



head shoulders genes & toes

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CURATOR

Judith Rushin

TEXTS

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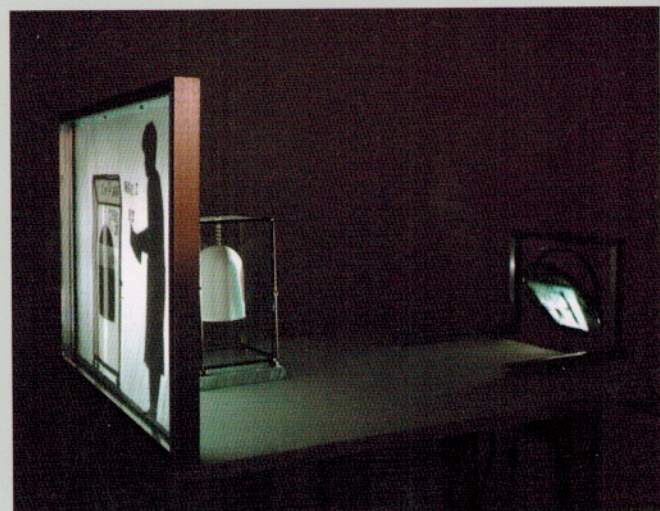
Emerging from the intersection of sculpture, theater and technology, Heidi Kumao's video and machine artworks challenge our perception of everyday behaviors. Kumao restages private and poetic gestures within cultural constructs to express subtle acts of defiance and the resilient chord of self-preservation. Each work is an intimate performance of minimalist theater that reveals itself in an animated tableau. Projects include: *Timed Release*, a series of video sculptures about surviving confinement. Part shadow play, part documentary, part optical illusion, these "situated cinema" works use visual storytelling to show how hostages, prisoners, slaves, victims of relocation camps and others have transcended the absurd by devising a survival strategy that necessitates careful navigation between powerlessness and regeneration through creativity. *Tether* explores the medical condition known as "Locked-in Syndrome" as described by Jean-Dominique Bauby in his book, *The Diving Bell and the Butterfly*. After a massive stroke, Bauby was completely paralyzed except for the use of his left eye that he used to "blink out" his memoir letter by letter, and with exceptional humor. *Misbehaving: Media Machines Act Out*, a set of three female "performers:" electronically controlled, mechanical girls' legs that respond to viewers' presence through unsettling displays of behavior. *Wired Wear*, one-of-a-kind women's clothing embedded with custom circuitry designed to draw attention to, and be worn during, the everyday "performances" of being a woman. *Cinema Machines*, hybrid projecting machines that use nineteenth century cinematographic technology to present a short filmic loop of a simple task or gesture repeated obsessively. Through the combination of photography, kinetics and sculptural assemblage, each piece explored the psychology of compulsive behavior, discipline and non-verbal communication. A solo exhibition of this work titled, *Hidden Mechanisms*, toured the U.S., Latin America and Europe.

Heidi Kumao is an Associate Professor at the School of Art & Design at the University of Michigan. www.heidikumao.net.

Exhibitions & Awards: Kumao has exhibited her work in solo and group exhibitions in the USA, Brazil, Argentina, Spain and Canada including solo shows at the Museu da Imagem e do Som (São Paulo), Museu de Arte Moderna (Buenos Aires) and Fundació Joan Miró in Barcelona. Recent group exhibitions include SIGGRAPH 2011 (Vancouver), Wing Luke Asian Art Museum (Seattle), and Usina do Gasômetro Cultural Center (Porto Alegre, Brazil). In recognition of her work as a new genres artist/sculptor, Kumao has been awarded numerous national fellowships, grants, residencies and awards including: a Guggenheim Fellowship, a Creative Capital Grant in Emerging Fields/Robotics, and fellowships from the National Endowment for the Arts, the New York Foundation for the Arts, and Art Matters. Her work is in several museum collections including the Museum of Fine Arts, Houston and the ASU Art Museum.

▲ ▼ [above and below] Heidi Kumao, *Tether*, from the *Timed Release* series, 2010, mixed media video sculpture, glass case, painted bell jar, picture frame, glass and paper, DVD movie with audio, DVD player, video projector, approximately 36 x 28 x 30 inches.

► [facing page] Heidi Kumao, *Translator*, from the *Misbehaving: Media Machines Act Out* series, 2008, aluminum legs, plastic bowl, half-scale chairs with video projector heads, wooden table, parts from garage door opener and bicycles, 82 x 168 x 36 inches.





Head, Shoulders, Genes & Toes

Judith Rushin

"The sciences lift us outside of experience, so that we can more clearly survey it. The arts immerse us in experience, so that we can more fully encounter it."—Jonathan Keats¹

Art and science are intersecting with increasing frequency and in some cases becoming harder to differentiate. Artists are gaining access to the growing amount of surplus equipment and laboratories that were once off limits, enabling them to use cutting edge technologies and even living matter as art materials.² In other cases, contemporary artists use technology to create new works where color and form serve as metaphors that help scientists visualize new ideas or audiences question the consequences of new technologies.

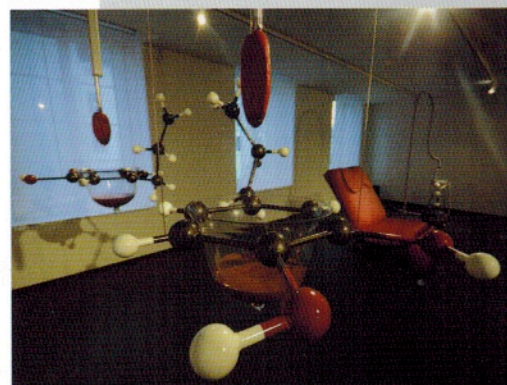
As artist Ken Rinaldo points out in his article "Interactive Electronics for Artists and Inventors," works that spring from the various intersections of science and art remind us that artists and scientists approach their work from a broad common ground: they question human nature and the nature of the physical universe, materials, and structures. Both artists and scientists visualize, hypothesize, experiment, and create systems of analysis. Both ask questions about our place in the universe, who we are, and where we are going. Both investigate materials, challenge ideas, and try to push past existing limitations. When thinking about what an artist is or what a scientist is, Rinaldo says "we should remember that these are social constructions which do not necessarily identify abilities of observation, analysis and or means to express them."³

Art and science have always been linked. Consider Leonardo da Vinci's fifteenth century inventions or the *camera obscura* that the Venetian artist Canaletto is believed to have used in composing his paintings. Seurat used the physics of color to create his vibrant pointillist effects. Before he discovered penicillin, Alexander Fleming made detailed polychromatic paintings from pigmented microbes. In the 1950s, op-art artist Victor Vasarely was so strongly committed to science and technology that he predicted an art movement that would revolve around the transmission of electronic data and social exchange — the genre we now call new media.⁴ In the mid 1960s, engineers Billy Klüver and Fred Waldhauer joined with artists Robert Rauschenberg and Robert Whitman to form the now legendary E.A.T. (Experiments in Art and Technology) with a mission to encourage the collaboration of artists and engineers across the country. The list goes on. Art has long made use of new scientific discoveries and in turn has encouraged scientists to test the limits of their imaginations. And by dragging science out of isolated institutional labs and into the cultural arena, artists put scientific advances and theories up for debate and examination before a wider audience.

Head, Shoulders, Genes & Toes is a survey of fifteen artists whose work addresses current scientific practice, explores the social and psychological effects of disease, and questions the effect of contemporary medicine on how we experience the world. The exhibit offers a survey of methods and practices ranging from biological art to traditional painting. Four of the artists—Joe Davis, Adam Zaretsky, Hunter Cole, and Brian Knep—use science labs as art studios and living matter as their materials. These artists have established unlikely home bases at Harvard Medical School, MIT, Rensselaer Polytechnic Institute, and Loyola University. The remaining artists engage with the science community from a more traditional stance, although their methods and materials are often anything but conventional. Their common thread is a deep interest in the scientific advances of the twenty-first century.

The Constructed Body

Approaching the human body as an object of inquiry is common to art and medicine. The gaze, whether controlled by the subject or imposed by an authoritative figure,



◀ [facing page] Paddy Hartley, *incisus labii* No. 1, 2002, tan cotton, waxed laces.

▲ [above] Ken Rinaldo, *Enteric Consciousness*, 2010, bacteria, glass, custom built robotic chair and human interaction, 20 x 20 feet. Commission from *Maison d'Ailleurs*, museum of science fiction, utopia and extraordinary journeys. Photo credit: Juana Abriel.

turns the body from its familiar experiential mode towards self-consciousness. Medical Anthropologist Byron Good coined the term *medical body* to describe the idea of a lifeworld (*lebenswelt*), a pedagogical foundation that instructs medical students to see the human body in medicine's own way — to adopt medicine's gaze. And often this means that the medical profession treats the body as a collection of parts, a fragmented whole, with its inevitable abnegation of the patient's self.⁵

Carolyn Henne and **Erik Geschke** also think of the body as a collection of parts, but they do so from an artist's perspective. Geschke's *Latitude and Longitude* presents stiff, arrow-straight, lifeless forms that look like they were made from the leftover parts of a post-human fantasy. His almost tender attention to anatomical detail makes the erasure of any trace of self all the more unsettling. Drawing from a more immediate inspiration, Henne constructed *Twins* from cast three-dimensional "tiles" of her own body. Although the piece presents a fragmented body, Henne's work does not erase the self. The works, she says, are like "*blasons anatomiques*—poetic tributes."

But these are not simply expressions of praise or blame towards the individual parts of the female body writ large; Henne's commentary specifically targets *her own* body. Like Manet's bartender in *A Bar at the Folies-Bergère* (1882), and the subject in Jeff Wall's *Picture For Women* (1979), Henne locks into her own gaze. In Wall's photograph, "the vanishing point has a body but it is not [the viewer's] body, it is the camera."⁶ In *Folies-Bergère*, Manet uses the vanishing point to represent himself. In *Twins*, the body, the gaze, and the vanishing point all belong to Henne.

Richard Heipp also thinks of the body as an object of inquiry, but his meticulously executed paintings ask us to turn inwards to examine our own powers of perception. Using an approach he calls *photocentric*, he renders them by hand with painstaking care to look like photographs. He asks the viewer to look carefully, as a doctor would look at a patient, immersed in the process yet coolly detached. This careful observation is the essence of both art and medicine.

The Cultural Body Electric

"And your very flesh shall be a great poem."—Walt Whitman⁷

Nowhere are Whitman's words more corporeal than in **Robert Sherer's** *Blood Works*. Through real blood, Sherer describes the complexities of romantic life. Inspired by an X-Acto knife accident in which Sherer's thigh began to bleed wildly, he says "I quickly collected the squirting liquid in a hermetic container and placed it in the refrigerator."⁸ Later he began using the blood—as well as blood from his friends, both HIV-positive and negative—in combination with blood thinners and varnishes to make exquisite botanical and anatomical illustrations on paper. They refer directly to Victorian botanical drawings, yet the images carry elements of sexual charge and danger to reflect the complexities of romantic life and sexual attraction in the age of AIDS.

Holly Hanessian's *Blood and Taste* is an homage to a different kind of relationship, that of mother and daughter. The vocabulary of this work—samplings of hair and fingernails sealed in a "sterile" environment—adopts the frame of medical science to address the anxiety of cross-cultural adaptation and a parent's hopes for her child.

Since the 1950s performance artists like Marina Abramovic and Gina Pane have used their own bodies as their primary sites of knowing the world and as matrices to express that knowledge. **Heidi Kumao's** haunting video sculpture, *Tether*, is about a man whose actual life was a mirror for artists interested in physical and psychological endurance and



◀ [facing page] Carolyn Henne, *Twin "B" with Seat*, castings of polyurethane elastomer skin and foam rubber with SkinFlex paint, *Twin "B"*: 62 x 21 x 21 inches, *Seat*: 13 x 21 x 21 inches. Photo credit: Terry Brown.

▲ [above] Jeff Wall, *Picture for Women*, 1979, transparency in light box, 142.5 x 204.5 centimeters. Courtesy of the Artist.

the often inexplicable capacity of people who persist against all odds. The piece is inspired by French journalist Jean-Dominique Bauby's memoir *The Diving Bell and the Butterfly*. Bauby suffered a massive stroke during a diving accident and was paralyzed except for the use of his left eye. To "write" his memoir, he tediously "blinked out" letter after letter. After one year, he completed his memoir and saw it published only a few days before his death. Although the subject is epic, the actual work is only 24 x 30 inches. Kumao requires us to enter the work mentally rather than physically and uses scale to make us feel confined. Yet our confinement can only represent a modicum of Bauby's experience.

Recently worn by Lady Gaga, **Paddy Hartley's** *Face Corsets* reflect his fascination with the boundary between beauty and the grotesque which grew out of his investigations into early reconstructive surgery and non-therapeutic enhancement procedures. Extending the tradition of Orlan, who uses the body as a *modified ready-made*, and Hannah Wilke, who straddled the worlds of art and fashion, Hartley's wearable constructions distort the face into grotesque contortions that investigate ways in which we refigure rather than disfigure the body. Like Hartley, **Jordan Vinyard** joins the debate on the ethics and desirability of *enhancement prosthetics*. In her works, she replaces the human body, already chaotic and unpredictable, with cumbersome mechanical devices that will themselves leak, break, and ultimately collapse.

Where Hartley and Vinyard investigate surgical enhancements, **Beverly Fishman** appropriates the language of pharmaceuticals and medical information systems to describe a culture where doctors and pills cure all. She executes her paintings in a cool, detached style with layers of hard-edged enamel paint on reflective aluminum surfaces. Rendered from patterns of EKG readouts, our reflection in the aluminum surface reminds us of "the vulnerability of the flesh, the vicissitudes of the body impersonally measured by machines, suggesting the depersonalization of the body."⁹

The Molecular Body

In a landmark 1959 lecture titled *The Two Cultures*, physicist C.P. Snow asked for a show of hands by those who had read a work by Shakespeare and could explain the Second Law of Thermodynamics.¹⁰ As he expected, the response was thin. His critique of the disconnect between disciplines spawned the catchphrase 'the two cultures' to describe the gulf between artist-intellectuals and scientists.

A representative response to this critique is **Suzanne Anker's** installation *Butterfly in the Brain*. Anker uses imagery derived from high technology simulation: the microscope, the telescope, the MRI scan. The installation focuses on a dialogue of signs within the symmetrical (or virtually symmetrical) structures of chromosomes, the butterfly, and the brain, all of which present an axis copy. Through pictorial substitution, demarcation, and relocation Anker creates a body of work out of science-based data.

Rapid developments in science and technology since the end of the twentieth century have led to a growing interest among artists and scientists in each other's disciplines. In many cases, such as *Stelarc*, Eduardo Kac, *SymbioticA*, and the *Critical Art Ensemble*, artists and scientists work collaboratively through institutional and industrial labs.¹¹

In this vein, **Joe Davis**, **Adam Zaretsky**, and **Hunter Cole** are artist-scientists whose lives and works straddle both worlds. Working with molecular biology, Joe Davis has created many projects that question science as a cultural authority. In *Microvenus*, Davis inserted a human genome into a strain of *E.coli* bacteria and proposed to send it into space. Davis encoded the bacteria with audio images of vaginal contractions to protest NASA's launching of a "man and Barbie" representation of humanity into deep space. Davis adds, "And they wonder why [extraterrestrials] come and experiment on our sex organs."¹²



▲ Hannah Wilke, *S.O.S. Stratification Object Series*, 1974-75 (Back), b&w gelatin silver print, 5 x 7 inches. Hannah Wilke Collection & Archive, Los Angeles. Copyright Marsie Emanuelle, Damon, and Andrew Scharlatt / Licensed by VAGA, New York, NY.

Like Davis, Zaretsky pushes against science's sense of propriety, suggesting that rapid advances "raise urgent questions about *aesthetics* and *ethics*, about usefulness and necessity, about the borders between *life* and *death*, between art and science." Zaretsky says, "One would hope that, beyond cultural hypnosis, vast reservoirs of international imaginations do flourish."¹³ His mission is to demystify the living sciences and poke vigorously at our comfort zones. Similarly, **Perrin Ireland's** self-proclaimed mission is to bridge the two cultures. Trained in biology, her drawings explore the way life perpetuates itself, moves, and holds itself in space. Her anatomical renderings explore the complexities of the human body with the frank and playful style of a graphic novel.

Brian Knep and **Hunter Cole** are trained scientists who choreograph living matter into formal artworks or generate computer data to mimic living matter. Cole's bioluminescent drawings reveal her interest in the formal as well as the ephemeral. The works grow, glow, and die. Knep's works mimic both life and art. In *Worm Constructs*, he plays architect in a petri dish populated by nematodes. He "builds" walls (etched into a plate) around which the microscopic worms move. On the other hand, in *Drift Wall*, computer generated panels respond to the viewer's gaze, moving when the eye shifts. Both works explore the phenomenon of behavioral changes and adaptations within set parameters.

The Curious Body

"The joy of not knowing, of learning by learning that you were wrong, is one of the chief joys—and one of the great benefits—of science."—Stuart Firestein¹⁴

The works in this show raise questions about life, death, the human condition, and the role science and medicine play in these matters. Their purpose is to provoke—to generate debate between the arts and sciences.

Somewhat naively, I once imagined vast differences between scientific and artistic research — that scientific research was always hypothesis driven while artistic research was more open-ended. Instead, I have learned that questioning is the great joy of both scientists and artists. Dr. Scott Stagg, a molecular biologist at Florida State University, responded when I asked him about his process:

For most scientists, the process is both hypothesis driven and discovery driven. With hypothesis driven research, you have an expectation of what the results of an experiment will be. For example, I will treat these cells with a certain compound and I expect that they will do A or B. If it's A then this process in the cell has been affected. If it's B then this other process in the cell has been affected. But sometimes C happens that you didn't expect or you accidentally grow the cells at a higher than normal temperature and something completely bizarre happens. Good science happens both ways: grinding through hypotheses and completely unexpected discoveries. By far, the most fun is the unexpected stuff though. That's what really gets the brain cells going. All of my biggest and most exciting discoveries have been the unexpected kind. But here's the rub — you can't set out to make an unexpected discovery. There are just too many variables. That is why when you start a project, you almost always have a hypothesis. Then you see where it takes you.¹⁵

Many of the artists in *Head, Shoulders, Genes & Toes* borrow freely from the scientific realm, often using scientific discoveries to solve problems in the studio, as well as raising questions and providing raw material to feed back into the sciences. This manner of exchange mirrors the relationship between science and medicine. Medicine's primary



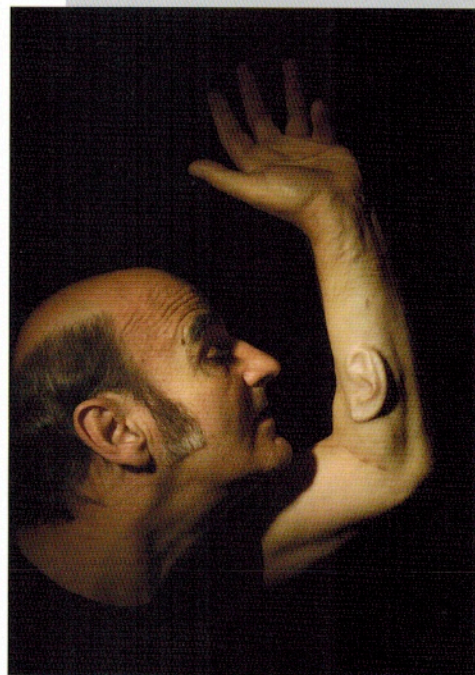


mission is to help suffering patients by applying the best available contemporary understanding of science based on existing evidence. However, observations gathered by clinical practitioners often provide the raw material to researchers that helps them frame future research. The mission of science is to push beyond what we already know, discovering pitfalls in our current understanding. This is particularly significant in an age where technologies are advancing faster than we can talk about them, because it is in the moment of stepping back, pausing, and questioning that we gain power and choice. Doctors are humanists. They balance evidence with the subjective narratives of their patients. If any field could embody the third culture it is medicine, which is why so many medical colleges, including our own, now have medical humanities departments.

But the conversation should be out in the open, where artists, scientists, doctors, and the wider public can freely engage. As an artist whose work falls squarely outside the realm of pure scientific inquiry, putting this exhibition together has given me a more personal connection with science. I hope that experiencing this exhibition will encourage similar connections for you. In the words of critic and artist Jonathan Keats, "the true third culture is to be found in an educated and interested public, able to embrace each endeavor on its own terms."¹⁶

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- ¹ Keats, Jonathan. "Proust Was a Neuroscientist." Salon. N.p., 20 Nov 2007. Web. 5 Aug 2012. <www.salon.com/2007/11/20/proust_neuroscientist/>
- ² Rinaldo, Ken. "Interactive Electronics for Artists and Inventors." New Media Artist. Ken Rinaldo, n.d. Web. 5 Aug 2012. <http://newmediaartist.org/index.php?view=article&catid=3:chapter-1&id=5:chapter-1&option=com_content&Itemid=5>
- ³ Ibid. Rinaldo is more than a theorist. He is primarily significant as an artist whose interactive works explore the intersection of natural and technological systems.
- ⁴ Vasarely, Victor. *Notes Brutes*. New York: Alpine Fine Arts Collection, Ltd., 1979. Or pdf "in his own words" downloaded from the Victor Vasarely official website. <http://www.vasarely.com/site/site.htm>. For a brief time Vasarely was a medical student in Budapest, but two years into his coursework he left to pursue art.
- ⁵ Mildorf, Jarmila. "Narrativising the Body: Fragmentation and Unification in Jed Mercurio's Bodies." Oxford: St Hilda's College, 2003. 1-3. Web. 5 Aug. 2012.
- ⁶ de Duve, Thierry. *Jeff Wall*. New York: Phaidon Press, 1993. 31. Print.
- ⁷ Whitman, Walt. *Leaves of Grass*. Preface, section 8.
- ⁸ Feaster, Felicia. "Robert Sherer: Let It Bleed." Creative Loafing [Atlanta] n.d., n. pag. Print. <<http://clatl.com/atlanta/robert-sherer-let-it-bleed/Content?oid=1271813>>
- ⁹ Kuspit, Donald. "Beverly Fishman: Deceptive Pleasure." artnet. n. page. Web. 5 Aug. 2012. <<http://www.artnet.com/magazine/features/kuspit/beverly-fishman1-3-12.asp>>
- ¹⁰ Snow, C.P. *The Two Cultures and the Scientific Revolution: The Rede Lecture, 1959*. New York: Cambridge University Press, 1961. Print.
- ¹¹ In addition to her studio practice, Anker has also been an articulate proponent of bioart through books and articles, as well as her radio talk show ArtonAir.
- ¹² Davis, Joe. "Microvenus: Joe Davis, Genetics and Culture." viewingspace. N.p., n.d. Web. 5 Aug 2012. <http://www.viewingspace.com/genetics_culture/pages_genetics_culture/gc_w03/davis_microvenus.htm>
- ¹³ Zaretsky, Adam. "Viva la Vivo." Waag Society, institute for art, science and technology, develops creative technology for social innovation. N.p., n.d. Web. 5 Aug 2012. <<http://waag.org/nl/project/viva-la-vivo-vastal>>
- ¹⁴ Schwartz, Casey. "Stuart Firestein, Author of 'Ignorance,' Says Not Knowing Is the Key to Science." The Daily Beast. N.p., 22 Apr 2012. Web. 5 Aug 2012.
- ¹⁵ Stagg, Scott. From an email to the author, 12 Jun 2012. His process sounds remarkably similar to typical contemporary studio processes, although I imagine his lab to be much cleaner than any artist studio I'm familiar with.
- ¹⁶ Keats, Jonathan. "Proust Was a Neuroscientist." Salon. N.p., 20 Nov 2007. Web. 5 Aug 2012. <www.salon.com/2007/11/20/proust_neuroscientist/>



◀ [facing page] Heidi Kumao, detail of *Tether*, from the *Timed Release* series, 2010, mixed media video sculpture, glass case, painted bell jar, picture frame, glass and paper, DVD movie with audio, DVD player, video projector, approximately 36 x 28 x 30 inches.

▲ [above] Stelarc, *Ear on Arm*, London, Los Angeles, Melbourne, 2006, by permission of the artist, courtesy of Scott Livesey Galleries, Armadale, Victoria Australia. Photo credit: Nina Sellars. Stelarc holds the Chair in Performance Art at the School of the Arts, Brunel University, London.