

# The Aesthetic Use of Mechanic Beings

By  
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for the exhibition "in::Formation" held at the  
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*The serious artist is the only person able to encounter technology with impunity just because he [sic] is an expert aware of the changes in sense perception.*

— Marshall McLuhan in *Understanding Media* (1964)

*The artist is now only the mechanic, the maker,  
the stage manager, not the star.*

— Tina Matkovic in *Primary Structures* (The Jewish Museum, 1966)

*Today, the main option people have for expressing  
themselves powerfully is through machines.*

— Mark Pauline, *Survival Research Laboratories* (1987)

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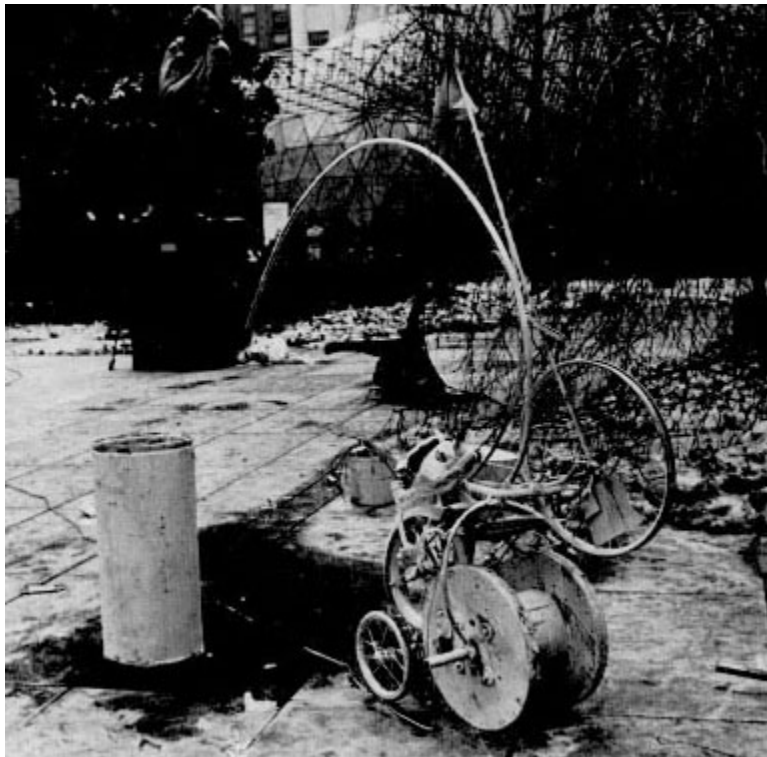
## Overview:

The group, "sine::apsis experiments," is a network of artists — Valerie Sullivan Fuchs, Kevin Heisner, Dan Miller, Kym Olsen, Fernando Orellana, Sabrina Raaf, Lauren Was, and Amy Youngs — that interface bodies and technologies. Steve Boyer, and Kenneth E. Rinaldo, all contemporary media artists, have been invited by sine::apsis as special guests for this show. "in::FORMATION" is an exhibition of art that moves and makes artworks in the process. Often natural life processes are introduced into artificial media. The result is immersive and responsive art experiences generated by computer-mediated kinetic and interactive sound sculptures, light installations, experiments with microorganisms, and performance works.

Besides the pre-programmed activity, randomness is introduced into their works. Like scientists in cybernetics and socio-biology, these artists agree in seeing randomness not simply as a lacking pattern but as the creative ground from which patterns can emerge. [1] Such systems result in "emergence" whereby, appearing on their own, surprising and unaccounted-for properties that arise from the complex system and develop in ways not anticipated. The pieces form developed networks to which are imparted an upward tension to the recursively looped programs such that, "like a spring compressed and suddenly released, the

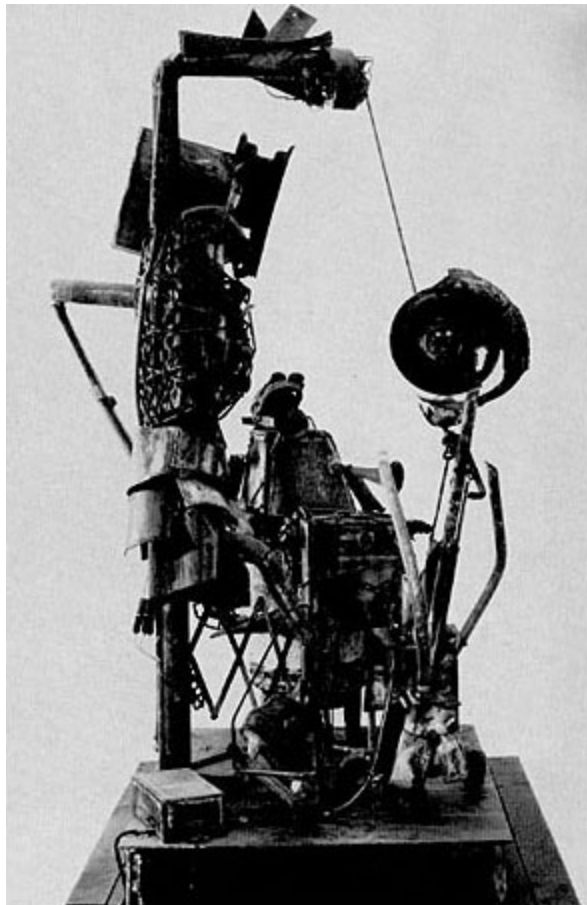
processes break out of the pattern of circular self-organization and leap outward into the new." [2] They ask us to see technology and the human as contiguous, rather than opposed, and speculate upon the advent of new *mutual* evolution.

The group (formerly known as "synApse") began in 1998 when Sabrina Raaf and Fernando Orellana invited nine other Chicago-based artists to meet and discuss issues concerning art and technology. [3] Commonalities were found, mutual technical support was given, and a collective vision formulated. For instance, the interrelationship between information and entropy interests them — like how technologies encourage rapid restructuring and new use of our bodies that then change experiences of our embodiment in the world. This then impacts the metaphoric networks at play within culture and encourages new life-choices. But also of interest to them is how technologies are geared to accelerate a planned obsolescence that feeds rampant consumerism. On the market, machines have short life spans. In one of their manifestoes, the group declares both a stoic resignation to the inevitable obsolescence and breakdown of their automata and their own mortal bodies, even as they utopically formulate a vision of themselves as machine-assisted artists producing artworks that are art-producing machines.



*Homage to New York, remnant* (1960) Jean Tinguely

To focus on only the machine's mortality might lead one to think that these artworks by sine::apsis and their invited guest exhibitors are heirs of Swiss artist Jean Tinguely's hilariously self-destroying machine-sculptures or American Richard Stankiewicz's infernal motorized junk. However, the artists in "in::FORMATION" eschew both the former's slapstick lampooning of, and the latter's sardonic attack on, modernity's child — the machine. Tinguely delighted in contrasting, as K. G. Pontus Hultén put it, "the paroxysm of junk in motion" to the fluidity of human locomotion. Stankiewicz resurrected metallic monsters from our glut of junk, as Hultén observed: " . . . he awakens machine parts from their dreams and makes them come alive. Anything brought back to life in this way is frightful and menacing. Stankiewicz is apparently afraid of the power of machines; when they are smashed, their degraded strength seems even more frightening than before." [4] Hence, the true contemporary heir to the Tinguely-Stankiewicz's legacy is not Sine::Apsis, but Mark Pauline and Matt Heckert's San Francisco-based Survival Research Laboratories' (SRL) manic machinic black comedy performances wherein humor and threat meet.



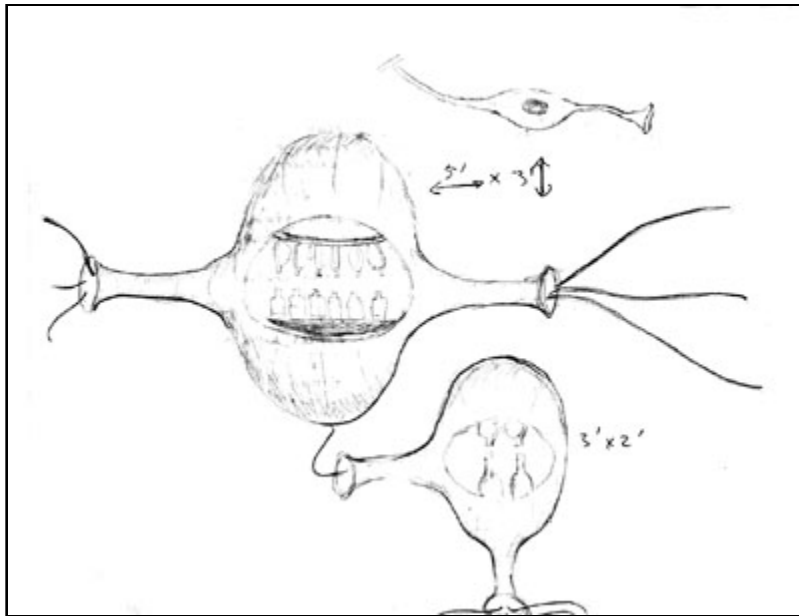
*The Apple* (1961) Richard Stankiewicz

For modernists Tinguely and Stankiewicz, aesthetic logic succeeds only by maintaining an antipodal contrast: *human/machine*. To them, the term *intelligent-machine* would have been an oxymoron. And SRL's wacky machines only warn us of the "dark side of the force" of technology while, paradoxically, encouraging participants and viewers to take devilish delight in the simulation of unleashed fury. Not so the artworks in "in::FORMATION." These artists seek a *rapprochement* between art and science, between the human and technology.



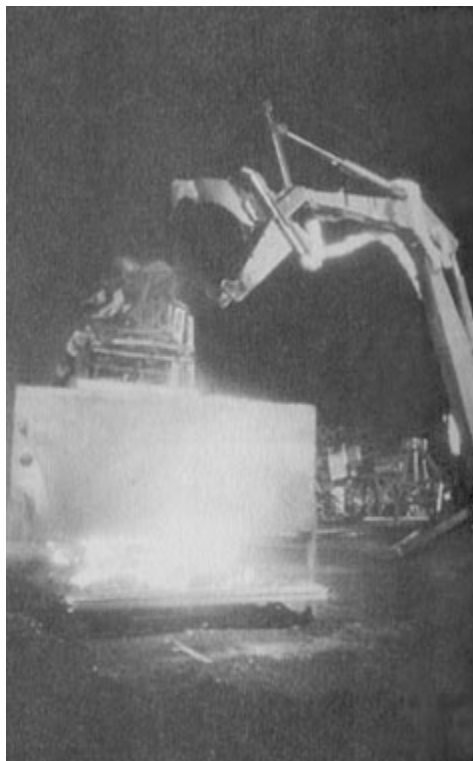
*Pantomime* (1961) Robert Rauschenberg

To seek an artistic precedent concurrent with Tinguely and Stankiewicz for sine::apsis's alternative attitude toward technology one must go back to Robert Rauschenberg's "combine-painting" *Pantomime* (1961). This 7-foot by 5-foot canvas sports two operating electrical fans that face each other from either side of the piece so that, as Hultén describes it, "The play of the two fans . . . is one of the subtlest uses of mechanical means in a work of art. The two currents of air move over the painting behind them [the fans], keeping it fresh and in constant relation to the atmosphere of the room. The display of electric cords connects the work of art to the current of life." [5] One also notices wide splashes of black paint that appear to have moved from the left toward the center and white pigment that seem to have flowed from the right toward the center, clues suggesting they've been spread in part by the force of the air from each fan, hastening the pigments' drying. This distinctly implies the cooperative agency of man and machine the production of pigmental patterns whereby human and machinic constraints coupled with random events result in an artwork. Here the machine, as in "in::FORMATION," is treated as an apprentice, that appears to learn and come to function independently of its master, rather than an object of sport or menace.



Sketch for *The Unstoppable Hum* (1999) Sabrina Raaf

The artists represented in this show desire creative machines rather than foist on us destructive ones. They produce a more complex systems architecture where networks, reflexivity, and the interplay of randomness and pattern are used to initiate a profound engagement with informatics, [6] commenting on a society fraught with information glut, genetic engineering, robotics, AIDS, and environmental destruction. They observe that sensorial experience is increasingly mediated through technological extensions of ourselves. Where humans and machines are viewed as sharing patterns of organization, there can emerge the "posthuman," the splicing of human with the machine. These artists view such innovations as fertile implements, as tools to be used for heuristically creating new experiential frameworks that question the nature of creativity, manipulate staid cultural messages, and restructure old meanings.



"The Big Arm," in *Illusions of Shameless Abundance*:

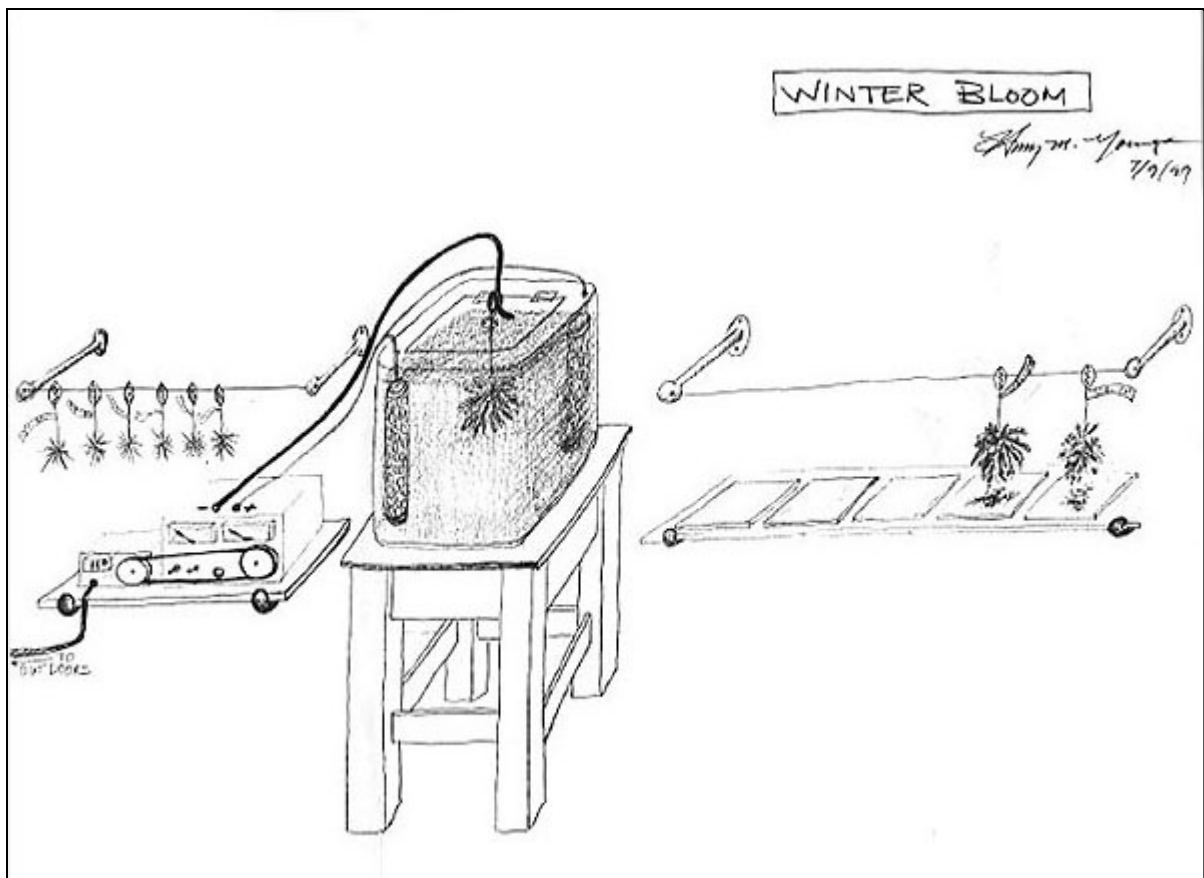
*Degenerating into an Uninterrupted Sequence of Hostile Encounters*  
(1989) Survival Research Laboratories, Mark Pauline and Matt Heckert

As in SRL performances, technology can be construed dystopically, but one must also recall Martin Heidegger's claim that where technology's danger lies, so does its saving power, a saving power not merely secondary to its danger. Underscoring the ambiguous nature of technology — Heidegger reminds us that in ancient Greece "the *poiésis* of the fine arts was also called *techné*" — he says any decisive confrontation with technology "must happen in a realm that is, on the one hand, akin to the essence of technology and, on the other, fundamentally different from it. Such a realm is art." [7] Such a confrontation underlies sine::apsis's interfacing of technology and the human.



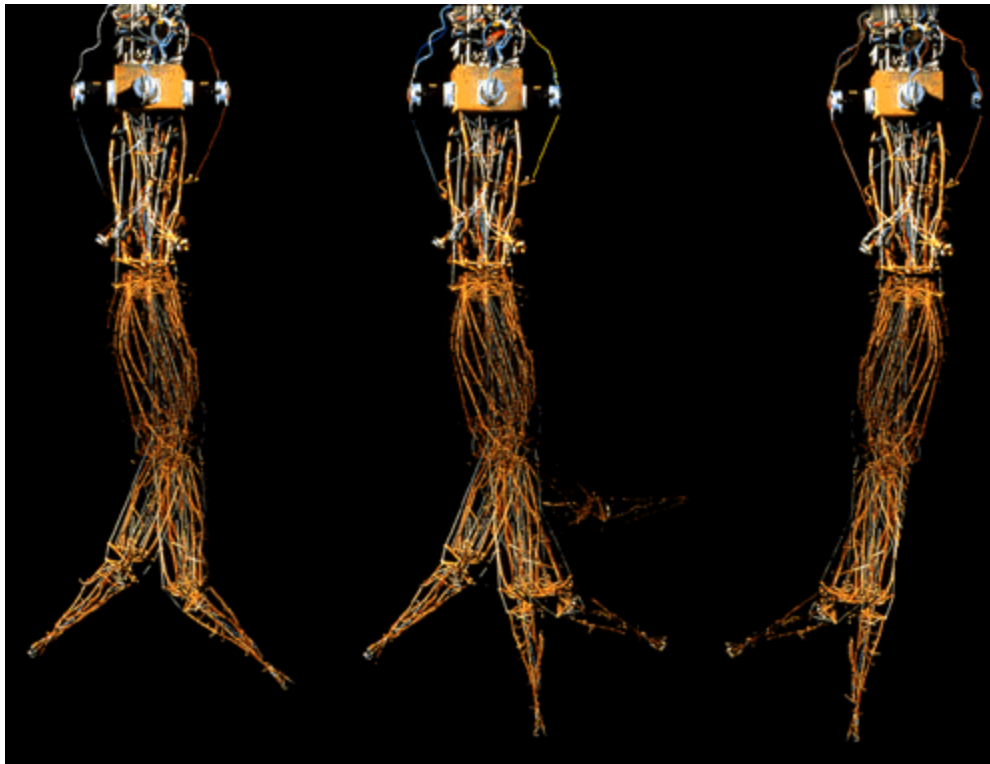
Installation view of *Drawing Machine* (1999) Fernando Orellana

These installations and the accompanying opening night performances (all produced specifically for this exhibition) function as witty metacommentaries on artistic production itself while challenging Marshall McLuhan's claim that new technologies can only induce "self-amputations" of our own organs to protect them from over stimulation. [8] Their works evoke a more positive outlook toward interfacing with machines than evidenced in Arthur Kroker's recent comment that we are living in the "flesh-eating 90s." [9] Becoming posthuman need not result in a wasting away of our humanity. Here information is not conceived as a thing separate from the medium instantiating it, but as literally, physically *in formation*. Embodiment — realized in the human complicity in the systems on exhibition here, as well as their various material products—is not a to-be-purged supplement to information. [10] The works here are articulations that escape from the dualism of anti/pro-humanism by offering models of "post-human existence where 'technology' and the 'human' are understood in continuous rather than in oppositional terms." [11] As a group, these artists strive toward what Katherine Hayles has called "reverse reductionism": the synthesis of elements which produce something mysterious and excessive. [12]



Sketch for *Winter Bloom* (1999) Amy Youngs

Thus, these artists stress human agency — employing both artist and audience — and modes generating random events as catalysts for their non-determinate, intelligent, independently functioning mechanisms. The machines become autonomous; by themselves they produce/transform certain materials during the span of the exhibit. The exhibitors intend such transformations to make an impact on the audience visually, but often on the exhibition space as well via sound, smell, and taste. In some works, the very presence of a viewer in the exhibition space functions reflexively as feedback. Looped through the observers, this reflexivity unwittingly makes them part of the system being observed. So how then will the viewers perceive these products — as art or, having not been immediately produced by human hand, something less?



*The Flock* (1994) Kenneth Rinaldo and Mark Grossman (strobe shot capturing multiple positions of the three arms interacting )

For many people artistic creation is mysterious, even magical. Most theories of creativity are too vague to be modeled and computers are deterministic, but they can simulate arbitrary choices. The idea is to start with a few simple rules or constraints and then, through highly recursive structures, allow complexity to emerge spontaneously. [13] Enhancing this effect, the artworks in this exhibition intermix computational devices with human agency and random generation either at the initial stage or during the computational event itself. The artist or random generator produces ideas, making use of at least some initial constraints. The outcome, however, calls for revision or elaboration by both machine and audience intervention, and the process may be governed by constraints that cannot be used in the generative stage. In other words, the intelligent-machines in this exhibition are designed to evolve spontaneously in directions the artist-programmer may not have anticipated; their intent is to produce systems that *evolve the capacity to evolve*. They are *in formation*. In the process, these machine-human systems create products and byproducts for our wonderment.

These artists seem to have anticipated an observation by Katherine Hayles: "The best possible time to contest for what the posthuman means is now, before the trains of thought it embodies have been laid down so firmly that it would take dynamite to change them. Although some current versions of the posthuman point toward the anti-human and the apocalyptic, we can craft others that will be conducive to the long-range survival of humans and of the other life-forms, biological and artificial, with whom we share the planet and ourselves." [14]

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### **The Opening Night Performances:**

**"Wanderings"** by Stephen W. Boyer: clad in a network of microprocessors wired to produce sound, the artist moves about the gallery. When he likes the musical patterns, he downloads the algorithm to a sculptural object that he is wired to. This object, which remains active throughout the exhibition, contains dozens of



small light sources interwoven into a network representing relationships among the twelve tones of the chromatic scale. Disconnected from the artist, the sound-sculpture continues to modify the original sound pattern as sensors embedded in the gallery unobtrusively and randomly feed back new data to the system, increasing musical complexity.



Stephen Boyer, "Wanderings", 1999, glass, soap, electronics, variable dimensions (approx. 36" x 36" x 12"). Photograph courtesy of the artist. From the exhibition "in::FORMATION," January 14 - March 1, 2000 at the School of the Art Institute of Chicago's Betty Rymer Gallery.

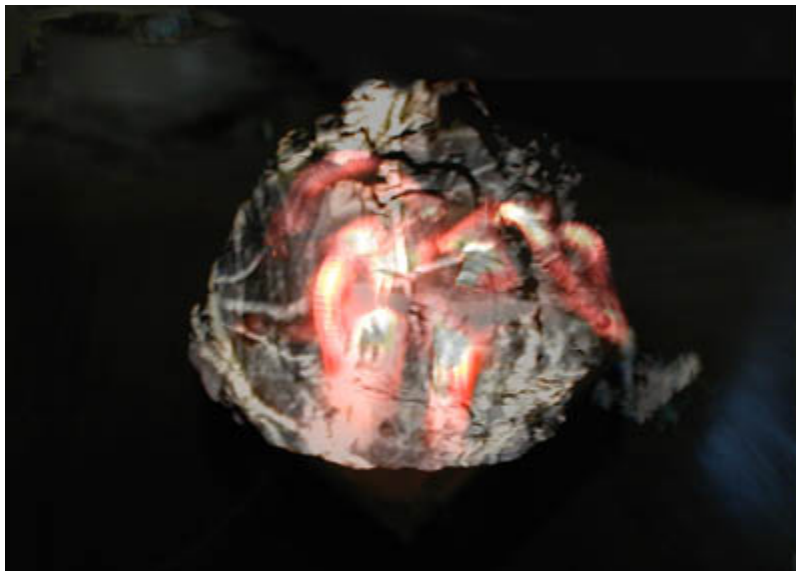
**"Gesundheit"** by Kym Olsen and Trevor Martin: the turn of a millenium gives us an artificial frame from which to reflect on the successes and failures of our methods of making meaning. How have these methods affected our perceptions of ourselves externally and internally is the general question from which "Gesundheit" began. It is a distillation of one of many explorations the performers have made with the body as the site for pathology, pleasure, hysteria, pain, and transformation. In this case they have focused on the center of the body, the belly. The performers are located behind an artifical wall which has peepholes from which to view them. One performer is suspended on the wall, while the other "tortures" the suspended performer's belly as she attempts to tell a story. Their exposed skin is covered in organic material such as flour, egg and food coloring. Here the belly is used to investigate the dynamics between public/private and pleasure/pain. Formally, the use of a frustrated narrative, absurdity, and fragmentation are used to "paint" an incomplete picture for the viewer. The viewer is unable to see the whole gestural sequence and the artificiality of the external appearances of the performers work to inhabit the postmodern idea that all history is fabricated.



Kym Olsen and Trevor Martin, "Gesundheit", 1999. performance, running time: 2 hours. Photograph courtesy of the artist. From the exhibition "in::FORMATION," January 14 - March 1, 2000 at the School of the Art Institute of Chicago's Betty Rymer Gallery.

### The Installations:

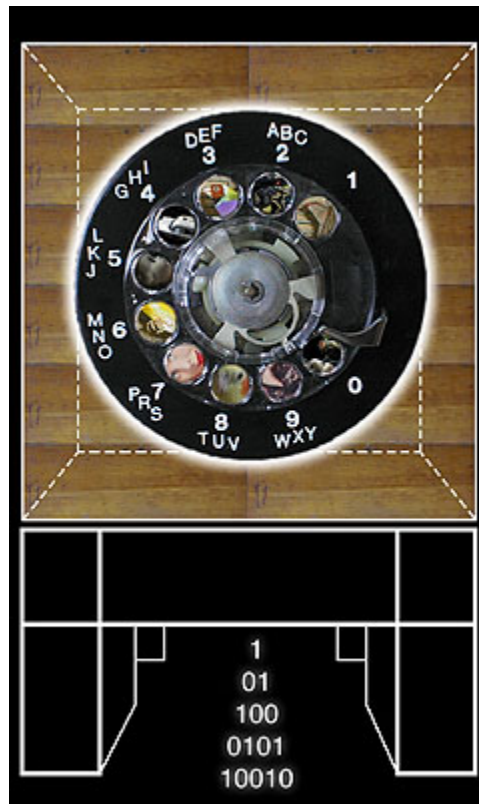
"The In Finite Earth" by Valerie Sullivan Fuchs: symbolizes earth, air, fire, and water using four hollow ceramic spheres whose surfaces are encrusted with suggestions of ruins; inside, they contain objects specific to the elements they symbolize (e.g., a heating element in the fire sphere). Different video projections beam down upon each sphere. Elizabeth Fisher in *Women's Creation*, 1975 speculates that the "first cultural device was probably a recipient. . . . Many theorists feel that the earliest cultural inventions must have been a container to hold gathered products and some kind of sling or net carrier," and here ancient clay and carrier bag technology meets hi-tech in an ecological comment on how we are misusing our natural resources.



Valerie Sullivan Fuchs, detail from "The In Finite Earth (Fire, Water, Air, Earth)", 1999, video projection, unfired clay, heating element, electrical

box, fountain pump, wire mesh, plastic tubing, metal water container, motion detector, water, atomizer, dimmer switch and wood, dimensions variable. Photograph courtesy of the artist. From the exhibition "in::FORMATION," January 14 - March 1, 2000 at the School of the Art Institute of Chicago's Betty Rymer Gallery.

**"Database PØØ: mutating informatic tools"** by Kevin Heisner: Mutating Informatic Tools" by Kevin Heisner: in this work a database is generated over the duration of the exhibition. The viewers/participants interact with the piece by leaving a telephone response at 888-803-8735. The message is then forwarded to a voice pager installed inside a wooden animal transport cage, which is the shell of the sculpture. This message is then emitted in delayed real-time from within the cage. There is a door at one end of the wooden box with an expanded metal opening through which the viewer can see inside and view a projected video. The messages end up recorded into a database on a web site. The site displays a short animation of the video, the phone number, and the text sorted into a randomly ordered data structure. This artwork explores presence/absence in communication, pattern/ randomness in information, and the evolution of artificial senses and its biological ramifications.



Kevin Heisner, "Database PØØ: Mutating Informatic Tools", 1999, found wooden animal crate, video projection, electronics, steel, voice pager and Internet, 60" x 20" x 36". Photograph courtesy of the artist. From the exhibition "in::FORMATION," January 14 - March 1, 2000 at the School of the Art Institute of Chicago's Betty Rymer Gallery.

**"Colony"** by Dan Miller: three robot loader mechanisms, following unique patterns, struggle to co-create a surface. Sensors in the gallery decide which loader deposits its material on the tabletop. The pattern for each loader is randomly sequenced to create new patterns. One loader places biodegradable foam squares on the table, another drizzles wax, and the third drops pebbles and water. Once deposited, the materials interact, wear on each other, creating patterned deposits. It makes us think about earthmovers, despoiled land, and systems run amuck.



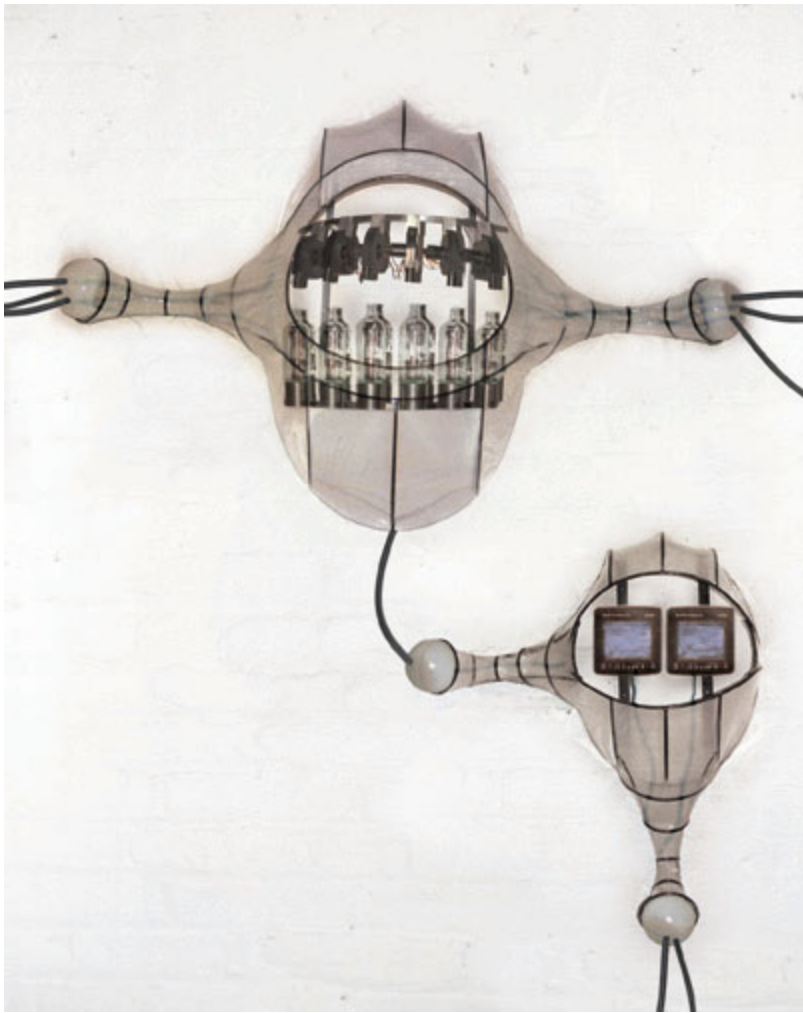
Daniel Wayne Miller, "Colony", 1999, steel, aluminum, plastics, electronics, programmable controllers, biodegradable packing, earth mixture, 102" x 120" x 120". Photograph courtesy of the artist. From the exhibition "in::FORMATION," January 14 - March 1, 2000 at the School of the Art Institute of Chicago's Betty Rymer Gallery.

**"The Hive"** by Fernando Orellana: nine drawing machines simultaneously drawing while communicating to each other via a network. The server of this network will mediate commands to each individual machine, allowing for "The Hive's" behavior to change while time passes. Connected in parallel with piece's network is a malfunctioning pager unit that turns on chaotically through out work's "ON" time. This random event is used as a seed to generate behavioral patterns unattainable in "The Hive's" closed network. In addition to the pager's random injection of information, the pager will also allow for incoming pages. The number of the pager will be available for viewers to call, thus allowing "The Hive" yet another means of achieving independent behavioral patterns. These undetermined patterns will be reflected in the motion of each individual machine and in the drawings that the installation will produce. Periodically, through out the exhibition's duration, the drawings will be removed and new drawings will begin.



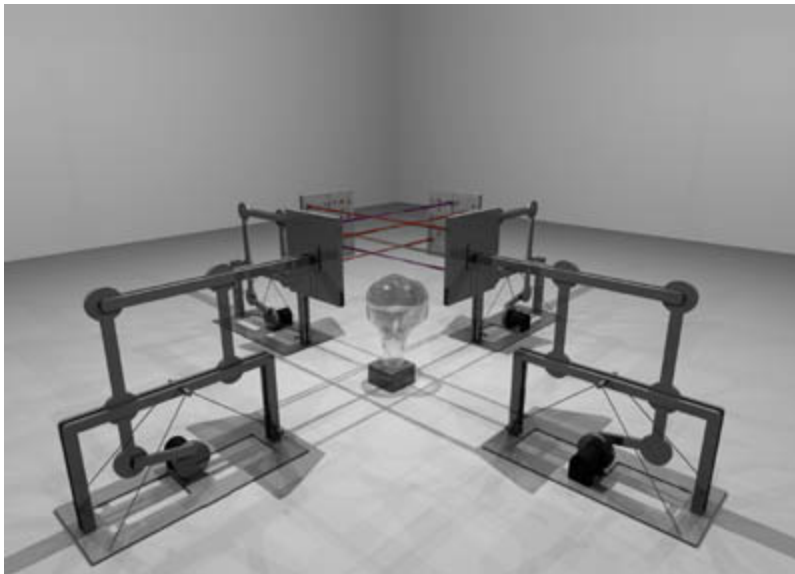
Fernando Orellana, "The Hive", 1999, aluminum, steel, wood, glass, paper, ink, motor, electronics, Basic Stamp 1 and 2, 200" x 20" x 15". Photograph courtesy of the artist. From the exhibition "in::FORMATION," January 14 - March 1, 2000 at the School of the Art Institute of Chicago's Betty Rymer Gallery.

**"The Unstoppable Hum"** by Sabrina Raaf: we perceive the hum of our industrial environment as inanimate background noise, while our life sounds animate space. This piece reverses these roles, showing us how a building environment perceives us. Contact microphones monitor inherent sounds from pipes and machinery, etc. in the gallery; a geophone listens to visitors' footsteps while a video camera track's their motion through the space. A microprocessor translates these inputs into digital signals that activate a biomorphic kinetic sculpture that blows air over water-filled bottles of various sizes secreted therein, creating sensually dissonant tones. The environment's hums activate the most animated tones, while the humans' activity is translated into sounds of wheezing water bags and droning bass noises.



Sabrina Raaf, "The Unstoppable Hum", 1999, steel, rubber, aluminum, glass, custom electronics, 84" x 70" x 12". Photograph courtesy of the artist.  
From the exhibition "in::FORMATION," January 14 - March 1, 2000 at the School of the Art Institute of Chicago's Betty Rymer Gallery.

**"Standby Deliver"** by Kenneth Rinaldo: consists of aluminum plates facing each other and moving back and forth attached to activating motors. Underneath is a lit glass sugar molecule. Visitors have access to chewing gum, which they chew and stick to the plates, which will stretch out, creating long colorful strings of the sticky substance. After many cycles of the plates back and forth motion, the glass sugar molecule rises up to catch the colorful goo. These molecules are periodically collected, becoming colorful illuminated sculptures displayed on the gallery wall. This computer-human activated system uses sugar, gum and machine as metaphor for human consumption and waist cycle while offering mouth and eye candy to help the participant question the impact of their addictive consumerist behavior and the sugar tweaked cognition that results.



Kenneth Rinaldo, "Standby Deliver", 1999-2000, aluminum, steel, chewing gum, sugar, human circulatory system, glass, electronics, motors, lights, and microcontroller, 120" x 120" x 36", 3D modeling by George Faeber. Photograph courtesy of the artist. From the exhibition "in::FORMATION," January 14 - March 1, 2000 at the School of the Art Institute of Chicago's Betty Rymer Gallery.

"Little Graffiti" by Lauren Was: a hi-tech bulbous sculpture: driven by Basic Stamp II and programmed to generate random behavior—rolls determinedly back and forth on a track and up and down on a cord along the wall; it scrawls playfully with lo-tech large crayons — at times the scrawl may be elegant, at others, manic; either way, one flashes on those delightful, naughty wall-defacing enterprises of childhood.



Lauren Was, "Little Graffiti", 1999, rubber gaskets, silicon rubber, canvas, stretch nylon, steel, bronze, pens, pencils, crayons, rubber cords, motors, and the Basic Stamp II, variable dimensions. Photograph courtesy of the artist. From the exhibition "in::FORMATION," January 14 - March 1, 2000 at the School of the Art Institute of Chicago's Betty Rymer Gallery.



**"Alchemical Bloom"** by Amy Youngs: outside temperature becomes information via a sensor that controls the voltage to an electroplating tank wherein "grows" an organic-looking copper object; thus, the weather directly affects the size, texture, and shape of the copper deposits on the armature dipped into the copper sulfate. As each copper bloom is completed, it is displayed hanging on a wire, still dripping, beside the tank in chronological order of production. The bloom quickly develops a patina, while the excess copper sulfate drips create crystalline designs on an aluminum canvas underneath. Process, product and byproduct all become "the art" in this transmutation of weather, electricity and chemistry.



Amy Youngs, "Alchemical Bloom", 1999, digital thermometer, microprocessor, voltage rectifier, copper, electrolyte, plexiglas, glass, aluminum, and wood, variable dimensions (approx. 180" x 72" x 48"). Photograph courtesy of the artist. From the exhibition "in::FORMATION," January 14 - March 1, 2000 at the School of the Art Institute of Chicago's Betty Rymer Gallery.

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### Endnotes

1. Concerning randomness and creativity, some see chaos as accelerating the evolution of biological and artificial life (Chris Langton and Stuart Kauffman), while others (Francisco Varela) see randomness as the froth of noise from which coherent microstates evolve and to which living systems owe their capacity for fast, flexible response. See Francisco J. Varela, "Making It Concrete: Before, During, and After Breakdowns," *Revisioning Philosophy*, James Ogilvy, ed. (Albany: State University of New York Press): 97-109.
2. N. Katherine Hayles, *How We Became Posthuman* (Chicago, IL: The University of Chicago Press, 1999): 222.
3. In engaging with the machine, these artists collaborate much less with industrial technicians than did



Tinguely and the artists involved in Experiments in Art and Technology's (E.A.T.) 1960s idealistic and internationalist attempt to heal the breach between art/science and emotion/reason, by pairing artists and technicians.

4. K. G. Pontus Hultén, *The Machine as seen at the end of the mechanical age* (New York: The Museum of Modern Art, 1968): 172, 176.

5. Ibid., 188.

6. "Informatics" refers to the material, technological, economic, and social structures that make our "information age" possible.

7. Martin Heidegger, *The Question Concerning Technology and Other Essays* (New York: Harper Colophon Books, 1977): 28, 35. Heidegger claims the essence of technology is nothing technological; the real threat is not from "potentially lethal machines and apparatus of technology," but resides in the attendant informational processes of regulating and securing, an "Enframing" of our world into a dead stock pile for potential use. This "standing-reserve" may be embodied as objects or encoded as information, and it occludes a more truthful revealing of the poetic coming forth of things and a more poetical way of dwelling in the world.

8. Marshall McLuhan, *Understanding Media* (New York: Signet Books, 1964): 52-53.

9. See Arthur Kroker, *Hacking the Future for the Flesh-Eating 90s* (New York: St. Martin's Press, 1996).

10. On this point these artists agree with N. Katherine Hayles who, in *How We Became Posthuman* (1999): 5, argues against the mind/body dualism in cybernetics that favors disembodiment; her anti-Platonic stance claims "an opportunity to put back into the picture the flesh that continues to be erased in contemporary discussions about cybernetic subjects."

11. Anne Balsamo, "Feminism for the Incurably Informed," *South Atlantic Quarterly* 92 (1993): 684.

12. Hayles, "Narratives of Artificial Life," Jon Birds, Barry Curtis, et al. (eds.), *FutureNatural* (London: Routledge, 1996): 153.

13. Philip N. Johnson-Laird's *The Computer and the Mind* (Cambridge, MA: Harvard University Press, 1988): 258, sketches out a "multi-stage" computational architecture with which a computer might come to be seen as creative: "It uses constraints to generate ideas and some to select viable ones from amongst them. Because creativity is not deterministic, there may at some point be more than one possibility — even after the use of some constraints — and, if so, an arbitrary choice is made from amongst them. The constraints may be spread over many stages, or products may be fed back for modification to the generative stage. Multi-stage creativity uses constraints both generatively and selectively."

14. Hayles, *How We Became Posthuman* (Chicago, IL: The University of Chicago Press, 1999): 291.