagination and external experience, science, mathematics, art and fiction.⁴

It seems the question we should be asking as we adjust to living in the new millennium is not so much whether we want to experience something "viscerally" or "virtually," but is the experience worth having, and if so, why? While artificial reality may imply something that is "other than life," it is important to recognize that it is not an unnatural form of human experience. If you disagree with this myth, it's time to scrap your cell phone, your iPod, your Blackberry, and all mediated sound, olfactory, and visual experience. The once-credible notion of "high tech, high touch" has morphed into "low tech, less touch," which reflects Buckminster Fuller's prediction that we would continue "to do more and more with less and less."

If one accepts the notion of self-similarity in qualities of "artistic mind" or "scientific mind" or the myriad of other qualities of mind, new myths regarding collaboration may constitute a form of artificial reality that we might find quite natural. The practice of creativity is not a condition of one quality of mind or another detached from the reality of living in one's body. It is a process of personal assimilation and transformation for all human beings: we either grow or we die as individuals, and thus the institutions we create grow or die with us. This, of course, is old news! The challenge for preparing anyone to embrace the future, whatever it happens to offer, is to be less focused on the new and more in tune with what's "next." The transformation from analog to digital has been with us for a long time, yet I would contend that it is this gradual shift from a reliance on tools that give form to reality to the interdependence of symbolic language systems to invent metaphors for tools that has presented us with the greatest opportunities to redefine the secrets of creative collaboration.

Part IV: Tracings on the Nature of Light, Meta-Tools, and Symbolic Language

The light we experience from outside of ourselves is either natural or artificial: the light from within, or the interior light of the mind, enables the fruits of our imagination.⁵

A camera is a black box. Nothing is visible inside until light enters the aperture. Once the interior of this sealed box is bathed in light, if one could look into that void through the tiny aperture, it would still appear to be totally dark. Only when an object is introduced into that space can we visually sheet a virtual form. Whether the destination is a sheet of light-sensitive paper or an array of pixels lit by data temporarily etched on an electronic chip, what we see with our eyes

(rods and cones, etc.) is encoded in the brain: the fruits of our imagination.

When we experience a television monitor or a computer screen, we are exposed to an electron-charged artificial light environment. This is not a neutral space, but a charged, dynamic, shifting set of light variables that you not only see; it prints itself on your skin. With those imprints may come some minimal exposure to radiation, an intervention that can have long-term effects on health and well-being. Yet another factor is at work that may be beneficial: the experience of viewing the text and/or dynamic images on that lighted screen is not frozen in that moment, but forms a composite set of variables: what you saw a few seconds earlier, what you are currently seeing, and what you anticipate seeing next. The real image only exists in the light of your imagination.



In Blue Light Performance, artist Seth Riskin utilizes an architectural setting he designed as a giant "optic." A sheet of blue laser light is cast from his body, parallel to his back. As he moves into the structure, the blue light articulates the spaces around his silhouetted body: a crossing point between the light from within and the light from without.

The image is a single frame from a three-minute performance for the Gyorgy Kepes Memorial, Kresge Auditorium, MIT, 2002. Photo by Walter Dent.

So what are the implications regarding the shift from analog to digital? In the analog world of tools, natural light was essential to functioning as a painter, sculptor, or craftsman. When photography was introduced as a new medium, a paradigm change occurred: capturing and containing the light from without and the light from within, a metaphor for what human beings have been doing all along, ushered in a new form of art practice that was not initially accepted by institutions in the business of educating artists. Yet, in time, the nature of

holography introduced another metaphor: their construction was made possible by splitting a beam of light into two parts, a working beam and a reference beam, enabling information about a three-dimensional object to be experienced as a three-dimensional virtual light form; a figure of lateral displacement. At that point in time, collaboration between art and science came together to create lensless photography.

More recently, we have learned how the development of sound-related technologies has become analogous to the



For Bright Field Observation reverses the analog tradition of human beings using technology to make things visible. Utilizing infrared reflectography, participants perform movement experiences that create interference patterns within an invisible light field. Robotic-controlled video cameras record visual artifacts as postcard-size images that archive the history of their interactive movement experience.

Collaborators were visual artist Stan Taft and architect John Zissovici at Cornell University; James Mayer, Solid State Scientist at Arizona State University; and Richard Loveless, ISA Director at Arizona State University's Institute for Studies in the Arts. 1994-95

shift from the use of lasers to the use of natural white light to produce holograms. Earlier research in the late 1980s by MIT artist fellow Joe Davis first recorded and transmitted sound in white light. I was fortunate to participate in some aspects of that research. More recently, there has emerged the invention of a sonic spotlight: a device that permits transmission of a particular sound event through the beam of a spotlight when it is focused on a very discrete limited space. Furthermore, it is possible to have many such sonic spotlights in proximity to

each other, each narrowcasting a unique sound experience to multiple spaces without any interference patterns. This is a prime example of how qualities of artistic and scientific mind have, over time, created a new myth about the transmission and experience of sound that has a myriad of applications for new forms of experiential learning.

Some 25 years ago, I was attending a World's Future Society conference in Washington, D.C. During that time, I was communicating routinely with John Ott, a former banker, amateur filmmaker, and eventually a leading proponent regarding the negative effects of artificial light on our health. Since he was neither a scientist nor an artist by training, his theories were considered by many to be sheer folly. Yet in my mind, he had demonstrated very clearly through his use of time-lapse photography that, indeed, what he referred to as "mal-illumination" could certainly be analogous to "malnutrition." That is to say, when people suffer from malnutrition, it is not because of what they eat but due to the absence of certain foods in their diets. Ott further hypothesized that mal-illumination was caused by excessive exposure to artificial light sources where the absence of certain wavelengths of the full spectrum of light were absent. In time, his findings were duplicated, tested, and proven by scientists to be highly regarded as essential to the study of artificial light and its effects on plants, animals, and human beings. Thus a new myth about the importance of natural light and health was imagined.

During that same time, I was engaged in a process referred to as "Creative Dreaming." A medical doctor whose name I can't remember developed the procedure. The procedure was fairly simple. He believed that there were limitations to the interpretation of dreams as a counterpoint to indicators embedded in one's past experience. He believed that we all have the capacity to initiate dreams that have the potential to connect disparate experiences that in turn create new myths about meaning.

But let's go back to the World's Future Society conference. After listening to a major presentation by an expert who was concerned about the quantity of satellites that we were launching (in a sense, polluting outer space), I decided that this would be one of three ideas I would incorporate into a

creative-dreaming process. The practice was to lie quietly in bed close to the time of falling asleep and repeat silently inside my head what connections were possible. The question I repeated was: “How can the clutter of satellites cycling around the universe, the nature of electrons cycling through transistors, and microchips in computers, and Ott’s ideas about the effects of artificial light cycling through the body affecting our health, be connected?” I happened to be staying at a friend’s house that night, sleeping on a couch several rooms away from his. In the middle of the night I awakened everyone in the house by repeatedly chanting: “Break the binary code with light! Break the binary code with light!”

Some years later, I participated in a small network of futurists who were meeting at yet another conference. In sharing ideas with each other, I described my dream that some day photons rather than electrons would drive computers and other technologies. A new myth perhaps, yet how to achieve that seemed beyond reach to some scientists at Bell Labs, one of whom was in my network. Reflecting on that time, the effort in most earlier research was concentrated on speed: how to accelerate the movement of increasing bits of information into multiple binary pathways. Thus the potential for a new myth, slowing down the light, has recently emerged to break the limitations of the binary code with light. As reported in the Washington Post in January 2007: “Scientists say that they have achieved a long-sought goal of slowing wave lengths of light to a relatively leisurely pace and using those harnessed pulses to store an image.” The article goes on to say that the fast-paced field of “slow light” is a field that barely existed a decade ago: “The fastest form of energy in the universe, light has the potential to revolutionize a wide range of technologies. Pulses of light can substitute for the digital ‘ones’ and ‘zeros’ that are today conveyed by relatively massive electrons on silicon chips.” It seems to me this provides a primary example of the function of mythmaking for discovering convergence and collaboration in the digital reality.

Summary

In this brief essay, I have examined the notion that predicting the future of technology innovation and the ultimate transformations that will occur is for the most part an exercise in futility. The counter-intuitive notion is to learn more gracefully how to live through our imaginations, to discover a personal context for accepting and embracing those inevitable changes that will occur in the way we communicate. To get there, wherever *there* is, I suggest that we develop new myths regarding our recognition of the convergence of different qualities of mind, that we engage in new forms of creative collaboration toward the invention of new paradigms for understanding everything. I do not want to imply that such collaborations should be limited to educational institutions; they should include real-world entrepreneurial research and development that drives inno-

vation in the corporate setting, not-for-profit agencies, and government, etc.

I fully admit to a bias of including qualities of artistic mind in such collaborations, since it seems apparent that their processes and procedures are more attuned to mythmaking. Yet we know that the fanciful and imaginary are not the sole province of a particular professional identity but the nexus of the human spirit. If the proof of the pudding is in “the shifting context,” I suggest we all have the potential to make our own connections, create our own myths, and discover our own theory of everything. I first learned this when I experienced a film by an eight-year-old girl in Harlem. Her title: “How’s Come When It’s Thundering You Can’t See the Moon.”

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4. Weiss, Rick. 2007. *Advance in slowing light holds technology benefits*, Washington Post, syndicated reprint, Arizona Republic, January 20, 2007, 32.
5. Zajonc, Arthur. 1993. *Catching the Light: The Entwined History of Light and the Mind*, Bantam Books, Doubleday Publishing Group Inc. New York.

Around the Antenna Tree: The Politics of Infrastructural Visibility

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Abstract

With the globalization of mobile telephony during the past two decades, cell towers have sprouted up across different parts of the world. The “unsightliness” of these towers has resulted in responses ranging from neighborhood protests to manufacturers’ concealment strategies. This essay explores the installation of towers in different locations from urban spaces to national parks and considers how their emergence relates to a set of concerns about technology, knowledge, and power. In addition to examining cell towers in different environments, I describe various “concealment strategies,” including covering towers in tree camouflage, mosque minarets, flagpoles, birds’ nests, and other hiding places. I explore what is at stake in hiding infrastructure and how such practices end up trading technological awareness for a highly synthetic version of “nature.” By disguising infrastructure as part of the natural and/or built environment, such strategies keep citizens naïve and uninformed about the network technologies they subsidize and use. Finally, I consider whether it might be possible to develop modes of affective engagement with infrastructure sites such as cell towers by discussing the work of artists such as Robert Voit (Enchanted Wood), Marijetica Potrč (Permanently Unfinished House with Cell Phone Tree), and Olaf Nicolai (Antenna Tree).

Communication infrastructures are frequently visualized as flow diagrams designed to approximate the spatial relations of a network. As a result, there is a tendency to overlook the uniqueness of particular nodes in a network: their physical form, the stories of their development, or the practices that surround them once they are activated. The antenna tree, I want to suggest, represents the potential to develop a more node-centric and materialist approach to the study of infrastructure. As a cell tower disguised as a tree, the antenna tree draws attention to the materiality of infrastructure in the very process of trying to conceal it. People often chuckle at these uncanny objects that have been designed to soften the severity of the steel tower with botanical plastics. This tower in disguise not only relays signals, but it is implicated in an array of industrial, legal, and socio-cultural relationships. Each antenna tree can be understood as a symptom of processes of fabrication and installation, state and local regulation, community delibera-

tion, and urban transformation. Thinking around the antenna tree, then, involves considering the fields of negotiation that are produced as an effect of infrastructure development and placement.

In this essay, I describe the emergence of cell-tower concealment strategies and discuss art works by Robert Voit (Enchanted Wood) and Marijetica Potrč (Permanently Unfinished House with Cell Phone Tree) that integrate antenna trees and provoke discussions of infrastructural in/visibility. I explore what is at stake in hiding infrastructure and how such practices may end up trading technological awareness for a highly synthetic version of “nature.” By disguising infrastructure as part of the natural environment, concealment strategies keep citizens naïve and uninformed about the network technologies they subsidize and use each day. We describe ourselves as a “networked society,” yet most members of the public know very little about the infrastructures that support that designation in broadcasting, web, or wireless systems. This issue of infrastructure literacy becomes more prescient as we enter an era of ubiquitous computing in which many different kinds of objects and surfaces will be used as relay towers and/or web interfaces. Since infrastructure sites are becoming more pervasive and less invisible, the work of visual artists can be extremely important in drawing our attention to them and triggering conversations about their design, placement, and effects.

Concealment

Cell-tower concealment began in the US during the early 1990s, as wireless carriers installed new infrastructure in cities across the country. These coverings, or concealment strategies, as they came to be known, were marketed as a way of disguising unsightly towers installed in the midst of urban and suburban areas. As cell towers sprouted up, citizens groups nicknamed NIMBY’s (not in my backyard) formed in communities across the country to protest tower installation, especially in residential districts. Such groups expressed concern not only about neighborhood aesthetics, but also about potential health risks, since the federal government authorized tower installation without conducting trials to assess their effects on people living nearby. Others feared that cell-tower installa-

tion near their homes would reduce property values. By 2005, there were at least 500 formal complaints filed in communities across the US protesting cell-tower installations. Some communities (such as Redmond, Washington) passed ordinances mandating concealment of towers installed in residential districts, and Connecticut created a Siting Council to regulate cell-tower placement throughout the state.

Opposition to cell-tower placement was not limited to residential areas. One of the most controversial installations occurred in Yellowstone National Park. In 2001, Western Wireless Corporation mounted a 100-foot cell tower in close proximity to the beloved geyser Old Faithful. After the installation, it was impossible to look at the geyser without seeing the steel cell tower looming in the distance. In 2004, the environmental organization PEER (Public Employees for Environmental Responsibility) filed a petition for removal of the tower near Old Faithful, stating that it was illegally installed and done without public comment.¹ When Congress passed the 1996 Telecommunications Act, it authorized construction of cell towers on federal lands. Cell tower installations have occurred in other national parks as well, and wireless corporations provide funds to the National Park Service by leasing these lands. For instance, Western Wireless pays \$12,200 to the National Park Service each year to lease the land on which the tower near Old Faithful sits.² A side effect of the 1996 Telecom Act is that private wireless carriers now provide operating revenue to the National Park Service.

Installation of cell towers raises fundamental questions about control of property, whether on the ground or in the spectrum, in neighborhoods or national parks. The cell tower only gained public attention when installed in the “wrong place” – that is, when it was perceived as violating the sanctity of a nationally protected forest or a valued neighborhood. Such controversies are useful, in that they draw public attention to infrastructure sites and their relationship to social, economic, and environmental issues. Wireless infrastructure is defined not only as the capacity, as advertisers would have it, to speak on a phone “anytime anywhere,” it also involves (re)allocation of publicly owned natural resources, installation of new equipment on private and public properties, and restructuring of lifestyles and communities.

Given the controversies that emerged around cell-tower installation, manufacturers and wireless carriers resorted to the use of camouflage as a way to appease NIMBY and environmental groups. Increasingly, owners have concealed the technology in an effort to mitigate complaints. Larson Camouflage, based in Tucson, Arizona, devised the first “tree tower” in 1992. Since then, other companies with names such as Steel in the Air, SpectraSite, Clearshot, Crown Castle, Treescapes, TeleStructures, and Pinnacle Towers have sold and installed so-called “stealth towers” designed to look like different tree species, flagpoles, church steeples, mosque minarets, crosses, and grain silos, among other things. One company

customized a tower to look like an osprey nest. Another sells a “lightning tree” designed to look like a stump struck by lightning. These tower get-ups can cost up to \$200,000, and securing permission for their installment can require elaborate planning and meetings with property owners, community groups, local political officials, and representatives of wireless corporations.

With the globalization of wireless telephony, similar firms have emerged in parts of the world that specialize in international distribution of tree tower coverings. For instance, Envirocom, based in Gauteng, South Africa, sells antenna trees to clients in Uruguay, Brazil, the US, Portugal, France, the UK, Holland, and Turkey. And the Turkish company Preserved Palm, based in Ankara, has signed deals with clients in Dubai, Saudi Arabia, Qatar, Egypt, the United Arab Emirates, Moldova, Kazakhstan, and Germany, among others. A global industry has formed to conceal wireless infrastructure, and these new products have been installed in various sites for different reasons. Given this growing trend, we might ask: What is at stake in this concealment? When technologies remain hidden or obscure, they remain beyond public concern. Only when cell towers became visible in neighborhoods and national parks did citizens take an interest in them and their effects. Most people notice infrastructures only when they are put in the wrong place or break down. This means that public knowledge of them is largely limited to their misplacement or malfunction.

While concealing infrastructure sites may be a viable aspect of urban planning (as has long been the case for sewer, electricity, and water systems), one of its effects is to keep citizens and users naïve about the systems that surround them and that they subsidize and use. Because of this, it is important to devise other ways of visualizing and developing literacy about infrastructures and the relations that take shape through and around them. Are there ways of representing cell towers that will encourage citizens to participate in sustained discussions and decisions about network ownership, development, and access? What is it about infrastructure that is aesthetically unappealing? What form should infrastructure sites assume? Should they be visible or invisible?

Antenna Tree Artworks

While manufacturers and carriers have devised ways to con-

ceal cell towers, some artists have created works designed to draw our attention back to them. German photographer Robert Voit has exhibited a series of photographs entitled “Enchanted Wood” that were taken between 2003 and 2005 in the US, Great Britain, South Africa, Korea, Italy, and Portugal. The photos draw upon the conventions of landscape photography and scientific illustration to present an inventory of cell towers that have been camouflaged as tree species in different settings. Each photograph represents an antenna tree in isolation (cactus, pine, palm, or cypress, as well as the environment surrounding the tower: desert floor, grassy field, parking lot, or mobile home park).³ By framing each tree next to an electrical box, Voit prompts the viewer to recognize it as an electrical apparatus and to reflect upon its status as such. What does it mean to view a tree that is actually a cell tower made of steel and plastic? In one photograph set upon a lush green landscape in Great Britain, the top of the tower is adorned with a thin branchlike structure that barely covers the transponders, so that they stand out silhouetted against the pale grey sky.

The tree’s conspicuously synthetic top works in stark contrast to its bottom, which is surrounded by a thick cluster of live plants and foliage and a rolling expanse of green grass. The photo works to expose an infrastructure site that has been carefully designed to blend in with the environment, but it also evokes the electrical sublime by subtly alluding to the complex and imperceptible signal transactions that occur across geophysical and electromagnetic territories.

Collectively, Voit’s photos activate a series of tensions between visibility and invisibility, spectacle and obscurity, and nature and artifice, and they provide a useful space for thinking about the politics of infrastructure concealment. While the photos resemble some of those that appear on manufacturers’ web sites, they are distinguished by their meticulous attention to framing, which privileges the tower against

its surroundings in the same way a botanist might focus on a new tree species. The sheer prominence of the antenna tree in each photo is a testament to Voit’s own curiosity about these new biotech forms, and he has roamed through different countries and settings to find them. In this sense, Voit’s work also merges with the practices of the online communities of FraudFond.com and Waymarking.com, where users post images, descriptions, and/or GPS data of disguised cell towers and

document their emergence in various locations.⁴ As an art photographer, however, Voit is able to activate and play upon different visual conventions such as landscape imaging, scientific illustration, and advertising, and in doing so, he makes a stronger conceptual intervention in the representation of infrastructure. Not only does his work stir uncertainties about the distinction between nature and technology, he also ultimately provokes the viewer to glimpse something that is not meant to be seen: the practice of concealment itself.

While Voit represents the antenna tree in different settings and foregrounds, Slovenian architect and installation artist



Marjectica Potrč
Permanently Unfinished House with Cell Phone Tree

Marjectica Potrč encourages us to consider the cell tower in relation to urban dwellings and space. Potrč has worked in different parts of the world and often integrates aspects of communication infrastructure (satellite dishes or cell towers, for example) into her designs. Committed to issues such as renewable energy, low-income housing, and visual ecology, Potrč’s Contemporary Building Strategies series conceptualizes a variety of small dwellings based on her experiences in a range of locations including villages in the Brazilian Amazon, barrios in Caracas, neighborhoods in Pristina, and settlements in South Africa. One of the works in this series, entitled Permanently Unfinished House with Cell Phone Tree, was exhibited as an installation at the Salzburg Kunstverein in 2003 and the NGBK in Berlin in 2006. It featured a small pink house made of bricks with wooden planks that support a plastic awning over the entrance. Steel rods emerge from the rooftop to suggest that the construction is unfinished, and a cell tower disguised as a pine tree stands next to the house. Potrč explains that the house is designed to remain unfinished so the owners can avoid paying property taxes.

The installation provokes consideration of urban space

and regulation, of dwelling and communication. By placing the cell tower near the home, Potrč raises the issue of connectivity and low-income housing, symbolically inscribing this “illegal” structure within a field of wireless communication. While the piece could be read as echoing the concerns of NIMBY groups, Potrč’s position differs. The conceptual basis for her work is grounded in her experiences far beyond US suburbs and national parks. Here the antenna tree appears to be a welcome, if awkward, addition to the urban landscape. The placement of an antenna tree next to an unfinished makeshift dwelling serves as a reminder that poverty persists within the boundaries of wireless footprints. Who is the owner of this property? Is the tower located on the homeowner’s land or not? Just as wireless carriers pay permit fees to the US National Park Service, they compensate private property owners when they install and operate towers on their lands. In the context of low-income housing districts, there may be strong incentives to allow tower installations right next to a home to help subsidize the costs of ownership and/or construction, while in more affluent neighborhoods, such supplemental income may not be as necessary or desirable. Thus the antenna tree is a symptom of financial gain for the landowner that hosts it and of an increasing intersection in the determination of geophysical and electromagnetic property values.

Potrč’s piece also raises important questions about the meanings of materiality in the age of globalization – whether the raw materials (brick, plastic, wood, and steel) used to construct the house and/or hide the cell tower, or the electronic signals that invisibly traverse transponders on the antenna tree. What is the urban environment made of, exactly? What kind of contradictory arrangements are built in different parts of the world? Why is it easier for wireless companies to install towers in urban space than it is for some citizens/workers to build and afford homes? What is the relationship between wireless infrastructure and the mode of unfinished and transient dwelling? These are the kinds of questions Potrč encourages us to consider. Her fieldwork in impoverished yet vibrantly resourceful communities in various parts of the world enabled her to position the antenna tree in a different milieu, where issues of class, taste, scale, ownership, and control emerge around it.

The politics of infrastructural invisibility that take shape around the antenna tree involve citizens’ concerns about neighborhood aesthetics, health and property values, environmentalists’ protection of national parks, global corporate enterprises, and artists who challenge us to reflect upon the contexts and effects of infrastructure concealment. Though these groups are situated around the antenna tree in different ways, they all draw attention to and help to generate dialogues about it.

Perhaps the ultimate irony of the antenna tree is that it actually exposes more than it hides and in this sense can be thought of as a site for generating further public knowledge about the materiality of wireless and other network systems.

We are socialized to know so little about the infrastructures that surround us, even though many of us use mobile phones each day. Would our experience of mobile telephony change if we knew more about the architectures of signal distribution? It is difficult to say, but we certainly would have a different relation to the technology if we understood it as something more elaborate and expansive than something that rings in our purse or vibrates in our pocket.

The emergence of wireless telephony has involved sale and lease of public and private property; allocation of space in the electromagnetic spectrum; redefinition of urban, suburban, and rural environments; and alteration of patterns of daily life. By thinking around the antenna tree, perhaps it is possible to begin cultivating new critical approaches to the study of infrastructure and its relation to cultures of everyday life.

Notes

1. Park Service Directors Silent as Cell towers Grow in National Parks. 2004. Omega News, omega.twoday.net/20040427/.
2. Foster, M. 2004. Height of Yellowstone Cell tower Questioned, Preservation Online, www.nationaltrust.org/magazine/archives/arc_news/031804.htm.
3. Some of Robert Voit’s photos are available at www.robertvoit.com/bilder/serie1_new_trees/index.php?id=9.
4. See FraudFond at www.fraudfrond.com, and the Disguised Cell-towers community of Waymarking.com at www.waymarking.com/cat/details.aspx?f=1&guid=5df351c0-98ea-4b8c-9a84-844f67beb552&r=200.

Art Gallery: Global Eyes

Art Panels



Database Documentaries and Global Knowledge: Transnational City Symphonies, Constructivist Courseware, and Interactive Science

Theory and practice in database documentaries from USC's Labyrinth Project: Tracing the Decay of Fiction, a transnational city symphony; Einstein in California, a contradictory portrait; and Russian Modernism, constructivist courseware.

Moderator

Marsha Kinder

Director of The Labyrinth Project and Professor of Critical Studies
School of Cinematic Arts, University of Southern California

Panelists

Rosemary Comella

Creative Director, The Labyrinth Project
School of Cinematic Arts, University of Southern California

Kristy H.A. Kang

Creative Director, The Labyrinth Project
and Adjunct in the Division of Animation & Digital Arts
School of Cinematic Arts, University of Southern California

Scott Mahoy

Creative Director, The Labyrinth Project
School of Cinematic Arts, University of Southern California

Global Environment and Digital Media

This panel of experts in interactive art, visualization, and socially responsible media explores the use of graphical and interactive technology for art relating to global environmental issues.

Organizer and Moderator

Bill Tomlinson

Assistant Professor of Informatics
University of California, Irvine
wmt@uci.edu

Panelists

William Brent

Critical Studies/Experimental Practices PhD student
University of California, San Diego

Heitor Capuzzo

Professor Titular – Cinema
Universidade Federal de Minas Gerais

Natalie Jeremijenko

University of California, San Diego

Michael Moshell

University of Central Florida

Vibeke Sorensen

University at Buffalo

Shahrokh Yadegari

Assistant Professor of Theater and Dance
University of California, San Diego

Indigenous People and Digital Media

An exploration of the role of digital media-making in Indigenous communities: its uses, forms, issues, and intentions. Representing several unique and varied cultural groups from across the globe, these esteemed Aboriginal filmmakers, photographers, and multimedia artists discuss how contemporary technologies allow them to simultaneously work with their respective cultural and ancestral iconographies while creating new ones, and how issues of identity, sexuality, cultural/political sovereignty, and land are played out through their art, not only in their respective post-colonial contexts, but also in this era of intense globalization.

Organizer

Cedar Sherbert

Artist and Filmmaker
Santa Ysabel Band, Kumeyaay Nation
iipay@hotmail.com

Panelists

Damián López Castillo

Filmmaker and Media Activist
Oaxaca, México

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Artist
The University of New South Wales
Sydney, Australia

Anthony Deiter

Artist
Santa Fe, New Mexico

Cedar Sherbert

Artist and Filmmaker
Santa Ysabel Band, Kumeyaay Nation

ISAST I: The Planet Has Changed: Art, Environment, and Sustainable Development

Human societies face a number of important issues related to the problems of sustainable development, environmental change, and climate change. Many artists have been involved in these issues over the last decades within the environmental and green movements. A new generation of artists, scientifically and technically literate, is engaging in new ways. The new planetary information-technology infrastructures and new-media technologies provide different approaches than were possible 40 years ago.

Organizer

Roger Malina

Leonardo/ISAST, Leonardo Education Forum

Moderator

Sheila Pinkel

Pomona College

Panelists

Roger Malina

Leonardo, The International Society for the Arts, Sciences and Technology

Andrea Polli

Director of Integrated Media Arts, Hunter College

Mike Phillips

University of Plymouth

ISAST II: Artists Have Changed: Art, Science, Technology Interaction

When Leonardo was founded 40 years ago, the theoretical context was the “two cultures” debate of C.P. Snow. Few artists were trained in science or engineering contexts, and access to new technologies drove a number of initiatives such as the E.A.T. programs and the MIT Center for Advanced Visual Studies, and new venues such as the SIGGRAPH Art Gallery, ARS Electronica, and ZKM. A new generation of artists, born digitally and scientifically literate, is now radically altering the way these issues will be addressed in the future. This panel provides a 40-year perspective on how the work of artists and institutions has evolved new trends, and future directions.

Organizer

Roger Malina

Leonardo/ISAST, Leonardo Education Forum

Moderator

Michael Naimark

University of Southern California

Panelists

Roger Malina

Leonardo, The International Society for the Arts, Sciences and Technology

Stephen Wilson

San Francisco State University

Eddie Shanken

Savannah College of Art and Design

Anna Ursyn

University of Northern Colorado

Chinese Media Art Preview

Chinese economic and institutional reforms have helped create a new media art scene in China that is accomplished and capable of international recognition. This panel focuses on significant historical predecessors of media art since the 1990s and the extensive development of media art in China since 2000. In addition, topics such as cultural and social issues, art form changes, media art education, and technological advancements involved with Chinese modern media art creation are addressed. Finally, Chinese media artists in the US are highlighted and compared to media artists in China.

Organizer

LiQin Tan

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Panelists

Xiang Zhong Liao

Associate Dean, Animation College
Communication University of China

LiQin Tan

Associate Professor
Rutgers University

Robert Wang

Associate Chair, Department of Digital Arts,
School of Software and Microelectronics
Peking University

Local Concerns – Global Art

Digital art is native to a global forum. Its immaterial methods of production and distribution are comparable with those behind economic globalization. What occurs when sensibilities are prompted by the particularities of local conditions? Do these ideas fall victim to some of the same forces that critics of globalization bemoan, such as homogenization of culture in the service of a hegemonic aesthetic status quo? Or does the work gain insight from a broad discourse of artistic sensibility? In this panel, several artists present work that grows out of particular aesthetic, political, and conceptual conditions connected to issues of concern in the art world at large.

Organizer

Sheldon Brown

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Panelists

Sheldon Brown

Professor of Visual Arts
University of California, San Diego

Ricardo Dominquez

Assistant Professor of Visual Arts
University of California, San Diego

Alex Dragulescu

Manager, Experimental Game Lab
University of California, San Diego

Shahrokh Yadegari

Assistant Professor of Theater and Dance
University of California, San Diego

Alternative Networks

Despite Thomas Friedman's contention in *The World is Flat* that digital technologies have equalized or "flattened" differences in the world, the members of this panel are convinced that many variations and disparities remain to be described and analyzed. Networks and infrastructures are certainly not the same all over the world. They are amalgams of old and new systems, relics of various stages of capitalism and/or socialism, they involve both bodies and machines, and they have different histories and uses. They are embedded in different patches of earth, operate at various scales and speeds, and serve different populations.

This panel features presentations by artists and scholars who work on the visualization of networks and infrastructures in different parts of the world. They explore the social, cultural, and economic effects of network technologies, the visualization of different systems, and the tactical appropriation of them by disenfranchised groups. The goal of the session is to provoke discussion of the variations and differences within categories such as "network" and "infrastructure," and to develop new modes of aesthetic and critical engagement with them.

Organizer

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Panelists

Lisa Jevbratt

Associate Professor
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University of California, Santa Barbara

Rita Raley

Associate Professor
Department of English
University of California, Santa Barbara

Warren Sack

Associate Professor
Department of Film and Digital Media
University of California, Santa Cruz

Cristina Venegas

Associate Professor
Department of Film and Media Studies
University of California, Santa Barbara

Lisa Parks

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