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Art without the artist

Today's art world is filled with 'originals' that an artist never touched

By Geoff Edgers | January 6, 2008

TARA DONOVAN'S PINS are hard to miss. There are thousands of them upstairs at the new Institute of Contemporary Art. They're smushed together almost as if dropped into a trash compactor, except instead of being bent, they form a 3½-foot-tall block of sinewy, shiny metal. This is art, and it sits in the center of a gallery at the ICA, one of the signature pieces of the museum's collection.

Stare at "Untitled (Pins)," and you're likely to have questions. How does this cube stick together? Is it solid or a kind of pin shell? And what of the artist? Did Donovan get pricked as she manipulated the piece? Was she wearing protective gloves? What kind of care and persistence did it require for her to turn these thousands of glittering pins into such a perfect square?

One thing you might not expect: Donovan didn't put "Untitled (Pins)" together at all. The New York City artist figured out how to shape a mass of pins and sent instructions to the museum; the work was assembled in July, and again in August, entirely by the hands of ICA employees.

Surprised? Don't be. Like any museum of contemporary art, the ICA is full of works built by somebody other than the artist, from Kelly Sherman's Foster Prize-winning "Wish Lists," a collection of personal wish lists gathered from the Internet, to "Cell (Hand and Mirror)," a mysterious Louise Bourgeois piece featuring a pair of carved marble hands in the center of miniature room.

In Cambridge, Harvard's Carpenter Center was recently home to an installation piece of cellophane-wrapped candies laid in a golden carpet across the ground floor of the center. The work is credited to Felix Gonzalez-Torres, but was actually built by curator Helen Molesworth. (Gonzalez-Torres died in 1996.) At the Massachusetts Museum of Contemporary Art in North Adams, several pieces in the Spencer Finch exhibit - including a majestic stained-glass wall - were simply assembled according to the artist's specs. And last September, when the Boston Center for the Arts hosted "Work No. 227: The Lights Going On and Off" by Scottish artist Martin Creed, in which the gallery's 67 track lights illuminated the white walls and then flicked off every five seconds, not only did Creed not set up the exhibition, he didn't even fly to Boston while it was up.

As contemporary art becomes more mainstream, and successful artists become "brands" that draw huge sale prices and big museum crowds, legions of art viewers are now finding themselves confronting "original" works created by someone other than the person listed on the wall label.

What qualifies such artwork as original, and whether it should matter whether the artist physically created the work, is a debate that has occupied academic corners of the art world for years. But if museumgoers believe - reasonably - that the point of seeing original art is to connect intimately with the artist who crafted the piece before them, they are opening themselves up to a rude surprise. In a contemporary art museum, it's now fair to expect that chunks of a collection were never touched by the artist at all.

In one way or another, contemporary artists have been handing off the actual making-of part for years. Who would expect Richard Serra to hand-install one of his thousand-ton steel sculptures, or for Christo and Jeanne-Claude to be out in Central Park hanging the 23 miles of nylon panels that made up "The Gates"?

But when viewing more intimate works, especially sculpture and painting, part of the appeal has always been standing in the presence of the unique hand of the artist. Vincent van Gogh spent years developing the swirling technique that would define his dramatic wheatfield oil works in Saint-Rémy. Jackson Pollock took pride in his "action painting," sometimes poking holes in paint cans to create a delicious stream, sometimes picking up a turkey baster to put on the finishing touches.

The intensely personal feel in a van Gogh, Pollock, or Picasso may be part of why works of the artists can fetch millions on the auction market, and reliably draw millions of visitors to museums to see the paintings in person.

Though that understanding of art may still drive individual viewers, it's not so current in the art world. As far back as 1917, Marcel Duchamp signed "R. Mutt" to "Fountain," a urinal meant to signal his move away from painting into Dada-inspired provocations. In the 1960s, the movement called "conceptualism" came into its own: An artwork could be a barricade of oil barrels blocking a Parisian street, or pages of a book chewed up, dissolved in acid, and then "poured" into bottles to be sent back to a library. What did it matter who did the chewing? Suddenly, the idea was more important than the creation of it.

John Baldessari, a pioneer of conceptual art, trained as a painter and earned a degree in art, but in 1968 held a cremation in which he burned all his paintings as a way of holding himself to his new plan: to stop using technique and commit to the maxim that the idea is everything. These days, he has a handful of assistants to help create his collages, videos, and other conceptual works. In addition, some pieces - prints more than 60 inches wide, all framing - are "jobbed out" completely and done elsewhere.

"It's delegation," says Baldessari, 76. "An architect is a classic example. He doesn't have to build a house. A composer doesn't always have to conduct his work so why should an artist?"

Some artists have built entire careers on this concept. Sol LeWitt, though trained as a conventional artist, began to recruit teams of installers to create "his" pencil drawings, obsessively detailed works done on gallery walls, and then removed. The team approach became part of what viewers appreciated

in a LeWitt work - and makes possible the curious exhibit being mounted later this year at the Massachusetts Museum of Contemporary Art. LeWitt died at age 78 last year, but the show goes on: close to 40 trained installers will spend six months creating nearly a half-mile of his penciled and painted wall drawings. It will be the largest-ever LeWitt show featuring these works - and will be created entirely posthumously.

"I think he was very interested in the notion that the idea itself could carry great power," explains Jock Reynolds, director of the Yale University Art Gallery, which is collaborating with Mass MoCA on the $9 million project. "If he showed the idea to others, people would enthusiastically enjoy participating in that experience."

But artists such as LeWitt and Baldessari make the gap between "artist" and "maker" part of the fun of the work. That's not the case with Donovan, Sherman, or Finch. Creating "Untitled (Pins)" is not some kind of social gathering. It is business carried out by an installer who pours the pins into a mold, and then removes that mold to leave the cube.

For Donovan, having another person create her pin sculpture is not a statement. It's practical.

"If I installed everything, I would never be in my studio," says Donovan in a recent phone interview. "I'd be following everything around all the time."

Donovan created the first cubes by her own hands a decade ago while experimenting in her studio. But now, whether you're a collector buying one through one of her galleries or a museum - the Museum of Contemporary Art in San Diego has a pin cube - you're expected to assemble it on your own. Donovan does send instructions.

She believes that her work is done before a sculpture is seen by the public.

"I'm the one in the studio making these discoveries," says Donovan, who will be the subject of a one-person show at the ICA next year. "But because of the nature of my work, I can pass off some of the labor to others. I'm more interested in developing the phenomenological aspects of the material. Once that's done, my part is done."

There is disagreement about this premise.

Maine-based John Bisbee makes sculptures using nails and spikes. He knows Donovan's work, and long admired her - until he had heard she stopped making her own art.

Bisbee, whose 20-year retrospective opens in January at the Portland Museum of Art, says he knows that curators and gallery owners don't mind when artists delegate.

"It's more production, more shows, more money," he says. "I've got to be honest. I fantasize about it. I've got more ideas than my hand can do. But for me, art is about what one person can do, from conception to completion."

On a recent Sunday morning at the ICA, a woman circled Donovan's cube of pins. Charlotte Sullivan, a 23-year-old artist in Athol, crouched at one point to examine it more closely.

"I wonder about how it came to be here," Sullivan said when asked what she was thinking. "I think a lot about the process. Is it solid pins all the way through? Is it important for her to make it herself or did it come with instructions?"

Told the answer, Sullivan admitted she was disappointed.

"I'm not really sure it's a successful piece of work," she said. "I would feel closer to feeling it was if I knew she had built it. I would know her hand and time were connected to this because I don't think you know unless you do it."

In a sense, this approach to art simply takes us back to Rubens's time, when a workshop of assistants and apprentices did much of the painting for distinguished artists, with the master guiding the work at the top level. Only now, the "assistants" are museum workers and gallery workers.

Then, as now, art was not just a calling but also a business. If anything has changed, it's that today you don't need to be a Rubens or LeWitt to offload the work. You can be Tara Donovan, just 38 and on the cusp, but certainly not a household name.

But this also means that Donovan, an artist praised by serious art-world types, has something in common with Thomas Kinkade, the QVC-selling "painter of light" who has never been taken seriously by art collectors, but has built huge success on an empire of "official" reproductions.

Donovan says she's sold about three dozen cubes of different sizes and materials. ("Toothpicks" sold for $45,600 last year.) She notes that it doesn't matter who you are, a museum or a collector: The piece comes with a set of instructions.

So what, she was asked, would stand in the way of somebody who wanted to save money by creating a pin cube without paying the artist?

"They could, but they won't own a Tara Donovan," she says. "Unless you own a certificate along with that work, you don't own my work."

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http://www.boston.com/bostonglobe/ideas/articles/2008/01/06/art_without_the_artist/

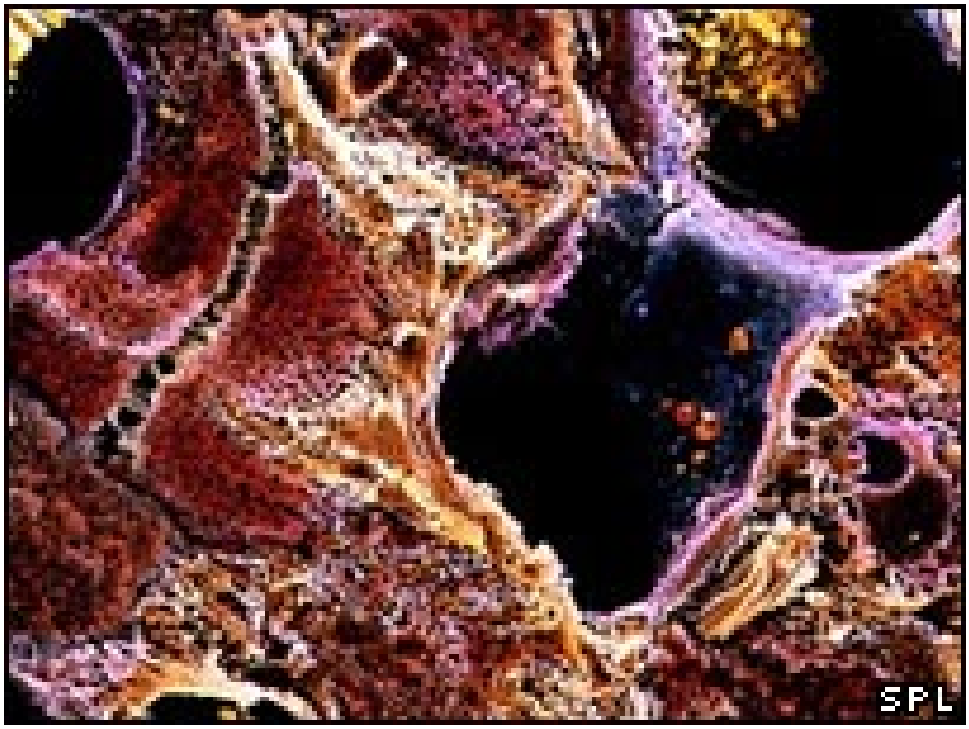
In praise of ... Stonehenge
Leader
Monday January 7, 2008

Guardian

Poor Stonehenge. Last month brought news that the latest scheme to save the monument from traffic blight has been scrapped as too big and too expensive, which leaves Europe's greatest prehistoric site trapped between a car park and two roads for the foreseeable future. Everyone agrees that this is a terrible thing, starting with Unesco, which has warned that the site's World Heritage status is being abused. Already the isolation of Stonehenge's setting on open chalk downland has been lost to traffic noise, an ugly visitor centre and fencing installed to protect the stones from vandals. Once painted by Constable, who praised it as standing "remote on a bare and boundless heath", Stonehenge has declined into a place mostly tourists visit, and then only once, a break on a trip from Oxford to Bath. The site is archaeologically far more significant than that, but even if only for aesthetic reasons it deserves better treatment. Some who love Stonehenge celebrate the scrapping of the latest road scheme, which would have closed parts of the A344, which passes through the Neolithic site, and put a section of the A303 trunk road in a tunnel. It would have required intrusive engineering works, and the doubling of a long section of surface road. But it was better than most alternatives proposed during the tortuous battle to clean up Stonehenge, and now it has gone the site will remain a mess. The planned tunnel cost too much. Giving Stonehenge the treatment that it deserves might cost even more.

http://arts.guardian.co.uk/art/heritage/story/0,,2236535,00.html?gusrc=rss&feed=40

Liver damage 'could be reversed'
Some liver damage caused by heavy drinking or hepatitis could be halted or even reversed, claim researchers.



US researchers say that the growth of scarring around the organ might be stopped by blocking a vital protein which helps it to form.

The research, in the journal PLoS Online, could also eventually help patients with lung problems and burns.

The British Liver Trust said that any treatment which lessened scarring would help patients.

> **Our latest finding proves that we can actually reverse the damage**
> Dr Martina Buck
> UC San Diego Medical Center

Heavy alcohol use and hepatitis can lead to a process called fibrosis in the liver, which involves the formation of excessive scar tissue.

Cirrhosis happens when this scarring becomes too severe, interfering with the way the liver works.

Currently doctors can do little more than try to prevent more damage by changing the patient's lifestyle or treating the virus which caused it.

Damage reversal?

The researchers at the University of California at San Diego School of Medicine have halted the formation of the scar tissue by blocking a protein called RSK, which is released naturally by the body as part of the healing process.

The scientists used mice with severe liver fibrosis, some of which were given a chemical which countered RSK.

Those mice had no further liver fibrosis, while those who didn't receive the chemical showed signs of more damage.

Dr Martina Buck, who led the study, said she felt that the treatment might be able to go further, and actually repair damage already caused.

"Our latest finding proves that we can actually reverse the damage," she said.

The researchers said that other conditions involving fibrosis, such as pulmonary fibrosis and scarring around burn injuries, could also potentially benefit.

A spokesman for the British Liver Trust said that the research was promising: "This is clearly in very early stages and the real test will be when a treatment is developed to safely block progression of damage in the livers of patients with liver disease and reverse their fibrosis.

"Irrespective of whether cirrhosis is fully reversible there is clearly a lot of benefit to be derived from reducing the amount of liver fibrosis as this allows the liver cells to resume normal function."

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7152415.stm

Published: 2007/12/27 02:08:00 GMT

Humans 'drive out large mammals'
Almost 80% of the Earth's surface has experienced a sharp fall in the number of large mammals as a result of human activities, a study suggests.

By examining records dating back to AD1500, US researchers found that at least 35% of mammals over 20kg had seen their range cut by more than half.

They said urgent action was needed to protect the animals, which were being hunted or suffering habitat loss.

The findings have been published in the Journal of Mammalogy.

The research, carried out by a team of scientists from Princeton University and conservation group WWF-US, has been described as the first "measurement of human impacts on biodiversity based on the absence of native, large mammals".

"Perhaps the most striking result of our study is that [the] 109 places that still retain the same roster of large mammals as in AD1500 are either small, intensively managed reserved or places of extremes," revealed lead author John Morrison, WWF-US's director of conservation measures.

"Remote areas are either too hot, dry, wet, frozen [or] swampy to support intensive activities."

'Eco-engineering'

The researchers compared the current ranges of the world's largest 263 land mammals with their distribution 500 years ago.

We can now pinpoint places where large mammals assemblages still play

important roles in terrestrial ecosystems
Eric Dinerstein,
WWF chief scientist

The species that suffered the greatest loss were "habitat generalists", including tigers, leopards, lions, American bison, elk and wolves.

Geographically, Australasia fared best, holding on to 68% of its large mammals. At the other end of the scale, South-East Asia only had 1% of the mega fauna that roamed the region in AD1500.

In their paper, the scientists explained why large mammals were so important for maintaining the ecological equilibrium.

"Large carnivores frequently shape the number, distribution and behaviour of their prey," the researchers wrote.

"Large herbivores function as ecological engineers by changing the structure and species composition of surrounding vegetation.

"Furthermore, both sets of mammals profoundly influence the environment beyond direct species interactions, such as through [the food chain]."

WWF chief scientist Eric Dinerstein said he hoped the findings would help focus conservation efforts.

"We can now pinpoint places where large mammal assemblages still play important roles in terrestrial ecosystems," he explained.

"Through strategic re-introductions - such as returning wolves to Yellowstone - we can restore... places missing one or two species and recover the ecological fabric of these important conservation landscapes."

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/science/nature/7161644.stm

Published: 2007/12/27 16:37:39 GMT

Gene find boosts allergy research
Gene-targeting therapies could one day offer relief from allergies such as hayfever, say UK and Swiss scientists.

A gene called "GATA-3" can stop the body's immune system from working properly when it meets potential allergens, they say.

The journal PLoS Biology reports that mice with dominant GATA-3 didn't produce enough key immune cells to prevent allergy attacks.

A treatment may still be some years away, allergy specialists have warned.

> **This finding will help us to understand how healthy individuals are able to tolerate allergens**
> Dr Carsten Schmidt-Weber
> Imperial College London

In most people, coming into contact with pollen, animal hair or nuts causes no reaction because their immune systems recognise them as harmless.

However, in allergy sufferers, the immune system becomes programmed to see them as a threat, launching an attack which causes inflammation, wheezing or rashes.

Scientists have spent many years looking at why and how the body responds this way.

One of the most important discoveries was the "regulatory T-cell", which appears to have some beneficial control on the scale and direction of unwanted immune system attacks.

The latest find, from Imperial College London and the Swiss Institute of Allergy and Asthma Research in Davos, has revealed more about the genes important to the production of regulatory T-cells.

Cell blocked

Activity in two different genes appears to be crucial - the FOXP3 gene which helps make the cells, and the GATA-3 gene, which, when over-active, blocks FOXP3.

They used mice engineered to "over-express" GATA-3 to test this theory, and found that regulatory T-cell numbers were much lower.

Dr Carsten Schmidt-Weber, the lead investigator on the research from Imperial's National Heart and Lung Institute, said: "This finding will help us to understand how healthy individuals are able to tolerate allergens and what we need to do to reinduce tolerance in the immune systems of patients with allergies."

Although allergy is known to be inherited in many cases - suggesting that genes are involved - the huge rise in the number and severity of allergies reported to doctors in recent decades is also thought to be due to other, environmental factors.

Some estimates suggest that the number of people in the UK with some form of allergy is at least 18 million.

A spokesman for the charity Allergy UK warned that the latest gene find would not lead immediately to useful treatments.

"All research is useful and interesting but a cure for allergy and indeed the sort of treatment that could direct the T-cells to avoid allergy is many years down the line."

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7161351.stm

Published: 2007/12/27 10:56:03 GMT

How to Tell Whether Writing Instruction Works

Complaints about students' poor writing skills have prompted many colleges to create new programs or adopt curricular changes, but do these efforts work?

As writing program directors gathered Thursday at the annual meeting of the Modern Language Association, many voiced confidence that their efforts are making a difference. But at one of the kickoff sessions for the meeting, many of these officials said they worried that views of their success were based more on hunches and intuition than solid evidence. That may be changing, however, as composition scholars described a range of projects designed to test the effectiveness of their efforts. Some said they see a shift in composition away from theory and toward more practical research on student learning and instructor strategies."For writing centers and programs, the dearth of empirical research is dangerous," said Linda S. Bergmann, director of the Writing Lab at Purdue University. Too much of what writing instructors believe is based on "lore," she said. At a time of political demands for assessment and commercial companies promising quick results if they take over tutoring services, writing instructors need evidence of what works, she said.

The research projects described at the meeting, in Chicago, are generally small scale, involving one or two campuses each. But those conducting them — and audience members — said there was a need for more such studies, and for efforts to enlarge and replicate some of those being conducted.

The research efforts included the following topics:How writing tutors and students set up relationships and agendas. Laurel Reinking of Purdue has been studying the conversations (through transcripts) between tutors and those they help in the writing center. Issues related to how students express their needs and accept (or reject) advice are crucial to the success of these tutoring programs, Reinking said. Her hope is to identify ways that tutors can get the information they need about students' needs without just giving in to what students say they want. "The bottom line is: We need to know what makes the agenda-setting part of this relationship work," she said. How peer advising on writing changes student learning. Dara Rossman Regaignon, director of writing at Pomona College, is testing the impact of "writing fellows," two students who are assigned to a course and who review student writing assignments and suggest revisions. Pomona is testing the impact of this approach by conducting surveys of students and professors in similar classes with and without the fellows, and by having outside experts examine portfolios of student writing in classes with and without writing fellows. The early results are encouraging, and suggest that the gut feeling of many that writing fellows help is something that can be backed up, Regaignon said. How teaching assistants teach writing. E. Shelley Reid, director of composition at George Mason University, is exploring which skills teaching assistants are confident of, and which they aren't, after they start teaching. Reid is also doing surveys to see how much TA's use the pedagogy they are given in orientation programs prior to teaching. Among early findings: First-year male TA's have difficulty balancing time demands with responding to student writing. Second and third-year female TA's are more likely to worry about pressure to give students higher grades than they might think are deserved. Chris Anson, director of the Campus Writing and Speaking Program at North Carolina State University, said that there were many reasons to support such research projects. Politically, he said, writing programs need to be able to defend their programs. But educationally, he said the reality is that research could find flaws in current practice. "We need to be ready to abandon cherished practices if they don't work," he said.

The projects discussed suggest "a reinvigoration of our research agenda," Anson said, and that could ultimately get to what really matters, he said: Finding out "what really works and what doesn't work."

— Scott Jaschik

http://insidehighered.com/news/2007/12/28/writing

WIRED MAGAZINE: ISSUE 16.01

The Software That Will Take Digital F/X to the Next Level of Awesome

By Michael Behar 12.20.07 | 6:00 PM

Stam in his Toronto office: "I started coding just for the beauty of it."
Photo: Jason Nocito

Jos Stam is standing on a pearl-white beach under a cloudless sky. He is visiting his parents, who are vacationing in Faro, a medieval town on Portugal's Algarve coast. Stam, a 41-year-old computer scientist specializing in 3-D graphics, doesn't look at the world the way the rest of us do. Reality is a binary riddle to be cracked, a series of fleeting images best appreciated after they've been rendered into 1s and 0s. Even here, watching the waves hit a beach in Portugal, his thoughts drift, as they always do, toward numbers. He begins scribbling in a small black notebook filled with mathematical interpretations of everything he sees.

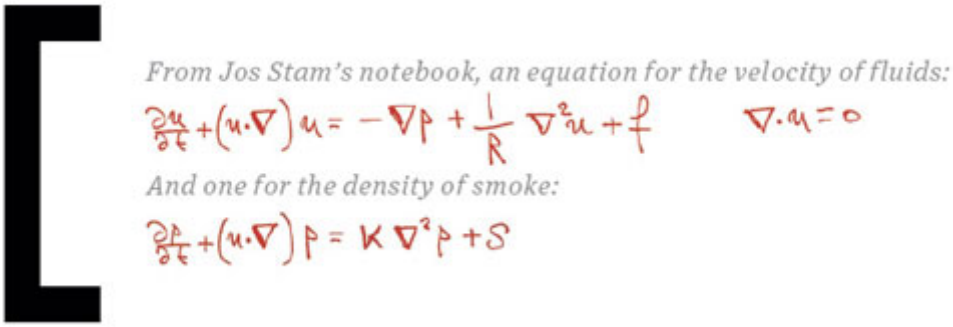
Stam is a Nordic Goliath, a neck-craning 6'8", with blond hair, pale green eyes, a deeply cleft chin, and hands the size of bear paws. He wrote the software behind many of the visual effects in modern Hollywood films — he is one of the few programmers to have won an Oscar — yet he's all too aware that no software can re-create the aquatic spectacle before him. Computers can simulate simple fluid motion, but on their own they still can't reproduce the complexity of a breaking wave.

Stam created these simulation tests to showcase Nucleus, a new module for Maya.

Sure, *Titanic* and *The Perfect Storm* had digitally created oceans. But those effects depended on the tedious melding of multiple rudimentary computer simulations. Ten years later, no software can produce

believable effects that don't also require untold hours of manual tweaking — and any time additional components are layered in by hand, the finished effect is less realistic. Stam calls the creation of a believable crashing wave, in all its multidimensional complexity, "the holy grail of computer animation." And he may be closer than anyone to finding it.

When I first meet Stam to discuss his work, at a tapas bar near his office in downtown Toronto, I admit right off that I'm a bit confused. "Aren't graphics programs already doing physics-based animation?" Answer: sort of. He glances around the room. He points out flickering candles, a sloshing glass of wine, and the billowy pleats and folds on the blouse of our waitress, who has just delivered a plate of lobster confit. All are formidable "problems," he explains, using the innocuous term that graphics coders reserve for the most daunting challenges. Stam himself has already devised an algorithm that crafts digital smoke with startling realism (it was used in *The Lord of the Rings* and *War of the Worlds*). But to create a digital wave or flickering flame that can realistically interact with other objects and forces (including rocky shorelines or light breezes) would require a CG-effects system that truly behaves in accordance with all the laws of physics. Such systems are still in their infancy — they're used to animate the simpler cartoon physics of videogames and certain discrete elements of movies — but it's not clear if any processor or software program will ever be powerful enough to mimic reality at the click of a mouse.



Stam is wearing designer blue jeans, purple lace-up combat boots, and a black T-shirt beneath a retro corduroy sport jacket. (When did coders stop being geeks?) He's so tall, he looks like he's about to fall out of his chair. He clutches the table and leans toward me. "Watching those waves really made me appreciate how hard it is to animate something that complex," he says of the beach in Portugal. "I'm fascinated by the mix of water, sand, and froth. But how would you model that? Is there an equation that accounts for all of it?"

Current animation software can't handle a lot of elements interacting within a single shot. A ship ablaze on a stormy sea, lashed by gale-force wind and rain, would be impossible to animate completely with existing software. The animations for the waves, ship, flames, wind, and rain have to be solved individually, then painstakingly blended and layered element by element into each frame of film. This can take a team of animators at a visual effects house many months and cost hundreds of thousands, if not millions, of dollars. Stam has a better idea: Teach visual effects software all the fundamental laws of physics and let it do the grunt work for you. Think of it as a unified field theory for animation — the animator can simply plug in the variables:

Wind speed: 25 knots
Wave height: 7 feet
Ship's mass: 46,000 tons
Ocean depth: 7,000 feet

Additional details might include air and water temperature, time of day (for lighting effects), wind direction, source of ignition... you get the idea. With the parameters set, hit Enter and voilá — the software would crunch the numbers and spit out the finished scene. At least, that's the theory. In practice, while algorithms for individual components (fire, water) already exist, integrating them all together has proven to be hideously complicated.

Stam likes hideous complications. He works for Autodesk, the software company that produces Maya, the world's leading 3-D modeling software. Maya has shaped nearly every CG visual effect you've seen since 1998 — from the first *Matrix* to the newest *Spider-Man*.

With his current project, a new module for Maya called Nucleus, Stam is getting closer than ever to his goal. Stam's formulas allow two or three elements to interact as they would in the real word — smoke with wind, or fabric with solid objects. What hasn't been accomplished yet is a system that can encompass and express dynamically all of the earthly elements and physical laws at once. Stam wants software that can play God with pixels. Right now, he's only in the early stages, but Nucleus is taking the special effects world a step closer to Stam's dream of a unified physics-driven system that can produce eye-popping visual effects all by itself.

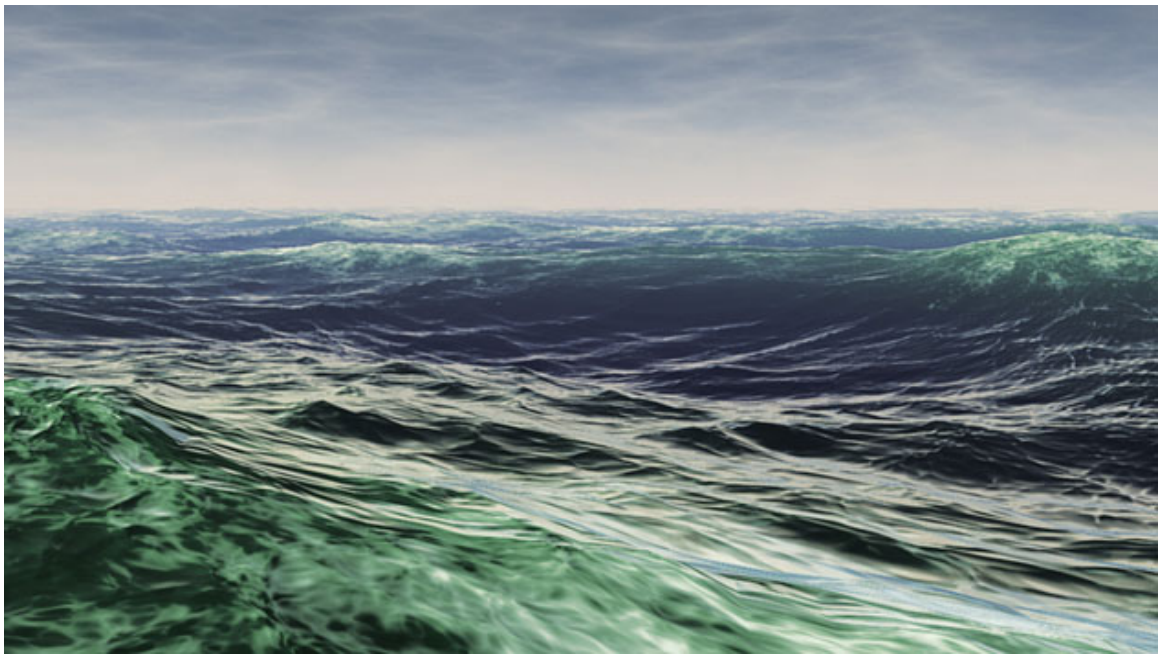
Stam, who grew up in Switzerland, didn't care much for math as a kid. He was more interested in art. "My hero as a teenager was Salvador Dali," he says. He spent his spare hours doing airbrush interpretations of classic Dali pieces, such as *The Persistence of Memory*, complete with melting clocks and gooey waterfowl. He even sold a few and shows me some photos of the paintings he still keeps in his office. We're sitting at his desk, or what I assume is a desk. I can't see it beneath the clutter. His workspace looks like the aftermath of a bomb detonated in a paper mill.

"I always thought I would be an artist or art historian," Stam says. But his older brother, Sim, would have none of it. After a relentless big-bro-knows-best campaign, Sim convinced Stam, then 14, to take a class in computer programming.

"He kept telling me I could make money doing it," Stam says. "I couldn't even type, so it took me forever to enter a program. But once I got the concept of what a program was and what you could make it do, it was a revelation. I stopped painting and started coding just for the beauty of it, the pure joy. It was all so logical to me, like poetry."

By the age of 18, he'd made up his mind to double major in computer science and mathematics at the University of Geneva. In 1987, he got an Amiga 1000, the first PC to feature a set of processors engineered for full-color animation. He wrote a *Pac-Man* knock off and made a "ray tracer" program for rendering 3-D images. "I was totally hooked," he says. In 1994, while earning a PhD from the University of Toronto, Stam got a call from the CG software firm Alias Systems (now part of Autodesk). Alias wanted to license some code from a paper he'd written and incorporate it into the company's next release of PowerAnimator, the predecessor to Maya. PowerAnimator had already generated the first-ever digital 3-D water effect, in *The Abyss*, and it brought to life the metal-morphing cyborg cop in *Terminator 2: Judgment Day*. Alias also gave Stam a job.

His first big assignment was tackling some problems with modeling surfaces. Real-world objects, especially curvy, multifaceted ones like clouds, mountains, plants, and animals, have an infinite number of measurable points. "You can only represent finite numbers in a computer," Stam says. So what numbers do you choose to model? A technique called subdivision modeling winnows down the choices by cleaving a smooth surface into polygons, the building blocks for 3-D images. The polygons are divided, then divided again, until they're small enough to encompass the object in a fine mesh grid that a computer can use to fool the human eye into believing it's seeing curves where there are none. "Think of it as always chopping off the corners of polygons until they appear smooth," he explains. Stam was tasked with making the process more efficient. Four weeks after getting the assignment, he came up with a faster and more elegant way to use subdivision modeling. "The result won me the Oscar," says Stam, who received an Academy Award for Technical Achievement in February 2005.



Stam's Maya software renders waves so realistic that filmakers used it for movies like *Spider-Man 3* and *The Day After Tomorrow*

These days, Nucleus takes up much of his time. The first module, called nCloth, simulates how various fabrics — cotton, leather, silk, rayon — fold, curl, drape, and crease over a rigid surface. "The physics going into nCloth look great," says Kim Libreri, VP of advanced strategy at Digital Domain, a Hollywood effects house, and visual effects supervisor for the *Matrix* films. Stam and his research partner, Duncan Brinsmead, a principal scientist at Autodesk, show me a demo of nCloth. Brinsmead launches a short animation they call "Dancing Ballerina." As she pirouettes, the dancer's satiny purple costume twirls and bounces with uncanny verisimilitude — the digitized cloth is *interacting* naturally with the body beneath it, without the need for any additional rendering. Change the movement of the body and the fabric adjusts accordingly.

There are dozens of lengthy equations that go into this type of simulation: algorithms for the cloth, for the dancer's body, for light, and for shadows. And then there are algorithms that address the interplay between fabric, body, light, and shadows. You'd need more algorithms if she were dancing in the wind or the rain or in a smoky cabaret. And it's not enough to just add more computers. To build fast physics simulators that can push CG visual effects to the next level, animators have to rely on mathematical finesse, not processing brawn. "The best animators are a combination of computer scientist and fine artist," Libreri says. "They have the eye of an animator but the brain of a hardcore technologist. That's a rare commodity in this business."

It may be that Stam, who once made extra cash drawing caricature sketches of friends and family, is uniquely suited to figuring out exactly where the math ends and the art begins. He believes that flawless visual effects aren't a matter of just simulating everything down to the last megapixel. "What does it mean to be realistic?" Stam asks.

"The art is picking equations good enough to fool the moviegoer," says Peter Schröder, a professor of computer science at Caltech. "What Jos is doing with Nucleus is asking whether we can find some common mathematical principles without going all the way to something that is ridiculous from a computational point of view. In principle, we should be able to describe everything in a CG simulation with quantum math, because it's all just atoms bouncing around doing their thing. But at that level, it's not computationally feasible."

And anyway, the human eye doesn't need to see that much. Even without the complete picture, our brains fill in the missing information. "More detail is not always the key," Stam says. "Look at Rembrandt closely and it's just big blobs of paint. Sometimes you have to exaggerate things to make them more real.

"Maya's main competitor is a promising technology from Stanford University called PhysBAM (physics-based modeling), developed by computer science professor Ron Fedkiw. A consultant to Industrial Light & Magic on the making of *Terminator 3: Rise of the Machines*, *Star Wars Episode III: Revenge of the Sith*, and *Poseidon*, Fedkiw points me to a short CG sequence on his Web site that shows ice cubes tumbling into a glass of shimmering water, then sloshing around until they're dissolved. It doesn't seem that impressive until you realize that the simulation is done exclusively with algorithms that know how ice, water, and light interact naturally. Once the animation is initiated, the animator is completely hands-off. The result is not only realistic but also utterly random — different every time — exactly as if you tossed a handful of ice cubes into your scotch and jiggled the glass until they melted.

For filmmakers, random outcomes are not a good thing. "In *Poseidon* we had to do this big splash of water on the decks," Libreri recalls. "But we couldn't get the simulator to do what the director wanted." It turned out that the simulator worked perfectly: A 200-foot wave slamming into a cruise ship is going to do whatever the hell it wants. The irony is that Nucleus and PhysBAM may not make the work of a filmmaker any easier. Caltech's Schrder explains: "Let's say the director wants a shot where you let go of a cloth, and he wants that cloth to land on a particular branch in a particular tree. In the real world, what are the chances it will land on that branch? Basically, zero." And there's the rub: A perfect CG simulator for the real world will replicate precisely what happens in the real world: chaos.

On one of five computers in his office, Stam calls up a short smoke simulation. The aim is to get rising wisps to bend and twist in a predetermined direction but still look natural. He enters start and end points, then applies a subtle virtual nudge to the smoke for the interstitial frames. The simulation makes numerous attempts to form the desired shape and match the final keyframe — in this case, a smoky letter C. If it fails, it automatically restarts itself. After 30 minutes and about a thousand cycles, the smoke naturally wafts into a C.

As it turns out, a little chaos goes a long way. "Over-controlling simulations can ruin all the beautiful physics," Fedkiw told me. "We've found that less control, better algorithms, and a different breed of artist is the key.

"Does Stam ever worry that dazzling special effects will become too common and thus spoil their impact? "Filmmakers will just keep making it harder, doubling or tripling the size of a scene," he says. "But that's good for us because it keeps us in business.

"I notice that there are short diagrammatical equations scribbled in red and black dry-erase marker on a floor-to-ceiling window that separates Stam's office from the main hallway. After a second, I realize that although the figures can be read by people outside the office, they have actually been written on the inside of the window — backward. It's a bit of mathematical macho designed to impress. "And they're solved for seven dimensions," Stam points out.

"Why seven," I ask. "Isn't three enough?"

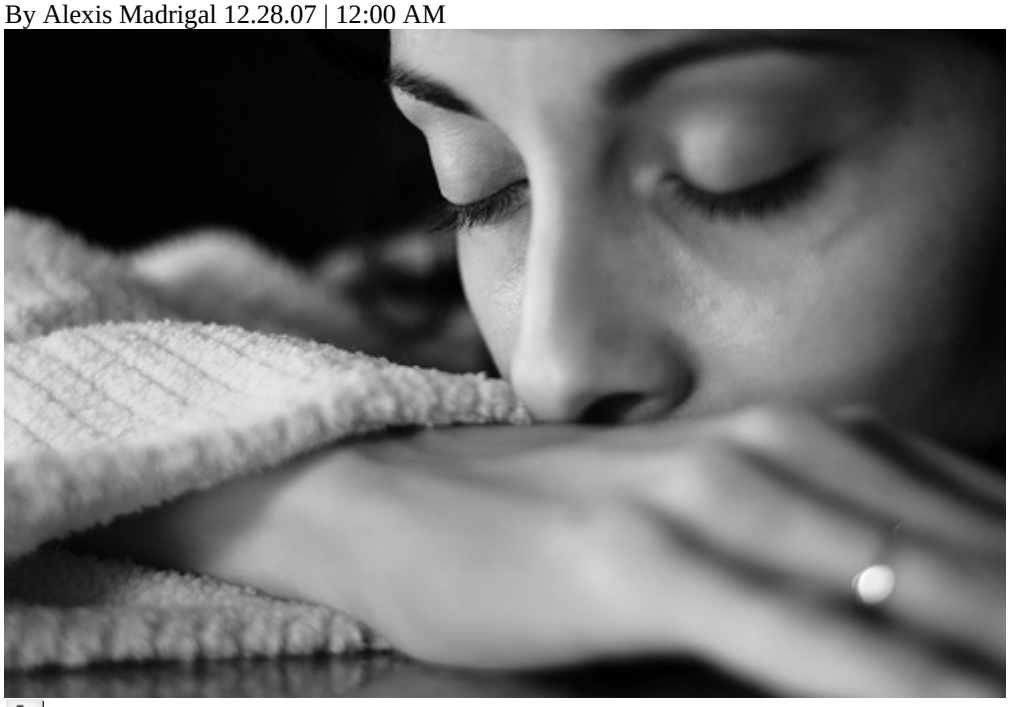
"Oh, just for fun," he says.

Michael Behar (michael@michaelbehar.com) *wrote about underwater logging in issue 15.02.*

http://www.wired.com/entertainment/hollywood/magazine/16-01/ff_animation

Snorting a Brain Chemical Could Replace Sleep

By Alexis Madrigal 12.28.07 | 12:00 AM



A nasal spray of a key brain hormone cures sleepiness in sleep-deprived monkeys. With no apparent side effects, the hormone might be a promising sleep-replacement drug.
Photo: Flickr/Mayr

In what sounds like a dream for millions of tired coffee drinkers, Darpa-funded scientists might have found a drug that will eliminate sleepiness.

A nasal spray containing a naturally occurring brain hormone called orexin A reversed the effects of sleep deprivation in monkeys, allowing them to perform like well-rested monkeys on cognitive tests. The discovery's first application will probably be in treatment of the severe sleep disorder narcolepsy.

The treatment is "a totally new route for increasing arousal, and the new study shows it to be relatively benign," said Jerome Siegel, a professor of psychiatry at UCLA and a co-author of the paper. "It reduces sleepiness without causing edginess."

Orexin A is a promising candidate to become a "sleep replacement" drug. For decades, stimulants have been used to combat sleepiness, but they can be addictive and often have side effects, including raising blood pressure or causing mood swings. The military, for example, administers amphetamines to pilots flying long distances, and has funded research into new drugs like the stimulant modafinil (.pdf) and orexin A in an effort to help troops stay awake with the fewest side effects.

The monkeys were deprived of sleep for 30 to 36 hours and then given either orexin A or a saline placebo before taking standard cognitive tests. The monkeys given orexin A in a nasal spray scored about the same as alert monkeys, while the saline-control group was severely impaired.

The study, published in the Dec. 26 edition of *The Journal of Neuroscience*, found orexin A not only restored monkeys' cognitive abilities but made their brains look "awake" in PET scans.

Siegel said that orexin A is unique in that it only had an impact on sleepy monkeys, not alert ones, and that it is "specific in reversing the effects of sleepiness" without other impacts on the brain.

Such a product could be widely desired by the more than 70 percent of Americans who the National Sleep Foundation estimates get less than the generally recommended eight hours of sleep per night (.pdf).

The research follows the discovery by Siegel that the absence of orexin A appears to cause narcolepsy. That finding pointed to a major role for the peptide's absence in causing sleepiness. It stood to reason that if the deficit of orexin A makes people sleepy, adding it back into the brain would reduce the effects, said Siegel.

"What we've been doing so far is increasing arousal without dealing with the underlying problem," he said. "If the underlying deficit is a loss of orexin, and it clearly is, then the best treatment would be orexin."

Dr. Michael Twery, director of the National Center on Sleep Disorders Research, said that while research into drugs for sleepiness is "very interesting," he cautioned that the long-term consequences of not sleeping were not well-known.

Both Twery and Siegel noted that it is unclear whether or not treating the brain chemistry behind sleepiness would alleviate the other problems associated with sleep deprivation.

"New research indicates that not getting enough sleep is associated with increased risk of cardiovascular disease and metabolic disorders," said Twery.

Still, Siegel said that Americans already recognize that sleepiness is a problem and have long treated it with a variety of stimulants.

"We have to realize that we are already living in a society where we are already self-medicating with caffeine," he said.

He also said that modafinil, which is marketed as Provigil by Cephalon and Alertec in Canada, has become widely used by healthy individuals for managing sleepiness.

"We have these other precedents, and it's not clear that you can't use orexin A temporarily to reduce sleep," said Siegel. "On the other hand, you'd have to be a fool to advocate taking this and reducing sleep as much as possible."

Sleep advocates probably won't have to worry about orexin A reaching drugstore shelves for many years. Any commercial treatment using the substance would need approval from the Food and Drug Administration, which can take more than a decade.

http://www.wired.com/science/discoveries/news/2007/12/sleep_deprivation

Sony rethinks flat screen focus
Sony has said it will no longer produce a flat-screen TV technology once seen as a rival to LCD and plasma displays.

The firm said it will stop making rear-projection televisions in February 2008 because of falling demand.

Instead, it will focus on flat screens built using liquid crystal display (LCD) and organic light-emitting diode (OLED) technology, a spokesperson said.

The Japanese electronics giant recently showed off the world's first commercial OLED TV, with a screen just 3mm thick.

The 11-in (28-cm) energy-efficient display costs £850 and produces crisp, vivid images.

The technology is expensive and difficult, but forms a key part of Sony's attempt to recapture the television market.

Screen trend

In the six months to September, the firm lost 60 billion yen ($526.3 million) on its TVs.

The loss-making rear-projection televisions - which use a projector, lenses and mirrors to create images on large screens - have fallen in popularity. In October this year, Sony lowered its sales forecast by 43% to 400,000 for the technology, popular in the US for home cinemas.

By contrast, the electronics firm expects to sell 10 million LCD televisions in the year to March 2008.

Other firms have already pulled out of the rear-projection TV market. Earlier this year, Hitachi withdrew its rear-projection TVs from the North American market, while Seiko Epson has also halted production. Most electronics makers are focusing on cheaper LCD and plasma display panels to build large flat screen TVs.

However, some are pursuing Sony into the OLED market. South Korean firm Samsung has said it has developed a 31in organic screen which it will show off at the forthcoming Consumer electronics Show in Las Vegas in early January.

It has not said when the prototype will be commercially available.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/technology/7161623.stm

Published: 2007/12/27 14:52:35 GMT

http://news.bbc.co.uk/2/hi/technology/7161623.stm

Doctors fear rickets resurgence
Pregnant or breastfeeding women have been urged to boost their vitamin D intake amid warnings that cases of rickets in children are increasing.

Rickets is a bone disease mainly caused by a lack of the vitamin. It can lead to deformities, stunted growth and general ill-health.

Some minority ethnic groups in the UK, including Asians, are particularly at risk, says the Department of Health.

Doctors want pregnant women to take more vitamin D during winter months.

It is made by the skin in response to sunlight, but can also be found in certain foods.

Officials are urging women to check if they are eligible for free supplements from their GP or health visitor under the government's Healthy Start scheme.

It provides vitamin D-rich milk and fresh fruit and vegetables as well as supplements for those on benefits or women who are under the age of 18 years old and pregnant.

Ultraviolet light

Common at the start of the last century, rickets was thought to be eradicated in the 1950s because of better nutrition.

But research suggests the incidence of rickets could be as high as one in 100 children among Asian, Afro-Caribbean and Middle Eastern ethnic minority groups.

Dark-skinned people do not absorb as much sunlight through the skin and may also wear clothing that limits exposure to the sun for cultural reasons.

Mothers and babies are simply not getting enough of this important vitamin
Paediatrician Dr Colin Michie

Most people in the UK should get enough vitamin D from sunlight - it only takes 15 minutes of sun exposure to the arms, head and shoulders each day during the summer months to make enough vitamin D for good health.

But in winter months at latitudes of 52 degrees north (above Birmingham), there is no ultraviolet light of the appropriate wavelength for the body to make vitamin D in the skin, research shows.

There have been several reports of a "resurgence" of rickets in recent years.

In June 2007, doctors in Dundee said they had seen several cases and warned that guidelines on vitamin D for pregnant women were being ignored.

Free supplements

Health Minister Dawn Primarolo said the Healthy Start scheme was designed to improve the health of the most vulnerable families.

"We encourage people who are eligible to take advantage of the free vitamins, to minimise the risk of developing vitamin D deficiency and other conditions.

"We particularly encourage women who are pregnant or breastfeeding to take vitamin D, to protect the health and wellbeing of their baby and help them get the best possible start in life."

She added that children under the age of four may also benefit from a supplement containing 10 micrograms of vitamin D.

Dr Colin Michie, a paediatrician at Ealing Hospital, says the biggest problem is maternal shortage of vitamin D.

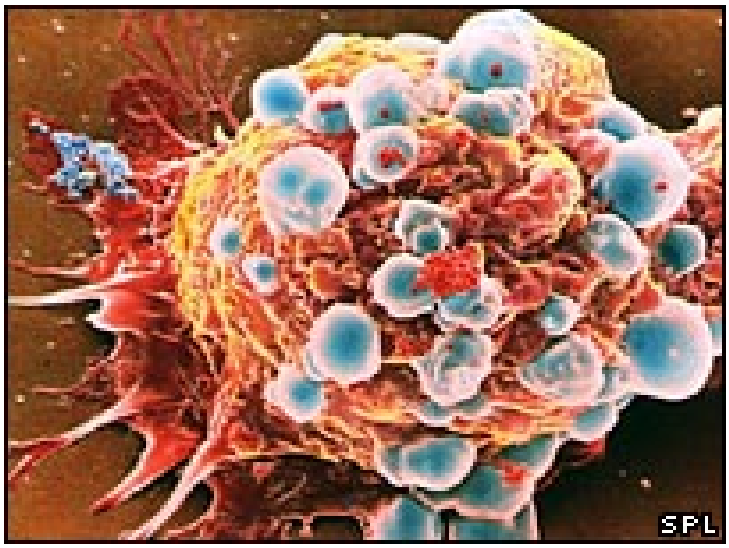
"Mothers and babies are simply not getting enough of this important vitamin.

"If a pregnant or breastfeeding woman is lacking in vitamin D, the baby will also have low vitamin D and calcium levels which can lead babies to develop seizures in the first months of life."

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7161458.stm

Published: 2007/12/28 08:22:37 GMT

Drug target to stop cancer spread
UK scientists have uncovered a vital clue to stopping cancers spreading around the body.



A protein called Tes is able to block a second protein, Mena, from helping cancer cells "crawl" away from the initial tumour.

The London Research Institute team says this knowledge should help in the design of new drug treatments to anchor a tumour in one site.

The work is published in the latest edition of the journal Molecular Cell.

> **Cancer cells use many complex processes when they break away from their tumour and spread to other areas of the body**
> Dr Lesley Walker of Cancer Research UK

The Mena protein is found in excessive amounts in tumours and was already known to help cancer cells move away from a tumour and spread around the body to form secondary cancers - one of the main obstacles in treating cancer.

Study leader Dr Michael Way said Tes was not as well studied but in many tumours it is absent.

Using a range of techniques, including X-ray crystallography, which can be used to determine the 3-dimensional structure of a molecule, Dr Way and his colleagues found that Tes attached itself to Mena in such a way it could no longer bind with other proteins.

Without being able to interact with its normal binding partners, Mena was no longer able to help the cancer cells migrate from the tumour.

Greater understanding

Figures show about 20,000 people have died from cancer every day across the world in 2007.

And one in three people will be diagnosed with cancer at some point in their lifetime.

Scientists are gradually developing a deeper understanding of the causes of cancer, investigating the complex interaction of chemicals, genetics, ageing and diet.

Dr Way said if researchers could design a drug to block Mena in the same way as Tes, it would potentially be a way to stop the spread of cancer once a tumour had formed.

"What was surprising was, when you look at Tes you wouldn't predict it would interact with Mena.

"Looking at the structure gives us clues in designing drugs which mimic the interaction with Tes and prevent cells from migrating, although that's a long way away."

He said Mena was a very small part of the spread of cancer cells, but that was one of the control mechanisms that goes wrong.

Dr Lesley Walker, director of science information at Cancer Research UK, said: "Cancer cells use many complex processes when they break away from their tumour and spread to other areas of the body.

Understanding these mechanisms and increasing our knowledge about this protein can hopefully help us to develop more effective cancer treatments in the future."

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7161762.stm

Published: 2007/12/28 00:02:55 GMT

'Laughs' not exclusive to humans
The basis for laughter may have originated in an ancient primate ancestral to both humans and modern apes, a study suggests.

Scientists found that orang-utans had a sense of empathy and mimicry which forms an essential part of laughter.

Facial expressions, such as the open, gaping mouth resembling laughter, were picked up and copied by orang-utans.

The speed with which they were mimicked suggests these expressions were involuntary, Biology Letters reports.

In other words, the "laughter" was contagious.

Dr Marina Davila Ross, from the University of Portsmouth and Professor Elke Zimmermann at the University of Veterinary Medicine in Hanover, Germany, studied the play behaviour of 25 orang-utans aged between two and 12 at four primate centres around the world.

When one of the orang-utans displayed an open, gaping mouth, its playmate would often display the same expression less than half a second later.

Dr Davila Ross commented: "In humans, mimicking behaviour can be voluntary and involuntary. Until our discovery there had been no evidence that animals had similar responses.

"What is clear now is the building blocks of positive emotional contagion and empathy that refer to rapid involuntary facial mimicry in humans evolved prior to humankind."

She added that the findings shed a new light on empathy and its importance for animals which live in groups such as orang-utans.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/1/hi/sci/tech/7167878.stm

Published: 2008/01/02 12:55:56 GMT

Bodies point to Alaska's past

By Richard Black
Environment correspondent, BBC News website, Alaska

It is not the type of a call that an archaeologist receives every day.

There are bodies, the voice on the end of the line told Anne Jensen; we don't know who they were, or why they are here.

"People started noticing stuff eroding out of the bluff," she recalls, "and I got called out, along with the police, the real estate people and so on.

"It was very clearly an archaeological burial. And the bluff was collapsing quickly, so we just got the contents out."

The bluff lies virtually at the end of the Americas, on a narrow, hooked spit projecting northwards from Barrow. It marks the join of the Beaufort and Chukchi seas, and is prey to the temperamental vagaries of both.

I used to think that my ancestors were really smart, but I never knew they achieved so much
Ben Frantz II

Now known as Point Barrow, the settlement on it was Nuvuk for at least 1,000 years, a spot presumably chosen because of its proximity to the migration path of bowhead whales which would become the cultural and nutritional centre of Nuvuk life.

These bodies, these bones, clearly came from no crime scene. The police could leave, and Dr Jensen's team could get to work on a find more closely related to its own interests. It has been working every summer since.

Disappearing land

When I visit in late May, the spit itself is virtually invisible beneath the blanket of ice which carpets land and sea alike.

Led by Laura Taylor, we speed out on to the ice on snowmobiles, bodies swathed in heavy-duty parkas and feet wrapped in "bunny boots" which include a layer of air to insulate the delicate extremities.

We traverse cracks created as the sea-borne ice rides up and down on the tide. We pass a couple of umiaq, traditional sealskin whaling boats left out on the ice, and every so often a scientific instrument or two, testimony to the extraordinary richness of Barrow's research tapestry.

After perhaps 20 minutes we disembark at the point, the site of ancient Nuvuk. The higher level of ice is a clue that we are on land, and grey-brown late Spring melt mush materialises beneath our feet as we walk, to prove the case.

Here, at the edge, is Anne Jensen's bluff, where bodies began appearing a decade ago. Or at least, here is where it is now; then it was 100 metres or further from the sea.

"We've had a lot of changing in currents over the past decade or so," explains Dr Taylor, "and with the changing currents and increased storm activity in the fall especially, it's undercutting the gravels and the point is literally washing out into the ocean."

And as the point washes out, so do the bodies. What used to be an accreting spit - one building up - has become an eroding spit as the coastal ebbs and flows have changed their seasonal patterns, perhaps at the behest of global climate change.

"It's eroding at about 20m per year; we only have an eight-week field season, and we need to cover at least 300m of shore," she says.

"So it's salvage archaeology - we have to beat the erosion."

Tunnels into history

The team uncovers about 20 complete burials each year. The methodology now involves digging exploration holes every few metres in a lattice pattern - "Swiss-cheesing", as Laura Taylor calls it - and excavating the newly identified burial sites.

Most of the bodies were interred in a rough framework made of wood or whale bones, with a piece of driftwood on top; some were also wrapped in animal skin or fur.

Artefacts have also surfaced, making suggestions about how people lived in Nuvuk. Here, a body holds an ulu, a traditional knife used for taking blubber from whale carcasses; there, a grave gives up weights from a bolus which would have been used to hunt birds.

There is armour made from whale baleen. Many of the graves also contain flat stones, which presumably have some kind of ceremonial purpose.

Researchers can also call on human memory and lore, because Nuvuk retained human inhabitants until about 60 years ago.

And although the houses have gone, Ukpeagvik, in the middle of what is now Barrow, has been an important site for studying remains of dwellings from the same period and culture; dwellings of impressive complexity built with subterranean cold-traps, entrance tunnels supported by whale mandibles, and insulation by sod.

Arctic origins

But what period and culture does Nuvuk represent?

Clearly it was complex enough 1,000 years ago to support whaling, an activity which needs great co-ordination within the community. Crews must organise hunting, villagers must turn out for a swift butchering, meat must be stored, seals caught to make umiaq, and trading enacted to bring in caribou meat and driftwood.

"I think these are very early Thule people," opines Anne Jensen.

"One of the big questions is where did the Thule come from? The culture was first described in the eastern Arctic, and it's clearly the ancestor of the modern Inupiat and Inuit cultures; but where did it develop?"

Whaling is the keystone; it's what everything in the culture is organised around

Laura Taylor

The Thule period succeeded earlier Arctic cultures such as the Birnirk and Punuk. And Dr Jensen now believes she may be sitting on or close to the very first Thule settlement.

"My idea is it started somewhere in northern Alaska, perhaps in a major whaling area; and it doesn't seem to stop, moving from place to place looking for whales."

A community organised for whaling, she believes, would have had an edge over competing cultures. The social hierarchy and regular experiences of mass mobilisation would have made for organised defence and perhaps attack too, while a diet rich in whalemeat meant better nutrition.

Laura Taylor believes you can draw a direct line between the Thule culture and the modern Inupiat, the traditional residents of Barrow and many settlements around. And the line, she says, is drawn in whalemeat.

"Whaling is the keystone; it's what everything in the culture is organised around," she says.

"It is the defining element of what makes Thule Thule, and in modern times, what makes Inupiat Inupiat."

Cool runners

When the first bodies washed out of the sea-battered bluff a decade ago, interest was high, but funding to excavate and examine stubbornly low.

That has changed; and since 2005, the researchers have received grants from Echo, a US federal programme aiming to give high school students a regular taste of real science.

The students spend several weeks digging alongside researchers, which given the shortness of the digging season and the necessity of getting the bodies out fast would be described as a dawn-to-dusk job, if the north Alaskan summer had dawns or dusks rather than 24-hour sunlight.

Some, such as Ben Frantz II, come back for more.

"I thought it would be pretty cool to see how my ancestors lived," the fresh-faced 19-year-old Inupiat tells me.

"Originally it was just a job; but as it turned out we started working on weekends and it was kind of fun, so I decided to stay for a while."

Now employed as a research assistant, his main task is to catalogue artefacts - arrowheads, harpoon shafts, scrapers, tools, and sled runners.

So much has been recovered that he is still working on artefacts unearthed in 2005. But, he says, it has been a worthwhile experience.

"It's changed my view of my own culture. I used to think that my ancestors were really smart, but I never knew they achieved so much."

As the Point Barrow bluff erodes, the rescue mission will presumably continue. Bodies will be snatched from the ocean's grasp each short summer, examined and catalogued before a new internment in the safer soils of modern Barrow.

Each body is a fragment of the town's past, a reminder of the long history of whale-centred culture which binds the threads of a millennium. They are treasures which neither the Barrow community nor its modern scientific boarders are minded to let wash away.

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Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/1/hi/sci/tech/6902858.stm

Published: 2007/12/31 11:20:22 GMT

Wood pigeons 'flocking to towns'
Wood pigeons are flocking from the countryside to towns and cities because changes in farming have seen numbers soar, a bird research charity says.

Increased garden bird feeding by people is also fuelling the migration, said the British Trust for Ornithology.

A survey by 16,500 householders found wood pigeons in 46% of London gardens, compared to just 27% for the more familiar feral pigeon.

The BTO said it was "amazing" how quickly the wood pigeon had adapted.

The trust's Garden Birdwatch survey encourages the public to report sightings on their own doorstep.

It says that a decade ago the wood pigeon did not appear in the list, but now it is the fourth most common species identified.

Bird tables

As well as outnumbering London's traditional pigeons, the wood pigeon is also in the ascendancy in Manchester where it was reported in 61% of gardens.

In contrast, the town pigeon was sighted in just 34%.

The BTO put the shift down to changes in farming practices, such as sowing cereals in autumn which, along with more growing of oil seed rape, provides lots of food for wood pigeons in their agricultural heartlands throughout winter.

This has led to a population rise which increases competition for food and nesting opportunities, which in turn causes a spill-over into other, often less favourable, habitats.

The increased popularity of bird tables and feeders in urban gardens has also lured birds to the city.

Paul Stancliffe, from the BTO, said: "It is amazing how quickly this bird of farm and woodland has become a familiar sight on the streets and pavements of some of our busiest towns and cities."

The wood pigeon is the largest of the six pigeon and dove species which breed in Britain.

The country is home to an estimated three million pairs during the summer months.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/1/hi/uk/7166536.stm

Published: 2008/01/01 05:16:01 GMT

Germans tighten car exhaust rules
Three German cities - Berlin, Cologne and Hanover - have introduced "environmental zones" to reduce fine particle emissions from traffic.

Drivers now have to display a coloured sticker on their vehicle to enter the inner city zones. The colour depends on the pollutants the vehicle emits.

The cities are gradually phasing in fines of 40 euros (£29;$58) for anyone caught driving without a sticker.

Other German cities - but not all - plan to have such zones later in 2008.

The stickers - green, red or yellow - are mandatory not only for locals but also for foreign drivers, including tourists.

There is a one-off charge of five to 10 euros for the stickers, issued by Germany's vehicle registration authority and authorised garages.

Some hotel and restaurant owners have voiced fears that tourists will be put off by the requirement for stickers, reports in Germany say.

The German motoring club, the ADAC, plans to take legal action against the restrictions, the DPA news agency reports.

The EU has set the limit for fine particle pollutants at 50 micrograms per cubic metre of air, which cannot be exceeded on more than 35 days per year.

The Berlin environmental zone covers about 88sq km (34sq miles), while the one in Cologne covers about 16sq km.

Officials say the majority of cars in the affected cities qualify for the stickers.

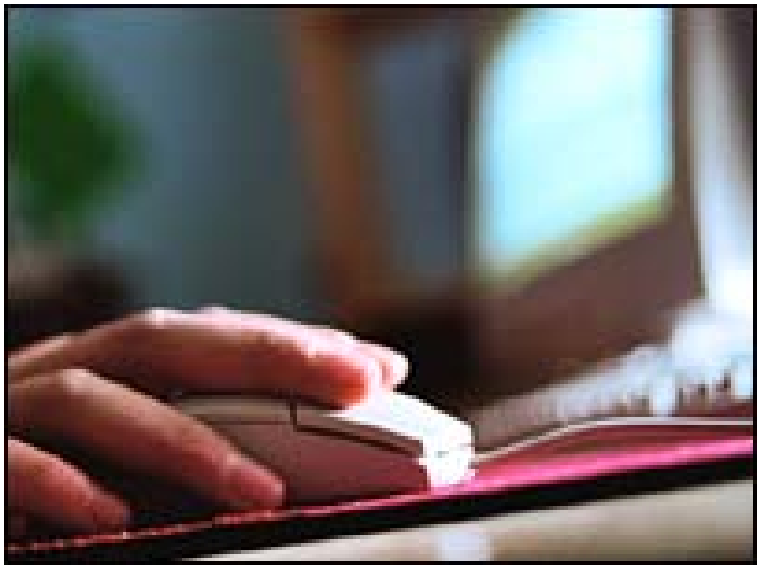
Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/1/hi/world/europe/7166770.stm

Published: 2008/01/01 13:49:11 GMT

Australia plans tough web rules

By Phil Mercer
BBC News, Sydney

Australia is planning tough new rules to protect children from online pornography and violence.



The new Labor government wants internet service providers to filter content to ensure households and schools do not receive "inappropriate" material.

Civil libertarians have condemned the plan as unnecessary, and say it will erode the freedom of the internet.

But telecommunications minister Stephen Conroy said more needed to be done to protect children.

Family-friendly

The Australian government's aim is to ensure that children only have access to family-friendly websites.

Service providers will be expected to stop the flow of pornography and other X-rated or violent content.

The government is set to compile a list of unsuitable sites, although at this stage it is unclear what will be deemed unsuitable.

Australians wanting unfettered access to the web will have to contact their supplier to opt out of the new regime.

Critics of the proposals have insisted they have no place in a liberal democracy, and have accused Canberra of being oppressive.

But Mr Conroy has been unmoved by their arguments.

The minister stressed that if people equated freedom of speech with watching child pornography then he would always disagree with them.

Concerns have also been raised that the government's filters could slow down access to the net, in a country where connection speeds are often below international standards.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/1/hi/world/asia-pacific/7165987.stm

Published: 2007/12/31 13:52:06 GMT

UK and US 'keenest on fast food'
The UK is the country most attached to fast food, closely followed by the United States, a survey has suggested.

A poll of 9,000 people in 13 nations, alongside a BBC investigation into global obesity, found vast variations in attitudes towards food and weight.

Many French get on the scales every day the poll found, while Singaporeans are the least likely to weigh themselves.

People are now said to be getting fatter in most of the world, with the exception of parts of Asia.

The three-day BBC series will look at the problems arising from the trend and what can be done about it.

This study, by market research firm Synovate, questioned 9,000 people in 13 countries across five continents.

OBESITY: WHAT PEOPLE BLAME
Food - 40%
Lack of exercise - 18%
Individual - 13%
Genetics - 11%

Few people blamed their government for rising levels of obesity: the largest number of respondents blamed the food that was now available.

People in the UK and the US were the most likely to nominate "no self discipline" as the leading factor in obesity.

These two nations also had the most respondents who said they would be unable to give up fast food.

Some 45% in the UK agreed with the statement "I like the taste of fast food too much to give it up", while 44% of Americans said they would be unable to give up their burgers, pizzas and chicken wings.

Middle east diets

The survey also threw up some other interesting geographical variations.

> **The results show there's a world of people who cannot deny themselves that hamburger or extra piece of pizza, but probably make themselves feel better by washing it down with a diet cola**
> Steve Garton
> Synovate

Saudi Arabians and those from the United Arab Emirates were among the top consumers of low-fat food products, meal replacements and food supplements. They were also the most interested in weight-loss courses, gym memberships and home exercise equipment.

"People are inherently contradictory and nowhere is it more obvious than on such a sensitive and important issue such as their weight," said Steve Garton of Synovate. "The results show there's a world of people who cannot deny themselves that hamburger or extra piece of pizza, but probably make themselves feel better by washing it down with a diet cola."

A recent study of men and women in 63 countries found between half and two-thirds of men were overweight or obese in 2006. 168,000 people were evaluated by a doctor on a single day. The US was not included in the report.
A BMI over 25 is deemed overweight and greater than 30 is obese.

The populations of Canada and South Africa currently lead the way, with an average Body Mass Index (BMI) of 29 - a calculation that takes into account both height and weight.

There is still some debate about the exact health risk posed by rising levels of obesity, but those who are overweight do have a higher risk of heart disease, Type II diabetes and other diseases including some cancers. It is thought that an increasingly sedentary lifestyle is a major factor in rising obesity rates.

Health analysts warn that obesity-related illness threatens to overwhelm healthcare systems around the world. Neville Rigby, of the International Obesity Task Force, said: "It is serious for individuals, but it is also serious for countries. "Reports from the World Health Organization have shown that preventing chronic disease can have major economic benefits, and failing to do so can have major economic disadvantages."

Douglas Smallwood, chief executive at leading health charity Diabetes UK, said: "This survey is a sad indictment of current eating habits in the UK." Peter Hollins, chief executive of the British Heart Foundation said: "If we are to tackle the growing obesity crisis it is vital that Britain's junk food addiction is addressed.

"But this isn't going to happen whilst a junk-dominated diet is being normalised through the constant barrage of advertising and promotions."

168,000 people were evaluated by a doctor on a single day. The US was not included in the report.
A BMI over 25 is deemed overweight and greater than 30 is obese.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/1/hi/health/7165990.stm

Published: 2008/01/02 05:01:59 GMT

Video Art Thinks Big: That's Showbiz
By HOLLAND COTTER

WE'RE in a house of many tight, messy rooms. In the suburbs? Cyberspace? Hard to say. Anyway, it's night. A door bangs open. A girl, who is also a boy, dashes in, talking, talking. Other people are already there, in gaudy attire, dire wigs and makeup like paint on de Koonings.

Everyone moves in a jerky, speeded-up, look-at-me way and speaks superfast to one another, to the camera, into a cellphone. Phrases whiz by about cloning, family, same-sex adoption, the art world, the end of the world, identity, blogging, the future. Suddenly indoors turns into outdoors, night into day, and we're at a picnic, in dappled sunshine, with a baby. Then this all reverses, and we're indoors again. A goth band is pounding away in the kitchen. The house is under siege. Hysteria. Everyone runs through the walls.

This is a highly impressionistic account of Ryan Trecartin's sensationally anarchic video "I-Be Area," which made its debut in the Elizabeth Dee Gallery in Manhattan last fall. The piece caused a stir, in part because most people had never seen anything quite like it before, certainly not in an art gallery.

Art video still has a funny reputation, left over from the 1960s, of being a serious medium, made for function rather than pleasure, as opposed to film. Yet "I-Be Area" was pleasure all the way. It was nonstop visual razzle-dazzle. It drew on every cheap-thrill trick in the digital graphics playbook.

More radically, it was the length of a feature film. More radically still, it told a story, one with dozens of characters and multiple subplots, which is what entertainment, not art, is supposed to do, if you assume there's a hard and fast difference between the two.

Mr. Trecartin, apparently, does not assume this. He is not alone. The American artist and performer Kalup Linzy, for example, has invented a serial soap opera around a dysfunctional African-American family. Sadie Benning uses hand-drawn animation to tell bittersweet tales of urban gay life. Nathalie Djurberg, born in Sweden and living in Berlin, sculptures clay figures and sets them in sadistic encounters. These artists, using video that is cheaper and more accessible than ever thanks to digital technology, are creating a new kind of 21st-century art that is narrative in form and potentially epic in scale.

At present it is shaped by a combination of pop fantasy, ingrained cybersmarts, neo-tribalism and an angst-free take on contemporary life that marks an attention-deficient Internet culture.

The relationship of this work to an art world structured on galleries, museums and fairs is, potentially at least, one of detachment. You can experience “I-Be Area” on a laptop wherever and whenever you want. That may be a reason why few of these new video artists feel the need to live in New York City. They have chosen a medium that is not only flexible and affordable but has a history of embracing experimentation.

Video 40 years ago offered restless, penurious, disenfranchised and performance-based artists (many women worked in early video) an alternative to the blue-chip clubbiness of Pop painting and Minimalist sculpture. Video was associated with television and newsreels, not art. It was available and fairly easy to learn. Because it had no aesthetic history, it came with no fixed expectations. Using it allowed artists like Vito Acconci, Joan Jonas, Nam Jun Paik to open a fresh chapter in art history.

Video, it is important to note, was not a static medium. Painting and sculpture could, in their ways, tell stories, but video could make stories move through time and keep moving indefinitely. Because it was relatively cheap, you could fool around with it, improvise and edit like crazy. Experimentation naturally led to self-indulgence. There was a lot of terrible, boring video in the ’70s. But there was at least as much boring, terrible painting. Some of that painting still hogs space in our museums while videos sit on a shelf.

With time video gained credibility, meaning it found a market. Production values rose: better tape, richer color, smoother projection. Technical differences between video and more expensive and durable film media began to blur. After the ’70s, in the interest of commerce, videos grew shorter, more polished and more self-contained, more like objects. But narrative, which required watching a video from start to finish, was a problem. With hundreds of galleries springing up in the ’80s art boom, who had time to spend an hour in a dark room on a Saturday afternoon?

For the same reason, one would expect narrative video to be even less welcome now. Now there are more galleries than ever. And no environment could be more video-averse than art fairs, with cramped booths entirely geared to drive-by shopping. Yet here is Mr. Trecartin, asking us to sit for an hour and 48 minutes for a high-concept, intensely detailed, attention-demanding experience. And we gladly comply.

We do so, first of all, because “I-Be Area” is so giddy, so different. But it’s also just plain strange, which is part of the larger appeal of today’s video art. It represents a possible way out of something, out of the renewed tyranny of the precious object, out from under a boutique art market that has amassed grotesque wealth and power while making art itself seem small and utterly dispensable.

Mr. Trecartin, born in Texas in 1981, produces work of its moment in others ways too; it is the natural product of a generation that grew up on television and grew into the Internet. At the same time a segment of this generation wants to get away from cellphones, the Web and instant, nonstop information. So Mr. Trecartin and, even more decisively, some of his peers are using very basic digital tools to create a highly personal narrative art, almost a kind of folk art.

It is an art that adheres to the market-sanctioned genius model. Mr. Trecartin directs his videos, writes the script, designs the costumes and takes several leading roles. But he also describes his art as a collective project very much shaped by a circle of family and longtime friends. One of these friends, Lizzie Fitch, he lists as a collaborator; she is almost as prominent in the videos as Mr. Trecartin himself.

Finally, as is true with several other artists working in narrative video, Mr. Trecartin’s work is part of a second or possibly third wave in queer identity politics. The big change lies in emphasis. For queer artists of Mr. Trecartin’s generation, cross-dressing, cross-identifying and cross-thinking are part of a state of being, not statements of political position. Like the work of John Waters and Jack Smith, his art is about just saying no to life as we think we have seen it and saying yes to zanier, virtual-utopian possibilities.

The New York artist Kalup Linzy, born in 1977, has also cooked up a populous and intensely imagined narrative in video, one based in part on the soap operas and sitcoms he watched as a child. In a multi-episode serial with the umbrella title “All My Churen,” he takes the daytime drama format, with its turgid

emoting and big secrets, to present the life of a fictional African-American family called the Braswells in the rural South.

As a group the family members touch on a prickly range of black stereotypes. They are all played, with awesome panache, by Mr. Linzy.

Culturally speaking this is a reference-intensive work, though the very notion of high art versus low art is long gone. Cindy Sherman, "The Jeffersons," Manet, Richard Pryor, Zora Neal Hurston and the drag diva Vaginal Davis are all at the same V.I.P. party. Queerness is assumed, not even worth a comment. Each video episode is an auteur product: Mr. Linzy writes, directs, acts, designs and overdubs the supporting characters with his own voice. But it's a product developed within a tight community of artist friends.

A big difference between his work and Mr. Trecartin's is in the degree of digital engagement. Mr. Trecartin goes wild with editing bells and whistles; Mr. Linzy does not. The plainness and occasional clunkiness of his video technique is one reason the Braswell serial ends up touching in a way that Mr. Trecartin's buzzed-up narratives rarely are. For all their raunchy hilarity Mr. Linzy's characters are more than cartoons; "All My Churen" is a family-values story that has a lot to do with life.

The same is true of some outstanding recent narrative video that substitutes animated characters for live actors. In these works cultural references to a childhood universe of cartoons and puppets, originally intended to amuse and instruct, now are used to explore adult trauma.

Sadie Benning, born in Wisconsin in 1973, started making short narrative videos with a PixelVision camera as a teenager. She has since refined a distinctive style of hand-drawn cartooning, engagingly applied in her 30-minute video "Play Pause" (2006) to an updated Pilgrim's Progress. The video tracks several solitary figures, men and women, through an unnamed city. They walk the streets to a grim pop beat — Ms. Benning was a founding member of the feminist New Wave band Le Tigre — and troubling sights catch their eyes: newspaper headlines, corporate advertising, security cameras.

At midpoint in the video the animated walkers converge on a small bar, and the mood lightens up. It's a gay bar filled with lovers and friends. A communal retreat, it's a mini-Eden, or could be in a different world. The video's final scene is in an airport, a place of goodbyes. Figures sit in isolation. The police patrol. We're back to the mood we started with.

Then there's one last image, of a couple — they might be women or men — making love on the wings of an ascending plane as silver birds float like angels through a night sky.

If Ms. Benning pulls some of the utopianism latent in Mr. Trecartin's art to the surface, another young storyteller, the Swedish artist Nathalie Djurberg, almost gleefully buries it in video animations that depict a dog-eat-dog world. Ms. Djurberg, born in 1978, has gone back in time to find her chosen medium, old-fashioned stop-action animation using hand-molded plasticene figures.

With this labor-intensive technology, she has created a series of picaresque short narratives that have a fanciful, fairy-tale look but devolve into scenes of cruelty and degradation: a child sexually abuses a cat; a woman whips a slavish young girl; a man slices himself to bits. Flesh rips, blood flows and characters weep big clay tears, not because they're sorry for the vile deeds they've done but because they've had to stop.

Another video by Ms. Djurberg, made on commission for Performa 07 and introduced to New York last fall, was her most ambitious yet, in every way a tour de force. Nearly an hour long, it depicts a fight to the death between a racially mixed gang of children and a pack of ravenous dogs over a meal of garbage. The scene goes on and on; dogs and kids are killed left and right, only to be resurrected in a hospital emergency room where they are tortured by doctors and nurses. Ms. Djurberg, along with two musicians — the composer Hans Berg and her brother, Pascal Strauss — accompanies it with a live score, using toys, kitchen utensils, squeezed balloons and crushed cornflakes.

This deservedly well-received piece brings to mind certain older videos by Bruce Nauman and Paul McCarthy and bears a close relationship, psychic if not stylistic, to Kara Walker's slave-narrative puppet animations. There are also plenty of comparisons to be made to work of Ms. Djurberg's peers. I'm thinking of the ghoulish puppet animations by Bert Green and the chilling stop-action re-enactment of a robbery and murder, using animated G.I. Joe dolls, by Hank Willis Thomas and Kambui Olijimi. Then there's Mr. Olijimi's video of the life and death of a young prostitute, told within the time it takes for Nina Simone to sing "House of the Rising Sun," and the hallucinatory five-minute version of Roman Polanski's "Repulsion" by the talented Keren Cytter.

The Beijing artist Cao Fei gave us one of the best single videos to come out of China in the past few years in her "COSPlayer," about a day in the life of a feral population of adolescents who dress as Japanese anime heroes and live on the fringe of a mushrooming city. And there's the wonderful, Kafkaesque "Lost City" by Gigi Scaria, an artist from New Delhi, which I recently saw at the Newark Museum.

It's about a young man whose memory deserts him day by day. We first watch him labeling photographs of family members and acquaintances so he can remember them. Next he makes elaborate maps of his daily route to work. Finally he posts directional signs on trees and walls along the route. At the end of the video we see him stranded in the street. Someone has taken the signs down, and he can't find his way home.

Mr. Scaria, who was born in 1973, works in a traditional, linear, scene-by-scene style. Other video storytellers, like Ms. Cytter, stretch or truncate time and place. Still others, like Mr. Trecartin, are at some outer, experimental edge of video, narrative and time alike, pushing all three further out with every new piece.

In a time of speeded-up production and marketing, they are making art that runs by a different clock. They are also making art that does things that objects can't do. And they are, potentially and some cases actually, reaching audiences by a new route. When you have YouTube at your disposal, who needs Chelsea?

http://www.nytimes.com/2008/01/06/arts/design/06cott.html?_r=1&ref=arts&oref=slogin

Adrenaline vials 'muddle doctors'
Doctors may be giving the wrong doses of life-saving adrenaline because of confusing labelling, a study suggests.

Adrenaline, which is used to treat emergencies such as asthma attacks, is stored in vials with the amount often expressed as a ratio as well as a dose. The ratio requires arithmetic to work out how much drug to administer.

In a test, only two of 14 doctors using the ratio were able to give the correct amount, researchers writing in the Annals of Internal Medicine said. They also took about 1.5 minutes longer than doctors using the dose information to give the injection to the medical mannequin.

Label woes

"The findings might be different if the doctors had to treat a real person," said Dr Daniel Wheeler, who carried out the research at the University of Cambridge. "In reality the labels have ratios and doses, not one or the other.

> **It is well documented that patients are commonly given the wrong dosage of adrenaline**
> Dr Daniel Wheeler
> University of Cambridge

"However this does give us insight into the problem and a fairly easy solution - expressing drug concentrations exclusively as doses - we believe would improve patient safety." There have long been concerns about the administration of adrenaline, with studies also raising concerns about the use of pre-loaded injection "pens".

Adrenaline shots are given if a patient has had a serious faint, has choked, or had a severe asthmatic reaction. Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/1/hi/health/7165839.stm

Published: 2008/01/01 00:02:25 GMT

Ban on junk food ads introduced
A ban on adverts for junk food during television programmes aimed at children under 16 has come into force.

Regulator Ofcom has outlawed adverts for foods high in fat, salt and sugar in an effort to tackle rising childhood obesity levels.

But broadcasters say the quality of children's programmes will be hit by the loss of an estimated £39m in advertising revenue.

Health campaigners had called for a complete ban before the 9pm watershed.

The move is the latest stage in a phased crackdown on advertising during programmes aimed at or appealing to children.

In April 2007, junk food ads were banned during programmes made to appeal to seven to nine-year-olds.

The rules are fantastically complicated and opaque for parents
Richard Watts, Children's Food Campaign

And by December this year, dedicated children's channels will have to phase them out altogether.

Children's Secretary Ed Balls has said that UK children see some 10,000 television adverts a year and recognise 400 brands by the age of 10.

Family shows

Terrestrial broadcasters have predicted their advertising revenue will fall by 1% after the ban.

Child-orientated satellite channels expect a 9% drop, while commercial channels aimed entirely at children fear a 15% fall.

Ofcom's rules impose curbs on adverts during shows where child viewers make up a high percentage of the total audience.

But in November, consumer group Which? claimed the restrictions were insufficient because they did not cover family programmes which appealed to both children and adults.

Among these were high-profile shows such as The X Factor, Ant and Dec's Saturday Night Takeaway, New You've Been Framed and Coronation Street.

Richard Watts from the Children's Food Campaign told BBC Radio 4's Today programme that 18 out of the top 20 shows watched by children were not covered by the new ban.

"The rules are fantastically complicated and opaque for parents," Mr Watts said in endorsing a complete ban before the 9pm watershed.

He accused Ofcom of balancing the protection of children's health alongside the "financial health" of broadcasters.

In addition to scheduling restrictions, Ofcom plans to ban the use of celebrities and characters, such as cartoon heroes, to advertise unhealthy food.

Free gifts and health or nutrition claims will also be banned.

A Food Standards Agency ratings system is used to assess which foods are deemed to be junk products.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/1/hi/health/7166510.stm

Published: 2008/01/01 08:01:51 GMT

Insect Attack May Have Finished Off Dinosaurs

Tick found in Burmese amber. (Credit: Image courtesy of Oregon State University)

ScienceDaily (Jan. 4, 2008) — Asteroid impacts or massive volcanic flows might have occurred around the time dinosaurs became extinct, but a new arguemet is that the mightiest creatures the world has ever known may have been brought down by a tiny, much less dramatic force -- biting, disease-carrying insects.

An important contributor to the demise of the dinosaurs, experts say, could have been the rise and evolution of insects, especially the slow-but-overwhelming threat posed by new disease carriers. And the evidence for this emerging threat has been captured in almost lifelike-detail -- many types of insects preserved in amber that date to the time when dinosaurs disappeared.

"There are serious problems with the sudden impact theories of dinosaur extinction, not the least of which is that dinosaurs declined and disappeared over a period of hundreds of thousands, or even millions of years," said George Poinar Jr., a courtesy professor of zoology at Oregon State University. "That time frame is just not consistent with the effects of an asteroid impact. But competition with insects, emerging new diseases and the spread of flowering plants over very long periods of time is perfectly compatible with everything we know about dinosaur extinction."

This concept is outlined in detail in "What Bugged the Dinosaurs? Insects, Disease and Death in the Cretaceous," a book by George and Roberta Poinar, just published by Princeton University Press.

In it, the authors argue that insects provide a plausible and effective explanation for the slow, inexorable decline and eventual extinction of dinosaurs over many thousands of years. This period is known as the famous "K-T Boundary," or the line between the Cretaceous and Tertiary Period about 65 million years ago. There is evidence that some catastrophic events, such as a major asteroid or lava flows, also occurred at this time -- but these provide no complete explanation for the gradual decline of

dinosaur populations, and even how some dinosaurs survived for thousands of years after the K-T Boundary.

Insects and disease, on the other hand, may have been a lot slower, but ultimately finished the job.

"We don't suggest that the appearance of biting insects and the spread of disease are the only things that relate to dinosaur extinction," Poinar said. "Other geologic and catastrophic events certainly played a role. But by themselves, such events do not explain a process that in reality took a very, very long time, perhaps millions of years. Insects and diseases do provide that explanation."

Poinar and his wife, Roberta, have spent much of their careers studying the plant and animal life forms found preserved in amber, using them to re-create the biological ecosystems that were in place millions of years ago. They are also authors of "The Amber Forest: A Reconstruction of a Vanished World."

As a semi-precious gem that first begins to form as sap oozing from a tree, amber has the unique ability to trap very small animals or other materials and -- as a natural embalming agent -- display them in nearly perfect, three-dimensional form millions of years later. This phenomenon has been invaluable in scientific and ecological research, and among other things, formed the scientific premise for the movie Jurassic Park, for the "dinosaur DNA" found in mosquitoes.

"During the late Cretaceous Period, the associations between insects, microbes and disease transmission were just emerging," Poinar said. "We found in the gut of one biting insect, preserved in amber from that era, the pathogen that causes leishmania -- a serious disease still today, one that can infect both reptiles and humans. In another biting insect, we discovered organisms that cause malaria, a type that infects birds and lizards today.

"In dinosaur feces, we found nematodes, trematodes and even protozoa that could have caused dysentery and other abdominal disturbances. The infective stages of these intestinal parasites are carried by filth-visiting insects."

In the Late Cretaceous, Poinar said, the world was covered with warm-temperate to tropical areas that swarmed with blood-sucking insects carrying leishmania, malaria, intestinal parasites, arboviruses and other pathogens, and caused repeated epidemics that slowly-but-surely wore down dinosaur populations. Ticks, mites, lice and biting flies would have tormented and weakened them.

"Smaller and separated populations of dinosaurs could have been repeatedly wiped out, just like when bird malaria was introduced into Hawaii, it killed off many of the honeycreepers," Poinar said. "After many millions of years of evolution, mammals, birds and reptiles have evolved some resistance to these diseases. But back in the Cretaceous, these diseases were new and invasive, and vertebrates had little or no natural or acquired immunity to them. Massive outbreaks causing death and localized extinctions would have occurred."

In similar fashion, the researchers suggest, insects would have played a major role in changing the nature of plant life on Earth -- the fundamental basis for all dinosaur life, whether herbivore, omnivore or carnivore. As the dinosaurs were declining, their traditional food items such as seed ferns, cycads, gingkoes and other gymnosperms were largely being displaced by flowering plants, which insects helped spread by their pollination activities. These plants would have spread to dominate the landscape. Also, insects could have spread plant diseases that destroyed large tracts of vegetation, and the insects could have been major competitors for the available plant food supply.

"Insects have exerted a tremendous impact on the entire ecology of the Earth, certainly shaping the evolution and causing the extinction of terrestrial organisms," the authors wrote in their book. "The largest of the land animals, the dinosaurs, would have been locked in a life-or-death struggle with them for survival."

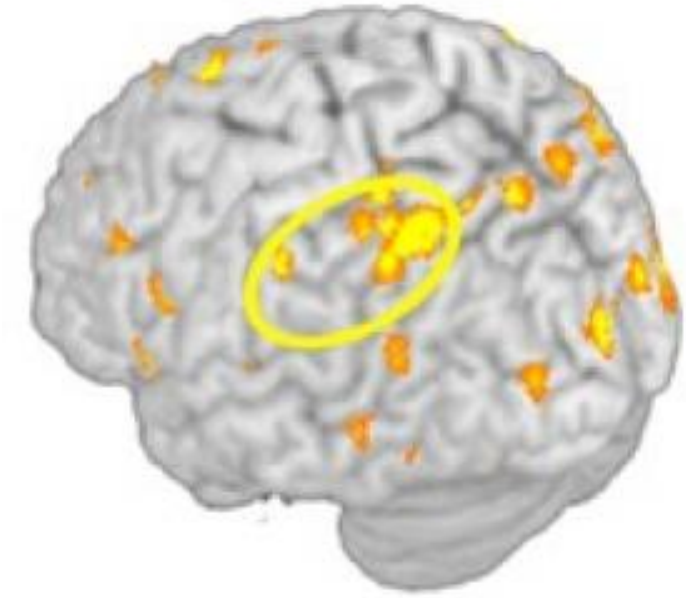
The confluence of new insect-spread diseases, loss of traditional food sources, and competition for plants by insect pests could all have provided a lingering, debilitating condition that dinosaurs were ultimately unable to overcome, the researchers say. And these concerns -- which might have pressured the dinosaurs for thousands of years -- may have finished the job, along with the changing environment, meteor impacts and massive lava flows.

"We can't say for certain that insects are the smoking gun, but we believe they were an extremely significant force in the decline of the dinosaurs," Poinar said. "Our research with amber shows that there were evolving, disease-carrying vectors in the Cretaceous, and that at least some of the pathogens they carried infected reptiles. This clearly fills in some gaps regarding dinosaur extinctions."

Adapted from materials provided by Oregon State University.

http://www.sciencedaily.com/releases/2008/01/080103090702.htm

Brain Imaging Shows If You Are Thinking Of Familiar Object



Locations of the discriminating voxels in object exemplar classification for one participant. (Credit: Image courtesy of Carnegie Mellon University)

ScienceDaily (Jan. 4, 2008) — A team of Carnegie Mellon University computer scientists and cognitive neuroscientists, combining methods of machine learning and brain imaging, have found a way to identify where people's thoughts and perceptions of familiar objects originate in the brain by identifying the patterns of brain activity associated with the objects. This new method was developed over two years under the leadership of neuroscientist Professor Marcel Just and Computer Science Professor Tom M. Mitchell.

A dozen study participants enveloped in an MRI scanner were shown line drawings of 10 different objects -- five tools and five dwellings --one at a time and asked to think about their properties. Just and Mitchell's method was able to accurately determine which of the 10 drawings a participant was viewing based on their characteristic whole-brain neural activation patterns. To make the task more challenging for themselves, the researchers excluded information in the brain's visual cortex, where raw visual information is available, and focused more on the "thinking" parts of the brain.

The scientists found that the activation pattern evoked by an object wasn't located in just one place in the brain. For instance, thinking about a hammer activated many locations. How you swing a hammer activated the motor area, while what a hammer is used for, and the shape of a hammer activated other areas.

According to Just and Mitchell, this is the first study to report the ability to identify the thought process associated with a single object. While earlier work showed it is possible to distinguish broad categories of objects such as "tools" versus "buildings," this new research shows that it is possible to distinguish between items with very similar meanings, like two different tools. The machine-learning method involves training a computer algorithm (a set of mathematical rules) to extract the patterns from a participant's brain activation, using data collected in one part of the study, and then testing the algorithm on data in an independent part of the same study. In this way, the algorithm is never previously exposed to the patterns on which it is tested.

Another important question addressed by the study was whether different brains exhibit the same or different activity patterns to encode these individual objects. To answer this question, the researchers tried identifying objects represented in one participant's brain after training their algorithms using data collected from other participants. They found that the algorithm was indeed able to identify a participant's thoughts based on the patterns extracted from the other participants.

"This part of the study establishes, as never before, that there is a commonality in how different people's brains represent the same object," said Mitchell, head of the Machine Learning Department in Carnegie Mellon's School of Computer Science and a pioneer in applying machine learning methods to the study of brain activity. "There has always been a philosophical conundrum as to whether one person's perception of the color blue is the same as another person's. Now we see that there is a great deal of commonality across different people's brain activity corresponding to familiar tools and dwellings."

"This first step using computer algorithms to identify thoughts of individual objects from brain activity can open new scientific paths, and eventually roads and highways," added Svetlana Shinkareva, an assistant professor of psychology at the University of South Carolina who is the study's lead author. "We hope to progress to identifying the thoughts associated not just with pictures, but also with words, and eventually sentences."

Just, who directs the Center for Cognitive Brain Imaging at Carnegie Mellon, noted that one application the team is excited about is comparing the activation patterns of people with neurological disorders, such as autism. "We are looking forward to determining how people with autism neurally represent social concepts such as friend and happy," he said. Just also is developing a brain-based theory of autism. "People with autism perceive others in a distinctive way that has been difficult to characterize," he explained. "This machine learning approach offers a way to discover that characterization."

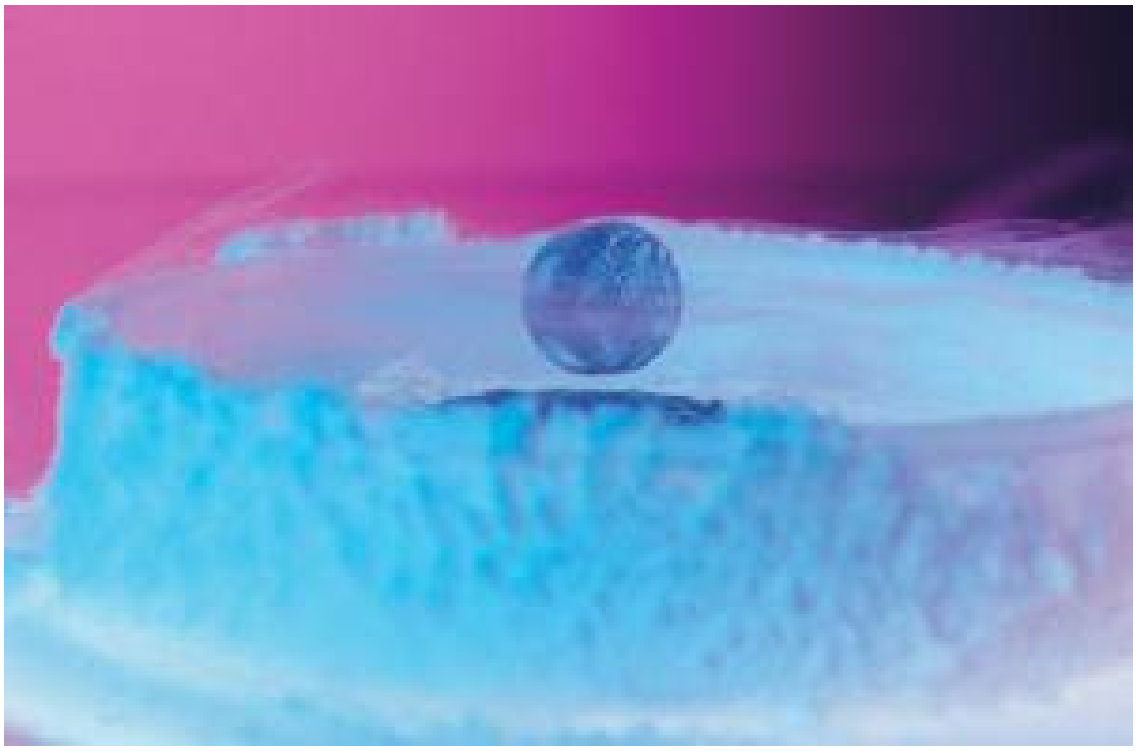
This research was published in an article in the Jan. 2 issue of PLoS One.

The project applying machine learning to brain patterns was funded by the W.M. Keck Foundation and the National Science Foundation.

Adapted from materials provided by Carnegie Mellon University.

http://www.sciencedaily.com/releases/2008/01/080102222813.htm

Quest For A New Class Of Superconductors



This photo shows a magnet levitating above a high-temperature superconductor, cooled with liquid nitrogen. A persistent electric current flows on the surface of the superconductor, effectively forming an electromagnet that repels the magnet. The expulsion of an electric field from a superconductor is known as the Meissner Effect. (Credit: Image courtesy of DOE/Los Alamos National Laboratory)

ScienceDaily (Jan. 4, 2008) — Fifty years after the Nobel-prize winning explanation of how superconductors work, a research team from Los Alamos National Laboratory, the University of Edinburgh and Cambridge University are suggesting another mechanism for the still-mysterious phenomenon.

In a review published December 20 in Nature, researchers David Pines, Philippe Monthoux and Gilbert Lonzarich posit that superconductivity in certain materials can be achieved absent the interaction of electrons with vibrational motion of a material's structure.

The review, "Superconductivity without phonons," explores how materials, under certain conditions, can become superconductors in a non-traditional way. Superconductivity is a phenomenon by which materials conduct electricity without resistance, usually at extremely cold temperatures around minus 424 degrees Fahrenheit (minus 253 degrees Celsius)--the fantastically frigid point at which hydrogen becomes a liquid. Superconductivity was first discovered in 1911.

A newer class of materials that become superconductors at temperatures closer to the temperature of liquid nitrogen--minus 321 degrees Fahrenheit (minus 196 degrees Celsius)--are known as "high-temperature superconductors."

A theory for conventional low-temperature superconductors that was based on an effective attractive interaction between electrons was developed in 1957 by John Bardeen, Leon Cooper and John Schrieffer. The explanation, often called the BCS Theory, earned the trio the Nobel Prize in Physics in 1972.

The net attraction between electrons, which formed the basis for the BCS theory, comes from their coupling to phonons, the quantized vibrations of the crystal lattice of a superconducting material; this

coupling leads to the formation of a macroscopically occupied quantum state containing pairs of electrons--a state that can flow without encountering any resistance, that is, a superconducting state.

"Much like the vibrations in a water bed that eventually compel the occupants to move together in the center, phonons can compel electrons of opposite spin to attract one another, says Pines, who with Bardeen in 1954, showed that this attraction could win out over the apparently much stronger repulsion between electrons, paving the way for the BCS theory developed a few years later.

However, according to Pines, Monthoux and Lonzarich, electron attraction leading to superconductivity can occur without phonons in materials that are on the verge of exhibiting magnetic order--in which electrons align themselves in a regular pattern of alternating spins.

In their Review, Pines, Monthoux and Lonzarich examine the material characteristics that make possible a large effective attraction that originates in the coupling of a given electron to the internal magnetic fields produced by the other electrons in the material. The resulting magnetic electron pairing can give rise to superconductivity, sometimes at substantially higher temperatures than are found in the materials for which phonons provide the pairing glue.

Among the classes of materials that appear capable of superconductivity without phonons are the so-called heavy electron superconductors that have been studied extensively at Los Alamos since the early 1980's, certain organic materials, and the copper oxide materials that superconduct at up to twice the temperature at which nitrogen liquefies.

"If we ever find a material that superconducts at room temperature--the 'Holy Grail' of superconductivity--it will be within this class of materials," says Pines. "This research shows you the lamp post under which to look for new classes of superconducting materials."

Adapted from materials provided by DOE/Los Alamos National Laboratory.

http://www.sciencedaily.com/releases/2007/12/071220133429.htm

Carbon Dioxide Emissions Linked To Human Mortality

A new study details how for each increase of one degree Celsius caused by carbon dioxide, the resulting air pollution would lead annually to about a thousand additional deaths and many more cases of respiratory illness and asthma in the United States. (Credit: iStockphoto/Karl Dolenc)

ScienceDaily (Jan. 4, 2008) — A Stanford scientist has spelled out for the first time the direct links between increased levels of carbon dioxide in the atmosphere and increases in human mortality, using a state-of-the-art computer model of the atmosphere that incorporates scores of physical and chemical environmental processes. The new findings come to light just after the Environmental Protection Agency's recent ruling against states setting specific emission standards for this greenhouse gas based in part on the lack of data showing the link between carbon dioxide emissions and their health effects.

While it has long been known that carbon dioxide emissions contribute to climate change, the new study details how for each increase of one degree Celsius caused by carbon dioxide, the resulting air pollution would lead annually to about a thousand additional deaths and many more cases of respiratory illness and asthma in the United States, according to the paper by Mark Jacobson, a professor of civil and environmental engineering at Stanford. Worldwide, upward of 20,000 air-pollution-related deaths per year per degree Celsius may be due to this greenhouse gas.

"This is a cause and effect relationship, not just a correlation," said Jacobson of his study, which on Dec. 24 was accepted for publication in Geophysical Research Letters. "The study is the first specifically to isolate carbon dioxide's effect from that of other global-warming agents and to find quantitatively that chemical and meteorological changes due to carbon dioxide itself increase mortality due to increased ozone, particles and carcinogens in the air."

Jacobson said that the research has particular implications for California. This study finds that the effects of carbon dioxide's warming are most significant where the pollution is already severe. Given that California is home to six of the 10 U.S. cities with the worst air quality, the state is likely to bear an increasingly disproportionate burden of death if no new restrictions are placed on carbon dioxide emissions.

On Dec. 19, the Environmental Protection Agency denied California and 16 other states a waiver that would have allowed the states to set their own emission standards for carbon dioxide, which are not currently regulated. The EPA denied the waiver partly on the grounds that no special circumstances existed to warrant an exception for the states.

Stephen L. Johnson, the EPA administrator, was widely quoted as saying that California's petition was denied because the state had failed to prove the "extraordinary and compelling conditions" required to qualify for a waiver. While previous published research has focused on the global effect on pollution--but not health--of all the greenhouse gases combined, the EPA noted that, under the Clean Air Act, it has to be shown that there is a reasonable anticipation of a specific pollutant endangering public health in the United States for the agency to regulate that pollutant.

Jacobson's paper offers concrete evidence that California is facing a particularly dire situation if carbon dioxide emissions increase. "With six of the 10 most polluted cities in the nation being in California, that alone creates a special circumstance for the state," he said, explaining that the health-related effects of carbon dioxide emissions are most pronounced in areas that already have significant pollution. As such, increased warming due to carbon dioxide will worsen people's health in those cities at a much faster clip than elsewhere in the nation.

According to Jacobson, more than 30 percent of the 1,000 excess deaths (mean death rate value) due to each degree Celsius increase caused by carbon dioxide occurred in California, which has a population of about 12 percent of the United States. This indicates a much higher effect of carbon dioxide-induced warming on California health than that of the nation as a whole.

Jacobson added that much of the population of the United States already has been directly affected by climate change through the air they have inhaled over the last few decades and that, of course, the health effects would grow worse if temperatures continue to rise.

Jacobson's work stands apart from previous research in that it uses a computer model of the atmosphere that takes into account many feedbacks between climate change and air pollution not considered in previous studies. Developed by Jacobson over the last 18 years, it is considered by many to be the most complex and complete atmospheric model worldwide. It incorporates principles of gas and particle emissions and transport, gas chemistry, particle production and evolution, ocean processes, soil processes, and the atmospheric effects of rain, winds, sunlight, heat and clouds, among other factors.

For this study, Jacobson used the computer model to determine the amounts of ozone and airborne particles that result from temperature increases, caused by increases in carbon dioxide emissions. Ozone causes and worsens respiratory and cardiovascular illnesses, emphysema and asthma, and many published studies have associated increased ozone with higher mortality. "[Ozone] is a very corrosive gas, it erodes rubber and statues," Jacobson said. "It cracks tires. So you can imagine what it does to your lungs in high enough concentrations." Particles are responsible for cardiovascular and respiratory illness and asthma.

Jacobson arrived at his results of the impact of carbon dioxide globally and, at higher resolution, over the United States by modeling the changes that would occur when all current human and natural gas and particle emissions were considered versus considering all such emissions except human-emitted carbon dioxide.

Jacobson simultaneously calculated the effects of increasing temperatures on pollution. He observed two important effects:

1. Higher temperatures due to carbon dioxide increased the chemical rate of ozone production in urban areas
2. Increased water vapor due to carbon dioxide-induced higher temperatures boosted chemical ozone production even more in urban areas.

Interestingly, neither effect was so important under the low pollution conditions typical of rural regions, though other factors, such as higher organic gas emissions from vegetation, affected ozone in low-pollution areas. Higher emissions of organic gases also increased the quantity of particles in the air, as organic gases can chemically react to form particles.

And in general, where there was an increase in water vapor, particles that were present became more deadly, as they swelled from absorption of water. "That added moisture allows other gases to dissolve in the particles--certain acid gases, like nitric acid, sulfuric acid and hydrochloric acid," Jacobson said. That increases the toxicity of the particles, which are already a harmful component of air pollution.

Jacobson also found that air temperatures rose more rapidly due to carbon dioxide than did ground temperatures, changing the vertical temperature profile, which decreased pollution dispersion, thereby concentrating particles near where they formed.

In the final stage of the study, Jacobson used the computer model to factor in the spatially varying population of the United States with the health effects that have been demonstrated to be associated with the aforementioned pollutants.

"The simulations accounted for the changes in ozone and particles through chemistry, transport, clouds, emissions and other processes that affect pollution," Jacobson said. "Carbon dioxide definitely caused these changes, because that was the only input that was varied."

"Ultimately, you inhale a greater abundance of deleterious chemicals due to carbon dioxide and the climate change associated with it, and the link appears quite solid," he said. "The logical next step is to reduce carbon dioxide: That would reduce its warming effect and improve the health of people in the U.S. and around the world who are currently suffering from air pollution health problems associated with it."

Adapted from materials provided by Stanford University.

http://www.sciencedaily.com/releases/2008/01/080103135757.htm

Gay Men Navigate In A Similar Way To Women, Virtual Reality Researchers Find

Participants had to navigate in a virtual environment. (Credit: Image courtesy of Queen Mary, University of London)

ScienceDaily (Jan. 3, 2008) — Gay men navigate in a similar way to women, according to a new study from researchers at Queen Mary, University of London.

Dr Qazi Rahman, from Queen Mary's School of Biological and Chemical Sciences used virtual reality scenarios to investigate if spatial learning and memory in humans can be linked to sexual orientation.

Differences in spatial learning and memory (our ability to record and recall information about our environment) are common between men and women. It has been shown that men consistently outperform women on tasks requiring navigation and discovering hidden objects; whereas women are more successful at tests which require them to remember where those objects lie in a particular space.

This is the first study to investigate if those differences are also true for gay, lesbian and straight individuals.

Dr Rahman used virtual reality stimulations of two common tests of spatial learning and memory, designed by researchers at Yale University. In the Morris Water Maze test (MWM), participants found themselves in a virtual pool and had to escape as quickly as possible using spatial clues in the virtual room to find a hidden platform. In the Radial Arm Maze test (RAM), participants had to traverse eight 'arms' from a circular junction to find hidden rewards. Four of the arms contained a reward, four did not.

Dr Rahman and his research assistant, Johanna Koerting, found that during the MWM test gay men and straight women took longer to find the hidden platform than did straight men. However, both gay and straight men spent more of their "dwelling time" in the area where the hidden platform actually was, compared to straight and lesbian women.

Dr Rahman explains: "Not only did straight men get started on the MWM test more quickly than gay men and the two female groups, they also maintained that advantage throughout the test. This might

mean that sexual orientation affects the speed at which you acquire spatial information, but not necessarily your eventual memory for that spatial information.

"In previous studies we have also found that gay men tend to use similar navigation strategies to women, like using land-marks, and we now want to explore whether navigation strategies on these virtual navigation tasks are also the same for gay men and women. In particular, we are interested in whether heterosexual men are using a unique strategy from their first attempt at traversing a new environment, which accounts for why they are so quick off the mark."

The researchers also found that gay and straight men were similar in their performance on the Radial Arm Maze. "This suggests that sexual variation in spatial cognition is not straightforward – gay people appear to show a 'mosaic' of performance, parts of which are male-like and other parts which are female-like," adds Rahman.

Dr Rahman also commented that it would be interesting to see if these sexual differences change with age. "We know that spatial ability declines more rapidly in men with age than in women, and this might be related to changing hormone profiles. This may have some relevance to sex differences in ageing-related diseases of cognitive functioning, such as dementia.

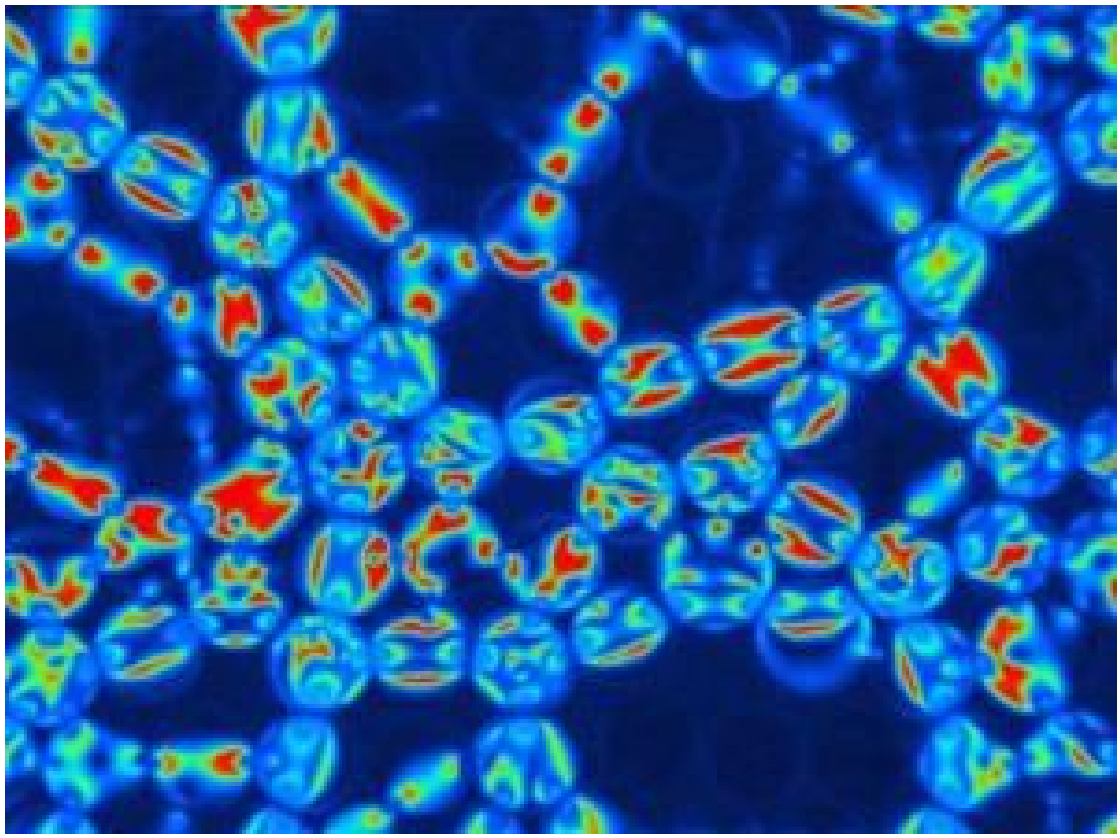
"If we can understand more about how people of different sexes and sexualities differ in spatial performance, we might be able to tailor cognitive remediation therapies more effectively to specific groups within an ageing population."

This research was recently published in the journal Hippocampus.

Adapted from materials provided by Queen Mary, University of London.

http://www.sciencedaily.com/releases/2008/01/080103135205.htm

Sound Waves Can Trigger Earthquake Aftershocks



Stresses on the photoelastic granules in the photo show up as brighter colors, with red showing the regions of highest stress. When forces are applied to granules beneath a plate in the earthquake machine, stresses propagate through the granules, creating "force chains," like the tracks of red visible in the image. (Credit: Bob Behringer)

ScienceDaily (Jan. 3, 2008) — Using a novel device that simulates earthquakes in a laboratory setting, a Los Alamos researcher and his colleagues have shown that seismic waves--the sounds radiated from earthquakes--can induce earthquake aftershocks, often long after a quake has subsided.

The research provides insight into how earthquakes may be triggered and how they recur.

In a letter appearing in Nature, Los Alamos researcher Paul Johnson and colleagues Heather Savage, Mike Knuth, Joan Gomberg, and Chris Marone show how wave energy can be stored in certain types of granular materials--like the type found along certain fault lines across the globe--and how this stored energy can suddenly be released as an earthquake when hit by relatively small seismic waves far beyond the traditional "aftershock zone" of a main quake.

Perhaps most surprising, researchers have found that the release of energy can occur minutes, hours, or even days after the sound waves pass; the cause of the delay remains a tantalizing mystery.

Earthquakes happen when the Earth's crust slips along cracks, known as faults. Major faults can be found at the junction of independently moving masses of crust and mantle, known as tectonic plates.

Each earthquake releases seismic waves--vibrations at the cusp, or below the range of human hearing--that travel through the Earth. These waves can trigger aftershocks in a zone several to tens of miles away from the radiating main earthquake, known as a "mainshock." Most aftershocks usually occur within hours to days after the mainshock.

Researchers often have assumed that seismic waves beyond the immediate aftershock zone were too weak to trigger aftershocks. However, Gomberg and others have proven that seismic activity sometimes increases at least thousands of miles away after an earthquake.

"At these farther distances, earthquake triggering doesn't happen all the time," said Johnson. "The question always was why? What was going on in certain regions that lead to triggering? The challenge was whether we could go into the laboratory and mimic the conditions that go on inside the Earth and find out."

The answer to the challenge lay at Pennsylvania State University, where Marone had developed an apparatus that mimics earthquakes by pressing plates atop a layer of tiny glass beads. When enough energy is applied to the plates, they slip, like tectonic plates above the mantle.

Johnson wondered whether sound waves could induce earthquakes in such a system. His colleagues originally believed sound would have no effect.

Much to their surprise, the earthquake machine revealed that when sound waves were applied for a short period just before the quake, they could induce smaller quakes, or, in some instances, delay the occurrence of the next major one. The sound waves seemed to affect earthquake behavior for as many as 10 earthquake events after they were applied.

More surprising still, the team found that the granular beads could store a "memory" even after the system had undergone a quake and the beads had rearranged themselves.

"The memory part is the most puzzling," Johnson said, "because during an earthquake there is so much energy being released and the event is so violent that you have to wonder, why doesn't the system reset itself?"

The research has helped confirm that earthquakes are periodic events and that sound can disrupt them.

But catastrophic events in other granular media--such as avalanches or the sudden collapse of sand dunes--could help provide clues into the physics of earthquakes, and could help Johnson and his colleagues begin to unravel the mystery of stored memory in granular systems.

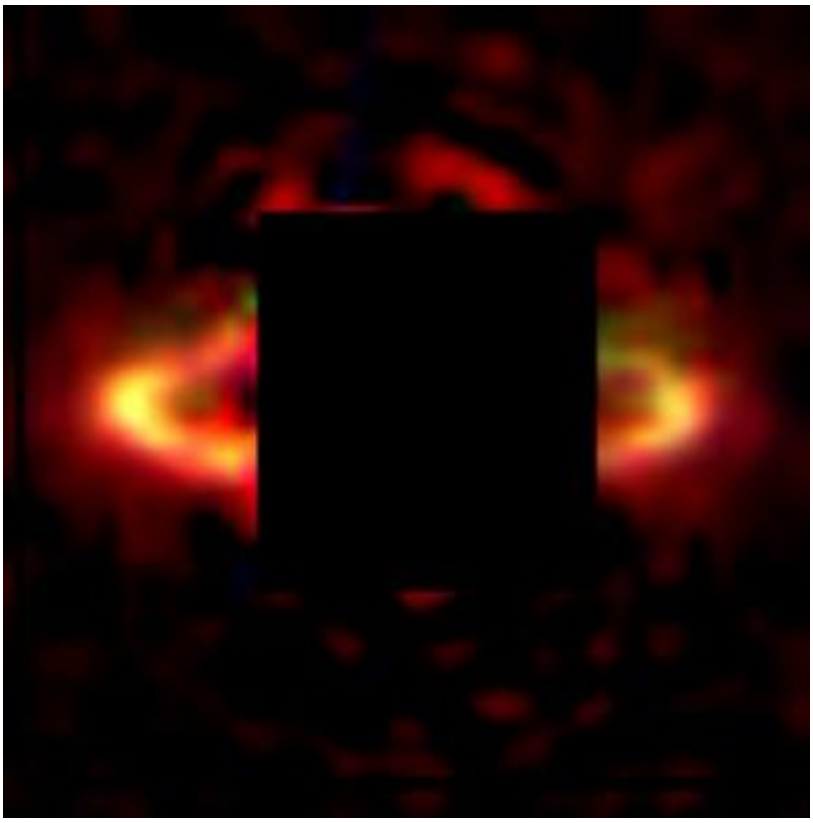
"What we've created in the laboratory has provided the basis for an understanding of dynamic triggering of earthquakes, something that has mystified people for years," said Johnson.

Other institutions besides Los Alamos National Laboratory involved in the research include Penn State, the University of California-Santa Cruz, the University of Wisconsin, the United States Geological Survey, and University of Washington.

Adapted from materials provided by DOE/Los Alamos National Laboratory.

http://www.sciencedaily.com/releases/2008/01/080103124649.htm

Red Dust In Planet-forming Disk May Harbor Precursors To Life



Red and near infrared wavelengths from the dust disk surrounding the star HR 4796A (masked in false-color image to make fainter disk visible) suggest the presence of complex organic molecules. The inner "hole" of the ring-shaped disk is big enough to fit our entire solar system and may have been swept clean of dust by orbiting planets. (Credit: John Debes)

ScienceDaily (Jan. 3, 2008) — Astronomers at the Carnegie Institution have found the first indications of highly complex organic molecules in the disk of red dust surrounding a distant star. The eight-million-year-old star, known as HR 4796A, is inferred to be in the late stages of planet formation, suggesting that the basic building blocks of life may be common in planetary systems.

In a study published in the current Astrophysical Journal Letters, John Debes and Alycia Weinberger of the Carnegie Institution's Department of Terrestrial Magnetism with Glenn Schneider of the University of Arizona report observations of infrared light from HR 4796A using the Near-Infrared Multi-Object Spectrometer aboard the Hubble Space Telescope.

The researchers found that the spectrum of visible and infrared light scattered by the star's dust disk looks very red, the color produced by large organic carbon molecules called tholins. The spectrum does not match those of other red substances, such as iron oxide.

Tholins do not form naturally on present-day Earth because oxygen in the atmosphere would quickly destroy them, but they are hypothesized to have existed on the primitive Earth billions of years ago and may have been precursors to the biomolecules that make up living organisms. Tholins have been detected elsewhere in the solar system, such as in comets and on Saturn's moon Titan, where they give the atmosphere a red tinge. This study is the first report of tholins outside the solar system.

"Until recently it's been hard to know what makes up the dust in a disk from scattered light, so to find tholins this way represents a great leap in our understanding," says Debes.

HR 4796A is located in the constellation Centaurus, visible primarily form the southern hemisphere. It is about 220 light years from Earth. The discovery of its dust disk in 1991generated excitement among astronomers, who consider it a prime example of a planetary system caught in the act of formation. The dust is generated by collisions of small bodies, perhaps similar to the comets or asteroids in our solar system, and which may be coated by the organics. These planetesimals can deliver these building blocks for life to any planets that may also be circling the star.

"Astronomers are just beginning to look for planets around stars much different from the Sun. HR 4796A is twice as massive, nearly twice as hot as the sun, and twenty times more luminous than the Sun," says Debes. "Studying this system provides new clues to understanding the different conditions under which planets form and, perhaps, life can evolve."

Image Caption: Red and near infrared wavelengths from the dust disk surrounding the star HR 4796A (masked in false-color image to make fainter disk visible) suggest the presence of complex organic molecules. The inner "hole" of the ring-shaped disk is big enough to fit our entire solar system and may have been swept clean of dust by orbiting planets. (Image: John Debes)

This research is based on observations with the NASA/ESA Hubble Space Telescope and was supported by NASA and the NASA Astrobiology Institute.

Adapted from materials provided by Carnegie Institution.

http://www.sciencedaily.com/releases/2008/01/080103132303.htm

Missing Evolutionary Link Found By Using Tiny Fungus Crystal

The crystal structure of an RNA molecule bound to a protein was used by Purdue and University of Texas at Austin researchers to study a stage of evolution. (Credit: Image courtesy of Barbara Golden, Purdue University Department of Biochemistry)

ScienceDaily (Jan. 3, 2008) — The crystal structure of a molecule from a primitive fungus has served as a time machine to show researchers more about the evolution of life from the simple to the complex.

By studying the three-dimensional version of the fungus protein bound to an RNA molecule, scientists from Purdue University and the University of Texas at Austin have been able to visualize how life progressed from an early self-replicating molecule that also performed chemical reactions to one in which proteins assumed some of the work.

"Now we can see how RNA progressed to share functions with proteins," said Alan Lambowitz, director of the University of Texas Institute for Cellular and Molecular Biology. "This was a critical missing step."

"It's thought that RNA, or a molecule like it, may have been among the first molecules of life, both carrying genetic code that can be transmitted from generation to generation and folding into structures so these molecules could work inside cells," said Purdue structural biologist Barbara Golden. "At some point, RNA evolved and became capable of making proteins. At that point, proteins started taking over roles that RNA played previously - acting as catalysts and building structures in cells."

In order to show this and learn more about the evolution from RNA to more complex life forms, Lambowitz and Paul Paukstelis, lead author and a research scientist at the Texas institute, needed to be able to see how the fungus' protein worked. That's where Golden's team joined the effort and crystallized the molecule at Purdue's macromolecular crystallization facility.

"Obviously, we can't see the process of moving from RNA to RNA and proteins and then to DNA, without a time machine," Golden said. "But by using this fungus protein, we can see this process occurring in modern life."

Looking at the crystal, the scientists saw two things, Golden said. One was that this protein uses two completely different molecular surfaces to perform its two roles. The second is that the protein seems to perform the same job that RNA performed in other simple organisms.

"The crystal structure provides a snapshot of how, during evolution, protein molecules came to assist RNA molecules in their biological functions and ultimately assumed roles previously played by RNA," Golden said.

Before the crystallization, Lambowitz, Paukstelis and their research team at The University of Texas at Austin were involved in a long-term project to study the function of the basic cellular workhorse protein and other evolutionary fossils from the fungus. In earlier work, the scientists studied a different protein that showed how biochemical processes could progress from a world with RNA and protein to DNA.

The protein, as found in the fungus, had adapted to take over some of the RNA molecule's chemical reaction jobs inside cells. The protein stabilizes the RNA molecule - called an intron - so that the RNA can cut out non-functional genetic material and splice together the ends of a functional gene, Paukstelis said.

"The RNA molecule in our study is capable of performing a specific chemical reaction on itself, but it requires a protein for this reaction to take place efficiently," he said.

This basic scientific information eventually could lead to clinical applications.

"This work has potential applications in the development of antifungal drugs to battle potentially deadly pathogens; that's one of the next steps," Lambowitz said. "Another is to produce more detailed structures so that we can understand the ancient chemical reactions."

Golden and Lambowitz are senior authors of the report. Golden is a member of the Markey Center for Structural Biology and Purdue Cancer Center. The Markey Center will be housed in the Hockmeyer Hall of Structural Biology when it's completed on the West Lafayette campus.

Other researchers involved in this study along with Paukstelis were Jui-Hui Chen, a Purdue biochemistry doctoral student, and Elaine Chase, a Purdue biochemistry research technician.

Results of the study were published in the journal Nature January 3.

Adapted from materials provided by Purdue University.

http://www.sciencedaily.com/releases/2008/01/080102142555.htm

Researchers Reverse Effects Of Sleep Deprivation

The effects of sleep deprivation on cognitive performance can be reversed when the naturally occurring brain peptide, orexin-A, is administered in monkeys, researchers have found. (Credit: iStockphoto/Neal McClimon)

ScienceDaily (Jan. 3, 2008) — Researchers at Wake Forest University School of Medicine have shown that the effects of sleep deprivation on cognitive performance can be reversed when the naturally occurring brain peptide, orexin-A, is administered in monkeys.

"These findings are significant because of their potential applicability," said Samuel A. Deadwyler, Ph.D., professor of physiology and pharmacology at Wake Forest. "This could benefit patients suffering from narcolepsy and other serious sleep disorders. But it also has applicability to shift workers, the military and many other occupations where sleep is often limited, yet cognitive demand remains high."

Orexin-A, also known as hypocretin-1, is a naturally occurring peptide produced in the brain that regulates sleep. It's secreted by a small number of neurons but affects many brain regions during the day and people who have normal amounts of orexin-A are able to maintain wakefulness. When people or animals are sleep-deprived, the brain attempts to produce more orexin-A, but often without enough success to achieve alertness past the normal day-night cycle.

The research team, consisting of Linda Porrino, Ph.D., and Robert Hampson, Ph.D, also of Wake Forest, and Jerome Siegel, Ph.D., of the University of California at Los Angeles, studied the effects of orexin-A on monkeys that were kept awake overnight for 30 to 36 hours with videos, music, treats and interaction with technicians, until their normal testing time the next day. They were then allowed to perform their trained tasks with several cognitive problems that varied in difficulty, and their performance was significantly impaired.

However, if the sleep deprived monkeys were administered orexin-A either intravenously or via a nasal spray immediately prior to testing, their cognitive skills improved to the normal, non-sleep-deprived, level. The researchers also noted that when the monkeys received the orexin-A via the intranasal spray they tested higher than when it was administered intravenously.

"Assessments of the monkeys' brain activity during testing through noninvasive imaging techniques also showed improvement by orexin-A which returned to its normal non-sleep-deprived pattern during performance of the task," said Deadwyler. "In addition, we observed that orexin-A at moderate dose levels had no effect on performance if the animals were not sleep-deprived."

Full results are published in the Journal of Neuroscience.

Adapted from materials provided by Wake Forest University Baptist Medical Center.

http://www.sciencedaily.com/releases/2008/01/080102093936.htm

Changing Skyline | City planning still bush-league

By Inga Saffron

Inquirer Architecture Critic

There are two kinds of people counting the days until Mayor-elect Michael Nutter fires David Auspitz, the blustering, bullying chairman of Philadelphia's Zoning Board of Adjustment. The first can't wait for him to go because they're hoping Nutter will usher in a more thoughtful approach to planning. The other bunch just want to get their variances locked in before Auspitz's erratic, deal-oriented reign finally sputters to an end.

Since Nutter's inauguration is Monday, that makes today their last chance for pushing through skyline-defining projects, including a massive mixed-use development on the former Schmidt's Brewery site in Northern Liberties. In his usual high-handed fashion, Auspitz peremptorily informed neighborhood representatives at a Dec. 20 hearing that he intended to green-light the scheme at a follow-up meeting today - like it or not.

It was a vintage Auspitz threat. In his 41/2 years as chairman, he has come to epitomize the Street administration's indifference to serious planning. Nutter has publicly compared Auspitz's often clownish stewardship of the zoning board to TV's *Judge Judy* show. Changing the board's lineup, the future mayor says, is a top priority.

Yet, if all Nutter does is send in a few fresh faces, he'll simply be replacing the actors in the same bad play. Auspitz isn't the real problem. The system is the problem.

The structure for handling planning and zoning matters in Philadelphia is broken beyond repair. This big-league city treats critical land-use questions with the amateurism of a small town. Actually, many small towns do it better. While development projects have grown bigger and more intricate in the last few decades, the city's leadership still operates on the belief that proposals of any size can be evaluated in a 90-minute-long adversarial hearing, and adjudicated by people who may have never visited the site, and who lack fixed standards to guide their decision-making.

Take Bart Blatstein's scheme for Schmidt's Brewery. The project would fill in an 8.5-acre tract along Second Street, between Germantown and Girard Avenues, with a vaguely designed 27-story apartment tower, a block-size shopping center, a major supermarket, and parking for 846 cars. The development, which requires a slew of variances and approvals, would substantially alter the character of the artsy, low-rise neighborhood.

Yet when Blatstein's lawyer, Carl Primavera, described the plans to the zoning board, he characterized it as a "simple infill project." As usual, no one from the city's planning staff offered an independent analysis. When, at last, representatives from the neighborhood were permitted to testify, Auspitz cut them off in midsentence, saying he saw no reason not to approve the project then and there.

"A high-rise is a high-rise," he declared, struggling to articulate a basis for his position.

The Victory Building and the Comcast Tower are also high-rises. But surely no one would mistake one for the other, or claim their impact on the streetscape is identical.

Despite the massive scale of the Schmidt's project, members of the Northern Liberties Neighbors Association say they're willing to accept its density and general configuration - as long as they can negotiate the details of the design. In particular, they want Blatstein to lower the height of the tower, sited on Germantown Avenue, by parceling out the apartments in several midrise buildings.

But Blatstein, who worked well with the neighbors group before on several excellent projects, refused to deal this time.

Why? Janice Woodcock, the city's chief planner, says the answer is obvious: Developers are in a hurry to get approvals before Nutter takes office. "I can't think of any other reason why they would rush a project like this through," she says.

Auspitz may be the enabler. But he's not operating in a vacuum.

In a city with a more modern approach to government - the kind of place Nutter has advocated in recent speeches - Blatstein would have been required by law to present a large project like Schmidt's to the planners for approval.

No such review is required by the City Charter. Some developers volunteer to meet with the city's professional planners, but they aren't obliged to accept suggestions. All power resides with the citizen members of the zoning board. The charter, now half a century old, has things backward.

Change is coming, albeit slowly. The new Zoning Reform Commission - which counts Auspitz among its members - is struggling to bring the city's zoning code into the modern era. Woodcock's office, meanwhile, has just begun the arduous task of rewriting the city's comprehensive plan, a set of values that is supposed to guide development.

But these efforts don't tackle the fundamental issue: the Planning Commission's subordinate relationship to the Zoning Board of Adjustment.

Real planning can't be done standing up in the courtroomlike environment of the zoning board. It can occur only around a table with developers, lawyers, residents and, most important, city planners haggling over the details. And the only way people will ever come to that table is for Nutter to persuade voters to amend the charter.

It's probably too late to take that approach for the Schmidt's site, unless Auspitz can be persuaded to stop acting as prosecutor, judge and jury.

Too bad. The arguments made by the Northern Liberties group are eminently reasonable. A 27-story building, one that will top out at 367 feet, is not just a notch up in scale from its neighbors - it's nine times as tall as nearby rowhouses. It's also sited in such a way that it will always stand alone, without other high-rises to mitigate its extreme height.

More than that, the Northern Liberties master plan, which the community prepared at its own expense in 2005, already designates an area for such tall towers: It's the area east of Interstate 95, along the Delaware waterfront.

The neighbors apply clear, objective standards for making their land-use decisions. You would think that a modern, big-city government is capable of doing as much.

Changing Skyline |

Inga Saffron blogs about Philadelphia architecture at **http://go.philly.com/skyline.**

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Smiling? You Can Hear It in the Voice

Jennifer Viegas, Discovery News

Jan. 3, 2008 -- Smiling affects how we speak, to the point that listeners can actually identify the type of smile based on sound alone, according to a new study that also determined some people have "smilier" voices overall than others.

The research adds to the growing body of evidence that smiling and other expressions pack a strong informational punch and may even impact us on a subliminal level.

"When we listen to people speaking, we may be picking up on all sorts of cues, even unconsciously, which may help us interpret the speaker," lead author Amy Drahota told Discovery News.

Drahota, a research fellow in the School of Health Sciences and Social Work at the University of Portsmouth, and colleagues Alan Costall and Vasudevi Reddy recorded volunteers as they went through a rather silly interview that required them to utter the words, "I do in the summer" -- no matter the question.

Examples of questions included, "Do you ever sunbathe?" and, "Do you go skinny dipping?"

"The question schedule was deliberately built up to begin serious and then become gradually more amusing and strange, and potentially slightly embarrassing," Drahota explained.

"All the while the speakers were 'admitting' what they do in the summer -- even if it wasn't true -- and additionally the interview must have seemed most peculiar to the speakers and this would have made them smile."

The researchers videotaped the volunteers and then categorized their smile types. It's believed that some 50 different types of smiles exist, ranging from triumphant ones to those that convey bitterness. For the purposes of this study, however, the scientists focused on four types.

Drahota described the first as an open smile "in which the lips are drawn back, the cheeks are raised and crows-feet wrinkles appear around the eyes." Technically this is called a Duchenne smile, which may be the truest and most intense of all.

The second smile type is like the Duchenne, only minus the "smiley eyes." The third is a suppressed smile, "where the speaker is trying to hide their smile by pulling their lips in or down as they speak." Finally, they denoted times when the speakers weren't smiling at all.

The audio for the interviews was then played back to another group of test subjects. Even without seeing the speakers, the listeners were usually able to identify the type of smile the speaker made as he or she went through the wacky interview.

The findings have been accepted for publication in the journal *Speech Communication*.

Drahota and her team suspect our smile-sense has to do with changes in pitch.

"When we listen to speech we hear the general pitch, and people associate a rise in pitch with more smiley sounding voices," she said, adding that "we might also be picking up on more subtle cues, like the spread of frequencies within the voice, and how intense the voice is."

A person with a naturally short vocal tract may therefore sound more smiley than others at all times.

How we perceive such smiles may influence our behavior.

Piotr Winkielman, associate professor of psychology at the University of California at San Diego, unconsciously primed some of his study participants with happy faces.

To do this, he showed them photos of faces. Pictures with the happy faces flashed by quickly, before the viewers could consciously detect them, while neutral faces were presented for longer periods. The photo viewers were then offered a drink and asked how much they would pay for it.

Volunteers primed with the subliminal smiles drank more and offered to pay up to triple the price of the offered beverage, which was just a sugary Kool-Aid mixture.

"This is the first demonstration that you can influence consequential, real-world behavior without affecting conscious feeling," Winkielman said. "We can change what you do without changing how you feel."

In future, studies on smiles and other expressions might improve synthetic voices used for disabled individuals. They could also benefit a host of other applications, such as computer games, automated phone systems, text-to-speech technologies and more.

http://dsc.discovery.com/news/2008/01/03/smile-communication.html?dcitc=w19-502-ak-0000

Don't worry if art makes you laugh. It should

Michael Archer

January 3, 2008 8:03 AM

http://blogs.guardian.co.uk/art/2008/01/why_does_it_seem_odd.html

The joke's on who? The Chapman brothers add another layer to a Goya print. AP/Alastair Grant

Why does it seem odd to suggest that art can be humorous? It's not as though we don't encounter the words 'art' and 'joke' often enough in the same sentence, especially if 'art' is qualified by the adjective 'modern'. But when we do it usually means that people's suspicions are aroused. We make out that the joke is on us, so the art can be dismissed as not serious and therefore irrelevant. Art is supposed to come out of some discernible effort on the part of the artist, and the apparent effortlessness of a good joke inevitably undermines that expectation. If art is a joke then it's not art, or so the thinking goes.

On the other hand, jokes and art have a good deal in common. They challenge assumptions, unsettle cosily habitual thought patterns and mock stereotypical behaviour. Surely they should often be found in each other's company? In fact they are.

To take just two examples, the films of Swiss artist Roman Signer, currently showing in Edinburgh and soon to be seen in London, explore the comedic poetry of our encounter with objects. He calls himself an "emotional physicist" - maybe he really isn't far removed from the comedian who walks into a lamppost. And the fact that we laugh at David Shrigley's drawings reinforces rather than detracts from the sharp eye with which he observes life's darknesses.

Making art nearly always involves destruction, even if it's only the pristine purity of a white sheet of paper. Humour, too, can be merciless. Harnessed together they can add up to much more than the sum of their parts. Modern art's iconic figure, Marcel Duchamp, was nothing if not a joker. His sardonic sense of humour is evident everywhere, especially in the postcard-size reproduction of the Mona Lisa to which he added a moustache and goatee, together with the words LHOOQ. Telling us that the only reason we look at Leonardo's painting is because the subject has a hot arse (elle a chaud au cul) is, of course, deliberately provocative.

Duchamp's defacement of a cherished treasure is insolent, yet if it causes anger it does so not because it is attacking Leonardo - who is beyond that, anyway? - but because it is mocking our lazy prejudices about what has cultural value. Art, he is saying, is about ideas, so seeing it requires us to use our brains rather than merely indulging our propensity to emotional incontinence. That the Chapman brothers were not unaware of this when making their own alterations of Goya's prints just adds another layer to the joke.

http://blogs.guardian.co.uk/art/2008/01/why_does_it_seem_odd.html

France racing to save Lascaux cave paintings from fungus

Last Updated: Wednesday, January 2, 2008 | 3:17 PM ET

CBC News

The French government is taking emergency action to rescue the celebrated cave paintings of the Lascaux caverns from a fungus.

Archeological experts have begun applying a fungicide to halt the spread of grey and black mould in the caverns, dubbed the Sistine Chapel of prehistory.

Prehistoric cave art from Lascaux, France, shows the head of a horse. (Hulton Archive/Getty Images)

The caves, discovered in 1940 by teenagers walking a dog, contain images of bulls, deer and horses believed to be 15,000-17,000 years old.

The French government has closed the caves located about 450 kilometres south of Paris to everyone, including scientists and historians, for three months and will replace an air circulation system that may be partly responsible for the fungus.

The system, installed seven years ago, may have been poorly designed, as a similar fungal attack took place after its installation.

The fungus, which grows because of moist conditions, is threatening some of the 600 drawings in yellow, red and black mineral pigments that cover the caves.

The drawings, believed to have been painted by hunter-gatherers, have survived since the last Ice Age.

A team of specialists who assessed the site before Christmas recommended stopping all activity in the caverns and taking action to stop the fungus.

They put pressure on the French government by alerting UNESCO, which classifies the caverns as a World Heritage Site, about the conditions.

Laurence Leaute-Beasley, president of the International Committee for the Preservation of Lascaux, called for the management of the caves to be taken out of the hands of the French government, saying someone who understands the science involved should take over.

The French government, not wanting such an an important site to be seen as neglected, has decided to accept the committee's advice and act now against the fungus.

The experts disagreed on the cause of the problem. Some say global warming is to blame, others that human activity in the caves is exacerbating the problems.

One of the projects to be halted by the emergency treatment is a survey that was to make a three-dimensional digital record of every painting in the caverns.

The caves, which had been a major tourist draw in the 1950s, have been closed to the public since 1963.

In 2001 and 2002, a white fungus spread over much of the caves, but was successfully brought under control.

http://www.cbc.ca/arts/artdesign/story/2008/01/02/lascaux-caves.html?ref=rss

The Hudson Yards Proposals: Plenty of Glitz, Little Vision
It is hard to believe that teams with this much assembled star power could come up with something so awesomely bad.

BY ADA LOUISE HUXTABLE
Wednesday, January 2, 2008 12:00 a.m. EST

The Extel (above) and Brookfield plans.

By Ada Louise Huxtable New York If anything ever proved the old saw about committees and camels, it is the schemes for the extremely large and extremely lucrative redevelopment of New York's Hudson Yards, the 28 acres on Manhattan's far West Side currently up for sale by the Metropolitan Transportation Authority to the bidder with the most financial allure and the best camel--oops, plan.

Anyone who has watched this ritual real-estate dance in New York before knows what to expect: After the display and the discussion and a tortuous path of Catch-22 obstacles and Machiavellian deal-making, we will get a lot of very, very big buildings that will make someone very, very rich. There will be a great many of these very large buildings because the site is enormous. The 28 acres that span the rail yards from 30th to 33rd streets and 10th Avenue to the Hudson River, dwarfing Ground Zero's 16 acres, have already been rezoned in part for the biggest buildings possible.

The only other thing we can count on is that whatever is eventually built there will bear very little resemblance to what we are being shown now. For which we should be tremendously thankful. Because it is hard to believe that teams with this much financial heft and assembled star power could come up with something so awesomely bad. Only two of them appear to have thought about it beyond the standard investment model blown up to gargantuan scale.

The scenario is right on schedule. The decision by the public agency, the cash-strapped MTA, to sell the land to private developers was followed by a request for proposals that included guidelines for commercial and residential construction, landscaped open space, and a cultural building and school. (Historically, the amenities have a way of fading away or being relegated to reduced, fringe status later on; see, for example, the case of the disappearing cultural buildings at Ground Zero.)

Once the bids and presentations are in and the show is over, the real negotiating will get under way. So why the charade--the expensively executed and seductively lit models, the earnest presentations by the architects, the request for public reactions? Why do we discuss the proposals at all?

Hope springs eternal, of course, because the chance to create something of lasting value on this incredible site begs to be honored; other world cities are making it clear in projects of similar magnitude that more

than money matters as they embrace standards of architecture and planning that leave New York in the dust. We continue to find the spectacle of developers' promotional and political savvy riveting, knowing that success will depend on the deal and not the design.

Only two of the five proposals being considered are worth talking about. Extell Development's submission, by the architect Steven Holl, could have the unity, character and potential beauty of a Rockefeller Center, and it is unique in this respect. The scheme flies in the face of the current cant about pluralism and diversity and proves once again that architecture is about vision and ideas. While the other proposals include a massive truss over the yards that is meant to support the new construction, Mr. Holl substitutes a suspension deck. (The trains will continue to run underneath.) This bridge-like deck carries the lesser weight (and expense) of a park, while the structures surrounding it, handsomely grouped for views of the Empire State Building and the Hudson River, can be built on solid ground. You have to admire Excell's courage in going with a single gifted architect and putting all its chips on design.

The plan offered by Brookfield Properties is the work of Skidmore, Owings and Merrill and the landscape firm Field Operations. (Brookfield-owned property in Lower Manhattan includes The Wall Street Journal offices at 200 Liberty Street.) The fine environmental hand of Field Operations is easy to discern. The planning process starts with the nature of the site, addressing the huge variations in elevation from street to platform to waterfront, changes in grade that create a formidable barrier to the city around it. This is not easy to read in the models or in the other proposals with their emphasis on hype and heavyweight names.

Continuing the local streets through the site establishes the connective tissue. Instead of treating landscape as leftover space between buildings, Field Operations makes it the unifying factor, softening transitions and tying everything together. Recognizing Chelsea to the south, the plan connects the 30th Street frontage to existing neighborhood fabric and scale, with the High Line, the elevated park-in-progress on the abandoned train bed that skirts the area, incorporated as part of the action. This section of the High Line was considered expendable by a number of the developers until public opinion made them think otherwise; it appears in all of the schemes, usually as a kind of peripheral trim. Or worse, a device for enhancing commercial properties by allowing direct exits onto the elevated park, a terrible idea. Skidmore, Owings and Merrill's most conspicuous contribution is a pair of skyscrapers that look, in profile, alarmingly like sex toys. A reasonable selection of innovative architects completes the proposal.

Both the Excell and Brookfield schemes suffer from the lack of a major tenant. Tishman Speyer has the promise of Morgan Stanley, the Durst Vornado team has brought along Condé Nast, apparently already out of room in its relatively new Times Square headquarters, and the Related Cos. comes with News Corp., which recently added The Wall Street Journal to its publications with the purchase of Dow Jones. The fact that such deals frequently fall apart in the changing economic climate of the intervening years of construction doesn't seem to diminish their value.

The Related Cos., with a drop-dead list of consultants, contributors, collaborators and anyone else who could be thrown into the mix (design teams can be camels, too), has covered all possible bases with something dreadful for everybody. This is not planning, it's pandering. They are either cynical or clueless; how else to explain the grossly opportunistic architectural zoo of Arquitectonica's jazzy modern and Robert A.M. Stern's ersatz traditional and the high-powered skyscraper-style of the lead firm, Kohn Pederson Fox? Related is rumored to be the front-runner because of a shrewd combination of financial backing, political connections and establishment names. It is quite clear that they know what they are doing and why they are doing it--and it is perfectly awful.

I seem to have blocked out the Durst Vornado team; possibly there were too many abstract planning clichés fished out of the past to absorb. I am resisting the inexplicable revival of the discredited elevated walkways of the 1960s that were a notorious failure in places like London's Barbican and South Bank, presented under the trendy archispeak of "biomimetic concepts," "microclimates" and "layering." Even worse, they slither across parkland, where they do not belong, and will stand vacant and unused because it is already a matter of record that people avoid them. The rest is standard city-of-the-future.

Finally, there is the elephantine dead-on-arrival proposal by Helmut Jahn and Peter Walker for Tishman Speyer. What in the world were they thinking? This oppressive arrangement of immense matched towers (I will not mention the diagonal stripes) relates to nothing; it is a throwback to the most insensitive urban renewal projects of the past century. The landscaped platform and its concentric steps evokes all those abandoned outdoor amphitheaters that looked so great in bird's-eye views but never worked. You have the feeling that if you gave the whole thing a good push it would slide right down to the bottom of the Hudson River.

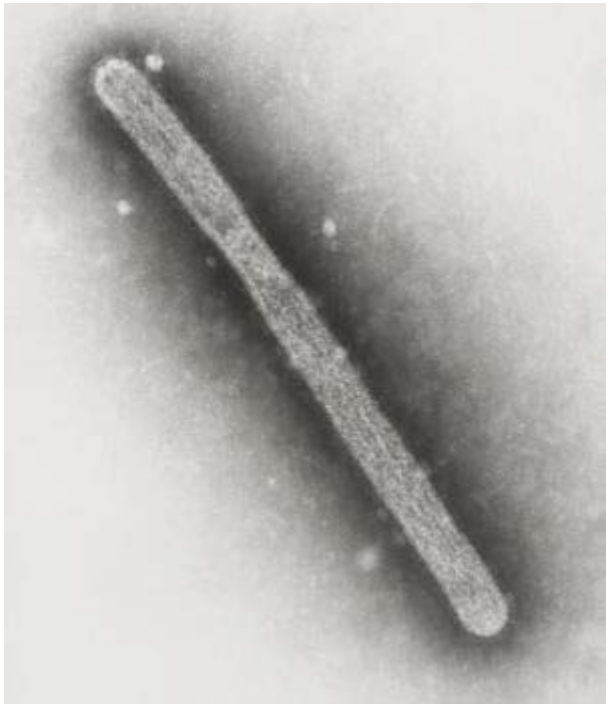
The most disturbing aspect of this high-stakes game is the default of the city and the public agencies involved: their failure to create--or is it simply disinterest?--a coordinated plan for a West Side bursting with development from Penn Station and Madison Square Garden to the Javits Center, allowing these cobbled up investment schemes to substitute for any appropriate, larger solutions.

The city thinks like a developer; that vision thing, the long-term overview, the balance of private investment and public utility and amenity, is just not there. The disposition of public land is expedited on the developers' terms even though the land is the most powerful negotiating tool of all--something so valuable in New York that builders would kill for it--and the Hudson Yards are an estimated $7 billion prize. It is accepted that whatever the plans are for these vast tracts of squandered opportunity, they will ultimately be controlled, compromised, or scuttled by the winner of the financial contest that is at the heart of the matter. New York will continue to sell itself short all the way to the bank.

Ms. Huxtable is the Journal's architecture critic.

http://www.opinionjournal.com/la/?id=110011068

Key To Avian Flu In Humans Discovered



This transmission electron micrograph (TEM), taken at a magnification of 150,000x, revealed the ultrastructural details of an avian influenza A (H5N1) virion, a type of bird flu virus which is a subtype of avian influenza A. At this magnification, one may note the stippled appearance of the roughened surface of the proteinaceous coat encasing the virion. (Credit: CDC/Cynthia Goldsmith/ Jackie Katz)

ScienceDaily (Jan. 7, 2008) — MIT researchers have uncovered a critical difference between flu viruses that infect birds and humans, a discovery that could help scientists monitor the evolution of avian flu strains and aid in the development of vaccines against a deadly flu pandemic.

The researchers found that a virus's ability to infect humans depends on whether it can bind to one specific shape of receptor on the surface of human respiratory cells.

"Now that we know what to look for, this could help us not only monitor the bird flu virus, but it can aid in the development of potentially improved therapeutic interventions for both avian and seasonal flu," said Ram Sasisekharan, MIT Underwood Prescott Professor of Biological Engineering and Health Sciences and Technology, and the senior author of a paper on the work that will appear in the Jan. 6 issue of Nature Biotechnology.

Flu viruses come in many strains, and not all of them can infect humans. Strains known as H1 or H3 have "jumped" from birds to humans and hence are tailored to attack cells of the human upper respiratory tract. H5 strains are usually confined to birds, but when they do infect humans they can have very high fatality rates.

In the past decade, isolated outbreaks of avian flu (H5N1) in humans have raised concerns that a deadly pandemic could arise if the avian flu evolves to a form that can easily infect humans and pass from person to person. Some scientists believe such an outbreak could rival the 1918 "Spanish flu" that killed 50 million to 100 million people worldwide.

Scientists already knew that whether an influenza virus infects humans depends on whether its hemagglutinin, a protein found on the virus surface, can bind to sugar (or glycan) receptors in the respiratory tract. Human respiratory cells have glycan receptors classified as alpha 2-6; avian respiratory cells' glycan receptors are known as alpha 2-3. This classification is based on how the sugars are linked together when they are displayed on cells.

Until now, scientists had believed that a genetic switch that allows the virus to bind to alpha 2-6 receptors instead of alpha 2-3 receptors is responsible for avian viruses' ability to jump to humans.

The MIT study shows that that view does not adequately explain how viruses evolve to infect humans. The new work reveals that, more specifically, it is the ability of a flu virus to bind to a certain shape, or topology, of specific alpha 2-6 glycan receptor that determines whether it will infect humans.

Alpha 2-6 glycan receptors come in two shapes-one that resembles an umbrella, and another that resembles a cone. The MIT team found that to infect humans, flu viruses must bind to the umbrella-shaped alpha 2-6 receptor.

Thus, Sasisekharan and his team have redefined the host receptor for influenza and the criteria for how H5N1 can jump to humans. They did so by showing that the shape of the sugars-and not the type of linkage-is the key determinant for human adaptation of these deadly viruses.

This new interpretation explains inconsistencies that plagued the previous model, according to Sasisekharan. For example, some flu strains that can bind to alpha 2-6 receptors do not infect humans very well. It turns out that those viruses bind to cone-shaped alpha 2-6 receptors, which are present in the human respiratory tract but in much smaller numbers than umbrella-shaped alpha 2-6 receptors.

This new paradigm should help researchers develop a better way to track the evolution of avian flu leading to human adaptation, Sasisekharan said. Now, they know to look for avian viruses that have evolved the ability to bind to umbrella-shaped alpha 2-6 receptors.

That knowledge could help them create vaccines tailored to combat a potential pandemic. Similarly, these findings will help in the development of more effective strategies for seasonal flu, which still is a leading cause of death.

"Subtle changes in influenza viruses over time can dramatically influence the likelihood that these viruses will be able to infect human populations, and this is a huge concern," said Jeremy Berg, director of the National Institute for General Medical Sciences, which funded the research. "This work enables researchers to look at flu viruses in an entirely new way. Dr. Sasisekharan's team achieved this through a multifaceted approach that combines laboratory experiments with the 'mining' of NIH-supported databases, leading to new insights into how the flu virus can adapt to a human host."

Other authors of the Nature Biotechnology paper are Terrence Tumpey of the Centers for Disease Control and Prevention; Aarthi Chandrasekaran, graduate student in MIT's Department of Biological Engineering (BE); Aravind Srinivasan and Karthik Viswanathan, postdoctoral associates in BE; Rahul Raman, research scientist in BE; S. Raguram, visiting scientist in BE; and Viswanathan Sasisekharan, visiting scientist in the Harvard-MIT Division of Health Sciences and Technology.

Adapted from materials provided by Massachusetts Institute of Technology.

http://www.sciencedaily.com/releases/2008/01/080106193222.htm

Scientists Restore Walking In Mice After Spinal Cord Injury

For the first time, a UCLA study shows that the central nervous system can reorganize itself and follow new pathways to restore the cellular communication required for movement after spinal cord injury. (Credit: iStockphoto/Mads Abildgaard)

ScienceDaily (Jan. 7, 2008) — Spinal cord damage blocks the routes that the brain uses to send messages to the nerve cells that control walking. Until now, doctors believed that the only way for injured patients to walk again was to re-grow the long nerve highways that link the brain and base of the spinal cord. For the first time, a UCLA study shows that the central nervous system can reorganize itself and follow new pathways to restore the cellular communication required for movement.

The discovery could lead to new therapies for the estimated 250,000 Americans who suffer from traumatic spinal cord injuries. An additional 10,000 cases occur each year, according to the Christopher and Dana Reeve Foundation, which helped fund the UCLA study.

"Imagine the long nerve fibers that run between the cells in the brain and lower spinal cord as major freeways," explained Dr. Michael Sofroniew, lead author and professor of neurobiology at the David Geffen School of Medicine at UCLA. "When there's a traffic accident on the freeway, what do drivers do? They take shorter surface streets. These detours aren't as fast or direct, but still allow drivers to reach their destination.

"We saw something similar in our research," he added. "When spinal cord damage blocked direct signals from the brain, under certain conditions the messages were able to make detours around the injury. The message would follow a series of shorter connections to deliver the brain's command to move the legs."

Using a mouse model, Sofroniew and his colleagues blocked half of the long nerve fibers in different places and at different times on each side of the spinal cord. They left untouched the spinal cord's

center, which contains a connected series of shorter nerve pathways. The latter convey information over short distances up and down the spinal cord.

What they discovered surprised them.

"We were excited to see that most of the mice regained the ability to control their legs within eight weeks," said Sofroniew. "They walked more slowly and less confidently than before their injury, but still recovered mobility."

When the researchers blocked the short nerve pathways in the center of the spinal cord, the regained function disappeared, returning the animals' paralysis. This step confirmed that the nervous system had rerouted messages from the brain to the spinal cord via the shorter pathways, and that these nerve cells were critical to the animal's recovery.

"When I was a medical student, my professors taught that the brain and spinal cord were hard-wired at birth and could not adapt to damage. Severe injury to the spinal cord meant permanent paralysis," said Sofroniew.

"This pessimistic view has changed over my lifetime, and our findings add to a growing body of research showing that the nervous system can reorganize after injury," he added. "What we demonstrate here is that the body can use alternate nerve pathways to deliver instructions that control walking."

The UCLA team's next step will be to learn how to entice nerve cells in the spinal cord to grow and form new pathways that connect across or around the injury site, enabling the brain to direct these cells. If the researchers succeed, the findings could lead to the development of new strategies for restoring mobility following spinal cord injury.

"Our study has identified cells that we can target to try to restore communication between the brain and spinal cord," explained Sofroniew. "If we can use existing nerve connections instead of attempting to rebuild the nervous system the way it existed before injury, our job of repairing spinal cord damage will become much easier."

Spinal cord injury involves damage to the nerves enclosed within the spinal canal; most injuries result from trauma to the vertebral column. This affects the brain's ability to send and receive messages below the injury site to the systems that control breathing, movement and digestion. Patients generally experience greater paralysis when injury strikes higher in the spinal column.

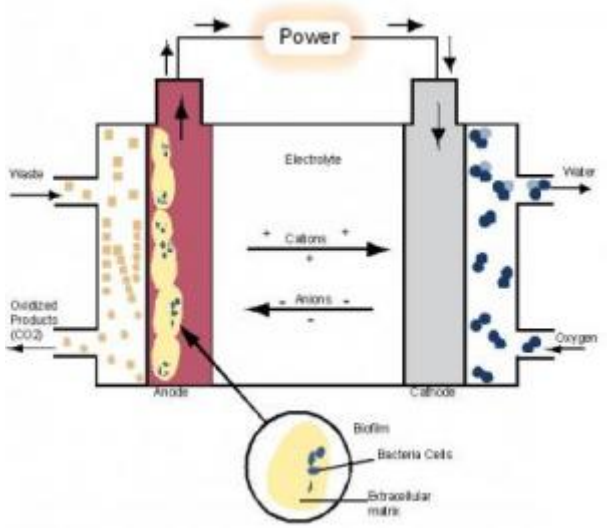
The full research is published in the January edition of Nature Medicine. Sofroniew's coauthors included Gregoire Courtine, Dr. Bingbing Song, Roland Roy, Hui Zhong, Julia Herrmann, Dr. Yan Ao, Jingwei Qi and Reggie Edgerton, all of UCLA

The UCLA study was supported by grants from the National Institute of Neurological Disease and Stroke, the Adelson Medical Foundation, the Roman Reed Spinal Cord Injury Research Fund of California and the Christopher and Dana Reeve Foundation.

Adapted from materials provided by University of California - Los Angeles.

http://www.sciencedaily.com/releases/2008/01/080106193147.htm

Fuel Cell That Uses Bacteria To Generate Electricity



Bacteria have evolved to utilize almost any chemical as a food source. In the microbial fuel cell, bacteria form a biofilm, a living community that is attached to the electrode by a sticky sugar and protein coated biofilm matrix. When grown without oxygen, the byproducts of bacterial metabolism of waste include carbon dioxide, electrons and hydrogen ions. Electrons produced by the bacteria are shuttled onto the electrode by the biofilm matrix, creating a thriving ecosystem called the biofilm anode and generating electricity. (Credit: Janelle Curtis, Biodesign Institute at Arizona State University)

ScienceDaily (Jan. 7, 2008) — Researchers at the Biodesign Institute are using the tiniest organisms on the planet 'bacteria' as a viable option to make electricity. In a new study featured in the journal Biotechnology and Bioengineering, lead author Andrew Kato Marcus and colleagues Cesar Torres and Bruce Rittmann have gained critical insights that may lead to commercialization of a promising microbial fuel cell (MFC) technology.

"We can use any kind of waste, such as sewage or pig manure, and the microbial fuel cell will generate electrical energy," said Marcus, a Civil and Environmental Engineering graduate student and a member of the institute's Center for Environmental Biotechnology. Unlike conventional fuel cells that rely on hydrogen gas as a fuel source, the microbial fuel cell can handle a variety of water-based organic fuels.

"There is a lot of biomass out there that we look at simply as energy stored in the wrong place," said Bruce Rittmann, director of the center. "We can take this waste, keeping it in its normal liquid form, but allowing the bacteria to convert the energy value to our society's most useful form, electricity. They get food while we get electricity."

Waste not

Bacteria have such a rich diversity that researchers can find a bacterium that can handle almost any waste compound in their daily diet. By linking bacterial metabolism directly with electricity production, the MFC eliminates the extra steps necessary in other fuel cell technologies. "We like to work with bacteria, because bacteria provide a cheap source of electricity," said Marcus.

There are many types of MFC reactors and research teams throughout the world. However, all reactors share the same operating principles. All MFCs have a pair of battery-like terminals: an anode and cathode electrode. The electrodes are connected by an external circuit and an electrolyte solution to help conduct electricity. The difference in voltage between the anode and cathode, along with the electron flow in the circuit, generate electrical power.

In the first step of the MFC, an anode respiring bacterium breaks down the organic waste to carbon dioxide and transfers the electrons released to the anode. Next, the electrons travel from the anode, through an external circuit to generate electrical energy. Finally, the electrons complete the circuit by traveling to the cathode, where they are taken up by oxygen and hydrogen ions to form water.

What is the matrix?

"We knew that the MFC process is relatively stable, but one of the biggest questions is: How do the bacteria get the electrons to the anode?" said Marcus. The bacteria depend on the anode for life. The bacteria at the anode breathe the anode, much like people breathe air, by transferring electrons to the anode. Because bacteria use the anode in their metabolism, they strategically position themselves on the anode surface to form a bacterial community called a biofilm.

Bacteria in the biofilm produce a matrix of material so that they stick to the anode. The biofilm matrix is rich with material that can potentially transport electrons. The sticky biofilm matrix is made up of a complex of extracellular proteins, sugars, and bacterial cells. The matrix also has been shown to contain tiny conductive nanowires that may help facilitate electron conduction.

"Our numerical model develops and supports the idea that the bacterial matrix is conductive," said Marcus. In electronics, conductors are most commonly made of materials like copper that make it easier for a current to flow through . "In a conductive matrix, the movement of electrons is driven by the change in the electrical potential." Like a waterfall, the resulting voltage drop in the electrical potential pushes the flow of electrons.

The treatment of the biofilm matrix as a conductor allowed the team to describe the transport of electrons driven by the gradient in the electrical potential. The relationship between the biofilm matrix and the anode could now be described by a standard equation for an electrical circuit, Ohm's law.

Within the MFC is a complex ecosystem where bacteria are living within a self-generated matrix that conducts the electrons. "The whole biofilm is acting like the anode itself, a living electrode," said Marcus. "This is why we call it the 'biofilm anode.'"

Life at the Jolt

The concept of the 'biofilm anode' allowed the team to describe the transport of electrons from bacteria to the electrode and the electrical potential gradient. The importance of electrical potential is well known in a traditional fuel cell, but its relevance to bacterial metabolism has been less clear. The next important concept the team had to develop was to understand the response of bacteria to the electrical potential within the biofilm matrix.

Bacteria will grow as long as there is an abundant supply of nutrients. Jacques Monod, one of the founding fathers of molecular biology, developed an equation to describe this relationship. While the team recognized the importance of the Monod equation for bacteria bathed in a rich nutrient broth, the challenge was to apply the Monod equation to the anode, a solid.

Previous studies have shown that the rate of bacterial metabolism at the anode increases when the electrical potential of the anode increases. The researchers could now think of the electrical potential as fulfilling the same role as a bacterial nutrient broth. The team recognized that the electrical potential is equivalent to the concentration of electrons; and the electrons are precisely what the bacteria transfer to the anode.

Equipped with this key insight, the team developed a new model, the Nernst-Monod equation, to describe the rate of bacterial metabolism in response to the "concentration of electrons" or the electrical potential.

Promise meeting potential

In their model, the team identified three crucial variables to controlling an MFC: the amount of waste material (fuel), the accumulation of biomass on the anode, and the electrical potential in the biofilm anode. The third factor is a totally novel concept in MFC research.

"Modeling the potential in the biofilm anode, we now have a handle on how the MFC is working and why. We can predict how much voltage we get and how to maximize the power output by tweaking the various factors," said Marcus. For example, the team has shown that the biofilm produces more current when the biofilm thickness is at a happy medium, not too thick or thin.

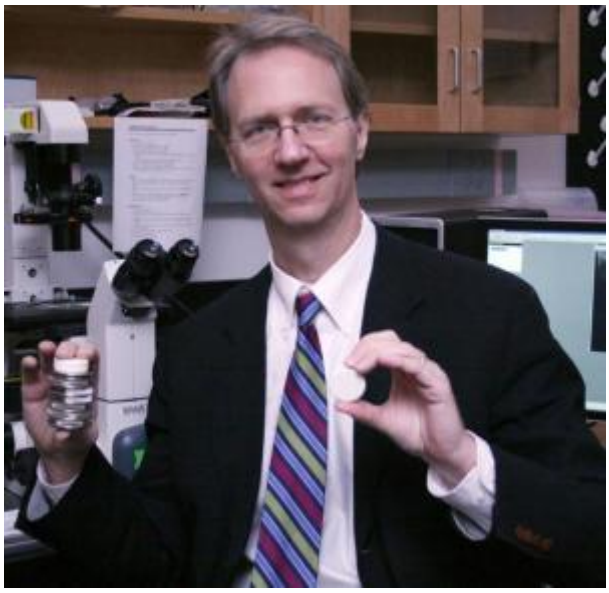
"If the biofilm is too thick," said Marcus, "the electrons have to travel too far to get to the anode. On the other hand, if the biofilm is too thin, it has too few bacteria to extract the electrons rapidly from the fuel."

To harvest the benefits of MFCs, the research team is using its innovative model to optimize performance and power output. The project, which has been funded by NASA and industrial partners OpenCEL and NZLegacy, lays out the framework for MFC research and development to pursue commercialization of the technology.

Adapted from materials provided by Arizona State University.

http://www.sciencedaily.com/releases/2008/01/080103101137.htm

Healing Value Of Magnets Demonstrated In Biomedical Engineering Study



Thomas Skalak holding magnets. (Credit: Melissa Maki)

ScienceDaily (Jan. 7, 2008) — A recent study demonstrates that the use of an acute, localized static magnetic field of moderate strength can result in significant reduction of swelling when applied immediately after an inflammatory injury. Magnets have been touted for their healing properties since ancient Greece. Magnetic therapy is still widely used today as an alternative method for treating a number of conditions, from arthritis to depression, but there hasn't been scientific proof that magnets can heal.

Lack of regulation and widespread public acceptance have turned magnetic therapy into a $5 billion world market. Hopeful consumers buy bracelets, knee braces, shoe inserts, mattresses, and other products that are embedded with magnets based on anecdotal evidence, hoping for a non-invasive and drug-free cure to what ails them.

"The FDA regulates specific claims of medical efficacy, but in general static magnetic fields are viewed as safe," notes Thomas Skalak, professor and chair of biomedical engineering at U.Va.

Skalak has been carefully studying magnets for a number of years in order to develop real scientific evidence about the effectiveness of magnetic therapy.

Skalak's lab leads the field in the area of microcirculation research—the study of blood flow through the body's tiniest blood vessels. With a five-year, $875,000 grant from the National Institutes of Health's National Center for Complementary and Alternative Medicine, Skalak and Cassandra Morris, former Ph.D. student in biomedical engineering, set out to investigate the effect of magnetic therapy on microcirculation. Initially, they sought to examine a major claim made by companies that sell magnets: that magnets increase blood flow.

The researchers first found evidence to support this claim through research with laboratory rats. In their initial study, magnets of 70 milliTesla (mT) field strength—about 10 times the strength of the common refrigerator variety—were placed near the rat's blood vessels. Quantitative measurements of blood vessel diameter were taken both before and after exposure to the static magnetic fields—the force created by the magnets. Morris and Skalak found that the force had a significant effect: the vessels that had been dilated constricted, and the constricted vessels dilated, implying that the magnetic field could induce vessel relaxation in tissues with constrained blood supply, ultimately increasing blood flow.

Dilation of blood vessels is often a major cause of swelling at sites of trauma to soft tissues such as muscles or ligaments. The prior results on vessel constriction led Morris and Skalak to look closer at whether magnets, by limiting blood flow in such cases, would also reduce swelling. Their most recent research, published in the November 2007 issue of the American Journal of Physiology, yielded affirmative results.

In this study, the hind paws of anesthetized rats were treated with inflammatory agents in order to simulate tissue injury. Magnetic therapy was then applied to the paws. The research results indicate that magnets can significantly reduce swelling if applied immediately after tissue trauma.

Since muscle bruising and joint sprains are the most common injuries worldwide, this discovery has significant implications. "If an injury doesn't swell, it will heal faster—and the person will experience less pain and better mobility," says Skalak. This means that magnets could be used much the way ice packs and compression are now used for everyday sprains, bumps, and bruises, but with more beneficial results. The ready availability and low cost of this treatment could produce huge gains in worker productivity and quality of life.

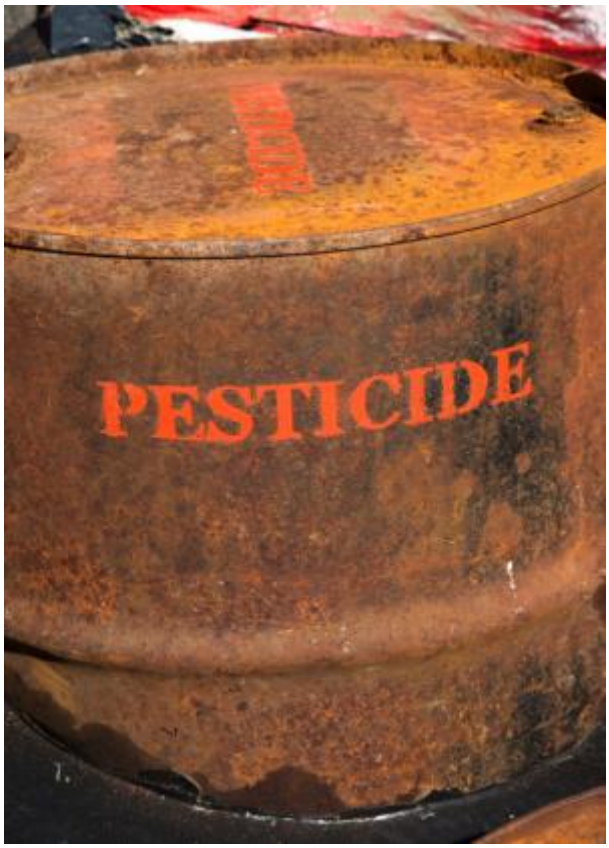
Skalak envisions the magnets being particularly useful to high school, college, and professional sports teams, as well as school nurses and retirement communities. He has plans to continue testing the effectiveness of magnets through clinical trials and testing in elite athletes. A key to the success of magnetic therapy for tissue swelling is careful engineering of the proper field strength at the tissue location, a challenge in which most currently available commercial magnet systems fall short. The new research should allow Skalak's biomedical engineering group to design field strengths that provide real benefit for specific injuries and parts of the body.

"We now hope to implement a series of steps, including private investment partners and eventually a major corporate partner, to realize these very widespread applications that will make a positive difference for human health," says Skalak.

Adapted from materials provided by University of Virginia.

http://www.sciencedaily.com/releases/2008/01/080103132307.htm

Potentially Harmful Pesticides Found In All Human Subjects Tested



All 387 adults analyzed had at least one kind of persistent organic compound, substances internationally classified as potentially harmful to one's health, in their bodies. These substances enter the body through food, water or even air. All of them tend to accumulate in human fat tissue. (Credit: iStockphoto/Vladislav Gurfinkel)

ScienceDaily (Jan. 6, 2008) — A study carried out by researchers from the Department of Radiology and Physical Medicine of the University of Granada, in collaboration with the Escuela Andaluza de Salud Pública, found that 100% of Spaniards analyzed had at least one kind of persistent organic compound (POC´s), substances internationally classified as potentially harmful to one's health, in their bodies. These substances enter the body through food, water or even air. All of them tend to accumulate in human adipose tissue and easily enter into the organism through the aforementioned mediums.

The study, conceived by Juan Pedro Arrebola Moreno and directed by professors Piedad Martín Olmedo, Nicolás Olea Serrano and Mariana F. Fernández Cabrera, measured the contamination levels of some persistent organic compounds (POC's) in a sample of the adult population from two areas, an urban one (Granada capital city) and a semi-rural one (Motril), and intended to find the determining factors associated with such levels: diet, lifestyle, activities or residence.

A total of 387 adults, from both sexes, were volunteers for surgeries in hospitals taking part in the study (Santa Ana de Motril and San Cecilio de Granada hospital). Once the volunteers had given consent, a sample of their human adipose tissue (fat) was taken during surgery and they answered a questionnaire about their place of residence, lifestyle, eating habits and activities throughout their life.

Analysis of 6 POC´s

The researchers analyzed the samples and measured 6 different POC concentration levels: DDE, a principal metabolite in DDT (a pesticide used in Spain until the 80´s); hexachlorobenzene, a compound used as fungicide and currently released by industrial processes; PCB's: compounds related to industrial processes; and Hexaclorociclohexano, used as an insecticide and currently used in scabies and pediculosis treatment.

The study carried out by the University of Granada concluded that 100% of subjects analyzed had DDE in their bodies, a substance banned in Spain, and other very frequent components such as PCB-153 (present in 92% of people), HCB (91%), PCB-180 (90%), PCB-138 (86%9) and HCH (84%).

Juan Pedro Arrebola Moreno explains that higher levels of toxic substances were detected in women compared to men and in older volunteers compared to younger people, "possibly due to the great persistence of these substances in the environment, which results in their biomagnification in the food chain and in their bioaccumulation over time". The scientist added that there is another theory known as "Efecto Cohorte" (Cohort effect) that explains the high quantities of these substances in older people. According to this theory, those born in periods of higher contamination suffered the consequences more than those born with the current bans on such pesticides.

impact of diet

This study indicates that diet is an important factor in POC concentration, as the ingestion of some aliments, particularly those of animal origin and high fat content, triggers a greater presence of these toxic substances in the human organism.

Juan Pedro Arrebola Moreno states, "There are few studies in Spain measuring POC levels in wide samples of the population, which means that some compound levels in the general population are unknown". Consequently, this study will improve the knowledge of such levels, and will identify those groups at higher risk of exposure, which is the first step for subsequent follow-up studies determining the cause-effect relations.

This study is part of a project subsidized by the FIS (Sanitarian Investigation Fund) and by the Andalusian Regional Government, and in which the University of Granada, the Escuela Andaluza de Salud Pública, and the Santa Ana and San Cecilio Hospitals take part.

Adapted from materials provided by University of Granada.

http://www.sciencedaily.com/releases/2008/01/080104102807.htm

Chemical In Red Wine, Fruits And Vegetables Counters Unhealthy Effects Of High-fat Foods

Consuming polyphenols (natural compounds in red wine, fruits, and vegetables) while eating high-fat foods may reduce health risks associated with high fat foods. (Credit: iStockphoto/Diane Diederich)

ScienceDaily (Jan. 6, 2008) — Just as additives help gasoline burn cleaner, a new research report shows that the food industry could take a similar approach toward reducing health risks associated with fatty foods. These "meal additives" would be based on work of Israeli researchers who discovered that consuming polyphenols (natural compounds in red wine, fruits, and vegetables) simultaneously with high-fat foods may reduce health risks associated with these foods.

"We suggest a new hypothesis to explain polyphenols," said Joseph Kanner, senior author of the report. "For the first time, these compounds were demonstrated to prevent significantly the appearance of toxic food derivative compounds in human plasma." For the study, six men and four women were fed three different meals consisting of dark meat turkey cutlets. One meal, the control, consisted of turkey meat and water. The second meal consisted of turkey meat with polyphenols added after cooking (one tablespoon of concentrated wine) followed with a glass of red wine (about 7 ounces). The third meal consisted of turkey meat with polyphenols added before cooking and then followed by a glass of wine.

At various points during the study, researchers took blood and urine samples to measure levels of malondialdehyde (MDA), a natural byproduct of fat digestion known to increase the risk for heart disease and other chronic conditions. The researchers found that MDA levels nearly quintupled after the control meal, while MDA was nearly eliminated after subjects consumed the meals with polyphenols. "As long as deep fried candy bars are on menus, scientists will need to keep serving up new ways to prevent the cellular damage caused by these very tasty treats," said Gerald Weissmann, MD, Editor-in-Chief of The FASEB Journal. "This study suggests that the time will come where people can eat french fries without plugging their arteries."

This research was published in the January 2008 print issue of The FASEB Journal.

Adapted from materials provided by Federation of American Societies for Experimental Biology.

http://www.sciencedaily.com/releases/2008/01/080102083757.htm

How One Pest Adapted To Life In The Dark

The red flour beetle (Tribolium castaneum) is a common pest, about one-eighth-inch long, that attacks milled grain products such as flour and cereals. This beetle, that lives in the dark, has lost photoreceptors that are sensitive to blue wavelengths. (Credit: Peggy Greb, USDA Agricultural Research Service, Bugwood.org)

ScienceDaily (Jan. 6, 2008) — A type of beetle that lives its entire life burrowing through stored grain has been found to lack full colour vision, and what's more the vision it does have breaks the rules. Most other insects have trichromatic vision -- they are sensitive to ultraviolet, blue and long wavelength light. Scientists now reveal that this beetle has lost photoreceptors that are sensitive to blue wavelengths. The red flour beetle (Tribolium castaneum) is a common pest that attacks milled grain products such as flour and cereals. It is a cryptozoic insect, meaning that it lives in the dark. Markus Friedrich from Wayne State University in Detroit, along with colleagues from St Louis and Cincinnati, performed genetic analyses to probe the evolution of the species' vision.

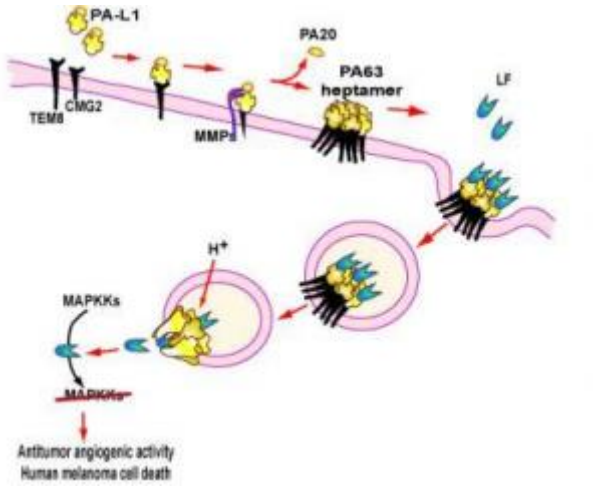
The opsin gene family is central to vision. The authors found that the beetle's compound eye retina lacked the blue-opsin encoding photoreceptors. Their work also identified the red flour beetle as the first example of an insect species that switches on two opsin genes across the entire retina. This co-expression of genes violates the 'one receptor rule' of sensory cells. The research suggests that the beetle may have gained an evolutionary advantage through this adaptation. Dr Friedrich states that the work "raises the possibility that opsin co-expression is of advantage under conditions where brightness sensitivity is critical."

The study points the way to broader studies of the development and biology of this pest species. It also suggests that the red flour beetle may be a promising subject for further investigation of cryptozoic animals' evolution. Journal reference: Genomic and gene regulatory signatures of cryptozoic adaptation: loss of blue sensitive photoreceptors through expansion of long wavelength-opsin expression in the red flour beetle Tribolium castaneum. Magdalena Jackowska, Riyue Bao, Zhenyi Liu, Elizabeth C. McDonald, Tiffany A. Cook, and Markus Friedrich. Frontiers in Zoology (in press)

Adapted from materials provided by BioMed Central.

http://www.sciencedaily.com/releases/2007/12/071221094847.htm

Turning Anthrax Toxin Into A Cancer Killer



After binding to cell surface markers, the MMP-activated PA protein (PA-L1) is cleaved by surface associated MMPs, releasing the PA20 fragment. The remaining receptor-bound fragment rapidly oligomerizes to form a heptamer. Up to three molecules of anthrax lethal factor (LF) bind to the heptamer, which is then internalized. Once inside the cell, the complex encounters an acidic environment, which induces a conformational change and allows the LF to enter the cytosol. LF released into the cytosol shuts down multiple signaling pathways, leading to inhibition of tumor angiogenesis and human melanoma cell death. (Credit: Image created by Drs. Shihui Liu, Mahtab Moayeri, and Stephen H. Leppla)

ScienceDaily (Jan. 5, 2008) — Most people wouldn't consider anthrax toxin to be beneficial, but this bacterial poison may someday be an effective cancer therapy. Anthrax toxin has actually been shown to be fairly selective in targeting melanoma cells, although the risk of non-cancer toxicity prevents any clinical use.

To develop a better and safer treatment, Stephen Leppla and colleagues created a mutated antrax toxin that could only be turned on by matrix metalloproteinases (MMP), proteins that are overproduced only in cancer cells.

When they tested this mutated toxin in mice, the researchers observed that 100% of the animals tolerated a dose that would be lethal for the natural toxin. The MMP-toxin was also better at killing melanoma tumors than natural toxin, due to its higher specificity and longer half-life in the blood.

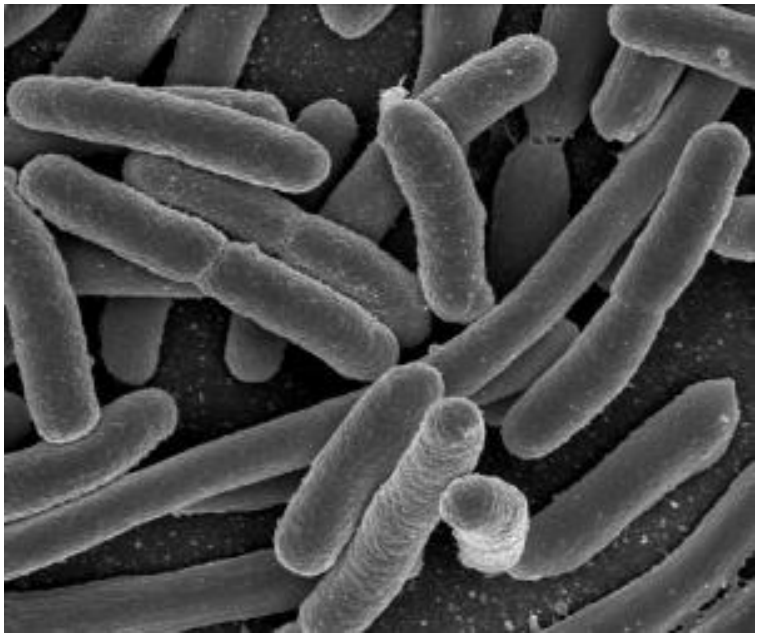
Even better, Leppla and colleagues saw that MMP-toxin was not limited to melanoma, and could also kill other tumors like colon and lung. This more widespread activity was due to the toxin's ability to inhibit angiogenesis, or the formation of new blood vessels.

These encouraging mouse results suggest that modified anthrax toxin could be clinically viable, and this potent killer might someday be put to good use.

Adapted from materials provided by American Society for Biochemistry and Molecular Biology.

http://www.sciencedaily.com/releases/2007/12/071231111915.htm

Efficient Biofuel Made From Genetically Modified E. Coli Bacteria



Researchers have genetically modified Escherichia coli bacteria to make it an efficient biofuel synthesizer. (Credit: Rocky Mountain Laboratories, NIAID, NIH)

ScienceDaily (Jan. 7, 2008) — Researchers at the UCLA Henry Samueli School of Engineering and Applied Science have developed a new method for producing next-generation biofuels by genetically modifying Escherichia coli bacteria to be an efficient biofuel synthesizer. The method could lead to mass production of these biofuels.

Concerns about long-term fossil fuel availability, coupled with environmental problems resulting from their production and use, have spurred increased efforts to synthesize biofuels from renewable resources.

Biofuels, like commercially available ethanol, are produced from agricultural products such as corn, sugarcane or waste cellulose. Ethanol, however, has limitations — it is not as efficient as gasoline and must be mixed with gas for use as a transportation fuel. It also tends to absorb water from its surroundings, making it corrosive and preventing it from being stored or distributed in existing infrastructure without modification.

Higher-chain alcohols have energy densities close to gasoline, are not as volatile or corrosive as ethanol, and do not readily absorb water. Furthermore, branched-chain alcohols, such as isobutanol, have higher-octane numbers, resulting in less knocking in engines. Isobutanol or C5 alcohols have never been produced from a renewable source with yields high enough to make them viable as a gasoline substitute.

A new strategy has been developed by UCLA professor of chemical and biomolecular engineering James Liao, postdoctoral fellow Shota Atsumi and visiting professor Taizo Hanai.

"These alcohols are typically trace byproducts in fermentation," Liao said. "To modify an organism to produce these compounds usually results in toxicity in the cell. We bypassed this difficulty by leveraging the native metabolic networks in E. coli but altered its intracellular chemistry using genetic engineering to produce these alcohols."

The research team modified key pathways in E. coli to produce several higher-chain alcohols from glucose, a renewable carbon source, including isobutanol, 1-butanol, 2-methyl-1-butanol, 3-methyl-1-butanol and 2-phenylethanol.

This strategy leverages the E. coli host's highly active amino acid biosynthetic pathway by shifting part of it to alcohol production. In particular, the research team achieved high-yield, high-specificity production of isobutanol from glucose.

This new strategy opens an unexplored frontier for biofuels production, both in coli and in other microorganisms.

"The ability to make these branched-chain higher alcohols so efficiently is surprising," Liao said. "Unlike ethanol, organisms are not used to producing these unusual alcohols, and there is no advantage for them to do so. The fact that they can be made by E. coli is even more surprising, since E. coli is not a promising host to tolerate alcohols. These results mean that these unusual alcohols in fact can be manufactured as efficiently as what evolved in nature for ethanol. Therefore, we now can explore these unusual alcohols as biofuels and are not bound by what nature has given us."

UCLA has licensed the technology through an exclusive royalty-bearing license to Gevo Inc., a Pasadena, Calif.-based company founded in 2005 and dedicated to producing biofuels.

"Given that part of UCLA's mission is to transfer technologies to the commercial sector to benefit the public, we are excited at the prospect that this UCLA-developed technology may play a key role in addressing climate change and energy independence," said Earl Weinstein, assistant director of the UCLA Office of Intellectual Property. "It has been a pleasure to work with the team at Gevo on this deal, and we look forward to an ongoing relationship with them".

"This discovery leads to new opportunities for advanced biofuel development," said Patrick Gruber, Gevo's chief executive officer. "As the exclusive licensee of this technology, we can further our national interests in developing advanced renewable resource-based fuels that will help address the issues of climate change and future energy needs while creating a significant competitive advantage."

Liao has joined Gevo's scientific advisory board. In this role, he will continue to provide technical oversight and guidance during the commercial development of this technology.

"Dr. Liao's input will be invaluable as we scale up the commercial applications made possible by this breakthrough in technology and bring advanced biofuels to market," said Matthew Peters, chief scientific officer of Gevo.

Full details of the research appear in the Jan. 3 issue of the journal Nature.

The research was supported in part by the UCLA–Department of Energy Institute for Genomics and Proteomics and the UCLA–NASA Institute for Cell Mimetic Space Exploration.

Adapted from materials provided by University of California, Los Angeles.

http://www.sciencedaily.com/releases/2008/01/080106202952.htm

Plate Tectonics May Grind To A Halt, Then Start Again

Pacific Ocean off California. Most of today's subduction zones are located in the Pacific Ocean basin. If the Pacific basin were to close then most of the planet's subduction zones would disappear with it. (Credit: Michele Hogan)

ScienceDaily (Jan. 7, 2008) — Plate tectonics, the geologic process responsible for creating the Earth's continents, mountain ranges, and ocean basins, may be an on-again, off-again affair. Scientists have assumed that the shifting of crustal plates has been slow but continuous over most of the Earth's history, but a new study from researchers at the Carnegie Institution suggests that plate tectonics may have ground to a halt at least once in our planet's history--and may do so again.

A key aspect of plate tectonic theory is that on geologic time scales ocean basins are transient features, opening and closing as plates shift. Basins are consumed by a process called subduction, where oceanic plates descend into the Earth's mantle. Subduction zones are the sites of oceanic trenches, high earthquake activity, and most of the world's major volcanoes.

Writing in the January 4 issue of Science, Paul Silver of the Carnegie Institution's Department of Terrestrial Magnetism and former postdoctoral fellow Mark Behn (now at Woods Hole Oceanographic Institution) point out that most of today's subduction zones are located in the Pacific Ocean basin. If the Pacific basin were to close, as it is predicted to do about in 350 million years when the westward-moving Americas collide with Eurasia, then most of the planet's subduction zones would disappear with it.

This would effectively stop plate tectonics unless new subduction zones start up, but subduction initiation is poorly understood. "The collision of India and Africa with Eurasia between 30 and 50 million years ago closed an ocean basin known as Tethys," says Silver. "But no new subduction zones have initiated south of either India or Africa to compensate for the loss of subduction by this ocean closure."

Silver and Behn also present geochemical evidence from ancient igneous rocks indicating that around one billion years ago there was a lull in the type of volcanic activity normally associated with subduction. This idea fits with other geologic evidence for the closure of a Pacific-type ocean basin at that time, welding the continents into a single "supercontinent" (known to geologists as Rodinia) and possibly snuffing out subduction for a while. Rodinia eventually split apart when subduction and plate tectonics resumed.

Plate tectonics is driven by heat flowing from the Earth's interior, and a stoppage would slow the rate of the Earth's cooling, just as clamping a lid on a soup pot would slow the soup's cooling. By periodically clamping the lid on heat flow, intermittent plate tectonics may explain why the Earth has lost heat slower than current models predict. And the buildup of heat beneath stagnant plates may explain the occurrence of certain igneous rocks in the middle of continents away from their normal locations in subduction zones.

"If plate tectonics indeed starts and stops, then continental evolution must be viewed in an entirely new light, since it dramatically broadens the range of possible evolutionary scenarios," says Silver.

Adapted from materials provided by Carnegie Institution.

http://www.sciencedaily.com/releases/2008/01/080103144448.htm

Helium Supplies Endangered, Threatening Science And Technology

Helium is drifting away. (Credit: iStockphoto)

ScienceDaily (Jan. 5, 2008) — In America, helium is running out of gas.

The element that lifts things like balloons, spirits and voice ranges is being depleted so rapidly in the world's largest reserve, outside of Amarillo, Texas, that supplies are expected to be depleted there within the next eight years.

This deflates more than the Goodyear blimp and party favors. Its larger impact is on science and technology, according to Lee Sobotka, Ph.D., professor of chemistry and physics in Arts & Sciences at Washington University in St. Louis.

"Helium's use in science is extremely broad, but its most important use is as a coolant," said Sobotka, a specialist in nuclear chemistry and physics who collaborates with researchers at several national laboratories.

Generally the larger users of helium (He), such as the national laboratories, have the infrastructure to efficiently use and recycle helium, Sobotka said. The same cannot be said of many smaller scale users.

Helium plays a role in nuclear magnetic resonance, mass spectroscopy, welding, fiber optics and computer microchip production, among other technological applications. NASA uses large amounts annually to pressurize space shuttle fuel tanks.

"Helium is non-renewable and irreplaceable. Its properties are unique and unlike hydrocarbon fuels (natural gas or oil), there are no biosynthetic ways to make an alternative to helium. All should make better efforts to recycle it."

Drift away

The helium we have on Earth has been built up over billions of years from the decay of natural uranium and thorium. The decay of these elements proceeds at a super-snail's pace. For example, one of the most important isotopes for helium production is uranium-238. In the entire life span of the earth only half of the uranium-238 atoms have decayed (yielding eight helium atoms in the process) and an inconsequential fraction decay in about 1,000 years.

As the uranium and thorium decay, some of the helium is trapped along with natural gas deposits in certain geological formations. Some of the produced helium seeps out of the Earth's mantle and drifts

into the atmosphere, where there is approximately five parts per million of helium. However this helium, as well as any helium ultimately released into the atmosphere by users, drifts up and is eventually lost to the Earth.

Helium is applied broadly in science and technology, from nuclear magnetic resonance to computer microchip production and devices like this mass spectroscopy apparatus.

"When we use what has been made over the approximate 4.5 billion of years the Earth has been around, we will run out," Sobotka said . "We cannot get too significant quantities of helium from the sun — which can be viewed as a helium factory 93 million miles away — nor will we ever produce helium in anywhere near the quantities we need from Earth-bound factories. Helium could eventually be produced directly in nuclear fusion reactors and is produced indirectly in nuclear fission reactors, but the quantities produced by such sources are dwarfed by our needs."

Unlike any other element, helium 4 (two protons, two neutrons) becomes a liquid below 4.2 Kelvin, just four degrees short of absolute zero. When one puts an object next to liquid helium, energy is extracted from the object, making it colder. The energy extracted from the object vaporizes the helium. It is this helium vapor which, Sobotka claims, should always be recaptured, to be recycled for future use.

Much of the world's supply of helium lies in a reserve in the Texas Panhandle, better known for the locales of Larry McMurtry's novels, such as "The Last Picture Show," and "Texasville," than as an elemental factory farm.

Scientists haven't even approached mining helium out of the air because costs are too prohibitive.

A rebel, a loner

Both hydrogen and helium, the first two elements on the Periodic Table are very abundant in the universe (about 92 percent and about 8 percent of the atoms, respectively). Helium is rare on Earth while hydrogen is abundant. The reason is that helium is a rebel, a loner, and it does not combine with other atoms while hydrogen does. Hydrogen is one of the two elements that make water. Under standard conditions, there are no combined or molecular forms of helium.

"It's the most Noble of gases, meaning it's very stable and non-reactive for the most part," Sobotka said. "Helium has a closed electronic configuration, a very tightly bound atom. If you try to extract an electron from helium, you pay a lot of energy to pull it off. It's very high in ionization energy. It is this coveting of its own electrons that prevents combination with other elements."

In addition to the Texas panhandle, helium can be found in small regions of Colorado, Kansas and Oklahoma. It is marketed in Australia and Algeria. And Russia has the world's largest reserves of natural gas, where helium certainly exists. But there is no push to market it, as, for the short term, supplies are adequate, though increasingly costly.

Sobotka believes that Russia will be the world's major source of helium in 30 years.

The price of liquid helium is about $5 per liter, having gone up more than 50 percent over the past year because of what Sobotka calls "conventional" economics. He cited the withdrawal of some companies from the marketplace, and the emergence of others that are not yet in production, as the driving force behind higher prices, and (as yet) a scarcity of the element.

Helium capture in the United States began after World War I, when the primary use of the gas was for dirigibles. Because helium is non-flammable, its use in balloons prevented another Hindenburg tragedy. The U.S. government ran the helium industry for 70 years, but since the mid-90s it has been in the domain of the oil and natural gas industries.

Tell it like it is

"The government had the good vision to store helium, and the question now is: Will industry have the vision to capture it when extracting natural gas, and consumers the wisdom to capture and recycle?" Sobotka said. "This takes long-term vision because present market forces are not sufficient to compel prudent practice."

Helium plays second fiddle to marketing oil and natural gas, and much of it is lost in a process that removes noncombustible nitrogen and helium from the product of prime interest.

"When they stick that straw into the ground to suck out oil and gas, the helium comes out, and if it doesn't get captured it drifts into the atmosphere and is lost," Sobotka said. "Helium production is a side industry to oil and natural gas, an endeavor that nobody wants to lose money on."

Meanwhile, laboratories worldwide could make better attempts at conserving helium. They can either use costly machines called liquefiers that can capture, store and reliquefy helium on site, or researchers can take captured helium in gas form, return it to the company that originally sold it to them and receive a monetary return, just as in a deposit on a bottle.

"We have to be thinking of these things," he said. "Up to now, the issue often hasn't risen to the level that it's important. It's a problem for the next generation of scientists. But it's incumbent upon us to have a vision, and tell it like it is — a resource that is more strictly non-renewable than either oil or gas."

Adapted from materials provided by Washington University in St. Louis.

http://www.sciencedaily.com/releases/2008/01/080102093943.htm

Low-energy bulb disposal warning

Low-energy bulbs contain a small amount of mercury

Disposing of bulbs safely

The Environment Agency has called for more information to be made available on the health and environmental risks posed by low-energy light bulbs.

It says because the bulbs contain small amounts of mercury, more information about safe recycling is needed.

It also wants health warnings printed on packaging and information on how to clear up smashed bulbs in the home.

But a toxicologist has played down the risks, saying several bulbs would have to be smashed at once to pose a danger.

Toxic substance

Environmental scientist Dr David Spurgeon said: "Because these light bulbs contain small amounts of mercury they could cause a problem if they are disposed of in a normal waste-bin.

"It is possible that the mercury they contain could be released either into the air or from land-fill when they are released into the wider environment.

"That's a concern, because mercury is a well known toxic substance."

If you broke five bulbs in a small unventilated room then you might be in short term danger
Dr David Ray, toxicologist

Official advice from the Department of the Environment states that if a low-energy bulb is smashed, the room needs to be vacated for at least 15 minutes.

A vacuum cleaner should not be used to clear up the debris, and care should be taken not to inhale the dust.

Instead, rubber gloves should be used, and the broken bulb put into a sealed plastic bag - which should be taken to the local council for disposal.

Unbroken used bulbs can be taken back to the retailer if the owner is a member of the Distributor Takeback Scheme.

Otherwise, many local waste disposal sites now have the facilities to safely collect and dispose of old bulbs.

However, this advice is not printed on the packaging that low-energy bulbs are sold in.

Toxicologist Dr David Ray, from the University of Nottingham, said about 6-8mg of mercury was present in a typical low-energy bulb, which he described as a "pretty small amount".

"Mercury accumulates in the body - especially the brain," he said. "The biggest danger is repeated exposure - a one off exposure is not as potentially dangerous compared to working in a light bulb factory.

"If you smash one bulb then that is not too much of a hazard. However, if you broke five bulbs in a small unventilated room then you might be in short term danger."

Information campaign

Adrian Harding of the Environment Agency said: "More information does need to be made available by retailers, local authorities and the government to alert people to the best way of dealing with these products when they become waste."

Louise Molloy from the environmental group Greenpeace said that a public information campaign was needed in order to advise people how to dispose of low-energy bulbs safely.

But she added: "Rather than being worried about the mercury these light bulbs contain, the general public should be reassured that using them will actually reduce the amount of mercury overall in our atmosphere."

The lighting industry and the government say the risk of mercury pollution posed by low-energy bulbs is minimal.

Kevin Verdun of the Lighting Association said: "Fluorescent strips, like the ones used in garages and kitchens, also contain mercury and have been used for many years without poisoning anyone."

But he said that warnings on how to safely dispose of smashed bulbs "might" be put on packaging in future, if the government and the public demanded it.

This month shops in the UK will begin the process of phasing out traditional tungsten bulbs as part of a government plan to completely replace them by 2011.

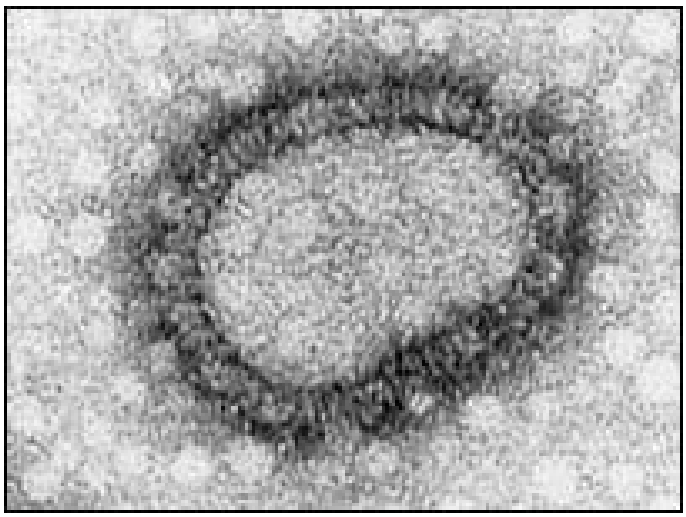
Ministers hope that using the more environmentally-friendly bulbs will save at least save 5m tonnes-worth of carbon dioxide emissions every year.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/uk_news/7172662.stm

Published: 2008/01/05 14:09:41 GMT

Universal flu jab works in people

A single jab that could give lifelong protection against all types of flu has produced promising results in human trials.



The vaccine, made by Acambis, should protect against all strains of influenza A - the cause of pandemics.

Currently, winter flu jabs have to be regularly redesigned because the flu virus keeps changing.

The new vaccine would overcome this and could be stockpiled in advance of a bird flu outbreak, say experts.

Promising results

Each year winter flu kills around 4,000 people in the UK.

Globally, between 500,000 and one million people die each year from influenza.

But a pandemic of the human form of bird flu, which experts believe is inevitable, could kill as many as 50m people worldwide.

The US trials show that the jab is safe and it works fast to make the body immune against flu.

> **It could be stockpiled in advance of a pandemic**
> Dr Michael Watson of Acambis

Nine out of 10 of those who had two doses of the jab ACAM-FLU-A developed antibodies against flu virus.

Scientists at Acambis are now working to perfect the formulation before doing larger human trials.

Dr Michael Watson of Acambis said: "As a universal vaccine, ACAM-FLU-A can potentially overcome many of the drawbacks of existing influenza vaccines.

"It can be manufactured at any time of the year, and could be stockpiled in advance of a pandemic or potentially used routinely to ensure population protection against future pandemics."

Unique action

Current flu vaccines work by giving immunity to two proteins called haemagglutinin and neuraminidase, which are found on the surface of flu viruses.

However, these proteins keep mutating which means doctors have to keep making new vaccines to keep up.

The Acambis vaccine homes in on a different protein, called M2, which is found on the surface of all A-strains of flu and does not appear to mutate so readily.

Professor Ian Jones, a University of Reading virologist, said the jab could end the scramble to produce a new winter jab each year.

But he said it would still be some years before it was widely available for patients.

"Larger trials and tests on a wider range of viruses will be needed before the full potential for pandemic protection can be assured," he said.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7171118.stm

Published: 2008/01/04 10:18:31 GMT

Gates hails age of digital senses

Touch will become an important interface for PCs, Mr Gates said

The way people interact with computers is going to dramatically change in the next five years, Microsoft chief Bill Gates has told BBC News.

He predicted that the keyboard and mouse would gradually give way to more intuitive and natural technologies.

In particular, he said, touch, vision and speech interfaces would become increasingly important.

Mr Gates made his comments whilst answering questions from BBC News website readers.

"This whole idea of what I call natural user interface is really redefining the experience," he said.

FROM DOT.LIFE BLOG
I've just emerged from the Microsoft machine, shaken but unscathed
Rory Cellan-Jones, BBC technology correspondent

"We're adding the ability to touch and directly manipulate, we're adding vision so the computer can see what you're doing, we're adding the pen, we're adding speech," he told BBC News.

During the interview Mr Gates showed off the Microsoft Surface computer, a large table like machine with a multi-touch interface.

"I'll be brave, in five years we'll have many tens of million of people sitting browsing their photos, browsing their music, organising their lives using this type of touch interface," he said.

Mr Gates expanded on this theme of natural interfaces during the CES keynote speech he made on the first day of the hi-tech fair.

Citing the success of the iPhone and the controller for the Nintendo Wii game console, Mr Gates said such interfaces were a big hit with consumers.

Vista versions

Although Microsoft Windows has become the most widely used operating system in the world, Mr Gates admitted, in answer to readers questions, that he had not always got things right.

"People thought we were late with the [web] browser," he admitted.

In addition, he said, search was an area where people thought that Microsoft had not fulfilled expectations.

"Google has done a good job," he said. "We expect to surprise people that we can match and even do better there - people should wait and see."

Mr Gates also answered questions about Windows Vista, the firm's often-criticised operating system, launched last year.

"I'm very proud of Vista," he said. "Like all of the products we ship, we hear how we could do this differently or that differently."

He said the firm had received "lots of feedback" on the software.

"We do downloads and improvements all of the time and of course there'll be a major new version coming along," he said.

Microsoft has just announced that it has sold 100 million licences for the operating system.

During the questions and answer session he also revealed his own computer habits.

"There are a lot of PCs in my house - over 10," he said.

In particular, he said, he used a tablet PC, a notebook computer that is operated with a digital stylus.

However, he said, he does not use his competitor's products.

"There are no Macs in my house," he admitted.

The future of technology at the Consumer Electronics Show 2008
Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/technology/7174333.stm

Published: 2008/01/07 00:15:36 GMT

One laptop project loses partner
Intel has pulled out of a project to put cheap laptops in the hands of children in the developing world.

Citing "philosophical" differences, Intel has withdrawn its funding and technical help from the One Laptop Per Child (OLPC) project.

OLPC aimed to boost learning in poorer nations via a custom-built laptop intended to cost no more than $100.

Intel's withdrawal is a blow to OLPC which has found few nations willing to buy large numbers of laptops.

Machine code

Intel joined the OLPC in July 2007 and was widely expected to work on a version of the project's laptop that used an Intel chip. Many expected this machine to be unveiled at the CES technology fair which opens in Las Vegas on 5 January.

The first versions of the OLPC or XO laptop were powered by a chip made by Intel's arch-rival AMD.

FROM THE DOT.LIFE BLOG
OLPC was always going to face an uphill battle when confronted with a mighty corporation like Intel
Rory Cellan-Jones, BBC technology correspondent

The green and white XO machine was designed specifically for children, was made rugged to cope with conditions in developing nations and could be kept powered using a hand crank.

Intel spokesman Chuck Mulloy said it had taken the decision to resign from the OLPC board and end its involvement because the organisation had asked it to stop backing rival low-cost laptops.

On the OLPC board with Intel are 11 other companies including Google and Red Hat.

The chip maker has been promoting its own cheap laptop, the Classmate, in many of the same places as the OLPC.

"OLPC had asked Intel to end our support for non-OLPC platforms, including the Classmate PC, and to focus on the OLPC platform exclusively," said Mr Mulloy . "At the end of the day, we decided we couldn't accommodate that request."

He added that the use of AMD chips in the first XO laptops had not influenced its decision.

Commenting on the split an OLPC spokeswoman said: "We at OLPC have been disappointed that Intel could not deliver on any of the promises they made when they joined OLPC; while we were hopeful for a positive, collaborative relationship, it never materialised."

She added: "The benefit to the departure of Intel from the OLPC board is a renewed clarity in purpose and the marketplace."

Prior to Intel's involvement, OLPC founder Nicholas Negroponte criticised the chip firm for what he called its attempts to undermine the project's work.

He said Intel was selling its Classmate at a loss to make the XO laptop less attractive.

While Dr Negroponte's initial aim was for a laptop costing only $100, the final versions that have been trialled in Nigeria and Uruguay cost $188 (£95).

Costs were supposed to be kept low by governments ordering the XO laptop in shipments of one million, but large orders for the XO laptop have, so far, not materialised.

In a bid to boost the numbers of laptops available, OLPC ran a "Give One, Get One" programme in the US from 12 November to 31 December.

This allowed members of the public to buy two XO machines - one for themselves and one for a OLPC project elsewhere.

OLPC said the success of this had helped it to launch programmes in Haiti, Rwanda, Ethiopia, Cambodia, Mongolia, and Afghanistan.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/technology/7171201.stm

Published: 2008/01/04 10:03:02 GMT

School Latin rise 'an illusion'
The number of state secondary schools teaching Latin has doubled over the last seven years, statistics reveal.

The change shows government attempts to encourage the study of Latin have largely worked, says the Cambridge Schools Classics Project (CSCP).

But one education specialist fears the rise is limited to Key Stage 3 pupils aged 12-14 - not GCSE and A-level.

Without "top level" support Latin teaching could vanish in a generation, Cambridge's Bob Lister says.

Records show that about 200 non-selective state secondary schools in England were teaching Latin in 2000.

By 2007 this had risen to 471 non-selective schools, according to research carried out by the CSCP between January and May last year.

There is no breakdown of whether schools are offering the subject all the way through to GCSE and A-level, but figures from the combined examining boards suggest they are not.

> **I think we are at a critical point in that we can point to evidence that there is an interest and demand for Latin but there is a problem as to how it is met**
> Bob Lister, classics lecturer, University of Cambridge

In 1988, 16,023 students were entered for GCSE Latin (53% from state schools).

This fell to 13,408 in 1992 (38% from state schools) and 10,561 in 2000 (37% from state schools).

Numbers have remained at around 10,000 since then.

There is also a shortage of teachers - largely due to the falling number of postgraduate teacher training (PGCE) Latin courses around the country.

Just two centres run PGCE Latin courses - Cambridge University and King's College London.

Only 30 PGCE Latin places have been allocated this year, while 72 Latin teachers are due to retire every year for the next five years.

League table pressure

CSCP's director Will Griffiths said: "There is clearly a large amount of interest across the country for the study of Latin.

"A huge number of schools are offering it at Key Stage 3 and that's because the government created a software package for Key Stage 3 Latin in 2000.

"But GCSE Latin is hard. It's said that it is more difficult to get an E in Latin than to get a C in any other subject.

"This makes it a deterrent for students to choose Latin and for schools to teach it because they want to get good results for the league tables."

The CSCP team says GCSE Latin needs to be made easier to create a level playing field.

Bob Lister, lecturer in classics education at the University of Cambridge, said: "Unless someone at a senior level comes up with serious ways of supporting Latin I fear that within the next generation it will pretty much disappear."

'Target driven' system

The state sector had more of a problem recruiting and retaining staff than the private sector. And state schools would not consider offering Latin if there were only a handful of interested students, he said.

"More staff are leaving the profession than entering it.

"The number of people applying for jobs has diminished and head teachers' perceptions are that the quality in the field has diminished."

He added: "We don't want to be seen to be dumbing down the classics but for an average school student who doesn't start to learn Latin until they are 13, GCSE Latin is extremely hard work.

"When confronted with Latin or German they will choose German."

A Department for Children, Schools and Families spokeswoman said GCSE entries had remained steady since 2000.

"It is for individual schools and their governing bodies to decide whether to include the classics - including classical languages - in their respective curriculum."

She said schools with humanities as a specialism had the option to focus on the teaching and learning of classical studies - Latin, Classical Greek and classical civilisation - alongside a core option of history, geography or English.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/uk_news/education/7172077.stm

Published: 2008/01/05 00:28:53 GMT

Scientists urged back into class
Ministers want Britain's top IT and science companies to encourage "career switchers" to go into teaching.

Ministers want professional scientists, mathematicians, information technology experts and engineers to help fill the skills gaps in classrooms.

Many of England's science teachers have not studied science to degree level.

A new programme linking the teacher training agency with employers hopes to ease the way for science experts planning teaching as a second career.

> **We need companies to encourage career switchers to take the leap and go into teaching**
> Jim Knight
> Schools Minister

Schools Minister Jim Knight said: "Britain is a world leader in science and engineering - from traditional lab coats to Grand Prix racing and computer games designers.

"We now need this 'best of British' to get into our schools and colleges and bring on the next generation.

"We need companies to encourage career switchers to take the leap and go into teaching.

"These people can help bring science alive for kids who are in school today - and ensure that more of them decide to take up science as a career. In the long term it can only benefit the UK."

A Department for Children, Schools and Families spokeswoman rejected suggestions that employers might be reluctant to lose their staff to another profession.

She said the programme might suit someone seeking early retirement from the science industry.

Industry support

Human resource departments might put such a person in touch with the Transition to Teaching programme, to be launched in the spring.

Head of recruitment at the Training and Development Agency for Schools, John Connolly, said the partnership would benefit potential teachers, pupils, and the science industry in the long term.

"It will enable employers to free up some of their brightest to teach the next generation of scientists and engineers that our businesses will need."

Firms including IT giant Cisco, pharmaceuticals company Astra Zeneca and BT have already signed up for the programme.

And the government has appointed the chief executive of IBM UK to head up a committee to design a programme to help graduates with science and maths degrees to go into teaching as a second career.

Recent government-funded research suggested that one in four science teachers was not a specialist.

The issue has drawn criticism from scientific organisations who argue that teachers without specialist training and knowledge often lack the confidence and ability to bring the subject to life.

Currently, just 19% of science teachers in England have a physics specialism and 25% a chemistry specialism - which equates to having studied either subject to degree level.

By 2014 the government wants that proportion to have risen to 25% and 31% respectively.

It also wants 95% of maths lessons to be taught by maths specialists.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/uk_news/education/7171442.stm

Published: 2008/01/04 11:55:41 GMT

http://news.bbc.co.uk/2/hi/uk_news/education/7171442.stm

Medical abbreviations 'pose risk'
Doctors are being warned that using abbreviations in medical notes is putting patients' lives at risk.

The UK's Medical Defence Union said difficulties often arose because abbreviations can have more than one meaning or might be misread.

Some patients have had the wrong limb removed or operated on and others have been given deadly drug doses, it said.

A recent US study of 30,000 medication errors, some fatal, showed 5% were linked to abbreviations in notes.

Abbreviations can cause confusion and risk patient safety
Dr Sally Old, MDU medico-legal adviser

Common errors included abbreviating drug names and dosages, the Joint Commission found.

An example involved a 62-year-old patient on haemodialysis who was treated for a viral infection with the drug acyclovir.

The order for acyclovir was written as "acyclovir (unknown dose) with HD", meaning haemodialysis. Acyclovir should be adjusted for renal impairment and given only once daily.

However, the order was misread as TID (three times daily) and the patient died as a result.

Fatal errors

A UK audit by the paediatric department at Birmingham Heartlands Hospital, published in the Archives of Disease in Childhood in November, found instances where abbreviations used had caused confusion because they had multiple interpretations.

For example, "TOF" could be taken to mean "tetralogy of fallot" or "tracheo-oesophageal fistula" - two completely different conditions.

When presented with a selection of abbreviations, the study authors found paediatric doctors agreed on the interpretation of 56-94%, while other healthcare professionals recognised only 31-63%.

The authors also found that the use of abbreviations was inconsistent - 15% of the abbreviations used in medical notes appeared in the hospital's intranet dictionary while 17% appeared in a medical dictionary used by paediatric secretaries.

The MDU, which defends members' reputations when their clinical performance is called into question, advises doctors to use only the abbreviations or acronyms that are unambiguous and approved in their practice or hospital.

Dr Sally Old, MDU medico-legal adviser, said: "Abbreviations can cause confusion and risk patient safety.

"In one instance a diabetic patient was given a dose of 61 units of insulin because the notes say six international units - 6IU - were misinterpreted.

"Thankfully, the error was spotted and the patient was treated."

She said clear, concise communication was essential, particularly when care was provided by multi-disciplinary teams.

Kevin Cleary, of the National Patient Safety Agency, said: "Abbreviations in clinical notes, prescriptions and treatment charts should be kept to an absolute minimum. They cause confusion and present a risk to patients.

"The NPSA is aware of at least one patient death in the last 12 months where abbreviations were a contributory factor.

"In response to this incident, involving chemotherapy, we will be issuing guidance later this month on clear communication of treatment protocols."

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7171453.stm

Published: 2008/01/06 00:07:46 GMT

Osteoarthritis Risk Linked To Finger Length Ratio

ScienceDaily (Jan. 7, 2008) — People whose index finger is shorter than their ring finger are at higher risk of osteoarthritis, a new University of Nottingham study has found.

A study of more than 2,000 people suggests that people whose index finger is shorter than their ring finger are up to twice as likely to suffer from the condition, which is the most common form of arthritis.

Index to ring finger length ratio (referred to as 2D:4D) is a trait known for its differences between the sexes. Men typically have shorter second than fourth digits; in women, these fingers tend to be about equal in length. Smaller 2D:4D ratios have intriguing hormonal connections, including higher prenatal testosterone levels, lower oestrogen concentrations, and higher sperm counts. Reduction in this ratio has also been linked to athletic and sexual prowess.

Whether this trait affects the risk of osteoarthritis (OA), the most common form of arthritis that may associate with both physical activity and oestrogen deficiency, has not been examined — until now.

Researchers at The University of Nottingham conducted a case-control study to assess the relationship between the 2D: 4D ratio and the risk of knee and hip OA.Their findings suggest that having a relatively long ring finger to index finger ratio raises the risk for developing OA of the knee, independent of other risk factors and particularly among women.

For the study, 2,049 case subjects were recruited from hospital orthopaedic surgery lists and a rheumatology clinic in Nottingham. All had clinically significant symptomatic OA of the knees or hips, requiring consideration of joint replacement surgery. Recruited from hospital lists of patients who had undergone intravenous urography (IVU) within the past five years, 1,123 individuals with no radiographic evidence of hip or knee OA, no present hip or knee symptoms, and no history of joint disease or joint surgery served as a control group.

The study population was comprised of both men and women, with an average age of approximately 67 years for cases and 63 years for controls.

Radiographs of both knees and the pelvis were obtained for all participants. Every participant also underwent separate radiographs of the right and left hands. Researchers then assessed the 2D:4D length ratio from radiographs using three methods: a direct visual comparison of the two finger ends, the measured ratio from the base to the tip of the upper finger joints, and the measured ratio of the metacarpal bone lengths.

Hands radiographs were classified visually as either type 1, index finger longer than the ring finger; type 2, index finger equal to the ring finger; or type 3, index finger shorter than the ring finger. Not surprisingly, men were 2.5 times more likely than women to have the type 3 pattern.

Using blind comparisons of hand radiographs with both knee and hip radiographs from random case and control samples combined with statistical analysis and odds ratios, researchers assessed the relationship between 2D:4D length ratio and OA. Compared with the other finger types, the type 3 finger was associated with an increased risk of OA involving any part of the knee or the hip, and including the presence of arthritic finger nodes. Of particular note, the risk of knee OA in participants with the type 3 finger pattern was nearly double that of the risk for participants without this pattern. Women with this finger pattern had a greater risk of knee OA than men.

Among participants of both sexes, researchers also found an interesting trend: the smaller the 2D:4D upper finger joint ratio, the greater the risk of OA of the tibiofemoral knee joint. Finally, after adjusting for established OA risk factors — age, sex, body mass index, joint injury, and lack of physical activity — the strong association of smaller 2D:4D length ratio with the risk for knee OA was deemed independent.

Professor Michael Doherty, lead researcher, said: “The 2D:4D length ratio appears to be a new risk factor for the development of OA. Specifically, women with the 'male' pattern of 2D:4D length ratio — that is, ring finger relatively longer than the index finger — are more likely to develop knee OA.”

As the first study to examine the relationship between 2D:4D length ratio and OA, it also raises questions.

“The underlying mechanism of the risk is unclear,” Professor Doherty stressed, “and merits further exploration.”

Journal article: "Index to Ring Finger Length Ratio and the Risk of Osteoarthritis," W. Zhang, J. Robertson, S. Doherty, J.J. Liu, R.A. Maciewicz, K.R. Muir, and M. Doherty, Arthritis & Rheumatism, January 2008; 58:1.

Adapted from materials provided by University of Nottingham.

http://www.sciencedaily.com/releases/2008/01/080102155442.htm

Big Pharma Spends More On Advertising Than Research And Development, Study Finds

A new study by two York University researchers estimates the U.S. pharmaceutical industry spends almost twice as much on promotion as it does on research and development, contrary to the industry's claim. (Credit: iStockphoto/Marcelo Wain)

ScienceDaily (Jan. 7, 2008) — A new study by two York University researchers estimates the U.S. pharmaceutical industry spends almost twice as much on promotion as it does on research and development, contrary to the industry's claim.

The researchers' estimate is based on the systematic collection of data directly from the industry and doctors during 2004, which shows the U.S. pharmaceutical industry spent 24.4% of the sales dollar on promotion, versus 13.4% for research and development, as a percentage of US domestic sales of US$235.4 billion.

The research is co-authored by PhD candidate Marc-André Gagnon, who led the study with Joel Lexchin, a long-time researcher of pharmaceutical promotion, Toronto physician, and Associate Chair of York's School of Health Policy & Management in the Faculty of Health.

"In our paper, we make the case for the need for a new estimate of promotional expenditures by the U.S. pharmaceutical industry," says Gagnon. "We then explain how we used proprietary databases to construct a revised estimate and finally, we compare our results with those from other data sources to argue in favor of changing the priorities of the industry."

The study is important because it provides the most accurate image yet of the promotional workings of the pharmaceutical industry, says Lexchin.

The authors examined the 2004 reports of IMS Health (IMS) and CAM Group (CAM), two international market research companies that provide the pharmaceutical industry with sales/marketing data and consulting services. IMS obtains its data by surveying pharmaceutical firms, while CAM surveys doctors, which explains important discrepancies in the data they provide.

The researchers used 2004 as the comparison year because it was the latest year in which information was available from both organizations.

CAM reported total promotion spending by the U.S. pharmaceutical industry as US$33.5 billion in their 2004 report, while IMS reported US$27.7 billion for the same year. The authors observed, however, important differences in figures according to each promotion category. By selectively using both sets of figures provided by IMS and CAM, in order to determine the most relevant data for each category, and adjusting for methodological differences between the ways IMS and CAM collect data, the authors arrived at US$57.5 billion for the total amount spent on pharmaceutical promotion in 2004. The industry spent approximately US$61,000 in promotion per physician during 2004, according to Gagnon.

“Even our revised promotion figure for 2004 is apt to be understated, as there are other promotion avenues that are not likely to be taken into consideration by IMS or CAM, such as ghost-writing and off-label promotion,” says Gagnon. “Also, seeding trials, which are designed to promote the prescription of new drugs, may be allocated to other budget categories.”

IMS and CAM data were used for comparison purposes because data from both are publicly available, both operate globally and are well regarded by the pharmaceutical industry, and both break down their information by different promotion categories. Most importantly, the two organizations use different methods for gathering their data, allowing the researchers to triangulate on a more accurate figure for each promotion category.

The authors focused their study on the United States because it is the only country in which information is available for all of the major promotion categories, and it is also the largest market for pharmaceuticals in the world, representing approximately 43% of global sales and global promotion expenditures.

Gagnon’s and Lexchin’s new estimate of total promotional costs is also consistent with estimates of promotional spending by the U.S. pharmaceutical industry from other sources they scrutinized, including reports by Consumers International, a non-governmental organization which represents consumer groups and agencies worldwide; Office of Technology Assessment, which extrapolated results from the cost structure of Eli Lilly, a global pharmaceutical company; Marcia Angell, former editor-in-chief of the New England Journal of Medicine, who extrapolated data from Novartis Inc., a company which distinguishes marketing from administration expenditures in its annual reports; and the United Nations Industrial Development Organization.

As well, note the authors, the number of meetings for promotional purposes has dramatically increased in the U.S. pharmaceutical industry, jumping from 120,000 in 1998 to 371,000 in 2004, further supporting their findings that the U.S. pharmaceutical industry is marketing-driven.

Thus, the study’s findings supports the position that the U.S. pharmaceutical industry is marketing-driven and challenges the perception of a research-driven, life-saving, pharmaceutical industry, while arguing in favour of a change in the industry’s priorities in the direction of less promotion, according to Gagnon and Lexchin.

Their study, “The Cost of Pushing Pills: A New Estimate of Pharmaceutical Promotion Expenditures in the United States,” appears in the January 3, 2008 issue of PLoS Medicine, an online journal published by the Public Library of Science.

Adapted from materials provided by York University.

http://www.sciencedaily.com/releases/2008/01/080105140107.htm

Epilepsy And Brain Pathology Linked Together By The Protein ADK

ScienceDaily (Jan. 7, 2008) — The brain of individuals who suffer from epilepsy is characterized by astrogliosis, a brain pathology evidenced by a complex series of changes in the morphology and function of brain cells known as astrocytes.

Little is known about how astrogliosis relates to the dysfunction of brain cells known as neurons in individuals with epilepsy, but filling in the blanks in our knowledge could lead to new possibilities for therapeutic intervention.

A study using mice by Detlev Boison and colleagues at Legacy Clinical Research, Portland, has now identified the protein ADK in astrocytes as a molecular link between astrogliosis and neuronal dysfunction in epilepsy.

The authors observed in a mouse model of epilepsy that ADK upregulation and spontaneous seizures occurred in the region of the brain affected by astrogliosis. In addition, overexpression of ADK in a specific region of the brain triggered seizures in the absence of astrogliosis. Conversely, mice engineered to express less ADK in specific regions of the brain were protected from chemical-induced epilepsy.

Furthermore, as ADK-deficient ES cell--derived implants protected normal mice from chemical-induced astrogliosis, ADK upregulation, and seizures, it was suggested that ADK-based treatment strategies might provide a new approach for the treatment of individuals with epilepsy.

Journal article: Adenosine kinase is a target for the prediction and prevention of epileptogenesis in mice. Journal of Clinical Investigation. January 2, 2008.

Adapted from materials provided by Journal of Clinical Investigation.

http://www.sciencedaily.com/releases/2008/01/080102222925.htm

France tries free museums

BRIAN ROHAN

Reuters

January 4, 2008 at 2:02 PM EST

PARIS — French national museums – including the Louvre in Paris – will let in many visitors free in the coming months, in an experiment intended to open up high culture to a wider public.

"French museums are ready for more visitors, and we hope to draw in a new public, especially young people ... it's a question of money for some people," Christine André, spokeswoman for the Culture Ministry's museum body, said on Friday.

Until June 30, 2008, some national museums will offer completely free admission to their permanent collections, while others will offer it to those under 26, one evening a week.

Foreign tourists will benefit, but the aim is to draw more French residents into the 18 museums, which include the Centre Pompidou and Quai Branly in Paris and the Marine Museum in Toulon.

Internet Links

- French Culture Ministry

"If the French start seeing long lines in front of the museums, they'll start to tell themselves: 'Hey, foreigners are taking advantage of this – we'd be morons not to.' " Andre said.

In Paris, museums such as the Louvre sell most of their tickets to foreigners.

Clarisse Vangucht, a 30-year-old from the northern French city of Lille who visited the Louvre on Friday, said she welcomed the scheme, but wondered who would pay for it.

"I already go to museums often but if they are free, then so much the better," she said. "But it will draw lots of tourists who don't pay local taxes ... where will the money come from?"

Ms. André said it would take around €220-million ($325-million Canadian) to make up for the lost ticket sales, funds that were set to come from both private donors and state coffers.

Access to national museums was made entirely free in Britain in 2001, after a protracted battle between the government and museum directors.

The British program led to a 62-per-cent jump in attendance in its first year – 2.7 million new visitors.

Le Monde daily said this week all French government ministers would face performance appraisals in coming weeks. Culture Minister Christine Albanel would be judged on the numbers of new visitors the museums program attracted.

Information on all museums participating in the program is available, in French, at the following http://www.culture.gouv.fr/culture/actualites/index.htm

http://www.theglobeandmail.com/servlet/story/RTGAM.20080104.wfranmuse0104/BNStory/Entertainment/?page=rss&id=RTGAM.20080104.wfranmuse0104

It's big, it's bold - but are the citizens of the Czech capital ready for this?

The London-based architect behind the Selfridges store in Birmingham and the 'pod' at Lord's cricket ground won the contest to design a national library in his native Prague - the first major new public building since the 18th century. But already opposition is brewing

Stephen Bayley
Sunday January 6, 2008

Observer

Great libraries are part of any civilised nation's self-identity. The classical manuscripts in Michelangelo's Biblioteca Laurenziana (which opened to the public in 1571) literally gave the Florentines ownership of the antiquity which so pre-occupied them. Then there was Paris's slowly evolving Bibliotheque Nationale and the British Museum of 1753. Washington's Library of Congress followed in 1800 and is probably the largest in the world, although the Lenin State Library in Moscow (formerly the Rumyantsev Museum Collection) is not far behind - in size, if not in readability.

So it is not, perhaps, surprising that plans for a new National Library in Prague are controversial. This will be the largest new building in the new Czech Republic, a country still by turns euphoric and anxious about recent upheavals. It is more than a book store: it is as much about democracy and prosperity as it is about books. Indeed, its designer, the Anglified Czech Jan Kaplicky, says, 'This building couldn't even be conceived in a dicatorship.' Just 40 years after the Soviet T-54 tanks grimly rolled in belching diesel and trailing dogma, Kaplicky intends to unroll a cheerful architectural spectacular of colourful globular modernismo all over a sacred part of historic Prague.

The site is Letenske Sady (Letna Park), just across the Vltava river from Kafka's old Jewish quarter where the paranoid author of the Bohemian ghetto worried that a 'cage went in search of a bird'. From the library site there are great views of the city's famous bridges; and there's revolutionary history here too. In 1962 a statue of Stalin was ceremoniously blown up. So, everybody is delighted that the Czechs are at last free to build, unconstrained by the suffocating conservatism of the Soviets or the equally suffocating folklorique inheritance of 'Magical Prague'. (In the Czech language, we are told, the word 'Praha' is feminine... like love, death and night.)

Well actually, no they are not. What with all this nocturnal love and death, they are passionate people. The Mayor doesn't like it. The current President of the Republic doesn't like it. Even the director of Prague's National Gallery (whom Kaplicky describes as a 'failed artist'), not however paid to be a professional philistine, says the striking conceit is too 'strong' for the delicate grain and texture of the

historic quarter. Kaplicky says yah-boo and argues that the Saint Nicholas Church (1735 by Ignaz Dientzenhofer) had its enemies too. But Vaclav Havel is on-side. The poet-President said: 'I had the feeling that the eye of the library, blinking over the green of the park... could stand like an embodiment of the past centuries.' I am afraid the thing is, a lot of very influential people are keen for that same embodiment of the past centuries to remain just as it is without interruptions from modern architecture. The threat, Havel says, is that 'averageness and banality [will] triumph again'.

Kaplicky is determined that it will not. But then he is a determined person. He left Prague for London penniless shortly after the T-54s arrived in 1968, finding himself in Richard Rogers's studios in time to be an influence on the design of the epochal Pompidou Centre in Paris. He moved on to Norman Foster in time to be involved in the Willis Faber building in Ipswich, the design which made Foster's reputation. There is a pattern here. In 1981 Kaplicky was denounced as a pornographer because his architect's impressions featuring bikini-clad lovelies degraded women. In 1982 he founded Future Systems in London with his then wife Amanda Levete and has ever since prosecuted strikingly original, if not always entirely rational, building designs. His inspirations include aerospace and high technology and it is irresistible to see in his consistent infatuation with the slick lustre of machinery a neo-erotic yearning for the shiny, material things so cruelly denied him in his austere Soviet-era youth.

The National Library's enemies have called Kaplicky's design an 'octopus'. Enemies of interesting modern buildings often seek refuge in puerile nursery imagery - carbuncles, wirelesses, gherkins and so on - when they cannot organise credible arguments. Still, it is significant that Kaplicky chose an image of a jellyfish for the front endpapers of Phaidon's recent monograph on Future Systems. He takes his inspiration where he can: the Media Centre he designed at Lord's was inspired by naval architecture and had to be fabricated in a boatyard and shipped to the MCC grounds. Some cricket correspondents have complained about certain functional deficiencies in the Media Centre's operation, but no one has ever said it was boring. Kaplicky's astonishing Selfridges in Birmingham looks as though it has landed from outer space, much to the benefit of all too surly, down-to-earth Brum. A boldly organic, windowless blue conceit covered with reflective metal plates, it has caused the client some disruption to conventional methods of retailing, but remains the most remarkable monument of Birmingham's rebirth.

Prague had not many precedents for a National Library. There was a failed competition for a new building in 1960, but the city has since had to make do with the hangover of the Klementium (an 18th-century Jesuit college). But in 2004 Vlastimil Jezek arrived as new National Library director. Moved by ambition and purpose, Jezek organised an international design competition. This is the very stuff of architectural careers, and for Kaplicky finally to make his mark in his home city was an opportunity that involved chutzpah, revenge and pride. There was massive interest in this opportunity to make this £50m monument in a much-loved city. Seven hundred and sixty architects registered interest and eventually there were over 350 entries. Fellow Anglo-Czech '68 escapee Eva Jiricna, as well as Zaha Hadid and Dominique Perrault were on the jury. Jiricna is a strict modernist; Hadid a globulist-geometrician and Perrault a builder of monuments.

Kaplicky's winning design was not so much a compromise between all three as a combination of them all. It is a 48m tall, irregular structure inspired, perhaps, by a handful of Play-Doh being splatted on to tarmac by an insurgent Russian military vehicle. A floppy jellyfish of coruscating triangular tiles sits above a podium of white marble. In photographs the tiles look green but are, in fact, champagne-coloured. Only 15 per cent of the glob is glazed for maximum thermal efficiency. Above ground are public spaces, reading rooms, ace caffs and so on, accessed by ramps. The 10 million books are consigned to a lightless, 15m deep undercroft served by the machines Karel Capek taught us to call robots (from the Czech for 'forced labour'). This automated retrieval system means readers can get access to the book of their choice within minutes; in the British Library, it can take weeks. Kaplicky's National Library is a monument not only to the new spirit in the Czech Republic, but to the interpretation of reading as a liberal, discursive, exploratory activity so nicely described in Alan Bennett's recent novella, The Uncommon Reader. You didn't have that under communism.

Never mind the local difficulties of Prague, with its doleful share of post-revolutionary fogeys: this is a difficult moment for libraries everywhere, now reaching the end of their natural life as institutions. Benedict's Rule explained that a 'biblioteca' was merely a book cupboard; only when rolls turned into

codices and papyrus changed into vellum were standalone libraries called for. Obviously, the great libraries belong to the Gutenberg era. Now their practical role is under scrutiny. Colin St John Wilson spent his entire working life on the magnificent British Library only to find ink conceding to electrons before it was complete. They had a similar experience in Paris where Dominique Perrault built what became known as the TGB (for Tres Grande Bibliotheque) out in the Tolbiac suburbs of eastern Paris. Competely useless as a storage or research facility, its sole purpose was to be a monument for Mitterrand who died a few weeks after its opening in 1995.

Eva Jiricna says the mood in Prague is politicised and somewhat disillusioned. And Jan Kaplicky's design for the city's National Library would be a demanding one at any time. Context and subtlety mean less to Kaplicky than rhetoric and commitment. In some ways, the act of building a National Library in the age of the podcast is as quaint as wanting to preserve the colour-washed cottages and pantile roofs of old Prague. In other ways, Kaplicky's insistence on the most uncompromisingly technological interpretations of modernism is idiosyncratic. There is an enlarging taste for responsive, flexible buildings, adaptive to their environment and capable of reuse. This is not one of them. But, and it's a big one, how wonderfully exciting to see stuffy old Prague at last getting ready to see its first excellent building since the 18th century. 'A thousand ages in thy sight are like an evening gone.'

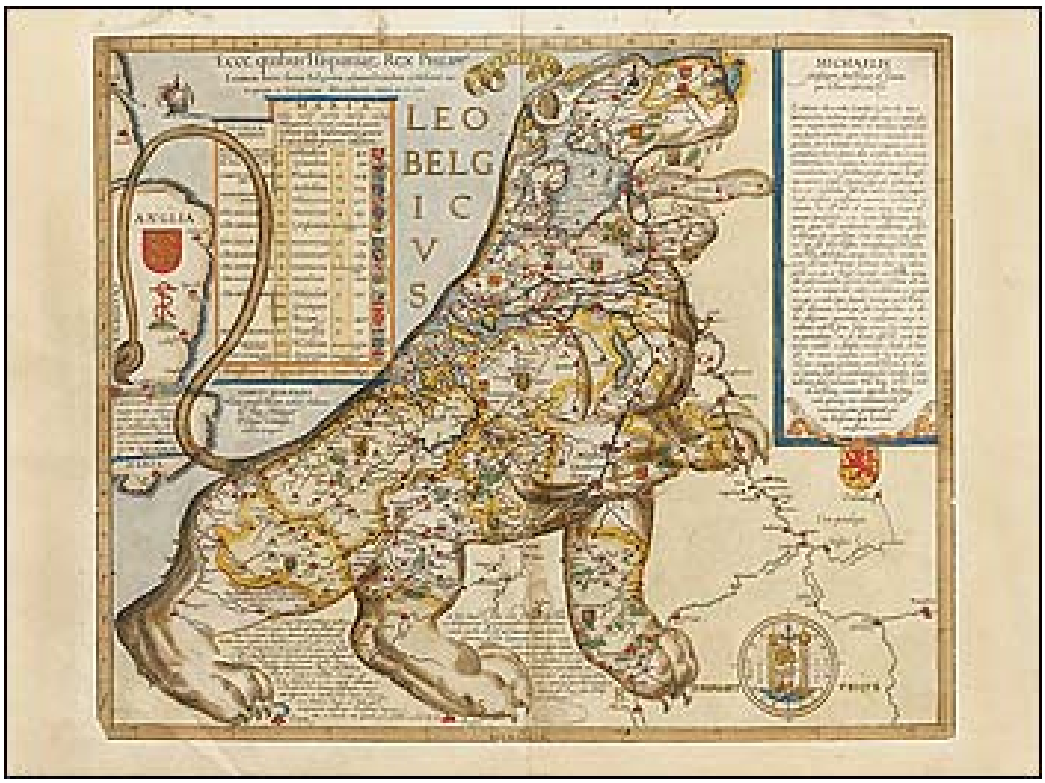
In October, Kaplicky debated his design on Czech television with the Mayor of Prague. He seems to have won over the public: 12,000 people have signed a petition insisting it is built. Kaplicky told the influential architecture trade magazine, Building Design: 'I think there is a generation against it who grew up with communism and who don't have experience of democracy and tolerance.' I called to ask him what the position was at the beginning of 2008. He said 'It's going to be built'. Just before Christmas Kaplicky presented the design to the Deputies. Perhaps influenced by the success of the telly debate which, Kaplicky says, has people hooting in the street and the passport guys at the airport saying 'good luck' to him in English, the politicos have nodded it through. Kafka wrote: 'It is not necessary to accept everything as true, one must only accept it as necessary.' Quite so. Eva Jiricna added: 'The baby has been born and it will need a lot of care to turn into an adult of some integrity.' This amazing design is really and truly a part of Czech national identity.

http://arts.guardian.co.uk/art/architecture/story/0,,2235896,00.html?gusrc=rss&feed=40

Picturing the World, Around Us

Maps Have Always Worked On More Than One Level: There's the You-Are-Here That Lets Us See Where We Are and Where We're Going. And There's the We-Are-Here That Lets Us Say It.

By Kari Lydersen
Washington Post Staff Writer
Sunday, January 6, 2008; M08



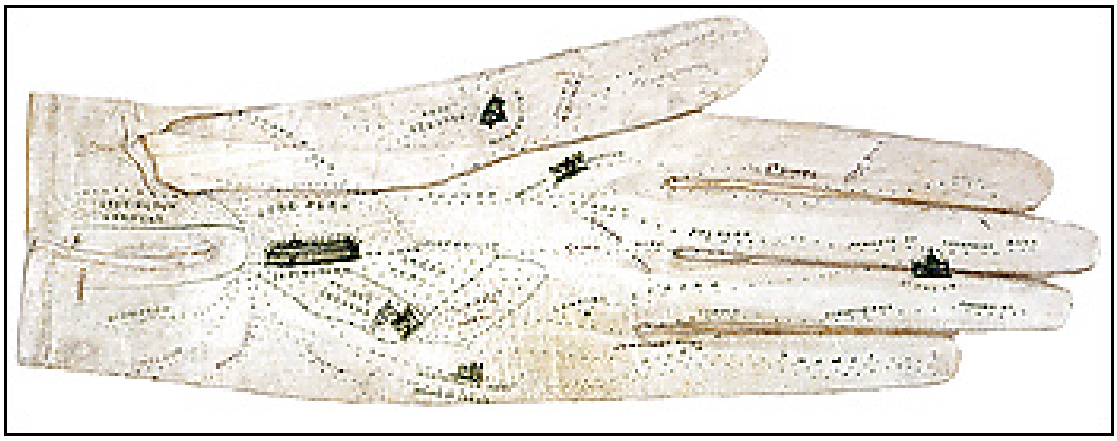
CHICAGO - To Inuits in the late 1800s, a map was a piece of wood with carved gnarls and pocks representing the coastal inlets of Greenland.

To ancient Greeks and early Europeans, maps were flights of fancy and horror, showing beautiful beasts and savage humans of uncharted lands.

Eighteenth-century Buddhists saw maps as moral charts juxtaposing landscapes of men's sensual desires and "infinite space." New World colonizers used maps as tools of conquest and empire, distorting size and shape to serve their self-interest.

No matter the age, maps have always inspired that eternal human penchant for dreaming of far-off places, for locating oneself in the universe. As vessels of wishful thinking, they transform us into explorers lured by the mystery of the unknown, if not a lust to conquer it.

Pursuits and desires such as these are at the core of the Festival of Maps here, billed as the largest, most diverse cartographic exposition in U.S. history. "Maps: Finding Our Place in the World," which is one part of the Chicago festival, will open in March at the Walters Art Museum in Baltimore. Although computer and satellite technology seem to cast a cold, hard light on our physical realm, people still turn to maps to feed their imagination, festival organizers say -- whether through collecting and studying ancient maps, using modern mapping technology in creative and interactive ways or making cartographically inspired art. Rather than distance us from cartography, technology has made mapping part of our everyday lives -- in driving, in fashion, even in political protest.



"It turns out almost any man on the street you talk to says they love maps," says Anna Siegler, who was hired to coordinate the festival by her friend Barry MacLean, one of the world's top collectors, with more than 20,000 maps.

The love of maps is "this quietly held passion [that] people have," says Siegler, wearing an Hermes scarf emblazoned with a map of the world's rivers.

"The advent of digital mapping -- Google, MapQuest -- means more people use maps more often, and that's stimulating interest in cartography," says Diane Dillon, a co-curator of the Newberry Library's "Mapping Manifest Destiny" exhibit. "Disciplines like geography have fallen by the wayside, but digital mapping is bringing it in through the back door. It makes geography fun."

Launched in November and continuing through mid-2008, the privately run festival involves exhibitions in more than 30 Chicago institutions, from independent art galleries to major institutions such as the Field Museum and the Museum of Contemporary Art.

More than 800 maps and related objects are being showcased, from a 1300 B.C. clay tablet mapping the Babylonian city of Nippur (in present-day Iraq) to the Sloan Digital Sky Survey's ongoing mapping of the galaxies. Cartographic paraphernalia include a pocket globe and a pocket astrolabe, a gadget once brandished by wealthy Englishmen seeking the time of day through a map of the stars. Such was its cachet that Marvin Bolt, an Adler Planetarium astronomy historian, calls it "the 16th-century iPhone."

The idea for the festival was born six years ago during a social gathering that included MacLean, John W. McCarter Jr., president of the Field Museum, and others with an interest in map collecting, history and world travel.

"John said, 'Why don't we have a display at the Field Museum of the 100 greatest maps of all time?' and we started talking about what those would be," says MacLean, president of MacLean-Fogg, a global machine parts manufacturer.

His corporate offices in the northwest Chicago suburb of Mundelein are lined with maps from across the world, with a focus on the early American interior. He lent many of his maps to the festival.

MacLean has been passionate about maps all his life. As a child he would pick up kitschy free maps at service stations during family road trips in Wisconsin.

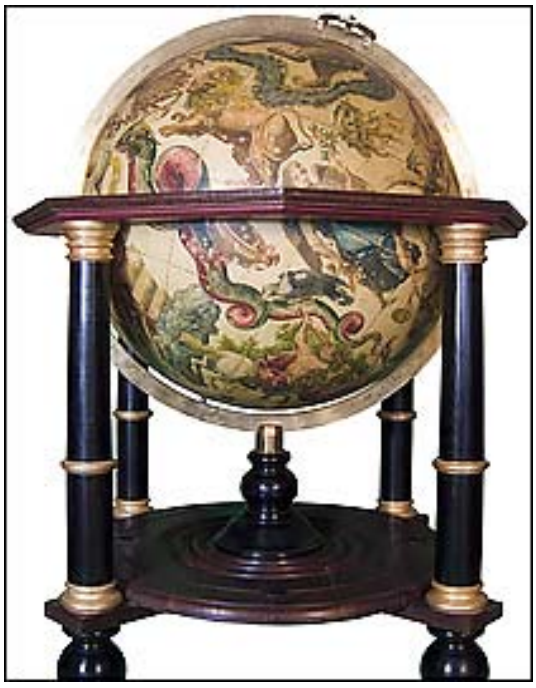
"I'd start asking my mom and dad questions, and we would fantasize about what was in Minnesota, in Iowa, in Michigan," he says. "National Geographic was a big part of my life. I would sit on the floor of the Madison [Wis.] library poring over maps and thinking about what is in Asia and Africa."

* * *

"Most maps don't actually say this is what the world is, but this is what the world ought to be."

That is Matthew Edney, director of the History of Cartography Project at the University of Wisconsin. He's narrating the Field Museum's audio tour, describing how maps often serve an aspiration, how mapmakers through the ages placed their own culture at the center of the universe.

In early Christian maps, Jerusalem anchored the globe, with "Paradise" depicted in the East. In ancient Indian maps, everything revolved around the mythical Mount Mehru. A 12th-century Chinese map of the heavens, displayed at the Adler Planetarium, envisions the sky as a reflection of the Chinese Empire, where phenomena such as comets foretell earthly events, such as an invader approaching the Imperial Palace.



Adelheid Mers, a School of the Art Institute of Chicago adjunct professor with several works in the festival, notes that all maps from ancient to modern -- even Google Earth -- must ask the question: "Is there one point of view or are there many? Where is up, where is down, who is central, who is peripheral?"

In some maps, the bias is clear. When Jesuit cartographers created a 1651 map of the moon's surface, they put the craters named after renegades Copernicus and Galileo in the Sea of Storms, while more favored scientists got a place in the Sea of Tranquility.

A moon globe manufactured in East Germany during the Cold War shows part of the previously mysterious dark side of the moon filled in thanks to images from the Soviet orbiter Luna 3's 1959 voyage. A slice of the orb still remains empty.

"There's the tension of discovery and the tension of the Cold War," Bolt says. "They're mapping with a scientific and political back story -- who will win the next part of the space race, and by extension, which political system is superior?"

* * *

When France, Britain, Spain and Russia were competing for parts of North America, mapmaking was a way to lay down stakes, sometimes referred to as "the war of the maps." The same area expanded or contracted depending on whose territory it was and who was making the map.

A 1755 map by Englishman John Mitchell on exhibit at the Newberry Library shows states such as South Carolina, Georgia and Virginia stretching infinitely west in long horizontal strips, implying an endless claim to that latitude. All of French Canada, meanwhile, is crammed into a small corner.

"Most cartographers never went to the Americas," says Michael Conzen, a geography professor at the University of Chicago and co-curator of the Newberry exhibit. "They were getting information from sailors and explorers coming back, and piecing their notes together. These were tremendous works of imagination and conceptualization."

He sees the American historical passion for maps embodied in the fact that three U.S. presidents were cartographers -- Washington, Jefferson and Lincoln. A military map drawn by George Washington while in the British army is on display at the festival, as is Lincoln's never-realized proposal for the development of Huron, Ill.

During the gold rush, maps were used to lure prospectors west, showing routes to the gold fields and embellished with advice and enticements. One 1849 map shows a route from east to west all the way around Cape Horn in Chile, with an alternate route suggested through Vera Cruz, Mexico, and the caveat to "go in parties of 40 to 50 or more to avoid the danger of robbers."

But often, the thrill of dangerous and wondrous places was a map's lure. Dutch explorers mapping Southern Hemisphere constellations for the first time in the 1600s named them after beings that, to them, seemed exotic and fascinating: Peacock, Phoenix, Toucan, Indian.

And authors J.R.R. Tolkien, William Faulkner and Jonathan Swift all used elaborate maps -- on display at the Field Museum -- to make Middle-earth, Yoknapatawpha County and Lilliput more real to themselves and their readers.

For centuries, maps tended toward the fantastic, like 17th- and 18th-century ones depicting constellations whose stars were placed within lushly drawn Greek narratives of conflict, love and triumph.

But by the 1800s, the muscular, voluptuous drawings disappeared, and constellations were shown as stick figures held together by stars. Cartographic techniques had become more advanced, and much of the artistry and flourishes were stripped away, leaving "just the facts," as Bolt says.

"The mythology and ornateness were gone," he says. "There was an increasing focus on reason and understanding the universe as it is, not interpreting it through various cultural lenses."

Maps of the land and sea followed the same trend. As the wild reaches of the western United States, South America, Africa and Asia were explored, accurately depicted population centers and geographic features replaced the noble rhinoceroses or wild-eyed warriors of maps past.

* * *

But the quest to map outer space, and show the results to the general public, has many parallels to mapping of the Earth centuries ago. Vast unknown spaces still exist. And even when scientists do know what's out there, they take artistic license with their presentation to help people grasp and appreciate this realm.

As in old depictions of the cosmos where everything revolved around the Earth, the Sloan Digital Sky Survey's electronic rendering of the galaxies places the Earth at the center of it all once again. And

while people might assume such images are definitive representations of what lies out there, Mark SubbaRao of the Adler Planetarium notes that we are actually seeing galaxies 2 or 3 billion years ago.

In Hubble telescope images of the cosmos, color is added and augmented to turn grayish swirls of gas and matter into fantastical dreamscapes. Bolt compares the Hubble's digitally enhanced image of dramatic, flaming colors in the Eagle nebula to Frenchman Alain Manesson Mallet's 1683 depiction of a universe of turbulent, boiling gray clouds surrounding a diminutive Earth.

"You're trying to arouse certain emotions. It's not so different from an artist's rendering 400 years ago," he says.

The mapping of space, he says, represents humankind's age-old quest.

"Then and now, it is still basically the same question -- where did it start and where do we fit into the grand scheme of things."

http://www.washingtonpost.com/wp-dyn/content/article/2008/01/04/AR2008010401321.html

The Man With 800 Warhols
Shrewd buying helped Jose Mugrabi build the world's largest private stash of Andy Warhol's art.
By KELLY CROW
January 4, 2008; Page W1

Just before the evening contemporary art sale at Sotheby's in New York this November, a short, stocky 68-year-old named Jose Mugrabi made his way down the sales room's spotless caramel carpet to his assigned seat. While most of the other bidders were in power suits or cocktail dresses, he wore his standard auction uniform -- blue jeans, a black T-shirt and a baseball cap.

In a realm where secrecy is a strategic tool and heavyweight collectors like to bid from the privacy of a skybox, Mr. Mugrabi prefers to operate by one simple rule. Whenever works by Andy Warhol come up, he bids on them early and often and wants everybody to know about it.

Mr. Mugrabi bid on seven of the eight Warhols on the block that night and bought one -- a quartet of paintings of Jacqueline Kennedy in mourning that cost him $5.6 million. The minute the Warhols were gone, he put on his baseball cap and walked out.

Nobody has done more to capitalize on Andy Warhol's increasing popularity than Mr. Mugrabi. Together with his two sons, this self-made former cloth merchant from Bogotá, Colombia, says that over the past 20 years he's amassed about 800 of the artist's works, a stake that's easily three times larger than any other private Warhol collection in the world and nearly as large as the paintings collection owned by the Andy Warhol Museum in Pittsburgh. Dealers and major auction houses rarely buy or sell a Warhol without Mr. Mugrabi's knowledge, and anyone who wants to buy one at auction must be prepared to outbid the family.

Andy Warhol created about 8,000 paintings and sculptures between 1952 and his death in 1987, and they turn up at auction so consistently -- about 200 works a year -- that they've become a bellwether for the entire $11 billion-plus art market. In part because high Warhol prices can feed the frenzy for other artists, collectors and dealers are paying closer attention to the Mugrabis.

Rival dealers say the Mugrabis are doing whatever they can to keep Warhol prices high, including occasionally overpaying -- or overcharging -- for the artworks. They say such moves make it far more difficult for others to collect the artist's work. Mr. Mugrabi said his efforts to "defend" the artist's price levels are legal and work in favor of Warhol owners everywhere.

"Most people don't realize that Warhol is the Dow Industrial Average" for the art world, said Richard Polsky, a longtime private dealer in Sausalito, Calif. "The Mugrabis know this and are doing whatever is best for their family -- and the rest of us just have to watch."

The few who bet on Warhol two decades ago have reaped big profits. Mr. Mugrabi won't give the exact value of his holdings, but in 2006, the mean estimate of a Warhol at auction was about $442,000, up from $66,000 in 1988, according to Artnet, a New York-based art-database service. Prices for middling Warhols now often exceed $1 million and a Warhol silkscreen of a car crash sold this May for a record $71 million.

A Singular Strategy

Many longtime dealers and collectors are quick to compliment the family's singular strategy. What's not clear, they say, is what happens if the Mugrabis ever fall into financial trouble and have to liquidate a large part of their stake. Not only might this dive-bomb Warhol prices, it could also rattle collector confidence in dozens of other artists. "If the market turns," said New York dealer Joe Helman, "it's going to be a hell of a ride going down."

The Mugrabi family keeps its Warhol stash in several spots. There are two heavily guarded storage rooms, one in Zurich and one near Newark, N.J., where they rent a 1,300-square-foot space lined floor to ceiling with metal racks, each containing rows of hanging canvases. The family owns dozens of works by other artists, but the majority of its holdings are Warhols. A large red "fright wig" self-portrait of the artist and an orange-green "Mao" line the walls of Mr. Mugrabi's apartments in Paris and on Manhattan's Upper East Side.

Anyone who handles Warhols knows just how obsessively the Mugrabi family tracks -- and some say influences -- the artist's market. Laura Paulson, a Christie's specialist in contemporary art, says the Mugrabis are called "as soon as we've got a contract" for a consigned Warhol because "we like to talk about where the market is for each work." Brett Gorvy, who helps run Christie's contemporary art department, says over the years he has on occasion adjusted his Warhol estimates upward after conferring with Mr. Mugrabi or hearing about private sales he has brokered.

Lately, the Mugrabis have made some of their boldest attempts to build the Warhol market. In May, the family paid $2.8 million, or $700,000 apiece, for a quartet of small portraits of Jacqueline Kennedy that Warhol painted between 1964 and 1966. Just a month later in London, they paid $1.5 million for a single small "Jackie," a more-than-100% price increase over the previous sale. Mr. Mugrabi says the goal was to leapfrog the previous asking price and set a new threshold for all the paintings in the "Jackie" series. It seems to have worked: In November, Mr. Mugrabi says he sold another quartet of Jackies for $6.5 million to a new collector -- essentially doubling the market price in six months.

Several months ago, the Mugrabis teamed with Christie's to try to make one of the largest private art sales of all time. They offered up to 15 of the family's best Warhols to the governments of several Arab Emirate states including Abu Dhabi and Dubai, which have been investing heavily in museums. The asking price: roughly $500 million. So far there have been no takers.

Art-market experts have mixed views about the Mugrabis' strategies. Eric Greenleaf, a business professor at New York University, says that if the Mugrabis know anything other bidders don't before or during a

sale, it can be unfair to competitors. George Sutton, an auction analyst at Craig-Hallum Capital Group in Minneapolis, says the Mugrabis' bidding pattern is no different than a company's largest shareholder buying additional stock at crucial moments as a show of support. Noted Warhol collector Peter Brant said criticism of the family's impact on the Warhol market is just "sour grapes" and that the Mugrabis are hardly the only ones bidding up Warhol. "People have to protect themselves," Mr. Mugrabi says.

Jose Mugrabi keeps a corner office with five rooms in a nondescript New York bank building on Park Avenue. His office is decorated with purple contemporary sofas and a brown desk with a few pens, a phone, and proofs from a photo shoot for a new line of Andy Warhol jeans introduced this fall by Levi's.

Mr. Mugrabi can be shy in social settings -- he attended an elaborate art-world party in London this October for maybe 20 minutes, while Dennis Hopper and Andrew Lloyd Webber stayed for hours. He doesn't sit on any museum boards or host art-industry parties. Around artwork he covets, he can be theatrically effusive, shouting in the Spanish he prefers to English.

A Shy Patriarch

To his children, he is the patriarch who gets final say on nearly all business matters. Mugrabi's younger son David, 36, is known as the quiet, practical one, and is a former broker on Wall Street. Alberto, or "Tico," is 37 and is the family's gregarious jetsetter and ambassador, a protégé of collectors like Mr. Brant and Aby Rosen. When separated from his sons, Jose Mugrabi calls them almost hourly, sometimes as late as 4 a.m., usually to talk about deals.

In his office on a recent afternoon, he reached into a drawer and pulled out a yellowed ledger he used to log his early art buys -- works by Sisley, Daumier, Renoir -- very few of which he still possesses. When asked how many Warhols he owns, Mr. Mugrabi furrowed his eyebrows and stared off into a corner of the room. "Esty!" he bellowed. "Warhols, how many do I have?" Less than a minute later, his longtime assistant, Esty Neuman, popped through the door from the reception area holding a printout.

"Eight hundred," she said, matter of factly.

Mr. Mugrabi, looking slightly surprised, smiled and glanced over at his sons, who were sitting across from him. "So many," he said quietly.

Born in 1939 into a middle-class Jewish family in Israel, Mr. Mugrabi is the son of a grocer and the eldest of seven. At 16 he was sent to live with an uncle in Bogotá, Colombia, who worked as a textile distributor. Mr. Mugrabi spent his days as an errand boy for the owner of a Bogotá fabric company. He never attended college, but he learned the business of buying and selling cloth by the bolt. By 1963, he had struck out on his own. During the 1970s, his company, Soditex, imported thousands of yards of wholesale fabric.

Rival textile firms like Coltejer, based in Medellín, increasingly complained to Colombian textile-industry officials that Mr. Mugrabi wasn't paying import taxes on his fabrics and was actually selling smuggled goods at fire-sale prices, according to Coltejer and Carlos Eduardo Botero Hoyos, executive director of the Colombian Textile and Apparel Association. "He did a lot of contraband," Mr. Hoyos says. He adds, however, that his association never investigated Mr. Mugrabi, in part because textile smuggling was common, and only a misdemeanor, until reforms were enacted in the past decade.

Mr. Mugrabi denies dodging taxes and smuggling, and there are no Colombian criminal or court records linked to him or Soditex, according to police records and Reinel Beleño, a spokesman for Colombia's Superior Judicial Council. By 1984, Mr. Mugrabi was fed up with the textiles industry and moved his family to New York. "Art became my refuge," he says.

'Who's Yves Klein?'

Mr. Mugrabi's introduction to the art world came by way of a cold call in 1981 from Citibank's Art Advisory Service. Jeffrey Deitch, a New York dealer who helped start the service, says it took more than a year for Mr. Mugrabi to agree to bid on a landscape by Pierre Auguste Renoir. A few days later, Christie's shipped him the painting, "Vue de la Seyne," along with a bill for $121,000. Surprised by how much he liked owning the Renoir, Mr. Mugrabi bought more art.

Jacob Baal-Teshuva, a freelance curator who befriended and advised Mr. Mugrabi soon after he arrived in New York, says Mr. Mugrabi relied on instinct since he didn't know art history. In late 1986, he paid about $83,000 at Sotheby's in London for an electric-blue sponge sculpture by the postwar master Yves Klein. He then turned to Mr. Baal-Teshuva and asked "Who's Yves Klein?"

On Feb. 22, 1987, Warhol died from complications following gall-bladder surgery. While he'd been celebrated in his lifetime for his Pop depictions of Marilyn Monroe and Campbell's Soup cans, his work never commanded more than $165,000. Much of his later work -- his 1970s and 1980s views of Chairman Mao, camouflage patches, children's toys and Rorschach tests -- were still proving a tough sell.

Four months after the artist's death, Mr. Mugrabi bought Warhol for the first time at an art fair in Basel, Switzerland. Specifically, he paid $37,000 apiece for a quartet of paintings that Warhol had done appropriating Da Vinci's "The Last Supper." A year later, in June 1988, he sold one of them at Phillips in London for $103,350 -- a 179% return on his investment. Mr. Mugrabi decided to sell off his Impressionist art and stock up on Warhol. "Every empire has its influences, and I realized Andy was the authentic American," Mr. Mugrabi says. "Five hundred years from now, people will see his art and recognize American culture in an instant. He was the only artist who absorbed it all."

But Mr. Mugrabi needed a masterpiece if he was ever to join the ranks of serious Warhol collectors like Mr. Brant or S.I. Newhouse Jr. He got it on Nov. 10, 1988, at Sotheby's New York sale of contemporary art when he paid a record-breaking $3.96 million for Warhol's 1962 orange "Marilyn Monroe (Twenty

Times)," more than double its presale estimate. His 18-year-old son Alberto, sitting beside him in the

second row, helped him place the winning bid by yanking his father's arm into the air. Alberto says he simply wanted his father to win, but Mr. Mugrabi cursed his son for his audacity and stormed out.

That night, Mr. Mugrabi felt sick to his stomach and woke his wife at one point to ask, "What the hell have I done?" A few months later, he says a collector offered him more than he paid for the painting. He declined, slept more soundly, and apologized to his son. He says he's since been offered more than $100 million for his Marilyn.

Buying Opportunity

The stock market plummeted in October 1987, and by early 1990, top artworks, including Warhols, lost 20% to 70% of their value. Mr. Mugrabi spent the decade snapping them up -- especially the less-popular later works. Sometimes he bought in bulk. Mr. Mugrabi says he once got 38 Warhols, most featuring images of Marilyn Monroe, from noted Zurich dealer Bruno Bischofberger for under $5 million. (Mr. Bischofberger didn't return repeated calls for comment.)

For a time in the early 1990s, Mr. Mugrabi teamed with collector Sammy Ofer, a collector Romanian shipping magnate who provided capital. In 1992, he hired Alberto, then 22 and a college graduate, to troll the backrooms of New York galleries for Warhols. "Nobody else wanted them, so we'd clean them out," Alberto says. By the late '90s, major collectors noticed Warhol prices rose whenever the Mugrabi family joined the bidding. "I'd see them and think, 'Oh, here we go again,' because I knew I wouldn't win," says London collector Tiqui Atencio. "They would always outbid me."

For the record, Mr. Mugrabi says he never met the artist. He spotted Warhol once -- at a New York restaurant in 1985, before he'd started collecting his work. At the time he knew little about Warhol, and when a friend suggested they introduce themselves, he declined. Were Warhol still alive, Mr. Mugrabi says, "He would come over to meet me."

--Katy McLaughlin contributed to this article

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An Alluring Enigma
Could Velázquez's 'Rokeby Venus' be a portrait of his lover?
By MATTHEW GUREWITSCH
January 5, 2008; Page W12

London

On the last day of January 1906, Punch magazine -- the conservative Briton's venerable voice of humor and satire (now alas defunct) -- ran a cartoon, captioned "Desirable Aliens," showing an odd couple strutting into the National Gallery, chests high, wreathed in smiles. One was the fashionably bearded John Singer Sargent (1856-1925), the Yank, with his portrait of Ellen Terry as Lady Macbeth slung under his left arm. At his side was Diego Velázquez (1599-1660), court painter to Philip IV of Spain, all velvet and ribbons, his "Venus and Cupid" clasped under his right. From each frame hung a label reading "PURCHASED FOR THE NATION." With all due respect to our compatriot, it's not easy, a century later, to imagine that the two canvases could ever have been mentioned in the same breath.

"The Toilet of Venus" or "Venus at Her Mirror," to give the Velázquez its now accepted formal titles, holds a place in the universal pantheon scarcely lower than that of Leonardo's "Mona Lisa," another enigma. The goddess of love is seen reclining, her back to the viewer, gazing into a mirror propped up by an obliging Cupid. Her face reveals no discernible character, barely even an identity. As a mug shot, her face in Cupid's mirror would never do. So soft is the focus that the features leave no imprint at all. Her expression -- a blank -- has been read as inviting or forbidding.

The figure is the artist's lone known nude. (His "Christ on the Cross" does not count.) As all the world knows, the Spain of *los Reyes Católicos* -- Queen Isabella I of Castile and King Ferdinand II of Aragon, that is -- suppressed carnal desire with a ferocity that made it flame all the hotter. The monarchs of the centuries that followed were scarcely more permissive toward the impressionable lower orders. But rank had its privileges, and aristocratic art collections, from the kings' on down, abounded in urbane erotica.

The second securely documented owner of that Velázquez nude was the scandalous Gaspar Méndez de Haro, a boon companion of the Spanish Infante, or crown prince. Méndez de Haro acquired the painting -- a majestic 4 feet high by 5 feet 9 inches wide -- in 1652 at the tender age of about 20. From him it passed to his daughter, Doña Catalina Mendez de Haro y Guzmán, who married the Duke of Alba, whose family held onto it until the early 19th century. Then, in short order, it went through various hands, winding up in 1814 at Rokeby Hall, a stately home in Yorkshire, where it hung for the private delectation of a few.

Nine decades later, the painting was put up for sale at Thos Agnew & Sons in London. Some 30,000 viewers lined up to see it. The price tag of £45,000 -- some 30 times the average annual salary of a solicitor, 170 times that of a surgeon, 300 times that of a high-ranking bureaucrat, or nearly 1,000 times that of a farm laborer. Yet it discouraged neither the Louvre, the Kaiser Friedrich Museum, Berlin, nor a pack of Henry Jamesian American plutocrats. But private subscribers to the newly founded National Art Collections Fund (now the Art Fund) saved for England the picture the Daily Express had dubbed "the Nation's Venus." Today, it is best known as "The Rokeby Venus."

Long thought to belong to the painter's last years, the "Venus" is now dated 1647-51, coinciding almost exactly with his second, very protracted, journey to Italy. Yet there is still ample margin for error. (Stylistic analysis of the brushwork has proved inconclusive; better evidence lies in sales histories and inventories.) As a gentleman of the bedchamber to Philip IV, the traveling Velázquez was charged with buying art and antiques for new apartments in the royal palace, as well as with recruiting fresco painters to embellish the apartments' new ceilings.

In Rome, between shopping sprees, he also found time to paint. In particular, he produced a pair of outstanding portraits in sharply contrasting modes. In a personal vein, he painted Juan de Pareja, a mulatto slave he had brought along from Spain. As a subject, such a person could have no standing whatsoever, yet Velázquez celebrated his admission to the Congregazione dei Virtuosi, Rome's confraternity of artists, by exhibiting Juan's likeness at the Pantheon. The Metropolitan Museum of Art acquired "Juan de Pareja" in 1971 at the price of £2,310,000, or $5.5 million, then the world-record price for a painting sold at auction. In a ceremonial vein, there was the riveting "Pope Innocent X," which in the 20th century haunted the oeuvre of Francis Bacon.

Was "The Rokeby Venus" likewise painted in Rome? History tells us that Velázquez met a widow named Martha there and fathered a child, Antonio, out of wedlock. Other than this, nothing is known of the fate of the son or the mother. Romantics have wondered: Was Martha Diego's Venus?

I doubt it. Where in Velázquez do we ever find a subject that seems to hold him by the heartstrings? (There may be one: little Infanta Margarita in the incomparable "Las Meninas.") Besides, there is the question of personality. Juan de Pareja and Pope Innocent X speak across the centuries as individuals, each vivid and unique. But who is Venus? Is she even modeled after a real person?

Venus's relaxed, graceful body seems more composed than observed, a harmonious symphony of idealized curves, the skin tones blended with a calm, unflurried hand. The pose conveys a certain sensuality, yes. But no show is made of the pre-eminent "charms" of breast and belly (they are invisible). And Velázquez displays no trace of the goatish concupiscence of a Rubens, who could slaver over a quivering posterior. Venus neither arouses him nor raises his guard. Yet there is nothing clinical, chilly, or austere in his appreciation of the female form. Quite simply, he paints, and she is there -- she and her boy. The artist's detachment bespeaks neither passion nor the memory of passion. (Was Antonio Diego's Cupid? Another imponderable.)

Dominated by a single figure in a shallow field, "The Rokeby Venus" may seem at first a far simpler proposition, spatially as well as formally, than other chief works of Velázquez. That impression is deceptive. Consider for a moment how intuitively most viewers read pictures like text on a page, from left to right, top to bottom. Taken by herself, Venus (her head to our right) reads from right to left, as it were, top to toe. Secondary as he is, Cupid turns the arrow the right way round. Kneeling, he also defines the vertical axis, complementing Venus, who defines the horizontal. At the same time, the pensive little heartbreaker's pose echoes that of the goddess with a difference, adding a sharp angle or two, and

reducing the scale. Tilted between the two figures, the square frame of Cupid's mirror pries open the third dimension of depth. From the bit of nondescript background that shows in the upper right quadrant, the room they occupy seems as bare as a garret. Yet a red drape and the slate-gray coverlet over the white sheet on the couch conjure up a magic hollow, enfolding Venus and Cupid like the halves of a giant scallop shell.

Is the simile far-fetched? Maybe. Remember, though, that Venus was born of the sea. In a composition that strips away the furniture and paraphernalia of myth, grant room for allusion.

According to recent scholarship, Velázquez painted the drape in a red far bolder than the red we see today and the coverlet in deep purple. Time changes everything. How right such sumptuous, royal shades seem for Venus, at least in theory. Yet as it is, the yin-yang color scheme we see seems beyond improvement, right down to the pink ribbons in Cupid's hand, his blue sash, and the fleecy white of his wings, tipped in tans like the ghost of old gold.

Mr. Gurewitsch writes for the Journal on the arts and creative personalities.

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Why life is good

Matthew Taylor

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A dangerous gap exists between our personal experience, which is mainly happy, and our view of a society in decline

Progressive ideology relies on the capacity of human beings to live fulfilled lives in a just and co-operative society. That people whose beliefs imply optimism seem to spend most of their time wallowing in pessimism is one reason that leftists sometimes lack personal credibility (another reason being that egalitarians so clearly enjoy being very well-off). But miserable idealists need to make a New Year resolution to look on the bright side. Pessimism is becoming an impediment to progressive politics. It is 50 years since J K Galbraith coined the phrase "private affluence and public squalor"; today, the dichotomy is between private hubris and public pessimism.

It is pessimism of a particular and pernicious kind. People are not generally negative about their own lives. In fact, we systematically exaggerate the control we have as individuals. As Malcolm Gladwell, among others, has shown, we tend to give our conscious minds credit for many reactions that are in fact instinctive. Other studies - of what we say has made us happy and what has actually increased our levels of contentment - show that we have a huge capacity to rationalise our life choices. When we are forced to make a choice between limited options, we are as likely to end up claiming the choice as our own as we would if it were unconstrained. And the more we like a future possibility in our lives, the more inclined we are to believe it will happen. The human mind is hard-wired to be personally Panglossian.

In contrast, we are unduly negative about the wider world. As a government adviser, I would bemoan what we in Whitehall called the perception gap. Time and again, opinion polls expose a dramatic disparity between what people say about their personal experiences and about the state of things in general. Take attitudes towards public services. In a recent poll, 81 per cent of respondents said that they were happy with their last visit to hospital. Yet when the same people were asked whether they thought the National Health Service was providing a good service nationally, only 47 per cent felt able to declare it was so, and most think the NHS is going to get worse.

This perception gap is not restricted to public services, as a recent BBC poll on families confirms. Some 93 per cent of respondents des cribed themselves as optimistic about their own family life, up 4 per cent from the previous time the survey was conducted, 40 years ago. Yet more people - 70 per cent,

across race, class and gender - believe families are becoming less successful overall. While we apparently thrive in our own families of many shapes and forms, as social commentators we prefer to look back, misty-eyed, to the gendered certainties of our grandparents' generation.

What is true for families is true for neighbourhoods: we think ours is improving while community life is declining elsewhere. We tend to like the people we know from different ethnic backgrounds but are less sure about such people in general. We think our own prospects look OK but society is going to the dogs.

The media seem to be the most obvious cause of this phenomenon. Bad news makes more compelling headlines than good. Tabloids and locals feed off crime stories, middlebrow papers are dismayed at the chaos of the modern world and the alleged venality and ignorance of those in power, and left-leaning broadsheets enjoy telling us that global instability is endemic and envir onmental apocalypse inevitable. Mean while, the content of television programmes - from dramas to news bulletins - contributes to what the communication theorist George Gerbner called "mean world syndrome": people who regularly watch TV systematically overstate the level of criminality in society.

Yet it is too easy to blame the media; the job of commissioning editors is to give us what we want. We make our own contribution to social pessimism. In the burgeoning industry of reputation management, it is generally argued that people are much more likely to tell others about bad experiences of services than good ones (5:1 is the usual ratio). Academic research suggests that people tend to exaggerate in the direction of the general mood. Viewing our own lives positively but wider society negatively, we will tend to pass on and exaggerate evidence that supports these prejudices.

Evolutionary determinists may seek an explanation of our predilection for bad news in neurological hard-wiring; perhaps, for the survival of hunter-gatherers, warning is more important than celebrating. But it is in two of the mega-trends of modernity that more likely reasons for our social pessimism are to be found.

First, there has been the inexorable rise in individualism since the Enlightenment. As Richard Sennett brilliantly argued in *The Fall of Public Man*, aspects of modernity such as the power of consumer capitalism and the ubiquity of the idioms of psychotherapy have accelerated the process by which we see our authentic selves as revealed in the private and personal spheres, rather than the public and social.

Hand in hand with the rise of individualism, we have seen the decline of industrial and pre-industrial collectivist institutions, including the organised church, trade unions, political parties and municipal elites. Robert Putnam's work on social capital suggests this decline in collectivism reaches down into our social lives, with people choosing to spend less time with acquaintances and more with intimates. Putnam's more recent work controversially argues that trust levels are lower and loose social networking less common in more diverse communities.

This points to the second of modernity's mega- trends. Increasingly, we feel that we are the victims of processes set in train by human activity but no longer under anyone's control. Globalisation is the gravity of modern society: an unstoppable force that will knock us over if we try to defy it. The origins of the current credit squeeze in the US sub-prime mortgage market show a financial system that is beyond not only its managers' control, but even their capacity to chart.

Illegal immigration, terrorism and pandemics are seen as the inevitable flip side of cheap travel and consumer goods. Philosophers and policy-makers argue about how best to regulate emerging science and technology in genetics, nano technology and artificial intelligence. But can anything long delay the advance of knowledge - especially if it has commercial applications?

It is not only that we as ordinary citizens feel beset by forces beyond our control. We are ever less likely to believe in the power or authority of our elected representatives (although we much prefer our own MP to MPs in general). At a time when they have more to prove to us than ever before, our

leaders are diminished by the politics of a populist consumerism. In this time of uncertainty, is it surprising that the more politically successful national leaders - think Chávez or Putin - are those who offer strong leadership in defiance of democratic constraints?

This is the anatomy of social impotence. By definition, progressives argue for the possibilities of progress; but is anyone inclined to believe us? A hundred years ago, Joseph Rowntree established his charitable works after analysing the social evils of his age. When, last year, the Joseph Rowntree Foundation asked today's public for its definition of the "new social evils", the list had changed very little. Greed, poverty, crime, family and community breakdown all featured on both lists. But at a seminar to discuss the findings, advisers from the foundation and elsewhere agreed on one big shift between the late-Victorian era and today: while Rowntree had seen his evils as the unfinished business of society's onward march, today we see social patho logies as the inevitable consequences of an idea of progress that itself feels imposed upon us.

And yet. There is a different story to be told about our world. It is a story of unprecedented affluence in the developed world and fast-falling poverty levels in the developing world; of more people in more places enjoying more freedom than ever before. It is a story of healthier lives and longer life expectancy (obesity may be a problem, but it is one that individuals have more chance of solving than rickets or polio). Think of how we thrive in the diversity of modern cities. Think, in our own country, of rivers and beaches cleaner than at any time since the Industrial Revolution. When you read the next report bemoaning falling standards in our schools, remember the overwhelming evidence that average IQs have risen sharply over recent decades. If you think we have less power over our lives, think of the internet, of enhanced rights at work and in law, or remember how it was to be a woman or black or gay 30 years ago.

As for the powerlessness of leaders, the Bali deal last month may leave much to be resolved, but isn't this at last a sign that nations can unite in the best interests of the planet? And should we really lose faith that human determination and ingenuity ultimately will win through? Despite the power of international finance, this is a world where it is possible to be economically successful in societies as deliberately different as those of Sweden or the United States.

We rightly worry about rogue states and terrorists with dirty bombs; but let us also remember that since Nagasaki we have managed to carry on for 60 years without anyone unleashing the power of nuclear warfare. Not only have there been three generations of peace in Europe, but when in the past has a project as grand as EU enlargement been accomplished, let alone accomplished in a decade?

Progressives want the world to be a better place. We bemoan its current inequities and oppression - yet if we fail to celebrate the progress that human beings have made, and if we sound as though the future is a fearful place, we belie our own philosophy. Instead, we need to address a deficit in social optimism that threatens the credibility of our core narrative.

There are many aspects to this; we should, for example, be making the case for a more balanced and ethical media. But my starting point is the need to forge a new collectivism. It is in working with others on a shared project of social advance that we can be reconnected to the sense of collective agency so missing from modern political discourse. It is the attitude of the spectator that induces pessimism, the experience of the participant that brings hope. The problem is not that change brings fear and disorientation (there's nothing new in this), it is that we lack the spaces and places where people can renew hope and develop solutions.

The old collectivism is dead or dying. Its characteristics - hierarchical, bureaucratic, paternalistic - are no longer suited to the challenges or the mood of the times. The institutions of the new collectivism must be devolved, pluralistic, egalitarian and, most of all, self-actualising.

For all the talk of the decline of social capital, people are doing more stuff together. Twenty-five years ago, with falling audiences, commentators assumed that the cinema and live football were dead: we would all rather stay in the safety and comfort of our new, hi-tech living rooms. But then the multiplex,

the blockbuster, the all-seater stad ium and foreign players showed the problem to be no deeper than the failure to keep up with modern tastes and expectations.

Self-actualisation is the peak of Maslow's hierarchy of needs. There is evidence that more of us are trying to climb that hierarchy. It is in the crowds at book festivals and art galleries, in ever more demanding consumerism with an emphasis on the personal, sensual and adventurous. We want to enjoy ourselves, to be appreciated and to feel we are growing from the experience. Compare that to the last Labour Party, trade union or council meeting you went to.

The failure to provide routes to collective fulfilment means we assume that our journey is best pursued alone. In the 1970s and 1980s, new left movements at home and abroad placed emphasis on forms of political organisation and debate that were innovative, exciting and (dare I say it without mockery) consciousness-raising.

Today, there are signs of a yearning for new ways of working together. There is the growing interest in social and co-operative enterprise and the emergence of new forms of online collaboration. Gordon Brown's citizens' juries are a tentative step in the right direction, albeit without much fun or risk-taking, but generally, progressives seem more interested in bemoaning the state of the world than in rolling up their sleeves and getting to work on building the institutions of a new collectivism.

Despite the huge impersonal forces of the modern world, people are prepared not only to believe in a better future, but to work together to build it. Tackling climate change offers a fascinating opportunity to interweave stories of action at the individual, community, national and international levels. This potential will be fulfilled only when we provide spaces for collective decision-making and action that speak to the same vision of collaboration, creativity and human fulfilment that progressives claim to be our destiny.

Matthew Taylor is chief executive, Royal Society for the Encouragement of Arts, and former chief adviser on political strategy to Tony Blair

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Live music is making its grand jete back into world of top dance performance

Pairing naturally boosts the artistry of programs

By Sid Smith

Tribune arts critic

January 6, 2008

No one can detail the exact origins of dance in human history, but one aspect is certain.

Someone nearby was undoubtedly performing some sort of musical accompaniment. Maybe only hands or sticks pounding on a makeshift drum. But dance and music are all but universally inseparable.

The use of taped music in the 20th Century helped popularize dance by saving costs. But there's an imbalance, a vacuum, a sense of something missing. Take away live music, and you take away part of the thrill.

Last year saw a veritable explosion of dance to live music here, a trend that's been building for some years. The Joffrey Ballet now performs most engagements here with the Chicago Sinfonietta, conducted by Leslie Dunner, the troupe's musical director. Hubbard Street Dance Chicago performs Friday with the Chicago Symphony Orchestra at Symphony Center, an annual get-together now five years old.

Patrons of Luna Negra Theatre's fall engagement at the Harris Theater saw Eduardo Vilaro's "Cugat!" danced to the live accompaniment of conductor Angel Melendez and the 911 Mambo Orchestra. Last summer, Donald Byrd's new ballet "To Know Her" premiered at the Ravinia Festival with Ramsey Lewis and fellow musicians performing onstage.

In August, Orbert Davis and the Chicago Jazz Philharmonic hosted tap dancers from the Chicago Human Rhythm Project at Millennium Park. And even Lollapalooza played along: Performers from Chicago Tap Theatre danced to the Polyphonic Spree, entertaining thousands.

"Live music is important because of the communication that happens non-verbally in a collaborative process," says Jason Palmquist, executive director of Hubbard Street and formerly vice president for dance administration at the Kennedy Center for the Performing Arts in Washington. "The conductor, watching the performance and the musicians, can react to nuances in ways that a recording can't."

Teamwork

"It's a partnership," says Dunner, whose achievements include a doctorate in music. "Even when we're not onstage, the conductor and orchestra are a conduit through which the musical experience is transferred from the stage to the audience. I always expect dancers to understand what can and can't be done, musically and artistically. My responsibility is to understand what can and cannot be done from the dancer's viewpoint.

"Together, we come up with the artistic product."

"When dancers perform to a piece on tape, after a while, they stop listening," says Ashley Wheater, the Joffrey's artistic director. "With live music, you have to adapt to whatever you're given. It's a challenge we need. Sure you can count, but people spend too much time counting. All you have to do is listen, even if you're in the corps de ballet. It's important dancers learn to dance inside the music. There's nothing better. It completely fills your body."

Dunner remembers performances during which dancers fell and even one when a ballerina managed to get offstage before collapsing after breaking a bone.

A live conductor's a godsend in such instances. But there are happy times too. "One year at the end of a variation, a dancer was just in a great spot and kept turning and turning and turning," he recalls. "The orchestra just kept looking at me. We were supposed to hold a short pause and then hit the next note, but the dancer kept going. Miraculously, not a single musician jumped into the note early. They all held the pause."

Thus, the seemingly strict discipline of ballet takes on the improvisational colors associated with jazz. The live orchestra gives the dancers heightened musicality; the live dancers give the orchestra visual oomph. "The tap dancers become another section of the orchestra," Davis says of his work with live dancers. "Jazz is rhythm and improvisation, and so is tap dancing. When the drummer and soloist trade off, it enhances the artistic experience."

'Music becomes a dancer'

"Cugat!" is an homage to Big Band legend Xavier Cugat, whose work inherently celebrated the mix of live music and dance. Vilaro said taped music wasn't an option. "The music becomes a dancer, an actor in the process," Vilaro says. "You lack an essence when you dance without live music. I can't imagine Latin dance without it."

The long use of taped music involves making a virtue of necessity. Modest modern troupes in their early days couldn't afford musicians. So they made do, and eventually employed elaborate recordings with all sorts of electronic effects that virtually couldn't be reproduced live. The scores of Philip Glass and John Cage are good examples.

There are also celebrated works to singers too renowned to tour with a dance troupe: Twyla Tharp's pieces to the Beach Boys and Frank Sinatra, for example, or the Joffrey's "Billboards" to Prince.

Even with less famous musicians, the cost is a challenge.

"It's a big expense," says Jon Teeuwissen, the Joffrey's executive director. "You're not just paying for a conductor and musicians, you're paying for rehearsals, for a librarian to put together the scores and even for sheet music." The price tag varies, but Teeuwissen estimates it costs an average of $200,000 extra for live music for a Joffrey engagement here. For the smaller Luna Negra, live music can add as much as $20,000 to the run.

"When dance organizations get strapped, one of the first things to go is live music," Teeuwissen says. "I disagree. Someone once said you wouldn't dream of hosting an opera singer with recorded music, so why should it be different for a dance troupe?"

Costs aside, last year's instances offered looks at an emerging aesthetic. In contrast to the empty stage and abstract purity of modern dance days, the musicians flooded the performance area and sat side by side with the dancers: at Ravinia, at Millennium Park and at Symphony Center. The musicians were part of the choreographic picture.

This is hardly new. Pianists and singers shared the stage frequently with dancers in the modern period, and Gerald Arpino's 1971 "Valentine" even employs an onstage bassist as part of a choreographed comic meltdown.

New territory

But recent juxtapositions in Chicago are more elaborate -- a fourth wall between dancers and musicians totally obliterated. Hubbard artistic director Jim Vincent finds it delightful.

In his days with the Nederlands Dance Theatre, Vincent remembers choreographer Jiri Kylian staging

a section of horns at the rear of the theater, "so that the music came from over the hills, as it were. It was enough to send chills down your spine before you even saw any choreography," Vincent says.

He adds: "I gradually became uncomfortable with the fact that the musicians were in the pit, and we were on the stage. The audience is missing something. One of the most beautiful things to watch is the bowing of a string section, a work of choreography in itself."

This spring, at its gala, Hubbard plans to perform three pieces to live piano accompaniment.

"It's like in 'The Wizard of Oz,'" says Dunner. "The movie starts in black and white, and then, after the tornado, there's suddenly a world of color. In dance, you have to have all the components to get the true live experience.

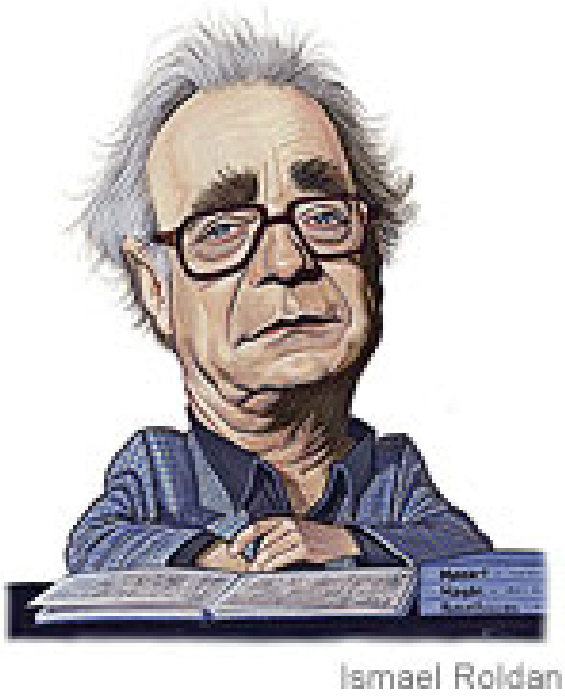
"Every night, I have no idea what I'm going to do," adds Dunner. "Sometimes, I slow down. Sometimes, I get really loud. Sometimes, I bring out certain accents. No matter how many 'Nutcrackers' we perform, every single one should be different."

http://www.chicagotribune.com/entertainment/arts/chi-0106_dancejan06,1,6896463.story?ctrack=1&cset=true

When an Artist Retires

How long is too long?

By TERRY TEACHOUT
January 5, 2008; Page W12



Alfred Brendel, the celebrated Austrian pianist, is calling it a day. He recently announced plans to retire from public performance a year from now, when he'll be 77 years old, an august but far-from-unprecedented age. Vladimir Horowitz, for instance, was still giving recitals at the age of 83. So what's the rush? Thomas Hull, a spokesman for Mr. Brendel, says that he wants "to stop performing while still at the peak of his powers. . . . He dislikes the idea of farewell tours and concerts and prefers to just stop."

I'm disinclined as a rule to encourage artists to hang up their dancing shoes. Nothing is so beautiful or thrilling as the spectacle of an old man mad about art. On his 90th birthday, Justice Oliver Wendell Holmes gave a radio address in which he quoted a line of ancient Latin poetry: "Death plucks my ear and says, Live -- I am coming." Many creative artists have taken his advice in old age, thereby infusing their work with a newfound sense of urgency and economy. Earlier this season I lavished praise on the New York premiere of "Dividing the Estate," a play by Horton Foote, who turns 91 in March. I was no less impressed by a recent exhibition at Knoedler & Co. of the late canvases of Jules Olitski, who painted with ever-increasing passion until his death last February at the age of 84. "I still have work to do," Olitski said at the end of his life, and he kept on doing it with undiminished force for as long as he could hold a brush.

More than a few performing artists have worked similar miracles at equally great ages. I treasure my memory of the last gig of the jazz saxophonist Benny Carter, who was born in 1907, cut his first records in 1928 and kept on playing until 1995, when I had the good fortune to hear him in New York, eight years before his death. He was still playing well -- and he knew it. "I play the same way now that I did when I was 23, so I don't think age has anything to do with it," he told Peter Keepnews of the New York Times.

But the performer, unlike the creator, is as much athlete as artist, and thus is slave to the flesh. Sooner or later he must face, like the oven bird of Robert Frost's poem, the problem of "what to make of a diminished thing." Some performers, like Horowitz and John Gielgud, solve that problem bravely and resourcefully, balancing the intensified insight of maturity against the physical decline that gradually erodes their mechanical skills, and manage to go out on a high note. Others, like Rudolf Nureyev and Arturo Toscanini, hang on too long, leaving their fans with memories they'd rather not have.

I saw Anita O'Day perform at a New York nightclub a couple of years before her death in 2006 at the age of 87. It isn't possible for any singer, however gifted, to go on that long, and the performance O'Day gave was a sad exercise in self-mockery, the kind that leaves behind a dark and lasting stain of humiliation. It set me to thinking about the aging artist who doesn't know when to quit.

No critic in his right mind is eager to write that terrible review saying the time has come to depart the stage. He writes it -- if he must -- with the utmost reluctance. I well remember when Isaac Stern, one of the foremost classical violinists of the 20th century, was supposed to play the Beethoven Violin Concerto at the New York Philharmonic's opening-night concert in 1998. He didn't, and what he did end up playing

was a hopeless mess. I reviewed the concert for the New York Daily News, and I went home that night wondering how to say what I had to say without being needlessly cruel. This was what I wrote:

"Isaac Stern, who is 78 years old and gave his first concert with the Philharmonic 54 years ago, was originally slated to perform the Beethoven D Major Concerto, one of the longest and most demanding pieces in the violin repertoire. Blaming a strained tendon, he chose at the last minute to substitute two shorter pieces by Beethoven and three Viennese cream puffs by Fritz Kreisler. It was a wise decision, given the fact that his technique is now in an advanced state of disrepair. The audience applauded warmly, no doubt in tribute to the golden-toned playing of his younger years."

I hated having to write that careful paragraph, just as I hated Stern a little bit for making me do it. That's why I appreciate Alfred Brendel's dignified decision to bring his illustrious career to a close. No doubt he could keep on playing well for quite a few more seasons -- but those of us who revere his way with the music of Haydn, Mozart and Beethoven will be glad not to have to wonder whether his next performance will turn out to be the one he shouldn't have given.

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