HUMAN NATURE
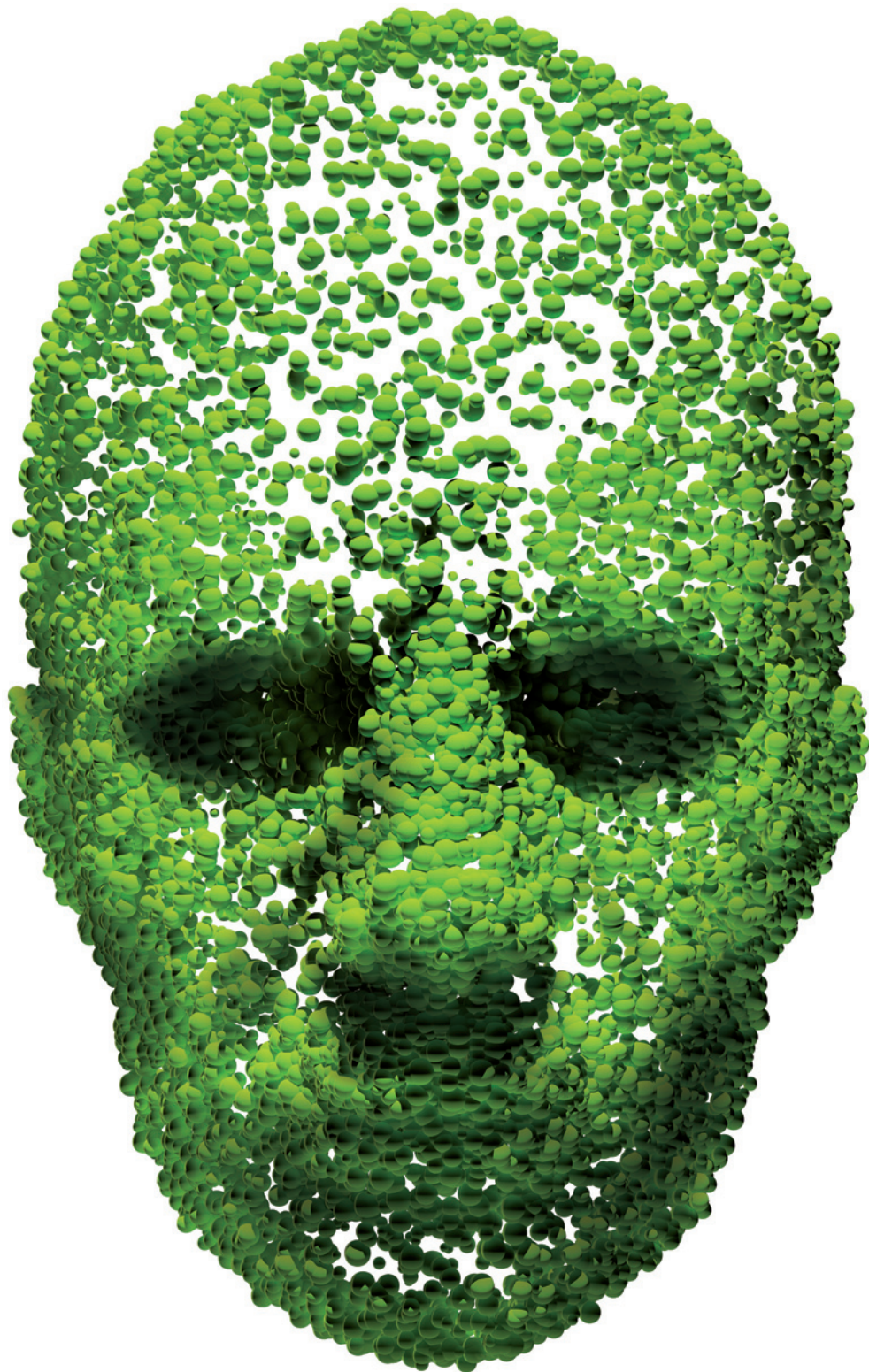
ARS ELECTRONICA 2009

Festival for Art, Technology and Society
Linz Thu 3 - Tue 8 September 2009

ARS ELECTRONICA · BRUCKNER HAUS · ØK · ORF oö OBERÖSTERREICH

HUMAN NATURE
Ars Electronica Festival 2009
September 3-8

In 1960, the Aral Sea had an area of 68,000 km2 and its surface elevation was 53.4 meters above sea level. It has since shrunk to under 27,000 km2, its elevation is down to about 30 meters above sea level, and what was once the Earth's fourth largest inland body of water has split up into three: the Aibugir Sea in the southwest, the Large Aral Sea in the south, and the Small Aral Sea in the north. The cities of Aral and Mujnak that were located right on the shore in 1960 are now situated more than 150 kilometers from the paltry remains of what was once the Aral Sea. A silted wasteland stretches from their city limits to the current waterline.

The Aral Sea is the symbol of an environmental catastrophe caused by humankind. And so it is—at the outset of the 21st century, it's become clear that we've arrived at the threshold of a new age here on Earth: the Anthropocene. An age characterized by our massive—and more and more often irreversible—impact on the environment. Up to now, that is. Because it's no longer just the environment we're modifying. It's the fundamentals of life that we're subjugating to our will to make things the way we want them. The fundamentals of our life.

September 3-8, 2009, the Ars Electronica Festival will be dedicated to HUMAN NATURE. An exciting dialog at the interface of art, technology and society is on tap once again. Kicking things off will be "Starry, Starry Night" during which everything will be rotating and revolving around the past, present and future of astronomy and space exploration. The educational institution orchestrating Campus09 will be MIT; under the direction of Professor Hiroshi Ishii, the head of the Things That Think program, the Boston school will present ideas and projects that aim to link up digital phenomena and the reality of our physical and sensory perceptions. Professor Hiroshi Ishiguro, 2009's featured artist, also comes from Japan—as does his twin android Geminoid. Two major symposia are on the agenda: one dealing with Human Nature, the other with Cloud Intelligence. The latter is being curated by bloggers David Sasaki (US) and Isaac Mao (CN). On Linz's Hauptplatz (Main Square), Ars Electronica and radio station Ö1 are hosting an encounter with Japanese computer game & manga culture. In the Brucknerhaus, the Golden Nica statuettes will be presented to this year's Prix Ars Electronica prizewinners; as always, their work will be showcased by the CyberArts exhibition in the OK. Details about Ars Electronica 2009 are online at www.aec.at/humannature.

Media outlet representatives can arrange accreditation to the 2009 Ars Electronica Festival at www.aec.at/accreditation from now through August 28.

Starry, Starry Night – The Launch

Hauptplatz & Nibelungen Bridge & Ars Electronica Center, Maindeck

"80+1 A Journey around the World" is a project sponsored by Ars Electronica, voestalpine and Linz09 that's been linking Linz's Hauptplatz with the whole wide world since June 17. This project will encounter the festival for the first time on September 3 in what promises to be a very fortuitous convergence! Every attendee can make a contribution to this stellar evening and post his/her own personal wish for the future on Hauptplatz. The full-day lineup of events puts the accent on the stars, the cosmos and astronomy. At workshops held under the auspices of the Austrian Space Forum, youngsters can explore the planets of our solar system and play astronaut in a real spacesuit. There'll be live remote linkups to the European Southern Observatory, the International Space Station and an amateur observatory in the South of France operated via remote control online. Astronaut Franz Viehböck will give his own behind-the-scenes account of how he became the first Austrian in outer space. There will also be a discussion of various facets of the little-known problem of light pollution. As soon as the sun dips below the horizon, the illumination of the cityscape will get switched down a notch or two—and stay that way for a while. In cooperation with the ORF – Austrian Broadcasting Company's Upper Austria Regional Studio, we're calling upon Linzers to turn off the lights in their homes on the evening of September 3rd and come and do some stargazing on Hauptplatz. Amateur astronomers will already have their telescopes set up to let visitors get views of the heavens unclouded by light pollution and underscored by the cosmic music of the spheres. In addition to ORF Upper Austria, Linz AG is also pitching in to make Starry, Starry Night a brilliant success.

Façade Festival

Ars Electronica Center, LED Façade

The Ars Electronica Center's 5,100-m2 glass shell will be a featured attraction in its own right every evening of the Ars Electronica Festival. Artists, artists' collectives and colleges were invited to use the façade's 40,000 LEDs as a medium for artistic experiments. Five institutions of higher education (Linz Art University, the Hagenberg Campus of the Upper Austria University of Applies Sciences, the Vienna University of Technology, the University of Applied Arts Vienna and the St. Pölten University of Applied Sciences) as well as several artists have accepted the invitation and developed projects that will be presented on the façade of the Ars Electronica Center on the evenings of the Ars Electronica Festival.

In order to minimize technical access impediments, the Ars Electronica Futurelab created a special development environment with which façade projects can be realized in a simple way with widely available tools that lots of users are familiar with. An application made available free of charge enables artists and developers to work out their ideas at their own workstations and to simulate the visual results before they're displayed live on the façade of the Ars Electronica Center in Linz.

Every evening of the Façade Festival, we'll showcase different projects that illustrate the very broad spectrum of approaches to this creative challenge. They're subsumed under three main programmatic headings: Facade Music, Interact! and Visual Experiments.

Facade Music features works composed especially for a visualization on the façade, visualizations of pre-existing pieces of music as well as live VJ performances in cooperation with radio station FM4.

Interact! makes it possible to interact with the façade—from simple SMS systems that enable users to display their own special color schemes, fun approaches and experimental interfaces.

Visual Experiments presents a wide array of custom-developed visual experiments that impressively illustrate the LED façade's incredibly diverse creative possibilities.

Featured Artist – Ishiguro Geminoid

Ars Electronica Center, RoboLab

How can a person's unique personality and essential character traits be captured, simulated and imparted to a robot? Scientists now promise to provide the solution in the form of complex artificial beings named geminoids. The name is derived from geminus (Latin: twin, couple) and the suffix "oid." A geminoid is a robot created as a clone of an actual human being. The human-mechanical duo is linked together by innovative network & sensor technology, so the geminoid not only resembles its human model, it behaves like him too.

Hiroshi Ishiguro, professor at the University of Osaka and guest group leader at ATR Intelligent Robotics and Communication Laboratories, served as the model for HI-1, the very first geminoid. Since 2006, HI-1 and other geminoids have been used for purposes of research, which has essentially been following two approaches. Some projects concentrate on the development of a functional remote-control

mechanism and the programming of movements that most closely resemble that way a human being naturally moves; others focus on cognitive modeling to investigate typical characteristics of humans—for instance, "human presence." The combination of the two approaches leads ultimately to the development of robots that strongly resemble a human being and open up novel insights into human nature.

While robotics builds upon findings in the cognitive sciences in going about this and attempts to take mechanisms of successful human-human interaction and apply them to robots, cognition research is beginning to focus on the robots themselves. Scientists in this field are pursuing two main objectives: first of all, developing androids that look as human as possible, move like a human being and have human functions of perception; secondly, gaining new insights into those processes that control our "conscious and unconscious cognition." After all, we perceive stimuli both consciously and unconsciously. When we observe other people, different regions of the human brain are activated. Sensory inputs are automatically compared with familiar human models, which forms the basis of our reactions. Furthermore, these unconscious processes are precisely what induce us to unthinkingly treat an android as if we were dealing with a human being. The reason for this is a central research question both in robotics as well as in other scholarly disciplines. The answers to it could serve as criteria for the development of androids and also deliver essential clues about those processes at work in the human brain that make us socially and emotionally controlled beings.

CYBERARTS

OK Center for Contemporary Art

3,017 works from 68 countries were submitted for prize consideration to the 2009 Prix Ars Electronica. The CyberArts show at the OK is once again showcasing a selection of the very best:

"Perpetual Storytelling Apparatus" uses the so-called Small World Theory to illustrate substantive linkages and cross-references among patents. Any two patents are "removed from one another" by an average of seven references to and citations of earlier and/or other works. With their installation, Benjamin Maus and Julius von Bismarck reproduce progress in patented scientific findings and reveal surprising links among phenomena that would seem to be totally unrelated.

"Red Psi Donkey" is Jens Brand's inquiry into a reality that is unattainable for us, into a reality that exists only when no audience is present to witness it. This is accomplished with the help of an "acoustic camera" that makes sound wave

patterns visible, though only as long as these can propagate unhindered in the empty exhibition space. As soon as someone enters the room, the image begins to dissipate.

Lawrence Malstaf (Belgium) uses five fans and a walk-through PVC cylinder to create a localized cyclone. In the "Nemo Observatory," thousands of polystyrene pellets fly about through the air with the installation visitor positioned right in the middle of it all—literally in the eye of the storm. Regardless of whether he/she focuses on particles whirling all about or looks past the flurry of material off into the distance, the tempestuous circumstances seem to exert an extraordinarily calming effect. With his "Nemo Observatory," Lawrence Malstaf has succeeded in producing a high-impact allegory—an apt symbolic representation of our ever-more-rapidly changing world and our attempt to maintain our composure whilst the storm rages.

A park, children playing, people strolling—and, amidst them, an automatic sliding door. In "when laughter trips at the threshold of the divine," Osman Khan and Kim Beck investigate how people encounter public places; at the same time, the artists turn this process upside down. In setting up this automatic sliding door, they've placed a common everyday object into a completely new context, which, in turn, calls upon those encountering it to play, to experiment, to reflect.

"The Physical Value of Sound" reflects on the physicality of music. Yuri Suzuki scrutinizes the tense interrelationship between analog and digital, and simultaneously questions the durability of the virtual. After all: whereas a phonograph record can last for centuries, all of our digital information—music, photos and films—has a much shorter life expectancy.

Andreas Muxel's "CONNECT – feedback-driven sculpture" stages a continuous process of coupling and separation. Thirteen oscillating spheres of steel are connected to a matrix by rubber bands. A bar with a magnet at either end controls the behavior of each of the system elements. Once a sphere is connected to the bar, it's oscillated by a motor until the bar detaches and makes a new connection to another sphere. The spheres and the magnet bar constitute an analog system of permanently changing patterns of movements and structures.

From March to June 2007, !Mediengruppe Bitnik hid audio-bugs in the auditorium of the Zurich Opera and gave members of the public access to the performance on stage. The performances were retransmitted to the public not via broadcasts but by transmitting the performances to randomly selected telephone land-lines in the city of Zurich. In the style of a home-delivery service, the inhabitants of Zurich were able to listen to opera performances for as long as they wanted through a live connection with the audio-bug signal. In conjunction with "Opera Calling," !Mediengruppe Bitnik delivered more than 90 hours of live opera to 4,363 Zurich households.

"In the Line of Sight" by Daniel Sauter and Fabian Winkler draws a bead on current discussions about enhanced security and (technical) efficiency of surveillance. Their installation uses 100 computer-controlled tactical flashlights manufactured by Smith & Wesson, a company better known for its firearms. Low-resolution video recordings of suspicious human movements are projected onto a wall. By walking between the light source and the projected images, the role of the visitors changes from observer to subject—with 100 flashlights pointed at them.

"Call Cutta in a box" by Helgard Haug, Daniel Wetzel and Stefan Kaegi stages an experimental form of dialog that turns up the other side of the globalization coin and whispers its message back into the ear of the end-user. The artists offer the installation visitor the opportunity to buy a ticket at the box office for an individual show on a specific day. The visitor is then led to an apartment somewhere close by, where a person on a phone strikes up a conversation with him/her. The voice belongs to a call-center agent from Calcutta, India. A story slowly proceeds to develop whereby the installation visitor turns out to be the protagonist. The OK shows a project documentation.

"Double-Taker (Snout)" orients a super-sized googly-eye towards passers-by, tracking their bodies and suggesting an intelligent awareness of their activities. Totally without words, this kinetic sculpture by Golan Levin, Lawrence Hayhurst, Steven Benders and Fannie White communicates that there is something uniquely surprising about each of us. The OK shows a project documentation.

Jens Wunderding's "default to public" explores the discrepancy between people's modes of self-revelation online and their simultaneous desire for privacy in the real world. This project focuses on the micro-blogging site Twitter that enables users to post entries about themselves in a variety of ways—for instance, via internet or SMS. Due to Twitter's basic settings and conditions of use, most of the entries— often of a very private nature—can be viewed by users worldwide.

Philip Gamblen, Guy Ben-Ary, Peter Gee, Dr. Nathan Scott und Brett Murray have put seven years of research work into "Silent Barrage," a project that spans an arc between artistic installation space and basic scientific research. Its subject is the essential nature of thought, of free will and neuronal dysfunction. Visitors move about within a space in which ranks and files of pole-like robots are posted. Cameras film the visitors' movements and a computer program analyzes their positions in the space—all of which constitutes input that sets the robots into motion. The OK shows a project documentation.

With "EarthStar," David Hines and Joyce Hinterding examine the elementary, mystical qualities of the sun. Installation visitors are treated to an up-close-and-personal encounter—seeing, hearing and smelling the heavenly body that dominates our solar system. A hydrogen-alpha telescope captures fantastic

images of the sun's chromosphere; VLF antennas pick up the star's radiation, which is converted by an amplifier into a soundtrack. And while all that's going on, the installation space is being suffused with synthetic aromas meant to suggest ozone.

"Corpora in Si(gh)te" by Sota Ichikawa, Max Rheiner, Ákos Maróy, Kaoru Kobata, Satoru Higa and Hajime Narukawa transforms environmental data into a living, virtual architecture that can react in real time as well as grow and subside just like a real live organism. A network of sensors measures temperature, brightness, noise level, humidity, wind speed & direction, etc in a selected area. The data packets collected in this way constitute a single architectural module. They go through individual cycles of birth, life and death, whereby they constantly influence one another and can react collectively to their environment.

"Natural History of Enigma" is Eduardo Kac's account of the common origin of species. He extracted a gene from his own DNA and then used it to replace its counterpart in the DNA of a petunia. The result of this gene transplantation is a new form of life: "Edunia," a cross between a human being and a petunia. To perform this engineering feat, Eduardo Kac didn't choose just any old gene; he selected the one responsible for identifying foreign bodies. The fact that, following this gene transplantation, the new element was then "recognized" as the organism's own also underscores the fact that a new form of life had been created thereby.

One week after Barack Obama was elected president of the United States, there appeared a perfectly counterfeited special edition of The New York Times reporting the end of the wars in Iraq and Afghanistan, a maximum wage, a new public transit system and 14 more pages of "all the news we hope to print." The publisher of "The New York Times Special Edition" was Steve Lambert of Because We Want It. He defines his work as a vision of self-organizing citizens fighting for a more just world.

Like a monk in a scriptorium, an industrial robot produces high-precision calligraphy on paper scrolls and thus copies the whole Bible over the course of seven months. "bios" by robotlab emphasizes scripture as the elementary function for religion and science—two cultural systems that are fundamental for societies today.

"The idea of a tree" by Thomas Traxler translates the various sunshine conditions that occur during a day into a three-dimensional object. The length/height of the resulting object depends on the hours of sunlight during the day. The thickness of the layer and the color depends on the amount of solar energy. The product becomes a three-dimensional "photograph" of the time and the space in which it is produced and communicates certain characteristics of locality. The process does

not just react to different weather situations, but also to shadows occurring in the machine's immediate surroundings. Each object represents one day at one spot where it was produced.

"Common Flowers - Flower Commons" is based on the first commercially available genetically modified flower, the blue Moondust carnation. As cut flowers, they are shipped to worldwide markets. "Common Flowers" reverses the plant-growing process by multiplying purchased cut flowers using DIY biotech methods involving everyday kitchen utensils and easily purchasable, ready-made materials. The plant is officially considered "not harmful" and was therefore released into the environment—an action with which Georg Tremmel and Shiho Fukuhara raise questions about the state of intellectual property as well as ownership and copyright issues surrounding the bio-hacking and bio-bending of plants.

"Kinetic Sculpture" by ART+COM is a metaphorical translation of the process of form-finding in art and design. 714 metal spheres hanging from thin steel wires attached to individually-controlled stepper motors and covering the area of six square meters within an empty space animate a seven-minute-long mechatronic narrative. Moving chaotically at first, then evolving into several competing forms that eventually resolve into the finished object, "Kinetic Sculpture" creates an artistic visualization of the process of form-finding in different variations.

Since becoming an indispensable component of cellphones, tantalum, a rare metal, has become more precious than gold and the cause of warfare and conflicts that have claimed the lives of more than four million Congolese since 1998. "Tantalum Memorial" by Graham Harwood, Richard Wright and Matsuko Yokokoji commemorates these victims. A computer registers calls made via the Telephone Trottoire social network, a messaging service for Congolese living abroad. A caller can leave a message or hear and comment on those left by others. "Tantalum Memorial" carries on the Congolese tradition of radio trottoire—passing on information via word of mouth to avoid running afoul of government censors.

The centerpiece of Bill Fontana's "Speed of Time" is the world's most famous acoustic icon and symbol of time, Big Ben. 30 live sensors and microphones were set up within the clockwork's mechanism and at unusual locations around Big Ben—for instance, in the clock tower's airshaft. Thus, each spot contributes its own special sound; ambient noise like the sound of traffic is audible as well. The spatial sound collage was presented live in a historic colonnade directly below and within earshot of the bells. The listener's own auditory perception of the bells, the digital sound, reality and virtuality blend together and make possible a new and unusual way of perceiving this landmark. A 12-hour multi-track recording of the sound sculpture was created that makes it possible to fully recreate the real-time sense

of this artwork, which can be realized as an eight-channel sound installation. The OK shows a project documentation.

In the zero-gravity of space, the only way to transport and position nearly all uncontained gases, liquids and powders is a phenomenon known as acoustic levitation. Below on Earth, the selfsame phenomenon creates the impression of a localized absence of gravity, enabling the airborne levitation of fluids and solid matter. For Evelina Domnitch and Dmitry Gelfand's rendition of "Sonolevitation," slivers of gold are acoustically suspended by a high-frequency standing wave and spun in different directions at varying speeds. The spin reveals the rotary consequences of acoustic vibrations as well as the dynamics of frictionless motion (untainted by gravitational forces). The OK shows a project documentation.

"Cosmic Revelation" lets you experience science up-close-and-personal. A four-hectare light installation makes visible the energies of the cosmic radiation emanating from the depths of the universe and constantly raining down upon our planet. One or two times per second, these cosmic forces are unleashed in 16 specially designed lightning sculptures. In CyberArts, the OK shows a project documentation of Tim Otto Roth's work and the KASCADE Experiment.

DEVICE ART

Ars Electronica Center, 1st Upper Level

"Device Art" is a new artform, a synthesis of art, design, technology, science and entertainment. Here, new technologies from everyday life encounter elements of traditional Japanese culture. "Device Art" seeks to understand what it means to live in a world that is increasingly saturated by technology.

The Japanese have a long tradition of raising everyday actions and objects to an extremely high level of cultivation. For example, the significance of a tea ceremony goes far beyond the mundane, concrete purposes for which these actions are performed. "Device Art" does away with this separation of form and function, usually in a fun, playful way by bringing into play new materials and technologies— along with their immanent qualities and possibilities. Its most frequently used stylistic element is mitate, a long and popular tradition of utilizing metaphors, associations and double entendres in a whimsical way. There's something magical about transforming a common, everyday, even banal object into something extraordinary and unexpected. But mitate also makes it possible to deal with serious issues behind an apparently playful front. Or to position art beyond the confines of classical venues like museums and galleries.

The "Device Art" project was launched in 2004 by a group of artists, technicians and researchers. The group is headed by Hiroo Iwata; his collaborators are Hideyuki Ando, Masahiko Inami, Machiko Kusahara, Ryota Kuwakubo, Sachiko Kodama, Novmichi Tosa, Kazuhiko Hachiya, Taro Maeda and Hiroaki Yano.

PIXELSPACES – Do-it-Together

Ars Electronica Center

Pixelspaces 2009 is dedicated to the art of new and not-yet-institutionalized transdisciplinary linkups, and spotlights the innovative new poetic forms of expression engendered by them. The focus here—before the backdrop of converging technologies—is on art and science getting things done together!

The new Ars Electronica Center provides a setting for a new conference format: a nomadic symposium staged along the topography of the facility's exhibits and their component installations. An inspection tour through this exhibition opens up various points of access to the discussion of which forms of reciprocal potential arise when art assumes a leading role within the new convergences involving art and information & communication technologies, art and biotechnology, art and nanotechnology, art and neurotechnology. The casting of this nomadic symposium necessarily brings forth hybrid constellations of presenters and presenter teams. The Ars Electronica Futurelab as well as visiting artists, scientists and media technology experts will be convening in various formats to jointly discuss convergences in the participants' respective fields.

Pixelspaces also seeks new ways to enable the general public to get a comprehensible picture of the process of convergence that is now bringing art and science ever closer together. Deep Space, the new Ars Electronica Center's large-format projection system that's suited to a wide array of forms of depiction and imaging techniques, is quite an up-to-date example. Within the framework of a behind-the-scenes presentation, Deep Space as a physical setting at the interface of publicly accessible lab and exhibition venue will become a stage in its own right. The Ars Electronica Futurelab staffers who developed Deep Space will present this facility's relevant features as illustrated by a broad spectrum of projects from the area of virtual reality and other high-definition, computation-intensive forms of depiction. Artists will also be displaying examples of their work in Deep Space.

The AEC's four labs—Biolab, Fablab, Brainlab and Robolab—will illustrate trends and possibilities of shaping nature and human culture via human intervention, whereby each lab will showcase different methods to utilize converging technologies. Hands-on experiences are conducive to micro-discourses that

promote wider discussions of related issues—e.g. cloning your favorite plant, creation of everyday objects with a 3D printer, steering a robot with your own brain, and high-tech prostheses.

In Geocity, various high-contrast foils in the form of interactive visualizations and new interface technologies will be applied to Planet Earth and, as a proxy for it, to the City of Linz. What is brought out very clearly by the available data sets and the evaluations of them is the ever-more-urgent challenge to find and implement solutions to global problems. Thus, "Do-it-Together" reveals itself to be an elementary formula; after all, no single discipline can solve these problems alone.

As a natural follow-up to the Geocity theme, the OPEN SAILING crew will present a prototype that is to be regarded as the intermediate result of an ambitious project: In accordance with bionic principles, do-it-yourself technologies are being integrated into an oceanic station that provides its human occupants with all the necessities of life. Pixelspaces will showcase Open Sailing as a floating exhibition accompanied by an installation elaborating on some of what's come out of the project experimental approach so far. The prototype's explicit "do-it-together" approach is emblematic of new convergences between disciplines and technologies. OPEN SAILING not only invites everyone to get involved and pitch in; it's also developing all hardware and software components as open source.

In conjunction with this year's Pixelspaces, the Ars Electronica Futurelab and Fabbrica are jointly offering a series of workshops entitled "Re-imagining the Fashion Retail Store." The idea: in the age of eCommerce and multi-functionality-oriented shopping mall concepts, designers and distributors have become all-too-cognizant of the need to rethink not only the cultural rites of "fashion" but also clothing per se and all of its product characteristics—that is, everything from intelligent fabrics to the mise en scène of the shopping experience. The workshop's hypothesis is that approaches to this can be sought and found, first and foremost, at the interface of art and converging technologies.

The whole conference and each of the individual contributions to it can be considered an experiment that addresses as well as constitutes new convergences. "Do-it-Together" is above all to be seen as a wake-up call for a society that is no longer able to answer its most urgent questions and perform its most pressing tasks within the framework of discrete individual disciplines. In addition to these disciplines, the symposium contributions and exhibition projects are shifting closer together than ever before, a sign that the fields of activity emerging at the nexus of art and science, theory and practice, are blending together into a new functional entity.

HUMAN NATURE – The Exhibition

Brucknerhaus, Middle Hall

"Future Farm" and "Nanotopia," spotlight the emergence of new fields of pharmaceutical R&D and new business models that no long think solely in terms of vaccines and medicines but rather exploit the human body itself as a lucrative source of raw materials (i.e. stem cells).

"Soil Clock" by Marieke Staps shows that metabolic processes produce enough energy to power an LED lamp or a clock. Free of charge and environmentally friendly.

"Cell Doll" is, just as its name suggests, a doll that consists of living cells. On the basis of a five-millimeter-high doll, Shoji Takeuchi, Yuya Morimoto and Yukiko Tsuda of the University of Tokyo's Institute of Industrial Science demonstrate a new method of producing three-dimensional living structures, a procedure that can also be utilized to produce human organs and tissues with complex cellular structures.

Prizewinning steer Yasufuku is regarded as the father of hida beef, a high-quality meat famous for its marbled texture and rich flavor. Now, 13 years after its death, Japanese scientists have succeeded in cloning the legendary animal. "Cloned Beef" is the latest successful cloning experiment; in 2008, a mouse that had spent 16 years in a deep-freeze was cloned. The "resurrection" of Yasufuku not only catapults a tradition into the 21st century; it also makes it possible to use the clone as the subject of sustainable research on the genetic and environmental conditions that are necessary to preserve the quality of this traditional breed for the future.

"Drink.Pee.Drink.Pee.Drink.Pee" is a research project by Britta Riley and Rebecca Bray that has to do with the preparation and recycling of urine, a rich source of nutrition, as plant fertilizer. Installation visitors can produce their own plant food.

"Bare" by Bibi Nelson, Isabel Lizardi, Matt Johnson and Becky Pilditch is a project that uses a special electricity-conducting dye to link up users to electrical devices. Applied to the skin—for instance, in the form of a line from the left index finger to the right index finger—two electrical contacts can be hooked up to one another simply by touch.

"d_shape" by Enrico Dini is a gigantic 3D printer that prints out nothing less than entire buildings. Once it's started, the robotic system requires no further human intervention; it stacks level upon level—including stairways and cables—and keeps on doing so until the architect's design is implemented.

"The Earth Angel" by a company named Caden Enterprises is "the world's first green technology sex toy." A hand-crank is used to load the energy cell inside the vibrator, which makes batteries a thing of the past!

"MERRICK" is a digital file that Daan van den Berg infected with the virus that produces elephantitis in human beings. The artist hacked into the computer server of IKEA and infected products' 3D print files saved there. The result is a series in which no object resembles another.

"Animatronica Flesh Shoe" is a sport shoe sewn out of latex castings of human skin. Adam Brandejs' work takes a look behind the design scenes of our consumer society and the exploitation of human labor.

Conventional action figures at first glance, Adam Brandejs' "Genpets" turn out, upon closer inspection, to be creations of biotechnology. Mass-produced and ready for mail-order distribution.

"Creature No.2 Cockroach" and "Creature No.18 Multiplied" appear to be skeletons of extinct species like the ones we've seen in natural history museums. At second glance, though, these sculptures prove to be strange hybrids of various species. Shen Shaomin impressively stages an encounter at the nexus of popular culture—our interest in long-extinct species—and modern science, a pursuit that is increasingly in a position to create new species and new life.

Vacuum-packed, positioned between the sterility of consumer society and the hope of immortality, Lawrence Malstaf floats in a PVC cocoon. "Shrink" symbolizes protection and threat at the same time.

Christoph Guger's "Multimodal Brain Orchestra" shows what the brain is capable of without the body. The musicians make use of invasive brain-computer interfaces in order to play their virtual instruments.

HUMAN NATURE – The Lectures

Brucknerhaus, Middle Hall

On Friday, September 4, 2009 Hiroshi Ishiguro of Osaka University will kick off the HUMAN NATURE Lectures. He'll be followed by Friedrich Kittler, one of the most influential and important German media theoreticians and founder of the so-called Berlin School, and Derrick de Kerckhove, renowned sociologist and former director of the McLuhan Program in Culture and Technology. Other speakers include author/artist Eduardo Kac (2009 Golden Nica winner in the Hybrid Art category) and Josef Penninger, scientific director of the Institute of Molecular Biotechnology in Vienna. Moderating the proceedings will be curator, author, artist, media theorist and journalist Jens Hauser.

On Sunday, September 6, 2009 the HUMAN NATURE Lectures will feature Maja Petrovic-Steger, social anthropologist at Cambridge University, Derrick de Kerckhove, Bernhard Fink, evolutionary psychologist in Göttingen, and artist Lawrence Malstaf. There will be one final talk on Monday, September 7, 2009 by philosopher/author Michael Schmidt-Salomon.

CLOUD INTELLIGENCE

Brucknerhaus, Middle Hall

Inspired by Jules Verne's epic excursion "Around the World in 80 Days," Ars Electronica, voestalpine and Linz09 are utilizing leading-edge technologies to explore fascinating places dispersed across the face of our planet. "80+1 – A Trip around the World" is the title of this undertaking. The stops along the way include the ship-breaking scrap yards of Gadani, Pakistan, the skyscrapers of Dubai, and the bustling markets of Bangladesh. The duration of the journey is 80 days: from June 17 to September 4. On the 81st day, September 5th, we will draw up a new map that shows where our world is headed.

Jules Verne's novel deals with nascent industrial globalization. Since its appearance, 125 years have passed and the speed of globalization has increased exponentially. And given rise to economic and ecological crises in practically every nook and cranny of the world. But are these crises unavoidable? Are they part and parcel of human nature? Or is it possible to engender a new consciousness in order to take on global problems jointly as equal partners endowed with equal rights?

Welcome to the cloud. Welcome to the new social ecology of the 21st century. Welcome to mobile banking from a New York City taxicab direct to rural Kenya. Welcome to the wild and wonderful web of blogs, podcasts, mailing lists and streaming videos. The world has changed. We have changed ourselves.

More and more information saturates our life. This raises the question of whether we will find the time and the capability to use it in a sensible way Will we succeed in taking advantage of it to develop heretofore inconceivable solutions to existing problems, or will we simply be overwhelmed by the avalanche of information and entertainment?

We need a new kind of intelligence. A new art of painting possibilities, a new science of assessing solutions, and new technologies to implement them. Economic globalization has led to a worldwide market of goods and services. New technologies enable us to exchange ideas and feelings. The next level of globalization will endow us with the power to partake of new solutions and to act in accordance with them.

We're currently observing the explosive growth of digital communities and digital nomadism, social networks and social clusters. Hierarchies are flattening out. Any idea can rapidly propagate and be disseminated through reputation networks. Communities that once were marginalized can now get all the attention they deserve, and traditional media have to adapt in order to fit into this new world order.

Human beings are not only custom-tailoring their social identities; they're also intensifying the linkages between knowledge and their existence. In the cloud of connections, every single one of us becomes a social nerve cell. Collective knowledge far exceeds what a single search engine can catalog and archive. Intelligence spreads out globally, incessantly, and cloud computing can create new connections via new ideas. We think together, though we remain independent in our identity. If we could promote joint thinking to reach accords with respect to new solutions, we might be in a position to find a new orientation for the future.

We're experiencing a new way to travel around the world—not in 80+1 days but in 80+1 minutes! Speed is determinative. Due to the fact that crises spread so quickly, it's imperative that social intelligence spread just as fast. Today, every one of us can use an extensive repertoire of tools to create and distribute vast quantities of information. But how can we manage the rhythm of our everyday life? How can we see to it that our digital assets are safe and enduring? How can we define new rules to maximize creativity amidst our rapid social evolution? These challenges remain unsolved, which creates space for new enterprises and new opportunities. This is only the beginning.

Welcome to the new social ecology. Welcome to our shared intelligence, our network-linked angst, and our collective future. Welcome to the cloud.

The first part of the full-day symposium on Saturday, September 5, 2009 is entitled "Cloud Intelligence – Those who enable us and encourage us." Speakers include David Sasaki (Introduction to cloud computing and brief mention of cloud intelligence), Stephen Downes (Cloud Intelligence – Encouraging collaboration), Ethan Zuckerman (Cloud Cartography – Mapping the flow of information and interaction) and Anders Sandberg (Distributed superintelligence). The focus then shifts to "Cloud Activism – What should we do?" The speakers are Isaac Mao (Introduction to cloud activism), Hamid Tehrani (Review of Iran protests), Xiao Qiang (Activism without organization), Evgeny Morozov (Activism not Slacktivism), Kristen Taylor (The social future of food), Teddy Ruge (Diaspora-based Development), Pablo Flores (Enabling Cloud Education), Andrés Monroy-Hernández (Cloud Programming for Children) and Juliana Rotich (Cloud Environmentalism in Africa). Wrapping things up will be a round-table discussion and a speech by Isaac Mao (Looking toward the future).

The symposium is being curated by Isaac Mao (CN) and David Sasaki (US). Isaac Mao is a software architect, entrepreneur and researcher specializing in learning technology and social technology. Isaac's primary fields of endeavor are R&D, social work, business and technology. He is currently the director of or a consultant to a few non-profit programs and several for-profit enterprises in China. David Sasaki is the director of Rising Voices, the worldwide "citizen media" contact initiative of Global Voices Online. He's in charge of a portfolio of smaller projects in the Third World that are utilizing citizen media to implement social change. Prior to focusing his efforts on outreach activities, he was Global Voices' regional editor for Latin America—monitoring the Latin American blogosphere, identifying important content, and translating the selected material from Spanish into English. Sasaki made the transition to online journalism after having worked as a freelance Web developer and English teacher in Monterrey, Mexico. He divides his time between domiciles in North and South America, and is a frequent contributor to Rising Voices and Global Voices in addition to maintaining his own weblog.

CAMPUS – IMPETUS: Works from the MIT Media Lab

Linz Art University, Rechtes Brückenkopfgebäude (Right Bridgehead Building)

Certainly we cannot hope to solve the problems facing us without a greater understanding of the modern world, based on the integration of knowledge. Humanists must be educated with a deep appreciation of modern science. Scientists and engineers must be steeped in humanistic learning. And all learning must be linked with a broad concern for the complex effects of technology on our evolving culture.

–Jerome B. Wiesner   (1915-1994), Co-founder, MIT Media Laboratory

The 2009 Ars Electronica Campus Exhibition features current work of the faculty and students from the MIT Media Lab in Cambridge MA. From its inception almost thirty years ago, the Media Lab has taken an unorthodox research approach to envisioning the impact of emerging technologies on everyday life–technologies that promise to fundamentally transform our most basic notions of human capabilities. The lab attracts designers, computer designers, engineers, artists, and scientists, divergent in background and practice. However, unifying the people of the lab is a particular kind of passion, momentum, drive–the IMPETUS– to create and innovate for change. The depth and breath of the Media Lab's research areas transcend traditional technology, design or art environments and the lab can be thought of as an ongoing experiment, both physical and intellectual, in facilitating innovation, collaboration, and critique. It is an environment where inspiration arises from difference and where the driving force behind creation comes from an inherently transdisciplinary approach.

The MIT Media Lab consists of 30 different research groups including the diverse disciplines of interactivity, robotics, artificial intelligence, education, nanotechnology, music, neuro engineering, material science, visualization, social networking, urban infrastructure, fabrication, and political art all intermingling in joint spaces, courses and projects. Students at the Media Lab generally arrive with a particular area of expertise but are encouraged to explore new domains to enrich and expand their perspective on their research. In many ways, time spent at the Media Lab becomes an education on the process of innovating in itself. The goal of the lab's work is to develop technologies that empower people of all ages, from all walks of life, in all societies, to design and invent new possibilities for themselves and their communities. Unique to the lab's structure is our pairing with industry sponsors who support the lab's research in a shared intellectual property model and keep the lab connected to the real world issues of the corporate community and society at large.

The idea for the Media Lab came into being in 1980 by Professor Nicholas Negroponte and former MIT President and Science Advisor to President John F. Kennedy, Jerome Wiesner. The Lab grew out of the work of MIT's Architecture Machine Group, and remains within MIT's School of Architecture and Planning. The Media Lab opened the doors to its I.M. Pei-designed Wiesner Building in 1985, and in its first decade was at the vanguard of the technology that enabled the "digital revolution" and enhanced human expression: innovative research ranging from cognition and learning, to electronic music, to holography. In its second decade, the Lab literally took computing out of the box, embedding the bits of the digital realm with the atoms of our physical world. This led to expanded research in wearable computing, wireless "viral" communications, machines with common sense, new forms of artistic expression, and innovative approaches to how children learn.

Now, in its third decade, the Media Lab continues to check traditional disciplines at the door. This fall, we will expand into a new building, a Fumihiko Maki designed atelier style addition to our current space where we will continue to move forward concept driven research, inventing—and reinventing—how humans experience, and can be aided by, technology.

The Campus exhibition at Ars Electronica features a sampling of current and recent work from the lab– an intersection of cutting edge technology with an appreciation for the power of design and aesthetics to metamorphize an interactive experience, and the desire to position work within a broader social infrastructure to better understand the effects of technology, for better or worse, on the fabric of society. Three subthemes have emerged for this exhibition— community, humanity and materiality—which broadly encompass the conceptual focus of our research and present a cross over between a humanist perspective so central to our approach and the engineering and science for which MIT is so famous.

COMMUNITY

The development of new media technologies has brought about a revolution in the way we communicate and share knowledge. In recent years the lab has focused on several systems which empower and democratize access to information and reformulate social infrastructure physically and virtually. Some of the systems feature novel methods of mapping information to physicality and temporality while others look at urban transportation and energy processes. Lab researchers have also developed physical and digital platforms which encourage creative through ease of accessibility to knowledge, transforming educational methods for all ages. Through products and tools which scaffold the process of creation of technologies by amateurs, the lab has helped in fostering the DIY initiative in communities of open source and participatory design. Key to this initiative is the concept of collective intelligence, aggregating knowledge of a diverse community of experts, and allowing for the formation of virtual communities never before possible. IMPETUS presents projects which explore how digital technologies have

changed our access to and interpretation of information, and in turn empowered the process of learning, making, doing and understanding.

HUMANITY

Technology has created systems for human augmentation which allow us to expand our physical and sensory capabilities and we have grown accustomed to living in an environment where our digital devices function as an extension of ourselves, both in ability and perception. The design of technological systems with artificial intelligence, pushes these boundaries further, where our devices also become a reflection of ourselves–we adapt to technology and in turn create technology which adapts to us. The notion of our relationship with technology is metamorphosizing as the boundary between technology as human augmentation or outside entity shifts, blurring the line between when becomes technological systems become part of us, and where they remains an 'other.' Robotic creations appeal to responses deeply rooted in our human nature, creating a dialogue to persuade, calm, assist or delight, through varying states of anthropomorphized forms and actions, while a vanguard media production questions what it means to be human in the context of an increasingly digital world. Through varying investigative methods, the featured projects seek to challenge and pursue critical inquiry into understanding our own humanity and identity in the context of technology.

MATERIALITY

For all the new dimensions the virtual world has brought us, we still intuitively delight in the physical–the tactile, the graspable, the tangible, the material– allowing us to utilize all of our senses and our inherent bodily knowledge of the world around us. For over a decade, the Media Lab has been at the forefront of understanding and innovating on technology's place within the built environment and the significance of physicality in our experience with digital systems. The idea of Tangible Bits was born at the Media Lab, seamlessly coupling the physical and digital world. In many ways, the Media Lab itself embodies the sense of the importance of physicality, it is a culture of learning by doing, a kinesthetic approach by which the physical output of endeavors can embody ideas beyond the imagination. In future visions of interactivity such as programmable matter and radical atoms, material science on the nanoscale begins to merge with concepts of interactivity, envisioning physical materials that are as malleable, programmable, and dynamic as pixels on a screen. Central to the notion of new materiality is also the innovation of fabrication processes that go along with creation, questioning how changing the process of making things also changes the things we make. For the lab's designers, artists and scientists working on novel methods of combining computation and materiality, the challenge becomes in expanding our notion of the possibilities of the material world while creating experiences that remain familiar, comfortable, and engaging.

Like everything at the MIT Media Lab, the works presented transcend any one category and show a fusion of the artists' viewpoint, knowledge and personal motivations. IMPETUS invites to experience and interpret the diversity and essence of our community.

"datamatics [ver.2.0]" meets "UNITXT"

Ryioji Ikeda & alva noto in Concert

Brucknerhaus, Main Hall

In his "datamatics" series, Ryioji Ikeda investigates the invisible diversity of the data that pervades our world. "Datamatics" uses pure data as sources for sound and visualization, and enables those who partake of it reexamine the boundaries of perception. "alva noto" (Carsten Nicolai) plays with the same raw material—in a way that is less abstract but breathtaking nevertheless. "UNITXT" is a reference to units of rhythmic patterns and universal texts (like binary codes). It is dynamically presented with 120pbm, combining highly diverse rhythmic entities and modules with additional text elements. Created in collaboration with French sound artist Anne-James Chaton.

ARS ELECTRONICA'S 30th ANNIVERSARY – Talks & Exhibition

Brucknerhaus, Lobby

Jean-François Lyotard's publication in 1979 of "The Postmodern Condition" launched the discourse on postmodernism, and in particular the discussion of how newly emerging information technologies are changing industrial society and especially culture.

It was a highly auspicious point in time, that year in which Ars Electronica was launched in Linz. And, indeed, not in the form of a specialized symposium for ivory-tower experts but with an opening event, the Linzer Klangwolke (Cloud of Sound), that attracted 100,000 visitors. This was still in the days before Windows, pre-laptop, no cellphones, a world without a WorldWideWeb. Since then, a new digital domain has emerged, one in which we can circumnavigate the Earth in a matter of moments, as is currently being demonstrated by "80+1 – A Journey around the World," a project being produced jointly by Ars Electronica, voestalpine

and Linz09. Back in 1873, Jules Verne's protagonist took 80 days to do what we can accomplish online in a few seconds.

From its very inception, Ars Electronica has sought to address technological issues and their consequences for society and culture at a very early stage of these developments in order to achieve a critical mass commensurate with the situation at hand. Until 1995, the Brucknerhaus and the ORF – Austrian Broadcasting Company's Upper Austria Regional Studio organized the festival. In 1996, the Ars Electronica Linz GmbH was set up to assume full management responsibility The ORF is Ars Electronica's media partner.

The History Lounge that's being set up in the Lobby of the Brucknerhaus will serve as a setting for installations, artists' talks and performances that will constitute a total-immersion tour through the last 30 years of Ars Electronica.

This will be accompanied by a History Club that invites visitors to kick back and relax, and take a long, leisurely look at the history of the Ars Electronica Center and Festival in books, audio recordings and films. Set in the heart of the action, the History Club will also serve as the central meeting point at Ars Electronica 09.

Online Accreditation for Media Outlet Representatives

Media outlet representatives can arrange accreditation to the 2009 Ars Electronica Festival at www.aec.at/accreditation from now through August 28.

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