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What Has Driven Women Out of Computer Science?

By RANDALL STROSS

ELLEN SPERTUS, a graduate student at M.I.T., wondered why the computer camp she had attended as a girl had a boy-girl ratio of six to one. And why were only 20 percent of computer science undergraduates at M.I.T. female? She published a 124-page paper, "Why Are There So Few Female Computer Scientists?", that catalogued different cultural biases that discouraged girls and women from pursuing a career in the field. The year was 1991.

Computer science has changed considerably since then. Now, there are even fewer women entering the field. Why this is so remains a matter of dispute.

What's particularly puzzling is that the explanations for under-representation of women that were assembled back in 1991 applied to all technical fields. Yet women have achieved broad parity with men in almost every other technical pursuit. When all science and engineering fields are considered, the percentage of bachelor's degree recipients who are women has improved to 51 percent in 2004-5 from 39 percent in 1984-85, according to National Science Foundation surveys.

When one looks at computer science in particular, however, the proportion of women has been falling. In 2001-2, only 28 percent of all undergraduate degrees in computer science went to women. By 2004-5, the number had declined to only 22 percent. Data collected by the Computing Research Association showed even fewer women at research universities like M.I.T.: women accounted for only 12 percent of undergraduate degrees in computer science and engineering in the United States and Canada granted in 2006-7 by Ph.D.-granting institutions, down from 19 percent in 2001-2. Many computer science departments report that women now make up less than 10 percent of the newest undergraduates.

In 1998, when Ms. Spertus received her Ph.D. in computer science, women received 14 percent of the doctorates granted in the field. Today, she's an associate professor at Mills College and a research scientist at Google. Her life story supports the hypothesis of Jane Margolis, co-author of "Unlocking the Clubhouse: Women in Computing," who highlights the ambient ideas in a family that are enormously influential in career decisions.

Last week, Ms. Margolis said that "a lot of the girls who were doing computer science came from families of computer scientists and engineers." Her explanation: "It was in the air. There was the

expectation that they could do whatever they wanted." Ms. Spertus's father was an M.I.T.-trained engineer. She learned programming even before personal computers had arrived, using computer terminals in her house that were connected to a Honeywell mainframe used by the family's business.

Twenty-five years ago, more young women in colleges and universities were drawn to computer science than today. From 1971 to 1983, incoming freshman women who declared an intention to major in computer science jumped eightfold, to 4 percent from about 0.5 percent.

Jonathan Kane, a professor of mathematics and computer science at the University of Wisconsin-Whitewater, recalls the mid-1980s, when women made up 40 percent of the students who majored in management computer systems, the second most popular major on campus. But soon after, the number of students majoring in the program had fallen about 75 percent, reflecting a nationwide trend, and the number of women fell even more. "I asked at a department meeting," he says, " 'Where have the women gone?' It wasn't clear." His theory is that young women earlier had felt comfortable pursing the major because the male subculture of action gaming had yet to appear.

Justine Cassell, director of Northwestern University's Center for Technology & Social Behavior, has written about the efforts in the 1990s to create computer games that would appeal to girls and, ultimately, increase the representation of women in computer science. In commenting as a co-contributor in a new book, "Beyond Barbie and Mortal Kombat: New Perspectives on Gender and Gaming," Ms. Cassell writes of the failure of these efforts, "The girls game movement failed to dislodge the sense among both boys and girls that computers were 'boys' toys' and that true girls didn't play with computers."

She said last week that some people in the field still believed that the answer to reversing declining enrollment was building the right game. Another school of thought is what she calls the "we won" claim because women have entered computer-related fields like Web site design that are not traditional computer science. Ms. Cassell points out that it's not much of a victory, however. The pay is considerably less than in software engineering and the work has less influence on how computers are used, and whether this actually accounts for the diminishing numbers of female computer science majors remains unproved.

Ms. Cassell identifies another explanation for the drop in interest, which is linked to the pejorative figure of the "nerd" or "geek." She said that this school of thought was: "Girls and young women don't want to be that person."

I spoke with Ms. Spertus last week about her thoughts about the declining percentage of undergraduate women majoring in the field. "Women choosing not to go into computer science is fine," she said, "if there aren't artificial barriers keeping them out." She lamented the recent decision of one of her outstanding computer science students who chose to major in nursing because of what the student perceived as better prospects for finding employment.

Such students who choose not to pursue their interest may have been introduced to computer science too late. The younger, the better, Ms. Margolis says. Games would offer considerable promise, except that they have been tried and have failed to have an effect on steeply declining female enrollment.

At least we know one thing: it's possible to have about the same number of men and women in computer science classes. That just about describes classrooms of 25 years ago.

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http://www.nytimes.com/2008/11/16/business/16digi.html?_r=1&th&emc=th&oref=slogin

Saving Buffalo's Untold Beauty

By NICOLAI OUROUSSOFF

BUFFALO

ONE of the most cynical clichés in architecture is that poverty is good for preservation. The poor don't bulldoze historic neighborhoods to make way for fancy new high-rises.

That assumption came to mind when I stepped off a plane here recently. Buffalo is home to some of the greatest American architecture of the late 19th and early 20th centuries, with major architects like Henry Hobson Richardson, Frederick Law Olmsted, Louis Sullivan and Frank Lloyd Wright building marvels here. Together they shaped one of the grandest early visions of the democratic American city.

Yet Buffalo is more commonly identified with the crumbling infrastructure, abandoned homes and dwindling jobs that have defined the Rust Belt for the past 50 years. And for decades its architecture has seemed strangely frozen in time.

Now the city is reaching a crossroads. Just as local preservationists are completing restorations on some of the city's most important landmarks, the federal government is considering a plan that could wipe out part of a historic neighborhood. Meanwhile Mayor Byron W. Brown is being pressed to revise a proposal that would have demolished hundreds of abandoned homes.

The outcome of these plans will go far in determining the city's prospects for economic recovery, but it could also offer a rare opportunity to re-examine the relationship between preserving the past and building a future.

Buffalo was founded on a rich tradition of architectural experimentation. The architects who worked here were among the first to break with European traditions to create an aesthetic of their own, rooted in American ideals about individualism, commerce and social mobility. And today its grass-roots preservation movement is driven not by Disney-inspired developers but by a vibrant coalition of part-time preservationists, amateur historians and third-generation residents who have made reclaiming the city's history a deeply personal mission.

At a time when oil prices and oil dependence are forcing us to rethink the wisdom of suburban and exurban living, Buffalo could eventually offer a blueprint for repairing America's other shrinking postindustrial cities.

Touring Buffalo's monuments is about as close as you can get to experiencing firsthand the earliest struggles to define what an American architecture would look like.

The city's rise began in 1825 with the opening of the Erie Canal, which opened trade with the heartland. By the end of the 19th century the city's grain silos and steel mills had become architectural pilgrimage sites for European Modernists like Erich Mendelsohn and Bruno Taut, who saw them as the great cathedrals of Modernity. In their vast scale and technological efficiency, they reflected a triumphant America and sent a warning signal to Europe that it was fast becoming less relevant.

Yet it is the parade of celebrated architects who worked here as much as the city's industrial achievements that makes Buffalo a living history lesson. Daniel Burnham's 1896 Ellicott Square Building, with its mighty Italian Renaissance facade, towers over the corner of Main and Church Streets. Just a block away is Louis Sullivan's 1895 Guarantee Building, a classic of early skyscraper design decorated in intricate floral terra-cotta tiles.

Across town, Henry Hobson Richardson built his largest commission: the 1870 Buffalo State Asylum for the Insane, composed of a pair of soaring Romanesque towers flanked by low brick pavilions. Light and air poured in through tall windows; spacious 18-foot-wide corridors were designed to promote interaction among the inmates, an idea that would be refined by Modernists in their communal housing projects decades later.

But it was Wright who made the decisive leap from an architecture that drew mainly on European stylistic precedents to one that was rooted in a growing cultural self-confidence. Wright built two of those great pillars of American architecture here, the 1904 Larkin Building and the 1905 Darwin D. Martin House.

Although torn down in 1950, the Larkin Building, designed as the headquarters of the Larkin Soap Company, remains one of the most influential designs of the 20th century. Wright invented floor-to-ceiling glass doors, double-pane windows and toilets affixed to the walls for this monument to American business. Massive, forbidding brick piers anchoring the exterior signaled a break with classical historical styles. The light-filled atrium piercing its five floors, with managers visible at their desks at the bottom, turned the traditional office hierarchy on its head.

The Martin House, a Prairie House complex of five buildings on a vast suburban lot, is the domestic counterpart to this vision. No European architect had come close to imagining such a fluid world. A composition of low brick structures, terraces, pergolas and gardens in which man and landscape were in tune, the design celebrated a democratic ideal of family life in which traditional social barriers, and the walls that reinforce them, were finally torn down.

Yet Wright's genius lay in his ability to accomplish this feat while conveying a profound serenity. The low roof and broad cantilevered eaves both beckoned to the horizon and provided shelter. The grid of wood beams in the living room, set just below ceiling level, visually broke down the space into discrete rooms while maintaining a sense of openness. Above all this architecture represented freedom both from Europe's suffocating traditions and from the feelings of cultural inferiority that had defined American architecture since the earliest days of the republic.

This departure from recycled European precedents is reflected in the city's late-19th-century urban planning as well. Buffalo's original plan from the early 19th century was loosely based on Pierre Charles L'Enfant's 1791 plan for Washington, an Americanized version of Paris's system of radiating boulevards. Its civic core, dominated by a mountainous City Hall, reads as an isolated fragment of a City Beautiful plan that was never fully realized.

Olmsted, as much social reformer as landscape architect, had visited John Paxson's Birkenhead Park near Liverpool, a pioneering project designed to better the lives of the city's working class. When he returned to New York, he expanded on that vision in his designs for Central and Prospect Parks, which he conceived as realms of psychological healing that could also break down class boundaries.

In Buffalo he realized an even grander ambition, creating a vast network of parks and parkways that he hoped would have "a civilizing effect" on the "dangerous classes" populating the American city. Flanked by rows of elm trees, the parkways were broken up by a series of gorgeous landscaped roundabouts, slowing the city's rhythms of movement into something more majestic yet distinctly democratic.

It didn't last of course. By the 1950s Buffalo's economy had already embarked on its long path to disintegration. The completion in 1959 of the St. Lawrence Seaway, which created a more direct route to the Atlantic Ocean, made the Erie Canal obsolete and deprived the city of its commercial lifeline. Economic decline was exacerbated by race riots in 1967 and white flight to the suburbs. By the mid-1970s the inner city was being abandoned.

Even so, many of the city's most revered monuments survived. Despite the destruction of some surrounding structures, the main house at the Martin complex remained intact. Richardson's asylum closed in the mid-1970s, and though one of its wings was demolished to make room for a new hospital next door, the bulk of the building still towers over Olmsted's park.

Today Buffalo is a collection of fragile museum pieces with a covey of local stewards struggling to preserve them as a means to help save the city.

It would not be the first place to see its history as a means of attracting tourist dollars. (Boston and New Orleans are among the obvious precedents.) What makes this historic revival so heartwarming, however, is that it is driven by genuine civic pride in the face of daunting odds.

When a group of private citizens took control of the Martin House in 1992, for example, their ambitions were relatively modest: to restore the main house, one of three structures that had not yet been demolished. As time wore on, the group began to see the entire complex as a singular vision that could not be understood unless it was fully brought back to life .

In the early 1960s its conservatory and pergola had been ripped out to make way for an unsightly apartment complex; in 1994 the group raised the money to purchase the structure, tear it down and rebuild the elements of Wright's complex that had been destroyed. A few years ago they bought the small gardener's cottage that anchored the northwest corner of the site as well.

The project's overall cost soared to more than $50 million from $10 million. But most of the structural and exterior work is now complete, and now, for the first time in decades, you can fully glean the genius of Wright's work.

Other projects have been less high profile but equally exemplary. On the October day I arrived, I met with Monica Pellegrino Faix, a representative of the Richardson Center Corporation, a local nonprofit group trying to save the asylum. The state has committed $76 million to help restore the complex, and the group is now trying to come up with potential uses for its vacant buildings, including using one for an architecture museum.

Later that day I met with a group of local activists who have been rebuilding single-family houses in some of the city's most run-down historic neighborhoods. On Richmond Avenue, one of Olmsted's grand decaying parkways, Harvey Garrett, a strategic planning consultant, spent several years renovating a 19th-century Victorian house before an arsonist set fire to it in 2006. He rebuilt it, and he is now one of the city's busiest community organizers and strongest preservation voices. Dozens of houses are now being renovated along the avenue, and an entire neighborhood that was once considered crime ridden is now livable again.

In a mostly abandoned factory area not far from downtown, Douglas Swift, a developer whose family has lived in Buffalo for generations, recently completed the restoration of a former Larkin warehouse, an early example of concrete frame construction; the project, which is now an office complex, has spurred a range of new development in the area.

What we see is a more egalitarian, diverse and socially tolerant vision of the city. It is both pro-density and pro-history. These residents have come to recognize through firsthand experience that social, economic and preservation issues are all deeply intertwined.

Sadly, not everyone has been so enlightened on this issue. Preservationists raised an outcry this year when Mayor Brown unveiled his plan to demolish 5,000 houses over the next five years as part of an effort to clean up some of the city's poorest neighborhoods. The National Trust for Historic Preservation and the mayor's office are now trying to hammer out a compromise.

And as the preservation movement has grown, it has inevitably gotten involved in bigger, more complex urban issues. The federal Homeland Security Department has proposed an expansion of the entrance to the Peace Bridge, the city's main border crossing into Canada. Preservationists balked. The project, which includes a vast new parking plaza for commercial trucks, would require razing five blocks of Columbus Park, a neighborhood of historic houses mostly built from 1860 through the late 1920s. A 20-foot-high berm would also be built alongside Olmsted's Front Park, which flanks one side of the neighborhood, blocking out sublime views of Lake Erie and the Niagara River.

The National Trust, which opposes the plan, has suggested moving the new parking plaza to the Canadian side of the border — a possibility that the Canadian government says it will consider — or rerouting traffic to one of four other bridges. But those prospects appear doubtful.

Meanwhile the city has begun to take a few cautious steps into the present. Toshiko Mori, a New York architect and the former chairwoman of the architecture department at Harvard's Graduate School of Design, is putting the finishing touches on a gorgeous new visitors' center at the Martin House. Gwathmey Siegel & Associates of New York has designed a sleek new zinc- and cast-stone-clad home for the Burchfield-Penney Art Center near the historic district of Elmwood Village, which opens next Saturday.

But how these projects will be forged into a cohesive vision for the city's future is less certain. The best-intentioned preservationists, however determined, can accomplish only so much. Often developers co-opt

the achievements of these trailblazing individuals and nonprofit groups by dolling up historic neighborhoods for private gain. The city's rough edges are smoothed over to satisfy the hunger for more tourist dollars. Shiny new convention centers and generic boutiques follow. Yet schools, roads, bridges and electrical and power lines continue to crumble.

Buffalo is an ideal testing ground for rethinking that depressing model. Its architectural heritage embodies an America that thought boldly about the future, but believed deeply in the city as a democratic forum. What's needed now is to revive that experimental tradition.

http://www.nytimes.com/2008/11/16/arts/design/16ouro.html?th&emc=th

European debut for '$100 laptop'

Europeans will soon be able to buy their own XO laptop.

The One Laptop Per Child (OLPC) organisation is planning to sell the devices via online store Amazon's European outlets from 17 November.

The machines will be sold under the Give One, Get One scheme that the OLPC organisation has already run in the US.

Under that scheme, buyers get one machine for themselves and the other is donated to a school child in a developing nation.

Late delivery

The plan to put the distinctive green and white XO laptops on sale in 27 European nations was revealed by OLPC founder Nicholas Negroponte in a speech to the World of Health IT Conference in Copenhagen.

When it goes on sale the XO laptop is expected to cost £268 (313 euros) and should be available in 27 EU nations as well as Switzerland, Russia and Turkey.

The Give One, Get One programme was first run in the US in November and December 2007. The OLPC organisation claims it sold almost 190,000 machines via the scheme.

Despite the success of the scheme, it drew criticism because the OLPC group had trouble delivering machines to those who had ordered one. In a bid to resolve these issues, it signed up with Amazon in September 2008.

The original idea for the OLPC was to create a small, powerful laptop for school children that would sell in the millions yet cost less than $100.

The final version of the machine ended up costing about $188 and the OLPC group has only sold about 600,000 of the machines.

Many nations have expressed an interest in using the XO but few have signed up to buy them in the numbers expected by the OLPC organisation. Most recently the Caldas region of Colombia signed up to buy 65,000 XO machines.

The XO has also faced competition from Intel's Classmate laptop. In September, Venezuela ordered one million Classmate laptops for its school children.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/technology/7728881.stm

Published: 2008/11/14 10:47:59 GMT

Cancer drug success 'on the rise'

Cancer drug research is entering a new era which will mean more successful drugs for patients, says a charity.

However, Cancer Research UK called for pharmaceutical firms and academics to be more open about those which do not make the grade.

Improved knowledge of cancer's biology means 18% of new drugs, compared with 5% previously - will become standard treatments, said the charity's experts.

Their research was published in the journal Nature Reviews Drug Discovery.

> **We strongly believe that both industry and academia must improve the availability of data related to failed as well as successful drug development programmes**
> Professor Herbie Newell
> Cancer Research UK

The hunt for cancer drugs is carried out on a massive scale, but there is also a massive failure rate, as promising candidates fall by the wayside in clinical trials.

This costs drug firms and charities such as Cancer Research UK many millions, although scientists can learn lessons even from expensive failures.

Some studies have estimated that, in the past, just 5% of cancer drugs in the pipeline actually end up in the clinic being used day to day.

Data on 974 drugs under development, gathered by Cancer Research UK experts, suggests that 18% of them will prove successful in clinical trials.

It is hoped that many of them will be alternatives to conventional chemotherapy, which can have unpleasant and dangerous side-effects, targeting the mechanisms of cancer cells more directly, with less damage to healthy cells.

Genetic make-up

Dr Ian Walker, the licensing manager at the charity's commercial development arm, said: "This clearly demonstrates the benefits of developing molecularly targeted treatments for cancer - understanding more about the basic biology of cancer is making a real difference to the success rate for new anti-cancer drug development."

The ability to tailor drug choices to the genetic make-up of patients in some cases is also having a benefit.

However, Professor Herbie Newell, also from Cancer Research UK, said that minimising the number of "failures" - and their cost to the industry - would be vital, and this could be helped if researchers and drug companies were more open about what worked, and what did not:

"We strongly believe that both industry and academia must improve the availability of data related to failed as well as successful drug development programmes.

"The sharing of such information can only be beneficial for clinical, scientific and commercial reasons - and will help measure our progress as well as pinpoint areas for improvement."

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7728821.stm

Published: 2008/11/16 00:00:22 GMT

Ovary transplant baby 'a miracle'

The first woman in the world to have a whole ovary transplant has spoken of her delight at giving birth to a healthy baby girl.

Susanne Butscher was given the ovary by her twin sister Dorothee a year ago, after developing an early menopause.

She gave birth to Maja, who is genetically her niece, at the Portland Hospital in London on Tuesday.

The 39-year-old told the Daily Telegraph the newborn child was a "little miracle".

"Being the first woman in the world to give birth after a whole ovary transplant hasn't sunk in yet, but I'm just so grateful to the doctors who enabled this to happen, and to my sister, of course," she said.

Hope

Mrs Butcher, who is German, gave birth by elective Caesarean at the private hospital after she reached full term but without experiencing any labour pains.

She told the newspaper she hoped her story would offer hope to other women in the same position.

> **When I saw her for the first time I just cried. She really is a little miracle**
> Susanne Butscher

She said: "I'm so lucky to have had this wonderful opportunity, which has given me a sense of completeness I would never have had otherwise."

Her daughter Maja, who weighed 7lb 15oz (3.6kg) when she was born, was named after the Roman goddess of fertility.

Mrs Butscher said: "When I saw her for the first time I just cried. She really is a little miracle."

The acupuncturist and complementary therapist said she had first found out she was infertile 12 years ago.

But she, and her husband Stephan, 40, conceived naturally after her twin, who has two children herself, donated the ovary.

The transplant operation was carried out by Dr Sherman Silber, who is based at the Infertility Centre of St Louis, in Missouri, USA.

He has given ovarian tissue transplants to nine twins previously, but Mrs Butscher's case was the first successful whole ovary transplant.

The ovary was implanted using microsurgical techniques to reattach it to its blood supply and hold it in place alongside the fallopian tube, so that eggs could be expelled and travel down the tube towards the womb in the normal way.

Dr Silber announced the birth at the American Society of Reproductive Medicine Conference in San Francisco earlier this week.

He told the conference that the full ovary transplant was likely to last longer than strips of ovarian tissue, and might allow a woman's ovary to be removed and put back after extended storage.

This, he said, could allow women who are delaying motherhood for career or other reasons to improve their chances of having a baby later in life.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7731186.stm

Published: 2008/11/15 14:56:26 GMT

Heart test 'cannot predict risk'

Heart tests offered to many patients with chest pain are of little value in predicting future heart disease, say researchers.

Instead of electrocardiagram (ECG) tests, doctors should spend more time quizzing patients about their symptoms and examining them, they said.

The British Medical Journal study, by the London Chest Hospital, followed 8,176 suspected angina patients.

A heart charity stressed that the test was useful in other circumstances.

> **Better risk assessment of patients with angina is needed to help identify those most at risk of heart attack or death**
> Dr Mike Knapton
> British Heart Foundation

Approximately two in 100 people in the UK experience angina, which is the most common symptoms of heart disease.

Reporting chest pain to a doctor generally means referral to a rapid access clinic, where ECGs taken to predict whether a patient needs further attention.

An ECG monitors the electrical activity of the heart over a period of time, looking for evidence of weakness in the heart muscle, or abnormal rhythms.

Often the patient will be asked to undergo the test while exercising, which can help highlight these problems.

The study compared the progress of the patients, 60% of whom who had an exercise ECG performed.

Among the 60%, 1,422 not only had the basic "summary" results recorded, but had detailed data from the ECG used to help make a diagnosis.

All the patients were then followed up for the next few years.

History call

However, almost half of all coronary "events", such as heart attacks, that happened during this period, happened in patients whose ECG results had not shown any sign of problems.

A routine clinical assessment, which involved taking a detailed "history" from the patient, and examining them thoroughly, was almost as good in predicting future heart disease as the exercise ECG.

The researchers concluded that the tests were "of limited value" to doctors faced by patients with no prior heart disease.

Dr Mike Knapton, from the British Heart Foundation said that while early diagnosis of angina was important, the study showed that the best way to achieve that was to talk to the patient.

"Tests such as resting or exercise ECGs can be helpful when patients present with unusual symptoms or suffer from chest pain following a heart bypass.

"But exercise ECG is not very good at assessing future risk. Better risk assessment of patients with angina is needed to help identify those most at risk of heart attack or death.

"Any results for ECGs should be in addition to consultation with your Doctor to properly monitor your condition."

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7728817.stm

Published: 2008/11/14 10:51:45 GMT

Packages You Won't Need a Saw to Open

By BRAD STONE and MATT RICHTEL

SAN FRANCISCO — A number of retailers and manufacturers have a gift for holiday shoppers: product packaging that will not result in lacerations and stab wounds.

The companies, including Amazon.com, Sony, Microsoft and Best Buy, have begun to create alternatives to the infuriating plastic "clamshell" packages and cruelly complex twist ties that make products like electronics and toys almost impossible for mere mortals to open without power tools.

Impregnable packaging has incited such frustration among consumers that an industry term has been coined for it — "wrap rage." It has sent about 6,000 Americans each year to emergency rooms with injuries caused by trying to pry, stab and cut open their purchases, according to the Consumer Product Safety Commission.

"I shouldn't have to start each Christmas morning with a needle nose pliers and wire cutters," said Jeffrey P. Bezos, the father of four young children and founder of Amazon.com. "But that is what I do, I arm myself, and it still takes me 10 minutes to open each package."

This month, Mr. Bezos pledged to lead the charge into a new era of nonhostile containers.

In Amazon's "frustration-free packaging" initiative involving Mattel, its subsidiary Fisher-Price, Microsoft and Transcend, an electronics maker, the companies will ship some of their best-selling products to Amazon in cardboard boxes that don't fight back. Mr. Bezos hopes to sell all of Amazon's products in such environmentally benign, consumer-friendly packaging — a goal he said would take years to achieve. "Everyone is excited about this project here," he said. "Everyone had their own war stories."

Such a campaign is relatively easy for Amazon, of course, because it does not need to worry about how products appear as they dangle from pegs on store shelves, or whether items will disappear inside shoppers' jacket pockets.

But even offline companies that do have those concerns are joining the movement. Microsoft recently unveiled an unusual container for the Explorer computer mice it sells at Best Buy. The mouse looks typically imprisoned in its package at first glance. But the container actually has a plastic zipper on each side — inspired by the packaging of food items, Microsoft said — with blue arrows that guide buyers into easily unlocking their purchase.

Sony, meanwhile, has started an ambitious internal project it optimistically calls “death of the clamshell.” The electronics giant is developing three packaging prototypes it plans to test in the coming months at Best Buy and Wal-Mart Stores. One uses an adhesive that is easy to pry open but makes a loud Velcro-like noise — intended to deter thieves.

Sony has even taken its anticlamshell campaign to its rank and file. At its annual sales and marketing meeting in April, held in Palm Desert, Calif., the company showed 1,200 employees a humorous video of four consumers struggling to open Sony products. One of them resorted to a hacksaw, another used his teeth and a third cut his finger.

“None of us intentionally tried to make this a hassle for consumers,” said Mike Fasulo, chief marketing officer for Sony.

In fact, companies like Sony resorted to hermetically sealed packaging with the best of intentions. A decade ago, as toys and consumer electronics items grew more complex, retailers decided they needed to attract shoppers by showing off items on shelves in clear plastic, instead of opaque boxes.

To do so while protecting the items, they decided to seal the hinges of containers with tough epoxy that would resist shoplifting, or what retailers call “shrinkage.”

Most shoppers know what happened next. There are the injuries, of course. And tool makers found a thriving market for blade-bristling implements to defeat the clamshell, with names like the Plastic Surgeon and the Package Shark.

For the last few years, Consumer Reports has published an annual Oyster Awards for the clamshell packages that are most frustrating to open. Last year’s winner: an Oral-B sonic toothbrush kit from Procter & Gamble and the Bratz Sisterz dolls from MGA Entertainment, which took an adult tester eight and a half minutes to open.For consumers like Lisa Martin, a mother of two from Chicago, such packaging means exhausting birthday mornings as her young children wonder impatiently why a cluster of adults are stabbing at their new presents with knives and scissors.

“I understand antitheft. But when you get home and it takes two days to get your purchase open, it kind of defeats the purpose,” said Ms. Martin, who was so enthusiastic about Amazon’s “frustration-free” initiative she offered in her blog to “make out” with the company.

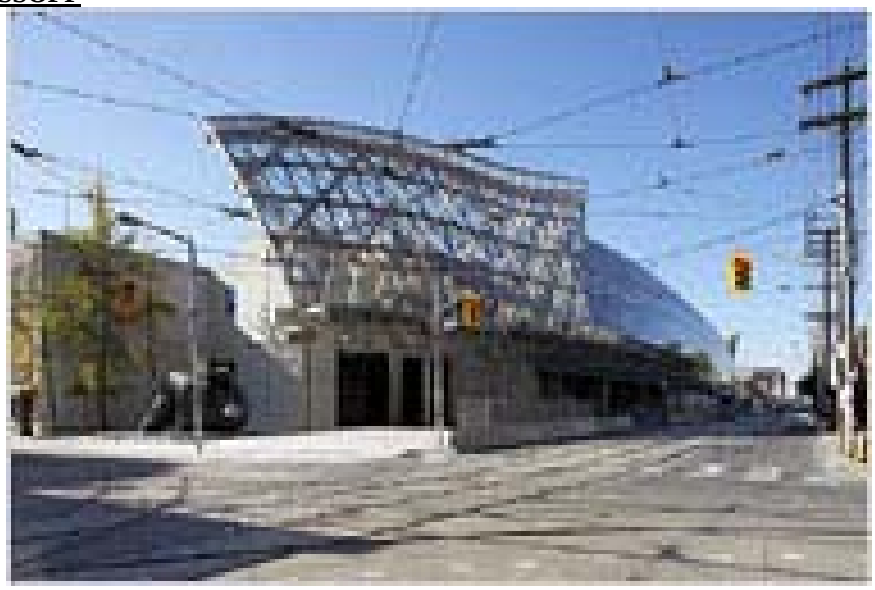
But Ms. Martin and like-minded consumers should not pucker up quite yet. In a sign that there remains a long way to go before the last clamshell is pried open, TracFone Wireless, a mobile phone company, sent an unusual gift this fall to Radio Shack outlets that carry its products.Each store has received a small box-cutter with the TracFone logo that Radio Shack sales staff can use to help open packages for shoppers.

“Rather than send coffee cups, we decided to send them something that helps them do their jobs better,” said Derek Hewitt, senior vice president for marketing at TracFone, adding that his company has already made the transition to easier to open packages. “We know how frustrating it is at Christmas to open these packages.”

http://www.nytimes.com/2008/11/15/technology/internet/15packaging.html?th&emc=th

Gehry Puts a Very Different Signature on His Old Hometown's Museum

By NICOLAI OUROUSSOFF



TORONTO — Frank Gehry has often said that he likes to forge deep emotional bonds with his architecture projects.

But the commission to renovate the Art Gallery of Ontario here must have been especially fraught for him. Mr. Gehry grew up on a windy, tree-lined street in a working-class neighborhood not far from the museum. His grandmother lived around the corner, where she kept live carp handy in the bathtub for making her gefilte fish.

Given that this is Mr. Gehry's first commission in his native city, you might expect the building to be a surreal kind of self-reckoning, a voyage through the architect's subconscious.

So the new Art Gallery of Ontario, which opened to the public on Friday, may catch some fans of the architect off guard. Rather than a tumultuous creation, this may be one of Mr. Gehry's most gentle and self-possessed designs. It is not a perfect building, yet its billowing glass facade, which evokes a crystal ship drifting through the city, is a masterly example of how to breathe life into a staid old structure.

And its interiors underscore one of the most underrated dimensions of Mr. Gehry's immense talent: a supple feel for context and an ability to balance exuberance with delicious moments of restraint.

Instead of tearing apart the old museum, Mr. Gehry carefully threaded new ramps, walkways and stairs through the original. As you step from one area to the next, it is as if you were engaging in a playful dance between old and new.

The original building, an imposing stone Beaux-Arts structure completed in 1918, grew in fits and starts over nearly a century. A wing designed to match the original style was added to the main building in the 1920s; a modern sculpture center and gallery shop, clad in precast concrete, were built in 1974.

The most damaging addition, however, was a two-story structure that the architect Barton Myers grafted onto the front of the old building on Dundas Street in the early 1990s. The addition's low brick form was intended to make the museum more accessible but ended up looking cheap and tawdry. The central

entrance was also moved off to one side, which meant that visitors had to pass through a labyrinth of spaces before reaching the heart of the museum.

Mr. Gehry's first task was to clean up this mess. He tore away that addition, restoring a grand, central point of entry. He consolidated all of the museum's commercial functions — bookstore, cafe, restaurant, theater — at one end of the building, reasserting the primacy of the museum and its art while creating a vibrant communal enclave at that street corner.

The new glass facade, swelling out one story above the sidewalk, seems to wrap the building and embrace passers-by below. Its faceted glass panels, supported by rows of curved wood beams, evoke the skeleton of a ship's hull or the ribs of a corset. At either end of the building, the glass peels back to reveal powerful crisscrossing steel and wood structural beams.

The unpretentious materials bring to mind one of Mr. Gehry's most powerful early works: his own 1978 house in Santa Monica, Calif., which he described as "a dumb box" wrapped in a skin of chain link, galvanized metal and plywood.

Yet an even greater strength of the museum design is how it suggests the interrelationship of art and the city. The bottom portion of the glass overhanging the street angles back slightly to reflect the facades of the pretty Victorian and Georgian houses across the way; the upper section tilts back to reflect the sky. Just above the glass facade, you glimpse the top of the new big, blue box that houses the contemporary-art galleries, its blocky form balanced on top of the old building.

The results are refreshing. Mr. Gehry doesn't put art on a pedestal; he asserts its importance while wedding it to everyday life. The rest of the design unfolds in a meandering, almost childlike narrative. An exposed stud wall frames the entrance, blending into the classical stone shell while adding a touch of warmth. From here, a long sinuous ramp snakes its way through the center of the lobby. The ramp, which provides wheelchair access but can be used by anyone, is an odd conceit. Yet it serves the purpose of slowing your pace as you move toward the galleries, prodding you to leave outside distractions behind.

As you travel deeper into the building, you experience a delightful tension between old and new. From the lobby you enter a court framed on four sides by the original museum's classical arcades. A glass roof supported on steel trusses has been cleaned up, and on a sunny day a heavenly light pours into the space from two stories above.

At the far end of the court, a spectacular new spiraling wood staircase rises from the second floor, punching through the glass roof and connecting to the contemporary gallery floors in the rear of the building. The staircase leans drunkenly to one side as it rises, and the tilt of the form sets the whole room in motion. When you reach the first landing, the stair rail keeps rising rather than becoming level with the floor, so that your view back across the court temporarily disappears and then returns. It's as if you were riding a wave.

This is a textbook example of how architecture can be respectful of the past without being docile. All the old spaces and the memories they house are brought lovingly back to life.

Mr. Gehry shows the most restraint in the galleries. Some have been left completely untouched, and others, like the Thomson Canadian gallery, have been subtly tweaked. Big wooden baseboards have been added to keep the eye upward, focused on the art. Doors are cut into the corners of some of the galleries so that you enter them diagonally, which preserves wall space. (One flaw is a series of rails at waist level that were designed to allow you to lean to view smaller paintings; they cast a distracting shadow on the wall, and the effect is fussy.)

Mr. Gehry seems to have had more fun with the contemporary galleries. Big wood-frame windows offer views onto the park at the back, and skylights funnel sunlight into the upper-floor spaces. The galleries are conceived as big white cubes with a few smaller, boxy spaces arranged inside, shifts in scale that give curators more display choices. They also add an element of surprise: you're not always sure what to expect when you round a corner.

The climax arrives in the Gallery Italia, a long, narrow sculpture corridor just behind the new glass facade. The entire composition snaps into place. The facade's gorgeous curved surface cleaves you close to the old building. Gazing toward the ends of the hall, where the glass curls over and then peels back, you think of the gills of a fish opening up to let in air.

As you watch the figures jostling outside and then turn to the sculptures, urban life and art seem in perfect balance.

And suddenly you grasp what's so moving about this place, despite its flaws. The exuberance is here, of course. But something else tugs at you: the architect's humility in addressing the past.

http://www.nytimes.com/2008/11/15/arts/design/15gehr.html?th&emc=th

Predatory Bacterial Swarm Uses Rippling Motion To Reach Prey

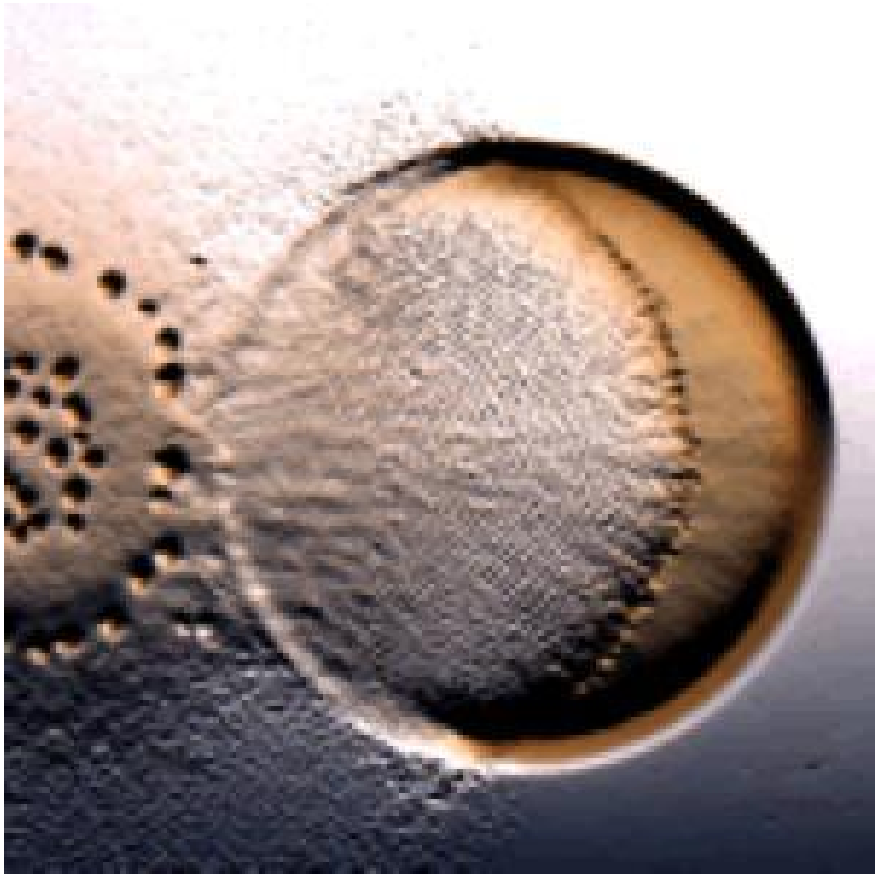


Image shows swarm of M. xanthus bacteria (left) invading a colony of prey bacteria (right). The rippling pattern is the highly organized behavior of thousands of M. xanthus cells working in concert to digest the prey. (Credit: Image courtesy of University of Iowa)

ScienceDaily (Nov. 15, 2008) — Like something from a horror movie, the swarm of bacteria ripples purposefully toward their prey, devours it and moves on.

Researchers at the University of Iowa are studying this behavior in Myxococcus xanthus (M. xanthus), a bacterium commonly found in soil, which preys on other bacteria.

Despite its deadly role in the bacterial world, M. xanthus is harmless to humans and might one day be used beneficially to destroy harmful bacteria on surfaces or in human infections, said John Kirby, Ph.D., associate professor of microbiology in the UI Roy J. and Lucille A. Carver College of Medicine.

"It may be that we can modify this predator-prey relationship or apply it to medically relevant situations," Kirby said. "It would be amazing if we could adapt its predatory ability to get rid of harmful bacteria that reside in places we don't want them, including in hospitals or on medical implants."

M. xanthus lives in a multi-cellular unit that can change its structure and behavior in response to changing availability of prey.

This adaptive ability to control movement in response to an environmental stimulus is called chemotaxis, and the research team coined the term predataxis to describe M. xanthus behavior in response to prey.

In earlier studies, Kirby and James Berleman, Ph.D., a postdoctoral fellow in Kirby's lab, showed that the presence of prey causes M. xanthus to form parallel rippling waves that move toward and through prey bacteria. Now, how the bacteria organize to form these traveling waves in response to the presence of prey is the subject of the UI team's latest study, which was published online Oct. 24 in Proceedings of the National Academy of Sciences (PNAS) Early Edition.

"When an M. xanthus aggregate is placed inside a colony of E. coli bacteria, the M. xanthus proceeds to eat the colony from the inside out and creates a rippling pattern as the swarm moves through the prey cells," Kirby said. "We now know that this rippling pattern is the highly organized behavior of thousands of cells working in concert to digest the prey."Unlike the random motion M. xanthus exhibits at low levels of prey, the study shows that during predation, individual M. xanthus cells line up perpendicular to the axis of the ripple and move back and forth. This motion of individual cells, known as cell reversal produces an alternating pattern of high and low cell density like crests and troughs of waves, and the overall motion of the wave formation is directed toward prey.

The UI team also showed that the ripple wavelength is adaptable and dependent of how much prey is available. At high prey density, M. xanthus forms ripples with shorter wavelengths. As prey density decreases, the ripple wavelength gets longer. Eventually, when there is no more prey, the rippling behavior dissipates.

"The rippling appears to enhance predation by keeping more M. xanthus cells in the location of the prey cells," Kirby said.

Finally, the UI study found that the bacteria use a chemotaxis-like signaling pathway to regulate multi-cellular rippling during predation.Individual M. xanthus cells move by shooting rope-like projections called pili from either end of the cell. These pili attach to surfaces allowing cells to pull themselves forward or backward in a "spiderman" type motion known as cell reversal. The genes that regulate this cell reversal process are chemotaxis-like genes.

The UI team mutated two genes in this pathway to study their effect on the predatory ability of the bacterium. One mutant strain rippled continuously even in the absence of prey, and individual cells exhibited a hyper-reversing action. Conversely, the second mutation produced bacteria that were not able to ripple at all.

Both mutants were unable to respond to changes in the amount of available prey and both mutant strains were deficient in predation."Our study really connects the stimulus to the behavioral response through this molecular machinery," Kirby said.

In addition the potential medical application of M. xanthus to destroy harmful bacteria, what Kirby learns about the molecular mechanisms used by the bacterium may also provide insights into the workings of a rarer, but potentially useful, bacterial cousin. The related bacterium, Anaeromyxobacter dehalogenans, has been found at superfund sites and it can transform soluble uranium, which can leach into the water supply, into insoluble uranium, which still is radioactive, but is stable and trapped in the soil where it can be more safely stored until the radioactivity decays.In addition to Kirby and Berleman, the UI team included Jodie Scott and Tatiana Chumley.

The research was funded in part by the National Institutes of Health.

Adapted from materials provided by University of Iowa.

http://www.sciencedaily.com/releases/2008/10/081029121820.htm

Major Advance In Cancer Radiotherapy

ScienceDaily (Nov. 15, 2008) — Radical improvements in outcome for many cancer sufferers are in prospect following one of the most significant advances in radiotherapy since x-rays were first used to treat a tumour in 1904. The use of charged particles as an alternative to x-ray or gamma ray radiation can extend the scope of radiotherapy to tumours previously requiring invasive surgery, while speeding up diagnosis and reducing collateral damage to surrounding tissue.

This fast emerging field of charged particle cancer therapy was thrashed out at a recent workshop organised by the European Science Foundation (ESF), which discussed new instruments that will lead to improvements in both diagnosis and treatment. Diagnosis and treatment are closely linked in radiotherapy, since more accurate location of tumour cells in turn enables the radiation dose to be more precisely focused.

"Developments in imaging have allowed improvements in radiation beam placement, and the two areas tend to go together," said Barbara Camanzi, convenor of the ESF workshop, and specialist in radiotherapy instrumentation at the Rutherford Appleton Laboratory Department of Particle Physics near Oxford in the UK. This in turn improves prospects of destroying the tumour while reducing collateral damage to healthy tissue nearby. Such collateral damage causes not just tissue death, but can lead to induction of secondary tumours, which has been a long standing problem for traditional radiotherapy using x rays. Some tissue cells close to the tumour receive enough radiation to trigger mutations in their DNA that can cause them to become malignant, but not enough radiation to kill them. "The fall in collateral radiation deposition in the body ranges from a factor of 2 to 15 depending on the precise treatment indication and body site," noted Bleddyn Jones, an oncologist attending the ESF workshop, from the Gray Institute for Radiation Oncology and Biology in Oxford, UK. "All techniques using external gamma rays and x-rays impart a larger dose to surrounding healthy tissue with long term risks of functional changes and malignant induction."

The improved imaging made possible by use of charged particles also makes it easier to detect tumours when they are small, improving prospects for patients whether or not they actually undergo radiotherapy. "Making an earlier diagnosis of a smaller cancer increases the chance of cure following either particle beam therapy or surgery," said Camanzi.

However, the ESF workshop identified that further significant improvements in instrumentation were required, both for treatment and diagnosis, to exploit the full potential of charged particles for cancer therapy. Further work was also required to adjust dose to minimise the risk of secondary tumour formation caused by the radiation, which remains a risk with use of charged particles. The ESF workshop also addressed the need for improved design of the gantry systems used both for imaging and to deliver the radiation doses in treatment.

The other important issue addressed by the ESF workshop is educating radiotherapy consultants in the new techniques so that they are in a position to determine the best form of treatment for each individual case. Sometimes charged therapy may be the best method, in other cases traditional x-ray therapy, and in yet others surgery or chemotherapy, or combinations of these.

"There is a need to hold more educational and training meetings on particle therapy especially in those European countries that at present have no plans for such facilities," said Camanzi, who noted that a follow up symposium in Oxford had been proposed for 2010.

Adapted from materials provided by European Science Foundation.

http://www.sciencedaily.com/releases/2008/11/081107071959.htm

Repairing DNA Damage: Researchers Discover Critical Process In Cancer Treatment

Elliot Drobestky and Yannick Auclair. (Credit: Image courtesy of University of Montreal)

ScienceDaily (Nov. 15, 2008) — From the sun's UVA rays to tobacco smoke, our environment is chock-full of DNA-damaging agents that can lead to cancer. Thanks to our body's DNA repair mechanisms, however, the effects of many carcinogens can be reversed thereby preventing the formation of tumours.

Now, according to a new study published in the early online edition of Proceedings of the National Academy of Sciences of the USA (PNAS), scientists from the Université de Montréal and the Maisonneuve-Rosemont Hospital Research Centre have identified a new biochemical pathway which controls DNA repair.

"Our study is the first to identify a regulatory role for the ATR protein in a specific DNA repair system, which is called nucleotide excision repair or NER," says Elliot Drobetsky, senior author and associate professor of immunology and oncology at the Université de Montréal.

"NER is a critical DNA repair system that removes pieces of damaged DNA before these pieces can be converted into genetic mutations that destroy the function of tumour-preventing proteins in the body. Characterizing how the NER system is turned on or off is critical to understanding how tumours develop. In this system, ATR is the key that turns on the repair machinery."

ATR-mediated NER often defective in tumour cells

The scientific team used cultured lung cells to investigate the role of ATR in NER function. They found that inhibiting ATR resulted in a dysfunctional NER system and, during a very critical period of the cell's growth cycle, damaged DNA was not repaired at all.

What's more, they discovered that some tumour cell lines are completely deficient in ATR-mediated NER, which provides solid evidence that the DNA repair function of ATR may be pivotal in cancer development. "Our study reveals an original mechanism to explain how exposure to environmental carcinogens initiate and promote cancer," adds Dr. Drobetsky.

Chemotherapy implications

The goal of conventional chemotherapy is to kill tumour cells – leaving normal cells relatively unaffected – by damaging their DNA. As such, in what may seem paradoxical, many chemotherapeutic drugs which are used to cure cancer are themselves powerful carcinogens that can also cause cancer.

"As shown in the current study, a non-functional ATR pathway resulting in limited DNA repair may be characteristic of many tumour cell types, but not of normal noncancerous cells. Determining if the NER system is working in patient tumours may therefore be an important first step to chemotherapy prescribing practices," says Yannick Auclair, the study's lead author and a PhD student at the Université de Montréal.

Any tumours identified as defective in ATR-mediated repair are expected to respond extremely well to chemotherapy, because the cells in these tumours would be extremely hypersensitive to certain anti-cancer drugs unlike normal cells in the rest of the body.

"These findings open a whole new area of research," says Dr. Drobetsky. "Our data harbour critical implications not only for understanding how cancer develops but also for devising new strategies to greatly improve cancer treatment."

About the study: The article "ATR kinase is required for global-genomic nucleotide excision repair exclusively during S phase in human cells," (http://www.pnas.org/content/current) published in Proceedings of the National Academy of Sciences of the USA (PNAS), was authored by Yannick Auclair, Raphael Rouget, El Bachir Affar and Elliot A. Drobetsky of the Université de Montréal and Maisonneuve-Rosemont Hospital Research Centre.

Partners in research: This study was funded through grants from the Canadian Institutes of Health Research.

Journal reference:

1. Yannick Auclair, Raphael Rouget, El Bachir Affar, and Elliot A. Drobetsky. **ATR kinase is required for global genomic nucleotide excision repair exclusively during S phase in human cells**. *PNAS*, Published online: November 11, 2008 DOI: 10.1073/pnas.0801585105

Adapted from materials provided by University of Montreal.

http://www.sciencedaily.com/releases/2008/11/081106122404.htm

Alternative Fuels: Retooled Approach May Make Bio-based Butanol More Competitive With Ethanol

ARS researchers have modified a method of producing biobutanol that could make the fuel more competitive with ethanol as a clean-burning alternative to gasoline. (Credit: Photo by Peggy Greb)

ScienceDaily (Nov. 15, 2008) — A modified method of producing biobutanol could make the fuel more competitive with ethanol as a clean-burning alternative to gasoline.

According to Agricultural Research Service (ARS) chemical engineer Nasib Qureshi, biobutanol offers several advantages. It can be transported in existing pipelines, it's less corrosive, it can be mixed with gasoline or used alone in internal combustion engines, and it packs more energy per gallon than ethanol.

Until the mid-20th century, biobutanol was produced from fermented sugars such as corn glucose. But low yields, high recovery costs and petroleum's increased availability after World War II sidelined fermentation-based systems for biobutanol production.

Today, petroleum price increases have rekindled interest in tapping butanol as a biobased fuel, notes Qureshi, with the ARS National Center for Agricultural Utilization Research in Peoria, Ill. In 2003, he began researching the use of wheat straw to make biobutanol—drawn by the straw's abundance and promise as a lower-cost alternative to corn-glucose-based feedstocks.

Like other biobutanol processes, his approach employed Clostridium bacteria to carry out the critical task of fermentation. Such processes normally involve four preparatory steps (pretreatment, hydrolysis, fermentation and recovery) carried out separately and sequentially. But Qureshi and colleagues devised a way to combine three of the four steps. For example, enzymes and the bacteria are allowed to carry out their respective tasks simultaneously. Throughout, a procedure known as "gas stripping" is used to extract the biobutanol as it is produced.In early trials, the method increased biobutanol productivity by twofold above traditional glucose-based fermentation. A later adjustment, dubbed "fed-batch-feeding," increased production even further. For example, during a 22-day fed-batch operating period, a culture of C. beijerinkcii P260 converted nearly 430 grams of sugar into 192 combined grams of acetone, biobutanol and ethanol.

If scaled up further, the process could yield 99 gallons of these three chemicals from one ton of wheat straw.

Adapted from materials provided by USDA/Agricultural Research Service.

http://www.sciencedaily.com/releases/2008/10/081031212844.htm

Doctors Must Look After Their Health, Too, Study Recommends

ScienceDaily (Nov. 15, 2008) — Short term counselling followed by a modest cut in work hours may help reduce emotional exhaustion (burnout) and sick leave in doctors, according to a study published on bmj.com today.

It is well known that doctors have higher rates of depression and suicide than the general population and are less likely to seek help. There have been calls for early intervention programmes to help doctors with mental distress and burnout before their problems interfere with the welfare of patients.

Although such programmes have been shown to reduce stress and exhaustion, it is not clear what type of intervention is best suited to which individual or personal characteristics, or which factors contribute to positive changes.

Dr Karin Rø and colleagues from Norway examined levels of burnout and predictors of reduction in emotional exhaustion after one year, in 227 stressed doctors who participated in voluntary counselling.

Initially, 187 doctors attended a one day individual session, and 40 a one week group based course. Of the 185 doctors who completed follow-up assessments, 70 returned for an additional intervention during the follow-up year, 51 to a one week course and 19 to an individual session.

They completed self report assessments in the four weeks before and the three weeks after the counselling, and a follow-up questionnaire after one year. The data was compared with data obtained from a representative sample of Norwegian doctors in 2003.

One year after a counselling intervention stressed doctors reported a reduction in emotional exhaustion and job stress similar to the level found in a representative sample of Norwegian doctors.

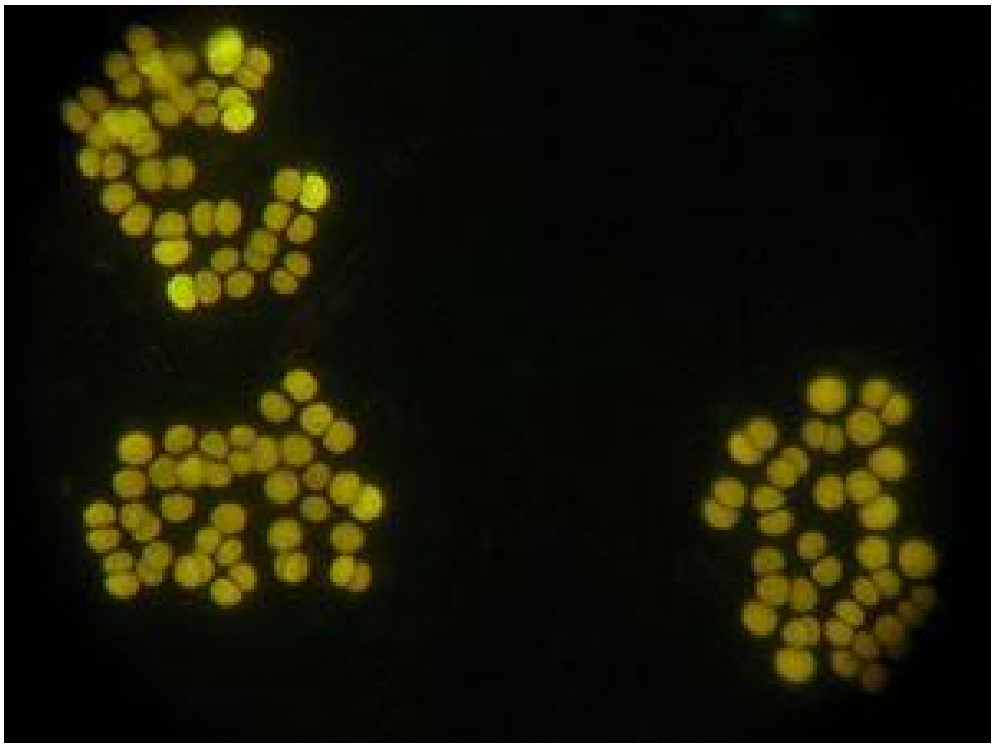
The researchers also found that the number of doctors on full time sick leave had reduced substantially in the year after counselling (35% to 6%), and that the use of psychotherapy also substantially increased from 20% to 53% in the follow-up year.

Interestingly, they found that reduction in work hours after the intervention was also associated with a reduction in emotional exhaustion.

"Our findings indicate that seeking a counselling intervention could be conducive to reduction of burnout among doctors. Considering doctors' reluctance to seek help…it is important to offer interventions that facilitate access", conclude the authors.

Adapted from materials provided by BMJ-British Medical Journal, via EurekAlert!, a service of AAAS.
http://www.sciencedaily.com/releases/2008/11/081112160905.htm

Mysterious Microbe May Play Important Role In Ocean Ecology



These unidentified cyanobacteria were collected in the Pacific Ocean near Hawaii. (Credit: Photo by Rachel Foster)

ScienceDaily (Nov. 15, 2008) — An unusual microorganism discovered in the open ocean may force scientists to rethink their understanding of how carbon and nitrogen cycle through ocean ecosystems. A research team led by Jonathan Zehr, professor of ocean sciences at the University of California, Santa Cruz, characterized the new microbe by analyzing its genetic material, even though researchers have not been able to grow it in the laboratory.

Zehr said the newly described organism seems to be an atypical member of the cyanobacteria, a group of photosynthetic bacteria formerly known as blue-green algae. Unlike all other known free-living cyanobacteria, this one lacks some of the genes needed to carry out photosynthesis, the process by which plants use light energy to make sugars out of carbon dioxide and water. The mysterious microbe can do something very important, though: It provides natural fertilizer to the oceans by "fixing" nitrogen from the atmosphere into a form useable by other organisms.

"For it to have such an unusual metabolism is very exciting," Zehr said. "We're trying to understand how something like this can live and grow with so many missing parts."

A paper describing the new findings appears in the November 14 issue of the journal Science.

Earlier research by Zehr's group had revealed surprisingly large numbers of novel nitrogen-fixing cyanobacteria, including the one that is the focus of this study, in the open ocean. Although 80 percent of Earth's atmosphere is nitrogen, most organisms cannot use it unless it is "fixed" to other elements to make molecules like ammonia and nitrate. Because nitrogen is essential for all forms of life, nitrogen fixation is a major factor controlling overall biological productivity in the oceans.

The new microbe is one of the most abundant nitrogen fixers in many parts of the ocean, Zehr said. New DNA sequencing technology provided by 454 Life Sciences, a Roche company, enabled rapid sequencing of the organism's genome. The results showed that it is missing the entire set of genes needed for photosystem II and carbon fixation, essential parts of the molecular machinery that carries out photosynthesis in plants and cyanobacteria.

"That has multiple implications," Zehr said. "It must have a 'lifestyle' that's very different from other cyanobacteria. Ecologically, it's important to understand its role in the ecosystem and how it affects the balance of carbon and nitrogen in the ocean."

During photosynthesis, photosystem II generates oxygen by splitting water molecules. Because oxygen inhibits nitrogen fixation, most nitrogen-fixing cyanobacteria only fix nitrogen at night, or do it in specialized cells. The lack of photosystem II enables the new microbe to fix nitrogen during the day, Zehr said.

But without photosynthesis, it can't take carbon dioxide from the atmosphere and convert it into sugars. So it's not clear how the new microbe feeds itself. Either it has some way of feeding on organic matter in its environment, or it lives in close association with other organisms that provide it with food, Zehr said.

"It would make a perfect symbiont because it could feed nitrogen to its host and live on the carbon provided by the host," he said.Zehr's team was able to obtain a mostly pure sample of these unique cyanobacteria using a flow cytometer--a device that rapidly sorts individual cells based on size and color. The flow cytometer can take the cell soup from an ocean sample, classify each cell as it passes through laser beams, and sort different cell types into separate containers. A cell type that makes up a small percentage of the original sample can be concentrated to nearly pure levels using flow cytometry.The team harvested DNA from the concentrated sample of cyanobacteria and sequenced it using the Genome Sequencer FLX system from 454 Life Sciences. The company's new sequencing reagents and software produce extra-long "reads" of DNA, greatly increasing the speed of the sequencing process.

"We were able to gain early access to this new high-throughput technology for rapid sequencing of the microbe's genome," Zehr said. "I had begun to suspect that there was something missing in this organism's genome, and the genome sequencing confirmed that."Photosystem II is large complex of multiple proteins and chlorophyll molecules, but the team was unable to find any of the genes for the photosystem II core proteins. The genes for photosystem I appeared in the sequencing data, as did genes for both photosystems from the small numbers of contaminating cyanobacteria in the sample.

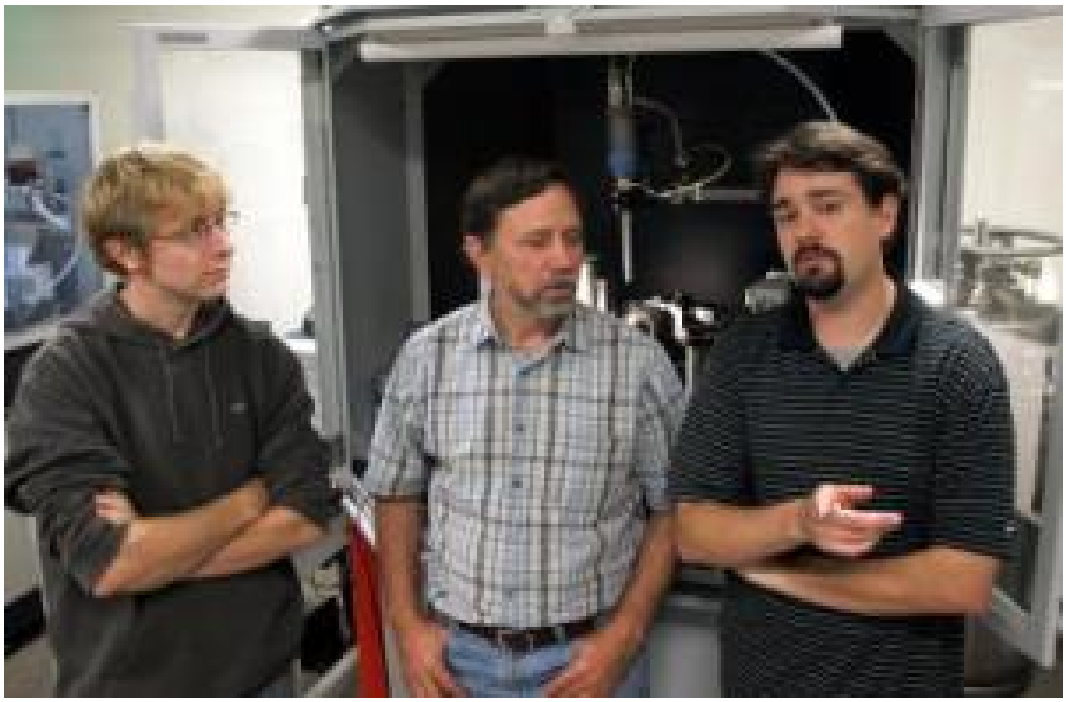
Zehr said he plans to continue his research on the new microbe and fill some gaps in the present knowledge. Efforts are currently under way to map the microbe's presence in the oceans and determine its global abundance. Zehr is also interested in how its metabolism differs from other known cyanobacteria. If it can be cultured, there may be ways to exploit this organism's unusual metabolism in biotechnology applications, he said.

Zehr's coauthors on the paper include graduate student Shelley Bench, researcher Brandon Carter, and postdoctoral scholars Ian Hewson, Tuo Shi, and James Tripp of UCSC, as well as Faheem Niazi and Jason P. Affourtit of 454 Life Sciences. This work was supported by the Gordon and Betty Moore Foundation, the National Science Foundation (NSF), and the NSF Center for Microbial Oceanography Research and Education, and sequencing was provided by 454 Life Sciences.

Adapted from materials provided by University of California - Santa Cruz.

http://www.sciencedaily.com/releases/2008/11/081113181037.htm

New Nanocluster To Boost Thin Films For Semiconductors



Graduate student Zachary Mensinger, left, talks with co-authors Lev N. Zakharov, center, and Darren Johnson in Zakharov's lab in the underground Lorry I. Lokey Laboratories at the University of Oregon. (Credit: Photo by Jim Barlow)

ScienceDaily (Nov. 15, 2008) — Oregon researchers have synthesized an elusive metal-hydroxide compound in sufficient and rapidly produced yields, potentially paving the way for improved precursor inks that could boost semiconductor capabilities for large-area applications.

The key to a "bottom-up" production of possibly the first heterometallic gallium-indium hydroxide nanocluster was the substitution of nitroso-butylamine as an additive in place of nitrosobenzene.

The substitute was identified during a comprehensive screening of potential alternatives by Zachary L. Mensinger, a doctoral student in the lab of University of Oregon chemist Darren W. Johnson. The additive acts to optimize and speed crystallization, allowing for reaction yields up to 95 percent. Comparable compounds traditionally made under caustic conditions often take months or even years to crystallize and result in low yields.

"The benefit is that we can predictably control the ratio of gallium and indium in these structures at molecular levels, which can result in the same control in the fabrication of semiconductor thin films," Johnson said. "We can tailor the properties for specific applications or for different performance levels."

Six University of Oregon and Oregon State University collaborators, working under the umbrella of the Oregon Nanoscience and Microtechnologies Institute (ONAMI), a state signature research center, describe their findings a paper to appear in the German Chemical Society's journal Angewandte Chemie (Applied Chemistry) International. The research, published early online, also was performed under the auspices of a new National Science Foundation-funded Center for Green Materials Chemistry, operated jointly by the two Oregon universities.

"Researchers working in the solid-state materials community are looking at these kinds of nanoclusters as precursors for thin films and other advanced materials, but you typically cannot get them in high enough

yields," said Johnson, who also is a member of the UO's Materials Science Institute. "Our synthesis, however, allows for gram-scale quantities."

The results represent a significant breakthrough in the way liquids are produced for semiconductor fabrication, said co-author Douglas A. Keszler, distinguished professor of chemistry at Oregon State and adjunct UO chemistry professor. "We now have new methods for pushing printed inorganic electronics to higher levels of performance within a useful class of materials."

Researchers in Johnson's lab have been experimenting with low-temperature production of a series of such heterometallic nanoclusters, which consist of 13 atoms and contain two different metals in the metal 13 framework, which may prove desirable for long-term applications in solid-state electronics. The nanocluster identified in the paper is labeled a Ga7In6 hydroxide.

"We're starting from a bottom-up approach, in that we can make these with the ratios we desire already built in," Mensinger said. "Using this nitroso compound, we get a higher yield and at a larger scale. I screened several of these compounds to narrow down the best choice. We can also re-use the nitroso compound. It is still present at the end of the reaction, so we can remove it and use it in future reactions."

While the nitroso compound produces usable amounts of nanoclusters for potential semiconductor applications and is reusable in subsequent production, it is toxic, Johnson noted. "It is great because it allowed us to make these clusters that had never been made before, but it is not truly a green-chemistry method," Johnson said. "We're looking at how it works and hope to replace it with a more benign reagent."

Co-authors with Mensinger, Johnson and Keszler on the paper were Jason T. Gatlin and Lev N. Zakharov, both of the University of Oregon, and Stephen T. Meyers, a graduate student of Keszler's at OSU.

Adapted from materials provided by University of Oregon.

http://www.sciencedaily.com/releases/2008/10/081031141522.htm

Caring For The Caregiver: Redefining The Definition Of Patient

ScienceDaily (Nov. 15, 2008) — One quarter of all family caregivers of Alzheimer's disease patients succumb to the stress of providing care to a loved one and become hospital patients themselves, according to an Indiana University study published in the November 2008 issue of the Journal of General Internal Medicine.Researchers from the Indiana University School of Medicine, the Regenstrief Institute and the Indiana University Center for Aging Research report in a new study that a quarter of family caregivers of Alzheimer's dementia patients had at least one emergency room visit or hospitalization every six months.

While it has long been anecdotally recognized that caring for a family member with Alzheimer's disease is stressful, this work is the first to measure just how stressful providing care is and to examine the impact of this stress on both the physical and mental health of the family caregiver.The study found that the behavior and functioning of the individual with Alzheimer's dementia, rather than cognitive ability, were the major factors determining whether the caregiver went to the emergency room or was hospitalized.

"Our findings opened our minds to the fact that society needs to expand the definition of patient to include both the person with Alzheimer's dementia and that individual's family caregiver," said Malaz Boustani, M.D., corresponding author. Dr. Boustani is assistant professor of medicine and a Regenstrief Institute research scientist.

The researchers looked at 153 individuals with Alzheimer's disease and their family caregivers, a total of 366 people. Forty-four percent of the caregivers were spouses. Seventy percent of the caregivers resided with their charges.The average caregiver was 61 years of age. The researchers found that age, education and relationship to the individual with Alzheimer's disease did not impact caregiver use of acute medical services – either emergency room or inpatient facilities.

"While we've long known that Alzheimer's is a devastating disease to the patient, this study offers a look at how it also impacts the caregiver's health. If we don't offer help and support to the caregiver, too, the stress of caring for someone with dementia can be overwhelming, both mentally and physically," said Cathy C. Schubert, M.D., IU School of Medicine assistant professor of clinical medicine.

Approximately four million older adults in the United States have Alzheimer's disease and three million of them live in the community, often cared for by family members. This number is growing rapidly and by 2050 it is estimated that there will be 18.5 million cases of Alzheimer's dementia in the United States."For American society to respond to the growing epidemic of Alzheimer's disease, the health-care system needs to rethink the definition of patient. These findings alert health-care delivery planners that they need to restructure the health-care system to accommodate our new inclusive definition of patient," said Dr. Boustani.

Dr. Boustani directs the Healthy Aging Brain Center. Using the findings of this study, the center is leading the nation in expanding the definition of patient to include the individual with Alzheimer's disease and family caregivers and to provide care to both. The Healthy Aging Brain Center is part of the IU Center for Senior Health at Wishard Health Services.Dr. Schubert is the medical director of the IU Center for Senior Health at Wishard and Acute Care for Elders at Indiana University Hospital.

Authors of the study are Cathy C. Schubert, M.D.; Malaz Boustani, M.D., MPH; Christopher M. Callahan, MD; Anthony J. Perkins, M.S.; Siu Hui, Ph.D.; and Hugh C. Hendrie, M.B., Ch.B., all of the Indiana University School of Medicine.

Adapted from materials provided by Indiana University, via EurekAlert!, a service of AAAS.

http://www.sciencedaily.com/releases/2008/11/081110153940.htm

Dinosaur Whodunit: Solving A 77-million-year-old Mystery

Reconstruction of the dinosaur nest and the two possible theropod egg layers. (Credit: Copyright Julius T. Csotonyi)

ScienceDaily (Nov. 14, 2008) — It has all the hallmarks of a Cretaceous melodrama. A dinosaur sits on her nest of a dozen eggs on a sandy river beach. Water levels rise, and the mother is faced with a dilemma: Stay or abandon her unhatched offspring to the flood and scramble to safety?Seventy-seven million years later, scientific detective work conducted by University of Calgary and Royal Tyrrell Museum researchers used this unique fossil nest and eggs to learn more about how nest building, brooding and eggs evolved. But there is a big unresolved question: Who was the egg-layer?"Working out who the culprit was in this egg abandonment tragedy is a difficult problem to crack," says Darla Zelenitsky, U of C paleontologist and the lead author of a paper published today in the journal Palaeontology. "After further investigation, we discovered that this find is rarer than we first thought. It is a one of a kind fossil. In fact, it is the first nest of its kind in the world."

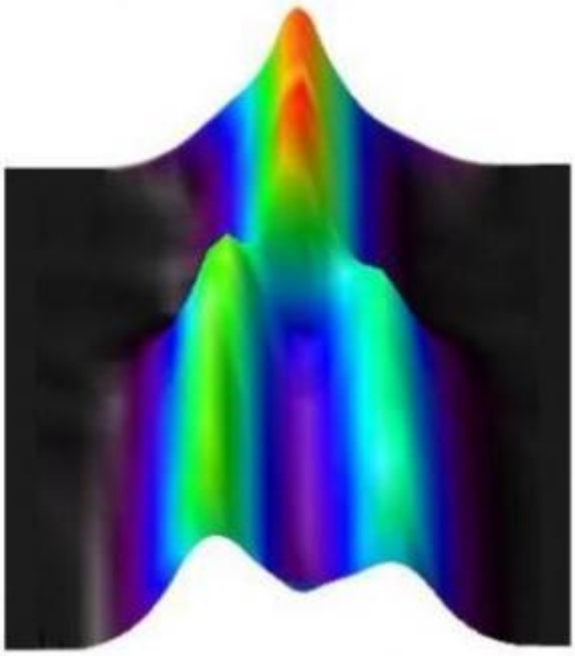
Zelenitsky says she first saw the nest in a private collection which had been collected in Montana in the 1990s. The nest was labeled as belonging to a hadrosaur (duck-billed) dinosaur, but she soon discovered it was mistakenly identified. In putting all the data together, she realized they had a small theropod (meat-eating) dinosaur nest. "Nests of small theropods are rare in North America and only those of the dinosaur Troodon have been identified previously," says Zelenitsky. "Based on characteristics of the eggs and nest, we know that the nest belonged to either a caenagnathid or a small raptor, both small meat-eating dinosaurs closely related to birds. Either way, it is the first nest known for these small dinosaurs."The nest tells scientists more about the behaviour of the animal as well as some valuable information relating to the characteristics of modern birds. "Our research tells us a lot about the dinosaur that laid the eggs and how it built its nest," says Francois Therrien, a co-investigator in the study and curator of dinosaur palaeoecology at the Royal Tyrrell Museum in Drumheller, Alta.The fossil nest is a mound of sand about half a metre across and weighing as much as a small person. The eggs were laid two at a time, on the sloping sides of the mound, and form a ring around its flat top, where the nesting dinosaur would have sat and brooded its clutch.

"Based on features of the nest, we know that the mother dug in freshly deposited sand, possibly the shore of a river, to build a mound against which she laid her eggs and on which she sat to brood the eggs," says Therrien. "Some characteristics of the nest are shared with birds, and our analysis can tell us how far back in time these features, such as brooding, nest building, and eggs with a pointed end, evolved – partial answers to the old question of which came first, the chicken or the egg."

Adapted from materials provided by University of Calgary, via EurekAlert!, a service of AAAS.

http://www.sciencedaily.com/releases/2008/11/081113181200.htm

Iron-based Materials May Unlock Superconductivity's Secrets



NIST researchers have found that new iron-based high-temperature superconductors subtly change their molecular shape as temperatures decrease. This graphic shows a superconductor transitioning from tetragonal (at top) to orthorhombic at about 220 Kelvin (-53 Celsius). Such physical changes appear to be a precursor to superconductivity, in which electric current can flow without resistance. (Credit: NIST)

ScienceDaily (Nov. 14, 2008) — Researchers at the National Institute of Standards and Technology (NIST) are decoding the mysterious mechanisms behind the high-temperature superconductors that industry hopes will find wide use in next-generation systems for storing, distributing and using electricity.

In two new papers on a recently discovered class of high-temperature superconductors, they report that the already complicated relationship between magnetism and superconductivity may be more involved than previously thought, or that a whole new mechanism may drive some types of superconductors.

At temperatures approaching absolute zero, many materials become superconductors, capable of carrying vast amounts of electrical current with no resistance. In such low-temperature superconductors, magnetism is a villain whose appearance shatters the fragile superconductive state. But in 1986, scientists discovered "high temperature" (HTc) superconductors capable of operating much warmer than the previous limit of 30 degrees above absolute zero.

In fact, today's copper-oxide materials are superconductive in liquid nitrogen, a bargain-priced coolant that goes up to a balmy 77 degrees above absolute zero. Such materials have enabled applications as diverse as high-speed maglev trains, magnetic-resonance imagers and highly sensitive astronomical detectors. Still, no one really understands how HTc superconductivity works, although scientists have long suspected that in this case, magnetism boosts rather than suppresses the effect.

The beginnings of what could be a breakthrough came in early 2008 when Japanese researchers announced discovery of a new class of iron-based HTc superconductors. In addition to being easier to shape into wires and otherwise commercialize than today's copper-oxides, such materials provide scientists fresh new subjects with which to develop and test theories about HTc superconductivity's origins.

Scientists at NIST's Center for Neutron Research and a team including researchers from the University of Tennessee at Knoxville, Oak Ridge National Laboratory, the University of Maryland, Ames Laboratory and Iowa State University used beams of neutrons to peek into a superconductor's atomic structure. They first found iron-based superconductors to be similar to copper-oxide materials in how "doping" (adding specific elements to insulators in or around a HTc superconductor) influences their magnetic properties and superconductivity.

Then the team tested the iron-based material without doping it. Under moderate pressure, the volume of the material's crystal structure compressed an unusually high 5 percent. Intriguingly, it also became superconductive without a hint of magnetism.

The iron-based material's behavior under pressure may suggest the remarkable possibility of an entirely different mechanism behind superconductivity than with copper oxide materials, NIST Fellow Jeffrey Lynn said. Or it could be that magnetism is simply an ancillary part of HTc superconductivity in general, he said—and that a similar, deeper mechanism underlies the superconductivity in both. Understanding the origin of the superconductivity will help engineers tailor materials to specific applications, guide materials scientists in the search for new materials with improved properties and, scientists hope, usher in higher-temperature superconductors.

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Adapted from materials provided by National Institute of Standards and Technology (NIST).

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Gender Is Key Factor In Determining Overall Survival Of Lung Cancer Patients

ScienceDaily (Nov. 14, 2008) — Even though some combinations of gender, race and/or marital status can factor into the overall survival of nonoperative non-small cell lung cancer patients, gender is the most significant factor impacting overall survival, according to a study presented at the 2008 Chicago Multidisciplinary Symposium in Thoracic Oncology, sponsored by ASTRO, ASCO, IASLC and the University of Chicago.

According to the National Cancer Institute, in 2008 approximately 215,020 new cases of lung cancer will be diagnosed in the United States and 161,840 people will die from the disease.

Researchers at Henry Ford Hospital in Detroit, the Radiation Therapy Oncology Group in Philadelphia, the University of Pennsylvania in Philadelphia, M.D. Anderson Cancer Center in Houston, the University of Texas Southwestern in Dallas and Emory University in Atlanta studied 1,365 lung cancer patients who were enrolled in national cooperative group trials conducted by the Radiation Therapy Oncology Group during the 1990s to determine the impact of sociodemographic factors such as gender, race and/or marital status on overall survival.

The results of the study showed that males diagnosed with non-small cell lung cancer had a 1.23 times higher mortality rate than females but that race and marital status did not significantly affect the patients' outcomes.

"Our study corroborates the fact that gender plays an important role as a prognostic factor in people diagnosed with lung cancer," Benjamin Movsas, M.D., lead author of the study and chair of the Department of Radiation Oncology at Henry Ford Hospital, said. "This underscores the importance of studying this disease entity in light of the fact that women diagnosed with lung cancer tend to have a better outcome in terms of survival."

The abstract, "The Influence of Gender, Race and/or Marital Status on Survival in Lung Cancer Patients: Meta-Analysis of Radiation Therapy Oncology Group (RTOG) Trials," will be presented as a poster on Thursday, November 13, and Friday, November 14.

Adapted from materials provided by American Society for Therapeutic Radiology and Oncology.

http://www.sciencedaily.com/releases/2008/11/081113091613.htm

'Arid Aquaculture' Among Livelihoods Promoted To Relieve Worsening Pressure On World's Drylands

ScienceDaily (Nov. 14, 2008) — "Arid aquaculture" using ponds filled with salty, undrinkable water for fish production is one of several options experts have proven to be an effective potential alternative livelihood for people living in desertified parts of the world's expanding drylands.

Researchers with the United Nations University, the International Centre on Agricultural Research in Dryland Areas (ICARDA), and UNESCO's Man and the Biosphere (MAB) Program say alternatives to traditional crop farming and livestock rearing will need to be put in place in drylands in order to mitigate human causes of desertification.

While it may sound far-fetched, researchers say using briny water to establish aquaculture in a dry, degraded part of Pakistan not only introduced a new source of income, it helped improve nutrition through diet diversification. The researchers also showed it possible to cultivate some varieties of vegetables with the same type of brackish water.

Drylands residents, many of whom are the world's "poorest of the poor," employ "highly vulnerable livelihood strategies that depend on land productivity" warns the report, which describes the success of several occupational options explored in a four-year, multi-country study.

Other promising alternative livelihoods, successfully tested in eight countries, include:

1. The manufacture and marketing of "dryland soaps" derived from locally-produced olive oil and fragrances from sustainably cultivated aromatic dryland plants, including geranium, lavender, pomegranate and mint;
2. Developing sustainable drylands ecotourism, which brings income while encouraging villagers to conserve natural ecosystems;
3. Harnessing the abundant solar power capacity in sunny drylands to create sustainable livelihoods and new economic opportunities;
4. Producing wool and sand-based handicrafts for sale at visitor destinations.

Because they do not primarily depend on land productivity, these and other options have the potential to reduce the pressure on the fragile resource base in marginal drylands, says the report. "At the same time, these strategies proved to yield significantly higher income per investment than traditional land-based livelihoods."

The report, "People in Marginal Drylands: Managing Natural Resources to Improve Human Well-being," summarizes the Sustainable Management of Marginal Drylands (SUMAMAD) project, funded largely by the Flemish Government of Belgium.

The project represents a systematic effort to understand these strategies and apply them to improving livelihood conditions of dryland dwellers with demonstration sites in China, Egypt, Iran, Jordan, Pakistan, Syria, Tunisia and Uzbekistan.

Project partners included the University of Alexandria (Egypt), the Royal Society of Nature Conservation (Jordan), the Fars Research Center for Agriculture and Natural Resources (Iran) , the Chinese Academy of Sciences and many more national research institutions.

"The key message is that innovations are needed to ensure long-term sustainability of communities and to avoid rapid desertification in the face of growing population pressures," says report co-author Zafar Adeel, Director of UNU's International Network on Water, Environment and Health.

"The question is, what options do people living in these resource-scarce areas have? What this report describes are some of the many realistic livelihood substitutes that can relieve human pressure on these ecosystems, pressures that will only be exacerbated by the onset of climate change."

"At the same time, people living in drylands need more than advice," he adds. "They need help from all quarters and all levels of government to make their future existence in these places possible. The alternative will be a potential migration out of drylands in two or three generations that will stagger the world's coping capacity."

Drylands constitute more than 40% of the global land area and provide a wide range of fundamental ecosystem goods and services. They are home to nearly a third of the global population, about 2 billion in all, over 90% of whom live in developing countries.

Drylands degradation results from a combination of local drivers (droughts, inappropriate irrigation systems, deforestation, overgrazing, and poor land use practices), and global drivers (demography, agricultural policies or global climate change).

Conservative estimates of the extent of desertified drylands range from 10 to 20 percent while a much larger area is at risk.

Reversing desertification "inexpensive"

Says Dr. Thomas Schaaf of UNESCO: "Adopting new, alternative livelihoods is possible with supporting policies and knowledge, and yields income for local communities. It also increases the incentives for dryland communities to better preserve ecosystems around them."

And it need not involve great expense. An investment of only US $6.50 to purchase sewing machines for Bedouin women in Egypt, for example, produced a reported annual income of about US $700.

And, the report adds, when alternative livelihoods start to yield income, one of two results typically occur: traditional livelihoods are gradually replaced or funds are invested to improve land-based livelihoods, such that co-existence of both approaches can be maintained.

The report says producing change requires an enabling policy environment created by government. This policy reform needs to be directly informed by available scientific expertise on dryland management and should be guided by local successes.

It also requires local consultation and involvement in the design and testing of new practices to create a feeling of ownership among land managers and to tap into practical traditional experience and expertise.

As well, it requires help from the international community so that local institutions can develop and enforce informed, coherent and integrated dryland management policies.

When traditional and modern knowledge and practices marry

"Management practices that build on the right mix of traditional knowledge, contemporary technology and innovative scientific research yield optimum results," says Dr. Richard Thomas, Assistant Director at UNU-INWEH, responsible for dryland ecosystems, and a co-author of the report.

Traditional practices, evolved over time for the capture, storage and efficient use of scarce and variable rainwater, floodwaters and groundwater resources, work well in dryland conditions. Examples include the

Roman underground cisterns, traditional garden terracing and irrigation systems, and traditional floodwater spreading achieving groundwater recharge.

SUMAMAD researchers demonstrated that traditional designs for water storage cisterns and ponds, for example, can be greatly improved with modern materials and construction techniques.

In parts of Egypt, meanwhile, where well water for drinking is a problem due to high salinity, new desalination technologies using solar energy were successfully introduced, virtually eliminating the cost of buying water and improving health through better water quality.

The study also reports the success of innovative water management techniques used by communities in Tunisia to grow olive trees, the waste from processing olive oil used to improve soil stability.

In the grasslands of China's Inner Mongolia, meanwhile, where cattle and sheep farming has led to severe land degradation, SUMAMAD worked with several families to test chicken farming as an alternative.

The project produced economic returns per hectare for chicken farming nine times higher than for cattle and sheep while fostering natural restoration of the grassland ecosystem which has resulted in the establishment of a growing "grassland" eco-tourism industry.

To support the marketing of chicken and eggs, a company was set up in the area and participating families were trained in entrepreneurship and business principles. Future project plans include producing organic chicken and eggs, in order to tap into growing markets in nearby urban centers like Beijing and internationally.

Policies that Help

Says UN Under-Secretary-General Konrad Osterwalder, Rector of UNU: "A new breed of interventions, developed in partnership with local communities, that combine traditional and contemporary knowledge, hold great promise for offsetting the growing environmental problems in drylands and improving the well-being of all those living in these harsh areas."

"We also need to bridge the divide between the research and policy-making communities to ensure that policies are informed science."

UNU-INWEH has helped create an international coalition – called Dryland Science for Development (DSD) Consortium – which will facilitate the inclusion of scientific information in the inter-governmental dialogue being undertaken by the UN Convention to Combat Desertification.

Says Dr. Adeel: "These new developments bring a sense of optimism to dryland communities who have lived under the doom and gloom scenarios for their environment over the last 20 years or so."

Adapted from materials provided by United Nations University, via EurekAlert!, a service of AAAS.

http://www.sciencedaily.com/releases/2008/11/081111073841.htm

Pelvis Dated To 1.2 Million Years Ago Shows Ancestors May Have Been Born With Big Heads

A reconstruction of the 1.2 million-year-old pelvis discovered in 2001 in the Gona Study Area at Afar, Ethiopia, that has led researchers to speculate early man was better equipped than first thought to produce larger-brained babies. The actual fossils remain in Ethiopia. (Credit: Scott W. Simpson, Case Western Reserve University)

ScienceDaily (Nov. 14, 2008) — Discovery of the most intact female pelvis of Homo erectus may cause scientists to reevaluate how early humans evolved to successfully birth larger-brained babies.

"This is the most complete female Homo erectus pelvis ever found from this time period," said Indiana University Bloomington paleoanthropologist Sileshi Semaw. "This discovery gives us more accurate information about the Homo erectus female pelvic inlet and therefore the size of their newborns."

A reconstruction of the 1.2 million-year-old pelvis discovered in 2001 in the Gona Study Area at Afar, Ethiopia, that has led researchers to speculate early man was better equipped than first thought to produce larger-brained babies. The actual fossils remain in Ethiopia.

The discovery will be published in Science this week (Nov. 14) by Semaw, leader of the Gona Project in Ethiopia, where the fossil pelvis was discovered with a group of six other scientists that includes IU Department of Geosciences graduate student Melanie Everett.

Reconstructing pelvis bone fragments from the 1.2 million-year-old adult female, Semaw and his co-workers determined the early ancestor's birth canal was more than 30 percent larger than earlier estimates based on a 1.5-million-year-old juvenile male pelvis found in Kenya. The new female fragments were discovered in the Gona Study Area in Afar, Ethiopia, in 2001 and excavation was completed in 2003.

Scientists also were intrigued by other unique attributes of the specimen, such as its shorter stature and broader body shape more likely seen in hominids adapted to temperate climates, rather than the tall and narrow body believed to have been efficient for endurance running.

Early humans became taller and narrower over time, scientists believe, partly due to long distance running and to help them maintain a constant body temperature. One consequence, however, is that a narrower pelvis would have been less accommodating to producing larger-brained offspring.

But rather than a tall, narrow hominid with the expected slight pelvic region, Semaw and the Gona researchers found evidence of a hominid ready to produce offspring with a much larger brain size.

"The female Homo erectus pelvic anatomy is basically unknown," Semaw said. "And as far as the fossil pelvis of ancestral hominids goes, all we've had is Lucy (dated at 3.2 million years and also found in Ethiopia), and she is very much farther back in time from modern humans."

Scientists studying early man predominantly find fragments of craniums and dental remains, while fossil bones from the neck down are rarely discovered. Even more difficult to verify are Homo erectus fossil bones that can be identified as those belonging to a female.

Scientists had thought early adult Homo erectus females, because of the assumed small birth canal, would produce offspring with only a limited neonatal brain size. These young would have then experienced rapid brain growth while still developmentally immature, leading researchers to envision a scenario of maternal involvement and child-rearing on par with that of modern humans. But those theories had been based upon extrapolations from the existing male skeleton from Kenya.

"This find will give us far more accurate information," Semaw said. Semaw is also a research scientist at the Stone Age Institute, a research center near Bloomington dedicated to the study of early human evolution and culture. It is affiliated with Indiana University's CRAFT, the Center for Research into the Anthropological Foundations of Technology.

Gona has turned out to be a productive dig site for Semaw. In 1997 Semaw and colleagues reported the oldest known stone tools used by ancestral humans. Then in 2004 he coauthored a paper summarizing Gona's geological properties and the site's cornucopia of hominid fossils spanning several million years. At the time, Science gave the article an "Editor's Choice" recognition. In 2005 he and colleagues published an article in Nature announcing the discovery of Ardipithecus ramidus, one of the earliest ancestral hominids, dating between 4.3 and 4.5 million years ago.

Scott Simpson (Case Western Reserve University School of Medicine and the Cleveland Museum of Natural History), Jay Quade (University of Arizona), Naomi Levin (University of Utah), Robert Butler (University of Portland) and Guillaume Dupont-Nivet (Utrecht University, Netherlands) also contributed to the report. Support for the research was provided by the Leakey Foundation, the National Science Foundation, the National Geographic Society and the Wenner-Gren Foundation.

The authors thank Ethiopia's Authority for Research and Conservation of Cultural Heritage and the National Museum of Ethiopia for research permits and support.

Adapted from materials provided by Indiana University.

http://www.sciencedaily.com/releases/2008/11/081113181152.htm

'Old treatments' better for IBS

Older "overlooked" treatments for irritable bowel syndrome may end up being the best option for patients, research suggests.

Fibre, anti-spasmodic drugs and peppermint oil were all found to be effective in a review of the evidence.

Guidelines on IBS should be updated in light of the findings, the researchers say in the British Medical Journal.

A UK expert said there had been a general feeling among doctors that the therapies "didn't work".

Between 5% and 20% of the population is estimated to suffer from IBS which is characterised by abdominal pain and an irregular bowel habit.

This puts these simple remedies back on the agenda
Professor Roger Jones, King's College London

The exact cause of the condition is unknown and recommendations for treatment include dietary advice, antidepressants and alternative therapies.

Fibre, antispasmodics and peppermint oil are used to treat IBS, but evidence of their effectiveness is unclear because of conflicting results from studies, the researchers said.

They have also been overlooked because of the focus on newer more expensive drugs which ended up being withdrawn due to lack of efficacy and safety concerns, they added.

Benefits

By trawling through all the studies comparing the therapies with dummy pills or no treatment, the researchers were able to look at data from 2,500 adult patients with IBS.

Fibre, antispasmodics and peppermint oil were all found to be effective, with doctors needing to treat 11, 5 and 2.5 patients, respectively for one patient to benefit.

Insoluble fibre such as bran was not beneficial; only isphaghula husk - a soluble form of fibre - significantly reduced symptoms.

Hyoscine - extracted from the cork wood tree - was the most successful antispasmodic drug looked at and should be the first choice, the researchers said.

Out of all three treatments, peppermint oil seemed to come out on top.

Both peppermint oil and hyoscine - an antispasmodic not currently widely prescribed in the UK - are available from the pharmacy.

Study leader Dr Alex Ford, a gastroenterologist who has recently moved from Canada - where he did the research to St James University Hospital in Leeds - said the treatments were cheap, safe and had been in use for 15 to 20 years.

"They fell out of favour with the development of new drugs.

"This is good news for patients."

Professor Roger Jones, head of the Department of General Practice at Kings College London, and founding president of the Primary Care Society for Gastroenterology, said: "There is a general feeling that they don't work very well.

"With all of the treatments for IBS, there is a huge placebo effect so it is easy to imagine your treatment is working then the trials come along and suggest they don't.

"This puts these simple remedies back on the agenda."

He added that the study did not pick out which patients would benefit from which treatment but as they are safe and cheap, patients can test what works best for them.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7727459.stm

Published: 2008/11/14 01:57:35 GMT

http://news.bbc.co.uk/2/hi/health/7727459.stm

Lucky George

By GRAYDON CARTER

GEORGE, BEING GEORGE

George Plimpton's Life as Told, Admired, Deplored, and Envied by 200 Friends, Relatives, Lovers, Acquaintances, Rivals — and a Few Unappreciative Observers

Edited by Nelson W. Aldrich Jr

Illustrated. 423 pp. Random House. $30

It can reasonably be said that "A Dance to the Music of Time," Anthony Powell's monumental 12-part novel about English manners, society, politics and power, still begs for an American counterpart. Lush and majestic, the book traces the years from 1921 to 1974 — pretty much the period we like to romanticize as "the American century." But if no novel over here quite tracks Powell's course, the life of George Ames Plimpton, impressively recorded in this glorious new biography, "George, Being George," offers a potential substitute. Powell, in his novel, described four types of men: the artist, the romantic, the man of will and the cynic. The first three were embodied in our boy George. And the parallels reach farther. For one thing, Powell and Plimpton both began their WASP parables in the Jazz Age. Powell's narrator, Nick Jenkins, goes from Eton to Cambridge and then on to the war. Plimpton went from Exeter to Harvard, the war and Cambridge. And just as Jenkins becomes a writer and biographer, Plimpton does too — of Edie Sedgwick and Truman Capote. And like Jenkins, he makes his inevitable way to Paris. In Plimpton's life, as in Powell's novels, there are all manner of collapsed romantics like Charles Stringham and available beauties in the mold of Pamela Flitton, as well as debutantes and dinner dances. Alas, there is no ambitious, climbing Kenneth Widmerpool in the Plimpton saga, unless it's Plimpton himself. As to the professional heights he ascended, one detects wonderment not only from his chums and detractors, but also from Plimpton.

"George Plimpton's Life as Told, Admired, Deplored, and Envied by 200 Friends, Relatives, Lovers, Acquaintances, Rivals — and a Few Unappreciative Observers," the subtitle of this sprawling, hugely entertaining oral history of the man who all but invented the genre, is a play, I suppose, on Plimpton's own "Truman Capote: In Which Various Friends, Enemies, Acquaintances, and Detractors Recall His Turbulent Career." And the book is superbly edited by Nelson W. Aldrich Jr., a former editor of The Paris Review, who now contributes to highbrow journals like The Nation, The Atlantic and Harper's.

As literary lives go, Plimpton's was a doozy. Well born, well bred, the father of four, a witness to the great, the good and the gifted, he epitomized the ideal of the life well lived. He sparred with prizefighters and competed against the best tennis, football, hockey and baseball players in the world, and along the way he helped create a new form of "participatory journalism." He palled around with Norman Mailer, Gore Vidal and William Styron, and drank with Ernest Hemingway and Kenneth Tynan in Havana just after Castro's revolution. He also edited and nursed that durable and amazing literary quarterly, The Paris Review, which published superb fiction and poetry and featured author interviews that remain essential reading for anyone interested in the unteachable art of writing. For someone like me, who grew up in the Canadian provinces, Plimpton was, like Bennett Cerf before him, the public face of the New York intellectual: tweedy, eclectic and with a plummy accent he himself described as "Eastern seaboard cosmopolitan."

I will henceforth call him George, because everybody in the book does. It's a cheap familiarity on my part though, because I never really knew him beyond a breezy "hello," and it is my loss. At parties, he was unfailingly polite, but he appeared to be the sort who didn't suffer fools, and I worried I just might be one of those fools he wasn't about to suffer. I remember getting a call some years ago from a television casting agent looking for a patrician type to play an editor who liked to go shooting rats in Central Park. I asked the agent if she had approached anyone else. As it happened, she had. Lewis Lapham said it was beneath him. George Plimpton agreed to do it, but he had a scheduling conflict. So she ended up with me. And the show went off the air within the year.

When people reminisce about the recently departed you can tell whether they really liked the person or are merely following convention in not speaking ill of the dead. George's friends — and my God, he had a lot of them — most certainly belong to the first camp. And everybody gets their say: authors (Styron, Mailer, Vidal, Peter Matthiessen and Gay Talese); editors (Ray Cave, Hugh Hefner, Osborn Elliott, Terry McDonell, Victor Navasky, Robert Silvers); sportsmen (Red Auerbach, Bill Curry, Alex Karras) among many, many, others. There are no doubt young Plimptophiles who don't know about his friendship with Muhammad Ali (who used to call him "Kennedy" because he looked like one), or that he was at the side of his Harvard classmate and real Kennedy, Robert F., when he was shot and killed in the kitchen passageway of the old Ambassador Hotel in Los Angeles 40 years ago. George was not only on a private plane with Bobby when he decided to run for president, he helped wrestle Sirhan Sirhan to the floor moments after the shooting.

He loved having well-born beauties around — I mean, who doesn't? — but he was no snob. He could talk to anybody, and as his fame grew, they all wanted to talk to him. George hungered for celebrity, and got it. That fame bent some noses out of shape — never more so than when Talese wrote a much discussed article about him in Esquire in 1963 — but so what? George loved being famous. When he landed a walk-on in David Lean's "Lawrence of Arabia," he sent out a Christmas card that year with a still from his scene in the movie. A cartoon in The New Yorker a few years later showed a man who is about to be operated on, looking up and asking the surgeon: "Wait a minute! How do I know you're not George Plimpton?"

The Paris Review was no small part of the composite public profile. "Without it, what would his celebrity have consisted of?" Matthiessen asks. "He was a good-looking, charming, very well-mannered son of the WASP establishment. But an awful lot of people fill that category, nothing very unique about it, so there had to be some other element that set him apart." George was criticized for squandering (and at the same time amplifying) his fame on print and television ads for Dry Dock Savings bank, Carlsberg beer, even

Pop Secret popcorn. But he had a family and a magazine to feed. At one point, he was paid $50,000 for three or four days' work for a Saab commercial, just slightly less than the $60,000 he paid for his spacious East Side apartment, apparently the only wise and considered financial investment he ever made.

It was all part of the fun. "The thing that I liked about George was that he was this combination of Long Island Lockjaw and 'Why can't I do that?' " Richard Price says. "I have a hard time having fun, period, and he was the paragon of fun." A wise man once said that 9/11 marked the end of the age of irony. Well, George would have none of it; he was an ironist to the end. He was not only in on the joke of being George Plimpton, he created the joke. More than anyone else I can think of, he embodied two signal strains of WASP-hood: he worked very hard to make it all look terribly easy, and in his charming, Mitty-esque way he personified the gifted amateur who was game for just about anything. And that was the George Plimpton his friends and the public saw.

But Pat Ryan, George's longtime editor at Sports Illustrated, saw another side. "What I did mainly was protect George and his copy from legions of less talented and envious staff," she tells Aldrich or one of his many collaborators on this "literary party," as Aldrich puts it. "They had no conception how hard he labored at his writing. (How could they? It looked effortless.) And because they didn't know him, they slammed him as a dilettante." Freddy Espy Plimpton, his first wife, remembers how he would wake up in the morning, throw on a pair of pants on his way to the kitchen and "walking around the pool table, which is littered with piles of paper, sees something, leans over, picks up a page, leans back, reads it and puts it back on another pile across the table. He's editing his latest book as he's waking up, and he's got all this on his mind, and I watched this man nobody knew, this writer who wrote all the time." Indeed, in addition to more than 150 issues of The Paris Review, the Capote book, the Edie Sedgwick oral biography he did with Jean Stein, a history of fireworks and a children's book, "The Rabbit's Umbrella," he wrote some of the most cherished articles and books on sports, almost all of them arising out of his willingness to give it a shot and submit to varying degrees of humiliation. Plimpton tried his hand as a stand-up comic in Las Vegas, drove a sulky at Saratoga, worked as a trapeze artist and played the triangle for the New York Philharmonic under Leonard Bernstein during a performance of Mahler's Second Symphony in 1973. He had talking parts in "Rio Bravo" opposite John Wayne, and played the editor Horace Whigham in Warren Beatty's "Reds." Overcoming the limitations of his impossibly lanky, foldy, 6-foot-4 frame, George swam against the Olympic gold medalist Don Schollander, sparred with the boxing legend Archie Moore, quarterbacked the Detroit Lions, tended goal for the Boston Bruins, played singles tennis with the top-ranked Pancho Gonzales, and hit the PGA Tour with Arnold Palmer and Jack Nicklaus. Matthiessen says: "There was something about him — in those antics — that bordered on the foolish, or buffoonish almost. But that was the source of his humor." Chris Cerf adds that "one of the things that made these events so sweet and sad, in a good way, was that George really cared that he would do well in those games." And of course there were the fireworks, a hobby that became a passion and culminated in his being named honorary "fireworks commissioner" for the City of New York by Mayor John Lindsay. Rose Styron recalls a Fourth of July celebration when Plimpton brought a bag of fireworks to John Marquand's place on Martha's Vineyard. His show went off and "all of a sudden, all these Army planes flew over. It was the same year they had the movie 'The Russians Are Coming,' and someone had alerted Otis Air Force Base that they'd seen fires, rockets, bombs, explosions of all sorts. . . . And they sent the whole Air Force over to see what was happening."

Born in 1927, George was eased into life an Ames and a Plimpton, both fine New England names. His father, Francis T. P. Plimpton, helped found the white-shoe law firm now known as Debevoise & Plimpton, and served as deputy ambassador to the United Nations during the Kennedy administration. The Plimptons lived well in a duplex on Fifth Avenue and spent summers out on Long Island. George went to St. Bernard's School, practically next door to their apartment, where other sons of the privileged were classmates, including Arthur Ochs Sulzberger, who became the publisher of The New York Times, and the grandson of J. P. Morgan. It's also where he met Matthiessen, who would later hand him a thread that would weave through the fabric of his entire adult life. At Exeter, where Vidal was a classmate — and where he heard the news about the Japanese attack on Pearl Harbor — he was already considered something of a sophisticate. But George was also a dutiful son, writing touching, detailed letters to "Mummy and Daddy," an obligation, or a joy, that he maintained into middle age. He landed at Harvard

in 1944. Almost organically clubbable, he joined Hasty Pudding, The Harvard Lampoon and Porcellian, the most exclusive of all. Even George's short military career seemed blessed. He was first stationed in New Jersey, close enough to New York for dinners at the Plaza Hotel, and arrived in Europe two weeks after the fighting ended. He spent much of his time there on the Lido in Venice, where, as a British friend, Sir Andrew Leggatt, remembers, "he had the stupefying good luck, even for George, to be assigned to teach social graces and military techniques" to his fellow conscripts. There was a return to Harvard and then two years at King's College, Cambridge, where he led a Bertie Woosterish life of tutorials and visits to the Continent and parties in London. He sat opposite Princess Elizabeth at a dinner dance at the Savoy Hotel. And in a letter home to "Mother and Daddy" recalled: "Halfway through dinner I leaned across the table and lit her cigarette for her with a French match that sputtered badly and gave off that obnoxious odor peculiar to French matches. . . . By about midnight I had steeled myself to asking her to dance. I was just rising out of my chair to go around the table to ask her when the orchestra gave vent with a Mexican hat dance — certainly not the sort of music suited to the occasion of one G. Plimpton dancing with the future queen of the British Empire. I sank back into my chair." He might well have been Bertie, explaining the evening to Jeeves the next morning.

Like so many other smart young men of his age and wherewithal, George followed the example of the Lost Generation and headed to Paris. Back at home, there were headlines about the Korean War and Joseph McCarthy. On the Left Bank, says Bill Becker, a Harvard classmate: "We were living like kings. In Paris, on the black market in the mid-1950s, you could exchange a dollar for 600 francs." Hotel rooms cost 300 francs a night; a decent meal with a bottle of Beaujolais was a little more than half that. Styron came. So did Terry Southern and James Baldwin, and Robert Silvers and Peter Duchin lived on a barge docked near the Place de l'Alma. A number of this new generation were secretly recruited into the newly formed Central Intelligence Agency — the cold-war offspring of the wartime O.S.S. (nicknamed Oh So Social).

It is a common misperception that George founded The Paris Review. He did not. Like so many other things in this gilded life, it was given to him — in this case by its creators Matthiessen, a classmate at St. Bernard's, and Harold Humes, known as Doc, who asked him to be its editor. Arguably though, without him the magazine, like so many similar small journals, would have sputtered and died after a few issues. The first number, with a minimal circulation in England, the United States and Europe, established the DNA for what it would remain for the next half-century. Donald Hall, who later became poet laureate, served as poetry editor. Styron, already celebrated for "Lie Down in Darkness,"wrote the introduction. And the first of volumes of Paris Review interviews kicked off with one with E. M. Forster, the man who, it was said, became more famous with every book he didn't write. George had made the connection with Forster at Cambridge. And Andrew Leggatt, a former classmate, says, "It was typical of George's luck, wasn't it, that he should have known personally such a great literary figure from the past who would be prepared to give him the kind of interview that would subsequently become a classic." I am reliably informed that little magazines comprise four elements: shabby, cramped quarters; meager wages; attractive interns of independent means; and boundless enthusiasm. They are also excellent excuses for throwing parties. In Paris, the canteen was the Café le Tournon, near the magazine's tiny office on the rue Garancière. Friends say George lived a particularly elastic Left Bank/Right Bank existence, editing during the day followed by drinks at the bar of the Ritz or the Crillon. When he relocated the review to New York, he brought his social-engineering skills with him. He held fund-raising "Revels" at bohemian palaces like the Village Gate and later at his home at 541 East 72nd Street, which doubled as living accommodation for him and his family and offices for the magazine. A consummate host, he shouted a guest's name above a crowd as a form of welcome. "Bring a pretty girl," he would tell interns like David Michaelis, who worked at the magazine in the mid-'70s. "He always said it when he invited me to a party, and I heard him say it to other young men later. . . . It was like an Irwin Shaw story, that lovely midcentury feeling."

And indeed, there were all manner of interesting men and interesting and pretty young women. Talese's Esquire article on George opens with one of his parties, and on a night when Jackie Kennedy came by. And there is that famous Life photograph by Cornell Capa, taken the same year, of a party at George's that is as much a midcentury New York period piece as Billy Wilder's films "The Seven Year Itch" or

"The Apartment." Throughout the vast living room are women in pinch-waist cocktail dresses and men in smart suits with thin ties. In the picture you can spot Capote, Styron and Vidal, as well as Ralph Ellison, Frank and Eleanor Perry, Mario Puzo, Arthur Penn and Arthur Kopit. At one of George's parties, Mailer and Humes got into a fight. "I remember George seizing me from behind in an iron grip that I could not get out of," Mailer says. "Because he was around so many people, boxers, football players, who were stronger than him, he never bothered to discuss his strength. But I remember thinking, 'God damn it, that guy is strong.' " Those lucky enough to afford an internship got caught up in the boozy movable feast too. "One night, George took us all to Elaine's for dinner, all six or eight of us, and Doris Kearns Goodwin and her husband came in," Anne Fulenwider, a Paris Review intern who worked with George on his biography of Capote, recalls. Introductions were made, and Goodwin, amazed that they all worked in George's house, told her husband: "This is what we need! We need six kids to be running around our house all the time."

Acting on Evelyn Waugh's adage that you can say pretty much what you want about a man, however negative, and he'll take it so long as you say he was good in bed, Aldrich is generous in parading a procession of Plimpton "girls," most of them admiring. His male friends incorrectly thought actual sex wasn't part of George's equation. Women knew otherwise. He treated sex like a sport, and once in the sack, he had great admiration for the female athlete. And like his stabs at making it on the gridiron or diamond, whatever George lacked in technique under the sheets, he made up for in enthusiasm. "He introduced me to everything," Kathy Ainsworth remembered. "He told me what to read . . . he taught me everything. I expected there to be another George in my life, but there never was. There was either passion and no manners, or there were lots of manners and no passion, or they didn't read, or I don't know. He was a whole man."

Another WASP trait George carried was an almost allergic reaction to introspection. He was offered $750,000 for his memoirs, but felt he had written so much about his life already that he'd just be "putting the nails in the coffin." Sometime after the offer came in, James Scott Linville recalls seeing a quotation from Verlaine in his diary that had been left open on his desk. "When one goes on a journey of self-exploration, one should go heavily armed." George would often complain that because of the review and the need to make money, he never got around to writing the Big Book, to enter the Pantheon of greats the way Mailer and Styron had. "I could have been a contender," Maggie Paley remembers him saying. "If I hadn't done The Paris Review, I could have been a major writer." Like so many principals in the novels of Powell and Evelyn Waugh, the man George became was directly related to the playing fields of his old boarding school. He had been kicked out of Exeter following an altercation with the school's baseball coach Bill Clark, known as Bull, George's second wife, Sarah, recalled: "He told me his father didn't speak to him for a year after his expulsion, which devastated him. I think it was at the heart of much of what he did in his career. I think it was a prime motivator — 'I'll show the world — I'll prove to the world that I can succeed and that they were wrong. I am good.' "

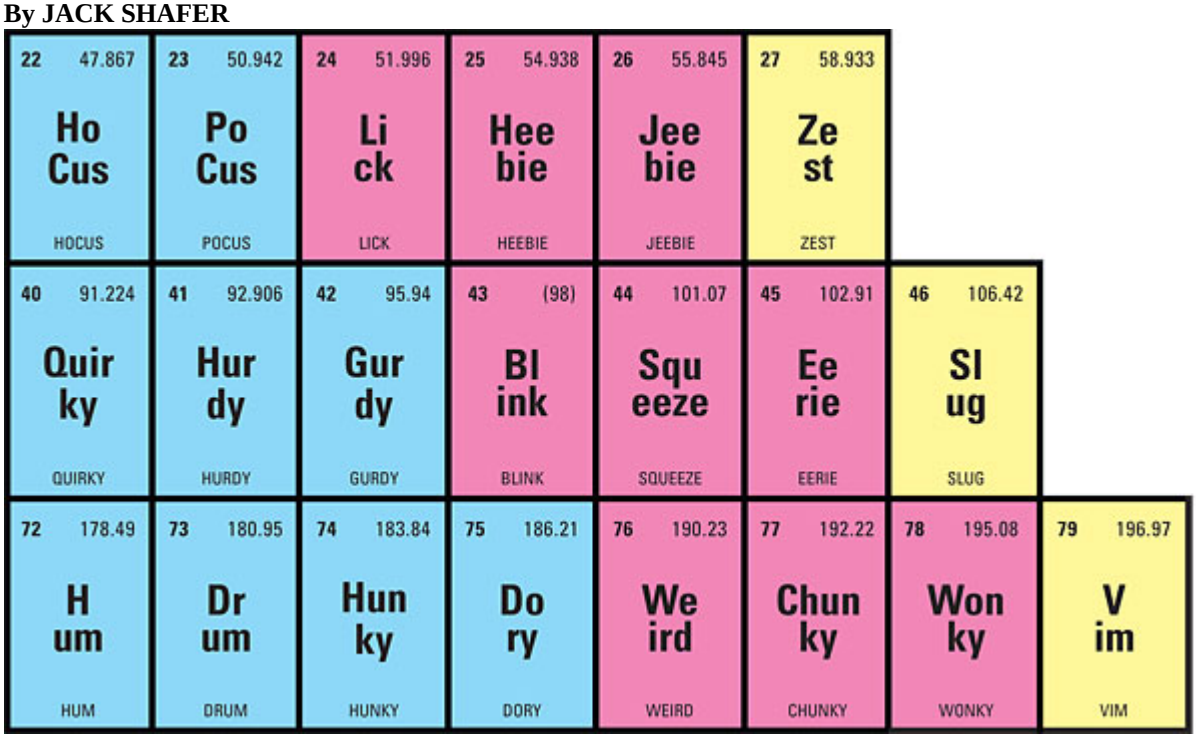
The title of the first volume in Powell's dodecatet, "A Question of Upbringing," came to him while driving with a friend. In order to avoid a head-on collision, his friend grabbed the hand brake and said, "This is just going to be a question of upbringing." Which must certainly be the answer to the question of George Plimpton. When he died in his sleep, just blocks from where he was born 76 years earlier, it was like retiring a favorite blue wool blazer that had been worn well, and seen everywhere. In these crazy, mixed-up times, George is a character to be fondly remembered, a hero of sorts, and a charmed and charming partner in his own spirited dance to the music of time.

Graydon Carter is the editor of Vanity Fair. He is also the editor of Vanity Fair's "True Tales of Hollywood: Rebels, Reds, and Graduates and the Wild Stories Behind the Making of 13 Iconic Films," which will be published in January.

http://www.nytimes.com/2008/11/16/books/review/Carter-t.html?8bu&emc=bua1

The Joy of English

By JACK SHAFER



ALPHABET JUICE

The Energies, Gists, and Spirits of Letters, Words, and Combinations Thereof; Their Roots, Bones, Innards, Piths, Pips, and Secret Parts, Tinctures, Tonics, and Essences; With Examples of Their Usage Foul and Savory.

By Roy Blount Jr

364 pp. Sarah Crichton Books/ Farrar, Straus & Giroux. $25

Roy Blount Jr. has returned from the fields where the American lingo grows wild to write “Alphabet Juice,” his personal lexicon, usage manual, writers’ guidebook, etymological investigation and literary junk drawer. This alphabetically arranged book reads like a big bag of salty snacks: nibble five or six of its 500-plus entries and you’ll have to wolf the whole thing.

Who before Blount thought to construct a complete conversation using only English vowels? Give a listen:

“ ’ey!”

“Eeeee!”

“I. . . . ”

“Oh, you.”

Who before Blount admired "it" as "the skinniest of all two-letter words"? Who thought to bust Buckminster Fuller for writing, "I seem to be a verb"? Because "verb" is a noun, Blount points out, Fuller was really saying, "I seem to be a noun," when he made his famous declaration.

A self-diagnosed hyperlexic since first grade, Blount hangs out in dictionaries the way other writers hang out in bars. It's easy to picture him making a pub crawl of the Oxford English Dictionary, Webster's Third New International Dictionary (unabridged), the Random House unabridged dictionary and especially the American Heritage Dictionary, where he helps tend bar as a member of its official usage panel. Both giddy and sober, as if ripped on Old Crow fortified with Adderall, Blount chases letters, words and phrases to their origins, and when stumped he hypothesizes.

Take "quirky," for example. Origin unknown, but Blount speculates that "quirk" was born following "the union of 'quick' and something more pejorative, perhaps 'jerk.' " Why, he asks, do so many reduplicative expressions or near-reduplicative expressions start with "h" ("hillbilly," "hippy-dippy," "handy-dandy," - "hanky-panky," "hocus-pocus," "hoity-toity," "hoodoo," "hotsy-totsy," "hully gully," "humdrum," "hurdy-gurdy"), beating out the runner-up, "w"? His answer:

"You will note that many of those 'h' expressions refer to disorder and jumblement. Most are of unknown origin. (No matter what you may have learned at your mother's knee, 'hunky-dory' probably does not come from a street in Yokohama where sailors could find a bit of all right.) They're the sort of expressions that people pull out of the air to convey something otherwise indefinable, like 'whatchamajig.' "

From there he redirects his inquiry to the entry for the letter "h" — which does not contain the "h" sound, having "lost one of its aitches when it came into English from the French hache" — and wonders if the ease of forming the "h" sound with just a breath explains its ubiquity.

There's no aspect of our language, written, spoken or grunted, that escapes Blount appraisal. Like that other lay linguist H. L. Mencken, who beat the pros at their own game with "The American Language," he figures that if amateurs are qualified to create language and authorized to mutate it, why leave the fun of tasting, dissecting and quarreling over it to the professoriate?

Marginalized as a humorist (like Mencken) because he knows how to write funny, Blount is also a superb reporter who possesses an imaginative intellect (also like Mencken). Disdaining those scholars who think the relation between words and their meanings is arbitrary, he argues that "all language, at some level, is body language." Beyond the clearly imitative words, like the onomatopoeic "boom," "poof" and "gong," Blount zeroes in on the expressive words that "somehow sensuously evoke the essence of the word: 'queasy' or 'rickety' or 'zest' or 'sluggish' or 'vim,' "he writes. "If you were a cave person earnestly trying to communicate how you felt digestively, you might without benefit of any verbal tradition come up with something close to 'nausea.' "

Blount has coined a term to describe words like these that are "kinesthetically evocative of, or appropriate to, their meaning": it's "sonicky," and it appears so frequently in "Alphabet Juice" that it deserves billing in the subtitle. Other sonicky words Blount traps and releases: "lick," "heebie-jeebies," "ka-ching," "chunky," "blink," "squeeze," "foist," "weird," "wonky," "finicky" and "wobbly." " 'Sphincter' is tight; 'goulash' is lusciously hodgepodgy," he writes. " 'Swoon' emerged from the Old English swogan, to suffocate, because the mind and the mouth conspired to replace 'og' with 'oo' in order to register a different motion-feeling." To Blount's sonicky list, allow me to add "snot."

The mind-mouth conspiracy to which Blount refers leads him to meditate on the pleasure of saying "polyurethane foam." The surplus of vowels, the "fluidity" of its meter and "the conjunction of that 'y' pronounced like a long 'e' and that 'ur' like 'yoor' " get primary credit for bliss. Feeling " 'polyurethane foam' . . . running around in my mind's ear and mouth is like watching otters play in the water," he says. The scientist in him holds and measures words; the poet tickles them and begs to be tickled back. At one

moment he has you beholding the most exquisitely balanced word in English (“level”), and at another he’s schooling you in the frequency with which “t” evokes disapproval, as in “tut-tut,” “too-too,” “tittle-tattle,” “tacky tacky tacky,” “fat,” “rat,” “catty,” “tatty,” “twit” and “all hat and no cattle.”

Like many writers, I keep a few books on a shelf to unclog my brain for those times when the right combination of words refuses to muster for service (currently in rotation are “Blood Meridian,” “Beneath the Underdog,” “Mumbo Jumbo” and “1001 Afternoons in Chicago”). To that pantheon I add “Alphabet Juice” for its erudition, its grand fun and its contrary view on what constitutes good writing. Real writers are supposed to “murder their darlings” — that is, purge any vivid phrase that calls excessive attention to the author. This advice has been variously attributed to Twain, Faulkner, Hemingway, Orwell, Auden and others, but Blount traces it to Sir Arthur Quiller-Couch’s 1916 book, “On the Art of Writing.” “Whenever you feel an impulse to perpetrate a piece of exceptionally fine writing, obey it — wholeheartedly — and delete it before sending your manuscript to press: Murder your darlings,” Quiller-Couch wrote.

As one who labored for 15 years as an editor urging writers to birth their darlings and nurture them so that we would have something interesting to publish, I cheered after reading Blount’s critique of this maxim. What is “murder your darlings” but a giant, throbbing, attention-grabbing darling itself? Quiller-Couch could have written “kill your pets” or “eliminate your sweeties” if he was so keen on scrubbing his copy of brilliant phrases, Blount writes, demolishing the famous directive by quoting passages in its vicinity. They swarm with darlings!

Not that Blount counsels self-indulgence. Writing “needs to be quick, so it’s readable at first glance and also worth lingering over.” This book is both, and danced in Blount’s arms, English swings smartly. My admiration for “Alphabet Juice” only swelled when it proposed a conclusion for this review. Reviewers like to apply the word “uneven” to books they’re fond of, he suggests, but have a few reservations about. “Would you want to read a book that was even?” he asks.

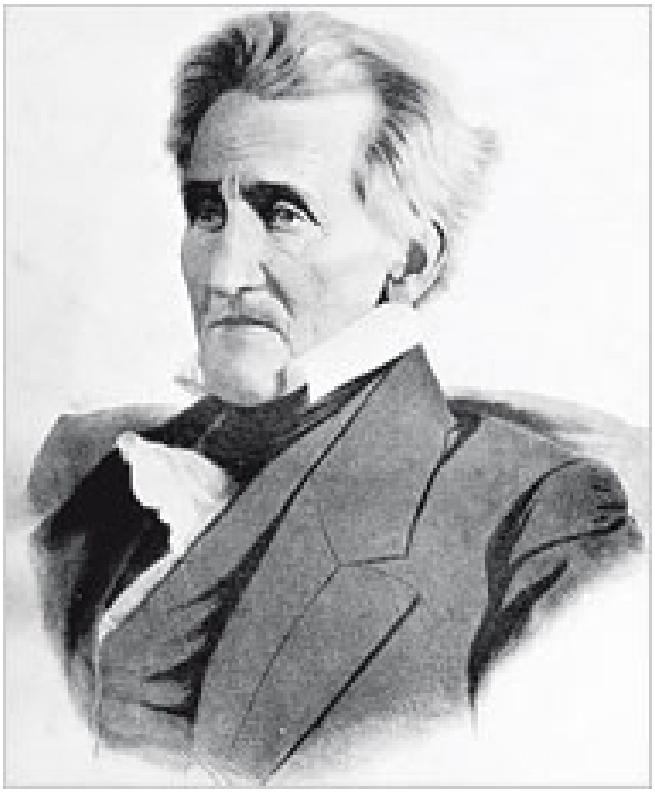
Yes, very much so. And I just did.

Jack Shafer writes about the press for Slate.

http://www.nytimes.com/2008/11/16/books/review/Shafer-t.html?8bu&emc=bua2

The Presidency That Roared

By ANDREW CAYTON



AMERICAN LION

Andrew Jackson in the White House

By Jon Meacham

Illustrated. 483 pp. Random House. $30

Early in "Moby-Dick," Melville announces his intention to celebrate the "democratic dignity" of ordinary men. To them he shall "ascribe high qualities, though dark." For support in this endeavor, Melville appeals to the "great democratic God!" the deity "who didst pick up Andrew Jackson from the pebbles; who didst hurl him upon a war-horse; who didst thunder him higher than a throne!"

Jon Meacham, the editor of Newsweek and author of "Franklin and Winston: An Intimate Portrait of an Epic Friendship," discerns a similar democratic dignity in the seventh president of the United States. But he underplays the consequences of his subject's darker qualities, especially the fact that, like Captain Ahab, Jackson was willing to destroy everything in order to exact revenge.

Born in 1767 along the border between North and South Carolina, Andrew Jackson experienced the American War of Independence as a brutal civil war. Ill-treated by British officers and imprisoned near Charleston, Jackson was the only member of his immediate family to survive the conflict. He migrated to Nashville, where he established himself as a lawyer, planter, politician and militia officer. Jackson fell in love with Rachel Donelson Robards, a woman he courted and lived with before she was officially divorced from her first husband. The Jacksons had a happy marriage, but whispers about the origins of their relationship dogged them until Rachel's death in December 1828. Her disconsolate husband blamed her fatal coronary on stress caused by partisan attacks during the recently concluded presidential campaign.

By then, Jackson was a national hero, mainly because of his exploits during the War of 1812, particularly the victory over an experienced British Army at New Orleans in January 1815. Denied the presidency by the House of Representatives in 1825 despite his victory in the popular vote, he claimed the White House four years later on a surge of highly organized support.

Jackson arrived in Washington seething with resentment. Still mourning Rachel, he delighted in the marriage, on Jan. 1, 1829, of his old friend John Henry Eaton to Margaret O'Neale Timberlake. Gossips were also happy. The Eatons were said to have lived together long before her husband's suicide cleared the way for a legal union, a scandal enhanced by Peggy's reputation as a woman who did as she pleased. ("The fact is," she later recalled, "I never had a lover who was not a gentleman and was not in a good position in society.")

What made this private matter a public one was Jackson's appointment of John Eaton as his secretary of war. When the respectable women of Washington, led by Floride Calhoun, wife of Vice President John C. Calhoun, spurned Mrs. Eaton, an outraged Jackson flew to the defense of his friend's wife. The president promptly divided Washington into two camps: friends who would receive Peggy and enemies who would not. Blessed was the politician without a wife in Washington in 1829, and none more so than Martin Van Buren, the (luckily) widowed secretary of state. Free to call on Peggy Eaton and ride horses with Jackson, he displaced Calhoun as vice president in the second Jackson administration and entered the White House himself in 1837.

John Quincy Adams, whom Jackson had defeated in 1828, observed these events with philosophical satisfaction. "You must read Tacitus and the Epistles of Pliny to understand this system of maneuvering," Adams advised his son. If the boy was "disgusted with the diminutive rivalries [and] the paltry altercations . . . of our public men," he should remember that men will rail "at each other . . . as long as there are prizes to contend for which move their avarice or their ambition."

And yet, Meacham hastens to add, while the personal shapes political culture, it does not preclude the pursuit of principled policies. Jackson, he argues, agreed with Adams's "central point: politics is brutal because it engages the most fundamental human impulses for affection, honor, power and fame. Great principles and grand visions are ennobling, but at its best politics is an imperfect means to an altruistic end."

For Jackson, however, personal loyalty was always the supreme law. Just as he valued his friends and family, so he idolized the Union as a mystical structure that allowed individuals like him to go their own way and become somebody. His enemies — Adams, Calhoun, Henry Clay — were the people's enemies. More than misguided, they were reprehensible men who, believing that they were somehow better than people like the Jacksons and the Eatons, would destroy the Union to satisfy their own ambition. Reinventing the presidency, Jackson constructed himself as a wielder of popular against institutional power, an outsider sent to Washington on a tide of populist resentment to keep unscrupulous insiders from taking the people's money and subverting their will.

In this spirit, Jackson slashed and burned his way through Washington from 1829 to 1837. He issued 12 vetoes, more than his six predecessors combined. Jackson took on the established order in politics, dismissing a considerable number of federal officeholders and thwarting the hopes of his well-established rivals. In 1832, he vetoed the rechartering of the Bank of the United States, objecting to government involvement in a monster institution that, he believed, served the interests of the few at the expense of the many. He strenuously rejected the doctrine of nullification, advanced by Calhoun and other South Carolinians, which asserted the rights of states to declare federal laws null and void within their borders. He feuded with France over money owed to the United States and encouraged Americans in the Mexican state of Texas to rebel against their government in Mexico City. Roundly criticized in Washington — he was the first president to be formally censured by the Senate — Jackson won re-election in 1832 in a landslide.

"American Lion" is enormously entertaining, especially in the deft descriptions of Jackson's personality and domestic life in his White House. But Meacham has missed an opportunity to reflect on the nature of American populism as personified by Jackson. What does it mean to have a president who believes that the people are a unified whole whose essence can be distilled into the pronouncements of one man? Populist resentment is to democracies as air is to fire. But republics may endure best when leaders remain uncertain — as several dozen did in Philadelphia in the summer of 1787 — as to whether the people can be entirely trusted with their own government. Was the United States really better off without the Bank of the United States? Did the removal of native peoples west of the Mississippi constitute smart policy? Should we assume that what is best for the United States (as defined by men like Jackson) is best for us all?

Pondering such questions may lead us to reconsider the significance of a pair of toasts exchanged at an 1830 dinner in honor of Thomas Jefferson's birthday. "Our Union — it must be preserved!" President Jackson exclaimed. "The Union," Vice President Calhoun replied, "next to our liberty the most dear." Majority rule and minority rights: the challenge even today is to sustain a just balance.

Andrew Cayton teaches history at Miami University of Ohio and is the co-author, with Fred Anderson, of "The Dominion of War: Empire and Liberty in North America, 1500-2000."

http://www.nytimes.com/2008/11/16/books/review/Cayton-t.html?8bu&emc=bua2

Love, Your Ted

Review by DAVID ORR

There are two ways to talk about the new Letters of Ted Hughes (Farrar, Straus & Giroux, $45), edited by Christopher Reid. The first is to approach Hughes's correspondence as an illuminating aesthetic record, the clearest insight we're likely to get into the mind of a poet viewed by some critics as one of the major writers of the 20th century. The second way is to discuss, well, "It." "It," of course, is what Hughes called "the Fantasia," the swirling, -decades-long hoo-ha brought about by his relationship with Sylvia Plath: their brief, difficult marriage; their separation due to Hughes's affair with Assia Wevill; and Plath's suicide shortly thereafter. "It" ultimately involved a series of bitter clashes over Plath's legacy, the occasional illicit removal of the surname "Hughes" from her tombstone (by aggrieved "Bell Jar" fans), a series of disputed biographies, at least one lawsuit, endless critical appraisals, reappraisals and re-reappraisals, a lame song by Ryan Adams ("I wish I had a Sylvia Plath," Adams croons, apparently unaware that they don't come in six-packs) and the inevitable film featuring Gwyneth Paltrow flopping around with Daniel Craig. "It" is a big deal.

But should it be? "When gossip grows old," the Polish writer Stanislaw Lec said, "it becomes myth." In the case of Ted Hughes and Sylvia Plath, the myth made by gossip has long obscured the art made by a couple of poets. That's a pity. It's a pity not only because many people might enjoy the poetry if they were to read it on its own merits, rather than for the customary vicarious frisson, but also because many people might not enjoy it. They might instead find themselves wondering why so much time has been spent on two writers whose most notable shared feature is the ability to write a poem dripping with blood, moons and psychic violence about anything from soccer to provincial beekeeping clubs. They might wonder whether the supposed primal intensity of the poetry isn't lessened by the fact that there's an awful lot of it: more than 300 pages in Plath's "Collected Poems" (and she died at 30); more than 1,300 pages in Hughes's (with the "Complete Poems" yet to come). They might even begin to think that what Plath and Hughes both stand for is a particular kind of poetic and psychological simplicity, according to which the best way to convey fraught concepts is to use words like "writhed" and "cancerous" and "Nazi." They might question whether this is actually the revelation it is sometimes claimed to be. Or they might not. But at least they would be making an actual judgment based on an actual encounter with poetry.

To judge from the evidence gathered here, Hughes would have been grateful for less "sensational involvement" and more reading. He lived for nearly seven decades and wrote many letters, and by "many" we're talking around 2,500 pages' worth, according to Reid's estimate in his introduction. (Fortunately, Reid has cut that down to 750, which is longer than the "Selected Letters of Robert Frost," but — in fairness — shorter than "The Lord of the Rings.") Hughes is a good letter writer, which is to say his letters are immediately interesting and accessible to third parties to whom they aren't addressed. In

part, this may be because Hughes anticipated they might be read by those very parties — as he observes to Assia Wevill, "I'm always expecting my notes to get intercepted so I don't write a fraction of what I would." Be that as it may, Hughes can turn out a memorable description (biographies of Plath are "a perpetual smoldering in the cellar for us. There's always one or two smoking away"), and his offhand observations about poetry can be startlingly perceptive ("Surrealism . . . is basically analytical"). There are correspondences here with a number of well-known writers — Seamus Heaney, Robert Lowell, Yehuda Amichai — and the notes by Reid are uniformly helpful and occasionally amusing. Glossing a letter to T. S. Eliot in which Hughes wishes the older writer a pleasant April, Reid dryly observes, "Whether the author of 'The Waste Land' was enjoying April is not recorded."

If there's one letter that sums up the personality that emerges in this collection, it's a note Hughes sent to Philip Larkin on Nov. 21, 1985. Larkin and Hughes had been rivals for most of their lives, a fact of which both poets were acutely aware. In private, Larkin gave Hughes such compliments as "He's all right when not reading!"; Hughes returned the favor by complaining that various newspapers "have prostrated themselves and finally deified" Larkin. Yet as Larkin lay dying, Hughes reached out with a letter of extraordinary tenderness and decency that is also possibly the most boneheaded piece of correspondence ever addressed to the mordant, brittle, doubting Larkin. Here's what Hughes wrote: "Ever since I heard you'd been into hospital I've been wanting to communicate something which for some reason I've assumed you'd reject outright. . . . I simply wanted to let you know somehow of the existence of a very strange and remarkable fellow down here, quite widely known for what seem to be miraculous healing powers. . . . He's called Cornish. . . . He explains his 'power' as some sort of energy that flows from him and galvanizes the patient's own autoimmune system." Bear in mind that these sentences are addressed to the author of a poem called "Faith Healing," which is not, to put it mildly, an endorsement of faith healing. The whole episode is so earnestly miscalculated as to achieve a kind of grandeur.

Which isn't a bad way to look at much of Hughes's writing. Hughes was, for better or worse, devoted to elaborate symbolic structures. Yeats had "A Vision"; Robert Graves had "The White Goddess"; Hughes had his personal hodgepodge of mysticism, astrology and Jungian psychology. And like many true believers, he was willing to offer the wisdom of that hodgepodge to whomever he figured might need it. Sure, most people would recognize the absurdity of suggesting magical healing to Philip Larkin, but to Hughes it would have made perfect sense, because in his mind such healing was closely tied to poetry itself. As he remarks in a draft of a letter to an Anglican bishop, "I regard poets such as myself as a sort of country healer, where the Church is Orthodox Medicine"; and in a later note about Eliot, "If one were to regard his poetry as a performance of 'healing power' . . . I don't think one can assume that when he ceased to write poetry, he ceased to be a 'healer.' " Seen in this light, Hughes's letter to Larkin may have been tone-deaf, but it was also kindly meant.

On the other side of that kindness, however, lay the irritability of a born crank. In 1992, Derwent May, the European arts editor for The Times of London, attempted to soften a pan of Hughes's idiosyncratic book on Shakespeare by publishing his own, kinder piece alongside. Those efforts earned May a letter in which Hughes explained that "King Lear was the Llud who was Bran" and "Apollo, Asclepius and Bran were Crow Gods" and "Edgar in Llyr's myth is Gwyn" and "Gwyn, as a British Hero, bequeathed all his legends to Arthur" and "My Hawk is the sleeping, deathless spirit of Arthur/Edgar/Gwyn/Horus — the sacrificed and reborn self of the great god Ra" and finally, inevitably, "I don't just jot these things down, you know."

Still, it's hard not to have sympathy for Hughes. However taxing his personality may have been for others, his own life was never easy, and he seems to have moved through it with more stoicism, good humor and humility than most writers manage. For him, little mattered but the poetry. As he writes: "I hang on tooth and nail to my own view of what I do — which is a view from the inside. It is fatally easy to acquire, through other people, a view of one's own work from the outside. As when a child is admired, in its hearing, for something it does naturally. Ever after — that something is corrupted with self-consciousness." His work and life now exist in a place well beyond such self-consciousness, a place no less mythic than the realm populated by figures like Apollo, Asclepius and Bran. Who were, you know, Crow Gods.

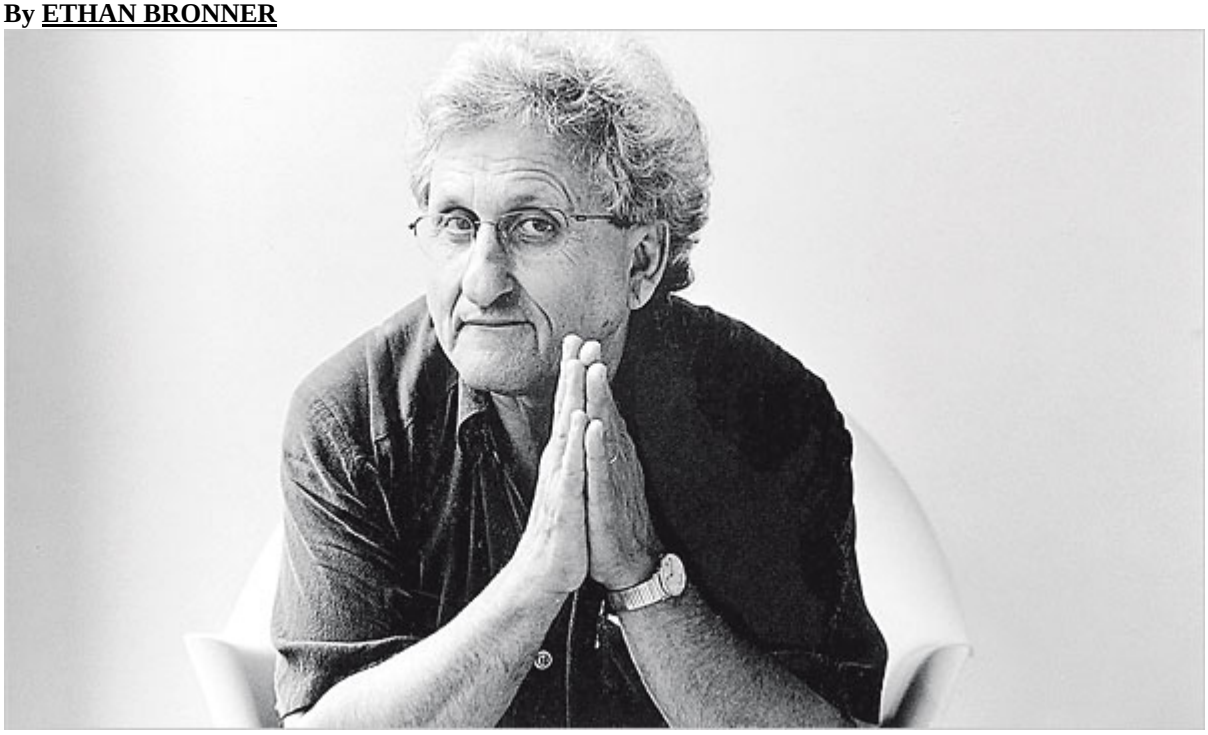
This article has been revised to reflect the following correction:

Correction: November 23, 2008
A picture credit with the On Poetry column last Sunday omitted the name of the photo agency. The picture of Ted Hughes and Sylvia Plath was from Blackstar.

http://www.nytimes.com/2008/11/16/books/review/Orr-t.html?8bu&emc=bua2

No Heroes

By ETHAN BRONNER



FRIENDLY FIRE

A Duet

By A. B. Yehoshua. Translated by Stuart Schoffman

386 pp. Harcourt. $26

A couple of years ago, the Israeli writer A. B. Yehoshua upset many American Jews by asserting that a full Jewish life could be had only in the Jewish state. Jews ruled by Jews, he said, were deciding whether to withdraw from territory and torture terrorists. Jews elsewhere might contribute to similar conversations but were only "playing with Jewishness," not defining it.

The depth — and burdens — of a full Jewish life in the only Jewish state form the central themes of Yehoshua's latest novel, "Friendly Fire," a work that interlaces a depiction of almost aggressively ordinary day-to-day Israeli activity with an emotional and symbol-laden journey to that other bloody cradle of civilization, Africa. The two halves of the narrative aim to echo and complement each other, and when they do Yehoshua achieves a remarkable artistry. However, this isn't always the case. The result is a fine but flawed novel, rendered from the Hebrew in an excellent, nicely tuned translation by Stuart Schoffman.

Yehoshua came of age just after Israel's creation in 1948 and, like Amos Oz and Aharon Appelfeld, has been one of his country's most vital chroniclers and critics. He is the author of eight previous novels, the most accomplished of which is "Mr. Mani," a multigenerational look at Jewish identity and Israel through five conversations over more than a century. "Friendly Fire" has its own structural ambition. (Yehoshua has said that he admires Faulkner's narrative innovations.) A duet, the novel switches back and forth between two main characters, a married couple in late middle age, Amotz and Daniela Yaari.

He is the sober, slightly boring but admirably responsible owner of an elevator engineering company (inherited from his father), while she is flightier, more intellectual, an adventuresome teacher who has gone off to Tanzania to see her brother-in-law and grieve over her recently deceased sister. Highly interdependent co-rulers of a small, respectable and well-regulated world of friends, children and grandchildren, Amotz and Daniela are rarely apart (this also describes Yehoshua's own marriage), so the week of disruption to their routine over the Hanukkah holiday feels full of foreboding and significance. And it turns out to be.

When Daniela arrives in Africa, she discovers that her brother-in-law, Yirmiyahu (Hebrew for Jeremiah), has sought to cut himself off entirely from his roots. A former Israeli diplomat (his post was terminated), he tells her he doesn't know the name of the current prime minister and doesn't wish to know. When she takes out a box of Hanukkah candles so they can light them together, he throws them in the furnace and says he has no interest in the Jewish calendar. "I've simply decided to take a rest here from all of that," Yirmi tells his sister-in-law. "A rest from what?" she asks, stunned. "From the whole messy stew," he replies. "Jewish and Israeli."

As manager of an anthropological dig, Yirmi works closely with a Sudanese woman, an animist whose entire family was slaughtered in her country's civil war and who, despite this, "grew up to be a woman of great tenderness and humanity." Suffering, even holocaust, Yehoshua implies, aren't the monopoly of the Jews, and they're no excuse for cruelty. Moreover, monotheism isn't the only honorable explanation for the inexplicable mysteries of the universe.

But it turns out that Yirmi can no more cut himself off from Israel than can Daniela, who never changes her watch to local time and worries about her extended family, no matter what exotic landscape she inhabits. (Has her daughter-in-law remembered that Daniela is away and can't pick up the grandchildren tomorrow?) For the death that haunts this story isn't that of her sister, Yirmi's wife, but of her nephew, his son, six years earlier as a soldier in the Israeli-occupied West Bank. He was accidently shot by fellow soldiers during an ambush, the victim of what is called in English "friendly fire." In Hebrew — Eish Yedidutit — these words don't carry the same meaning, and therefore have a jarring impact on both the ear and the heart. In his rage and desperation, Yirmi seizes on this phrase, translated from English, when he first hears it as "some small spark of light that would help me navigate through the great darkness that awaited me and better identify the true sickness that afflicts all of us."

In search of that sickness, he travels twice to the West Bank Palestinian home where his son lost his life, and his encounters there are the most powerful scenes in the book. Yirmi wants to know exactly how and why his son was killed, and the Palestinians give him the answer he's seeking. It's a painful one, offered without sympathy. And while this adds to Yirmi's misery, he can't blame them for failing to feel sorry for the occupier and his dead occupier son.

Although Yehoshua is a long-standing critic of the occupation, he doesn't lionize the Palestinians. There are no heroes here. The land relentlessly eats its own, and "friendly fire" is just one of its ways. After his son's death, Yirmi pores over the harsh poetic writings of his namesake, the Old Testament prophet, who seems to argue that God is a cruel master promising only further cruelty for the sins of previous generations. There is no escape, not even in the depths of Africa.

It's hard to know what to make of this pessimism because Yirmi, who has lost his job, his son and his wife, isn't a trustworthy guide. Generally, he seems less wise than lost. Moreover, the other half of the novel is a light, pleasant chronicle of Amotz, the well-meaning bourgeois, with his elevator company and his family — his father, in a wheelchair; his slightly too sexy daughter-in-law; his fine son who skipped his military reserve duty and now has to pay for it; his grandchildren who await Hanukkah presents. All is not perfect, of course, but Amotz's is a successful, honorable life in the modern Jewish state, the sort of life Herzl could have only fantasized about.

It may be that Yehoshua is hinting at the growing split in Israeli life, as exemplified by the self-absorbed, comfortable existence of Tel Avivians, protected by the separation barrier along and near the West Bank boundary, who pay less and less attention to the festering conflict a few miles away. Israelis, the novel suggests, are all living a kind of unconscious duet.

The conflict serves at most as an irritating background noise, like the one afflicting the fancy Tel Aviv tower where Amotz's company did its latest job — the elevator shafts howl in strong winds and the tenants want them fixed. The word in Hebrew for wind and spirit is the same — ruach — and Yehoshua appears to be drawing a link between the mysteries of Tel Aviv elevators and the animism of Africa. To fix the problem, Amotz ends up relying on a pixie of a woman with unusual hearing rather than well-trained engineers. But what exactly does this link mean? The connection feels elusive; Yehoshua's failure to make us understand it is one of the book's weaknesses.

One of the novel's strengths is its careful inspection of the nature of familial relationships, rendered through exceptionally accurate dialogue. Yehoshua writes with depth and clarity, for example, of the decline in Yirmi's marital sex life after his son's death, and he is equally convincing in Amotz's observations of his own offspring. But the Tel Aviv plot is, in the end, more tepid than riveting, even as a counterpoint to the emotional and political drama played out on the Tanzanian plains.

Ethan Bronner is the Jerusalem bureau chief for The Times.

http://www.nytimes.com/2008/11/16/books/review/Bronner-t.html?8bu&emc=bua2

In His Own Write

By MARCEL THEROUX

KIERON SMITH, BOY

By James Kelman

422 pp. Harcourt. $26

Throughout his substantial and highly praised body of work, James Kelman has sought to portray the life of Scottish working-class people in fiction that is sympathetic to their predicament and accurately reflects their language. He's done so, by his account, out of a sense that English literature's institutional elitism has blinded it to the significance of the lives of "people of my own background." The typical Kelman hero — like the narrator of the 1994 Booker Prize-winning "How Late It Was, How Late" — is a mouthy and indignant character down on his uppers, assailing the reader in a lively and foul-mouthed Scots vernacular.

Now in his 60s, and with his sense of injustice apparently undimmed by his standing as a senior eminence of British letters, Kelman has written "Kieron Smith, Boy," a novel about a hardscrabble Glasgow childhood. The exact time of the story isn't clear from the book, but the details fit the period starting in the 1960s when dwellers in the city's slum tenements were moved to new housing estates on its outskirts.

Kieron, the youngest of two brothers and a perennial outsider, grows from childhood to early adolescence against a background of unstated but obvious poverty. The Glasgow of the novel's era is a rough, sectarian city, its divisions echoing the bloodier conflict across the Irish Sea. Kieron's family is Protestant, but his Celtic name sounds Catholic. He doesn't appear to fit in anywhere. He even speculates that he might be adopted; his socially ambitious mother certainly seems to prefer his older brother, Matt.

The book unfolds in an unnumbered series of episodes, all told in Kieron's rambling, recursive voice. Events lead Kieron from the inner city to his new home on its outskirts, and include tangles with rough kids, visits to watch the soccer at the Glasgow Rangers' home ground, stints in two new schools, clashes with his brother, faltering steps into a first job and a taste of financial independence. There are so few moments of warmth and intimacy at home that when his dad fixes up an old bicycle it seems like Christmas (at least until the bike gets stolen a page later). Other bright spots in Kieron's rather cheerless world are the library, his grandparents' house and the facility he discovers he has for climbing drainpipes. Although the novel is written in the first person, it would be wrong, I think, to say that Kieron narrates the book. There's no implied moment of narration and indeed no reason for Kieron to be telling us his story. Instead, the text dramatizes the boy's unfolding consciousness in a way that recalls the modernist experiments of Joyce and Woolf. As the book progresses, the voice alters slightly, its preoccupations change, and the bashful self-censorship — nude, for instance, appears as n**e — gives way to full profanities. I think Kelman intends this as a kind of progress, that he approves of Kieron speaking unapologetically in his own voice. But it's hard to know: Kelman passes no judgment on his young hero. He just starts him up and lets him talk:

"I always went the messages for my grannie and would always go them, so if it was a train to take, I would still go them. I liked going them, only if it was a heavy pile of potatos and all vegetables, carrots and turnips, it was just a heavy bag and it was two hands going up the stair. The shops were round the corner along the road and I knew the ones to go to, if they gived ye good food, some of them did not. My grannie said the ones that were not good, Oh do not go there he is a cheat if his potatos are old and how his carrots are just soft." This is difficult writing of an unexpected sort. If you're not thrown by the Scots usage of "went messages" to mean "got the groceries," you'll still struggle to find the sentence's center of gravity. Kieron, and Kelman, give you no help, declining to distinguish what might be important from what's not. And that, in miniature, is how the book works as a whole.

Kelman is a profoundly political writer, concerned with the way that representing speech or policing speech can be a form of social control. Throughout the novel, Kieron's mother and other authority figures try to make him forsake the marked Scots features of his language and use more socially prestigious forms. "Ye had to speak right all the time, Oh it is not cannay it is cannot, you must not say didnay it is did not. If it is the classroom it is not the gutter. It is the Queen's English, only you must speak the Queen's English."

It's clear, by contrast, that Kelman wants his creation to speak in his native idiom, even at the risk of banality. He goes out of his way to avoid anything that smacks of fine writing. There's not a memorable sentence in the entire book. Occasionally, the result is a moving artlessness or a pungent, rhythmic vitality. More often, the effect is one of eye-watering dullness; the words just aren't doing enough heavy lifting to keep the reader interested. Kieron rambles on like the worst kind of bore, in repetitious, loosely connected flights of fancy.

Still, this isn't a bad book. Kelman is a writer of singular will and sincerity. He is, like many highly original artists, proposing to create the taste by which he is judged. In language and structure, he rejects forms that have worked for other writers. He willfully ducks anything that resembles a decisive climax — as if to write one would do violence to the naturalism of his material. Instead, grittily, by inches, and yammering all the time, Kieron pulls himself virtually unaided into young manhood.

Indeed, one of the most persistent motifs in the book is of Kieron climbing; up trees, or up ronepipes — drainpipes — at the new housing estate. The drainpipe climbing could stand as an image for Kelman's achievement in this book as a whole: the courage and tenacity required to pull it off are undeniable — but there is scant pleasure to be had watching him do it.

Marcel Theroux's fourth novel, "Far North," will be published by Farrar, Straus & Giroux next spring.

http://www.nytimes.com/2008/11/16/books/review/Theroux-t.html?8bu&emc=bua2

Bumpy Ride

By TOM VANDERBILT

AUTOPHOBIA

Love and Hate in the Automotive Age

By Brian Ladd

Illustrated. 227 pp. The University of Chicago Press. $22.50

“We can’t build our way out of congestion.” For years this has been the rallying cry against the continuing accommodation — either in the federal budget or the local landscape — to the exigencies of the car. Typically, it is brandished by mass-transit partisans or stubborn slow-growthers and routinely rejected by the road lobby (pave, baby, pave!), right-tilting think tanks and, if you pose the question at rush hour, at least, the average driver.

The quotation above was recently uttered, however, by a spokesman for a state department of transportation, typically among the most eager layers of asphalt. The state in question? Michigan, home of the American car industry — for which roads are as essential as pastures to ranchers. If this reads like an apostasy, it also looks like part of a larger withering of faith. Detroit is having a cataclysmic year while bus and train riderships exceed capacities, the once unsurpassed American road network is in vast

disrepair and in countries from Japan to England, fewer people are undergoing the adolescent ritual of getting a driver's license. With unpredictable gas prices and soul-deadening traffic, the car has certainly lost some of its luster, lending credence to the words of an English observer: "From being the plaything of society," the car "has come to dominate society. It is now our tyrant, so that at last we have turned in revolt against it, and begun to protest against its arrogant ways." The only problem with this incipient revolt is that these words actually date to 1911, the shaky toddler years of American motorization. That they could have been uttered in 1973, or perhaps yesterday, is what animates Brian Ladd's "Autophobia." People have been predicting the death, or at least severe retrenchment, of the car virtually since its invention. But while the literature may be filled with books like "Dead End," "Car Trouble" and "Autokind vs. Mankind" — among many others — the roads are filled with ever more traffic. The car, since it began, has seemingly been driven by Beckett: It can't go on, it goes on.

This raises the question of what, a century on, there is to say about motorization and its discontents that hasn't been said before. But for Ladd, author of the masterly study "The Ghosts of Berlin: Confronting German History in the Urban Landscape," the work of "Autophobia" is precisely about looking again at what has been said, by whom and for what reason, and why none of the voluminous critiques of the car — by any number of estimable figures — seem to have much mattered. He does this with equanimity and scholarly aplomb (particularly on the European response to motorization), and for a slender volume, this book has a lot under the hood. Early on, Ladd notes, the fault lines were clear. A wealthy few had cars, and they drove them ruthlessly, generally haranguing and disrupting the people in their paths. Other automobiles were less a risk than were local farmers' guns. And in one astonishing case in Germany, a couple was beheaded as they drove upon a wire stretched across a road in protest. There were "two strands of rural complaint," Ladd writes, "both with a conservative tinge: the poor peasant's resentment of the highhanded rich motorist, and the outraged good taste of educated people who enjoyed their quiet sojourns in the countryside."

As the automobile and its charms began tempting the masses, boundaries began to blur. Woodrow Wilson's famous warning that the car would instill "socialistic feeling" in the United States yielded to the fomentations of Adolf Hitler: "The automobile" must "be stripped of its class-specific and therefore divisive character. It must cease to be a luxury and become a practical device!" Cars, Ladd astutely points out, were politically unsettling: "The automotive metropolis offered liberation from old constraints, yet the car's defenders were increasingly those who called themselves conservatives. Its critics were the ones demanding both the conservation of natural resources and the defense of the traditional city."

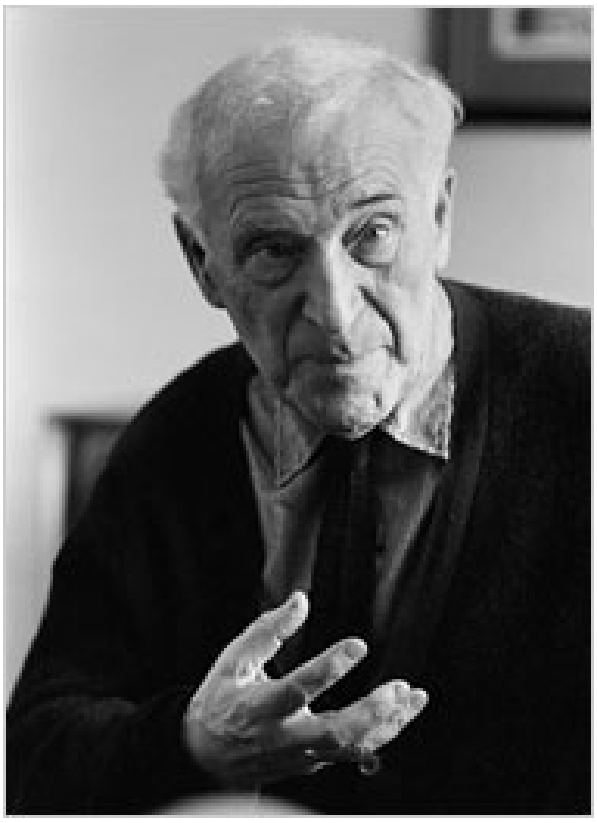
Throughout the car's life, Ladd argues, its critics have often "failed to appreciate the depth of the automobile's hold on ordinary people," reaching for conspiracies to help explain the ubiquity of car culture when the answers seem far simpler. The car, beyond any symbolic power, is usually the fastest — if far from the healthiest — way to get around. But this itself contains a point that the car's boosters, Ladd argues, often ignore — a so-called path dependence. Once you started to make room for the car in the landscape — doing things that made the car "an easy, convenient, even necessary, but not always wise choice" — it was hard to turn back. "Autophobia," Ladd observes, is "an obscure psychiatric diagnosis of 'fear of oneself,' " rather than a fear of cars, though today there may be no distinction. Cars are a good thing — which is why critics have failed to stem the tide — but we have had no easy way, or much will, to treat the problems of having too much of a good thing (which continues to give critics grist). "The democratization of driving has meant that we can all aspire to be petty tyrants of the road," Ladd writes. "In the end, the driver's sense of sovereign mastery and the bystander's perception of inhuman arrogance are two sides of the same coin." Like the preacher in "The Night of the Hunter," we may have the words "love" and "hate" tattooed on our hands, but those hands seem firmly on the steering wheel.

Tom Vanderbilt is the author of "Traffic: Why We Drive the Way We Do (and What It Says About Us)."

http://www.nytimes.com/2008/11/16/books/review/Vanderbilt-t.html?8bu&emc=bua2

The Exile's Palette

By SARAH BOXER



CHAGALL

A Biography

By Jackie Wullschlager

Illustrated. 582 pp. Alfred A. Knopf. $40

Ever wondered why so many figures in Marc Chagall's paintings fly? At age 79, Chagall described how his mother buoyed him, back when he was Moshka Shagal, "her breasts so warmly nourishing and exalting me, and I feel I could swing from the moon."

Jackie Wullschlager's Chagall is a colossal mama's boy. When sustenance from one source dried up, he quickly got it from another — first his mother; then his teacher, Yuri Pen; his friend Viktor Mekler; his girlfriend Thea Brachmann; the poets Apollinaire and Cendrars; his wife, Bella; his dealer Vollard; his daughter, Ida; his lover Virginia; his second wife, Vava. Everyone embraced him, nursed him, held him aloft. But — though the biographer doesn't put it this way in "Chagall" — one mother rebuffed him, despite his lifelong attempt to please her: Mother Russia.

Wullschlager, the chief art critic for The Financial Times and a biographer of Hans Christian Andersen, doesn't seem to like Chagall much. That's O.K. In her engaging, almost painting-by-painting biography, she backs up her dislike (drawing on archival letters and memoirs). Chagall appears as a social climber and a prince of self-pity. He thrived in a bloody century that killed many friends. (Wullschlager's many

concise lists detailing other artists' fates show how lucky he was.) But he saw himself as Christ on the cross.

And what of his art? Wullschlager says Chagall played on "every radical trend, every jarring dislocation" of the early 20th century, but he comes off as virtually untouched, particularly after 1914. Tellingly, he "possessed no works by any other painter" and, regardless of influence, carried his same bundle of narrative subjects — cows, chickens, rabbis, clocks, fish, flowers, steeples — wherever he went.

Chagall did acknowledge his debt to Vitebsk, his hometown in the Russian Jewish Pale. There the skyline was dotted with spires, everyone owned cows and chickens, and his father, an orthodox Jew, hauled herring for a living. Yes, all the images Chagall would turn into his private lending library came from Vitebsk. But first he had to "get out from that family," as his daughter said, and out of the shtetl.

In high school he saw his nemesis, a boy who called him a schlemiel, copying a picture. Watching "that fathead" draw, Chagall remembered, "roused a hyena in me." He enrolled at a traditional drawing school where the painter Lazar Lissitzky (later El Lissitzky) also studied. In 1907, tired of Pen's realism, he went to St. Petersburg, where he learned about experimental theater and Gauguin. But he soon returned to Vitebsk and made his first mature work, "The Dead Man," a study of a corpse, painted from life. It was arranged like a "framed tableau," Wullschlager says. He was already seeing Vitebsk as a stage set.

Still missing was Chagall's famous color — or was it? He once said he detested Russian color. "Their color is like their shoes." Color, he claimed, came into his life when he went to Paris in 1911. Wullschlager says it came with Thea Brachmann, a tomboy intellectual with "an extrovert's body," who modeled for him in 1909. Chagall responded with red, and added flowers and dominant women to his stock of images.

But Thea "outlived her usefulness," Wullschlager writes, after she introduced Chagall to Bella Rosenfeld, an aspiring actress who studied with Stanislavsky. Chagall painted a monumental portrait of her, "My Fiancée in Black Gloves."

One of the book's two highlights is the art revolution Chagall lived through in Paris. In 1911, Cubism was new, and an impoverished Chagall (who'd buy "a herring from the market, eating the head one day and keeping the tail for the next") gorged on second-tier Cubist paintings by Albert Gleizes, Henri Le Fauconnier and Jean Metzinger. Soon he saw Vitebsk through his idiosyncratic, quasi-Cubist lens: "the town seems to snap apart, like the strings of a violin, and all the inhabitants . . . begin to walk above the earth."

Chagall's fractured fairy tales caught the attention of the poet Blaise Cendrars, who loved Chagall's "logic of the illogical" and introduced him to his friends Robert and Sonia Delaunay, Fernand Léger and Guillaume Apollinaire. Chagall's lively description of his meeting with Apollinaire suggests, by the way, that he missed his calling as a writer: "Wine rang in his glass, meat clattered between his teeth. And all the while he was greeting people right and left . . . Oh! Oh! Oh! Ah! Ah! Ah!"

In 1914, Chagall returned to Vitebsk, where, Wullschlager writes, under Bella's eye his "dislocated perspectives were straightened out." Beggars off the street modeled for him, becoming red and green rabbis. His mother died. He married Bella, who became his critic, agent, translator and social ambassador. Their daughter, Ida, was born, and he refused to see her for days because she wasn't a boy. World War I began. In Petrograd (formerly St. Petersburg), Chagall sat it out, whining about the desk job that probably saved him. His deepest wounds, it turns out, were dealt by Russian artists. That story is the book's other high point.

Chagall was euphoric in 1918, after the Russian Revolution. His painting "Promenade," where "Bella spins in the air on Chagall's arm like a flag," suggests the feeling. Jews were finally Russian citizens, and

avant-garde art was triumphant. The trouble began in 1920, when Chagall, now the head of the People's Art College in Vitebsk, hired his pal Lissitzky, who, Wullschlager says, had just "come under the spell of Malevich," the Suprematist painter, and was creating aggressive geometric works like "Beat the Whites With a Red Wedge." Lissitzky hired Malevich, and together they turned the students against Chagall. Defeated, Chagall painted his school blotted out by semicircles and triangles. The next year, Vitebsk's synagogues were closed and its Torah scrolls destroyed. The Bolsheviks' persecution of the Jews had begun.

Chagall's life in exile — which started in 1922, after he designed the murals for Moscow's Jewish Theater — is, like his art, full of movement but strangely static. Chagall lived in France, then in New York. He painted more and more crucifixions. And Bella became not just his main subject but all of Russia for him.

Oh, how he missed Russia! In 1937, he wrote a nostalgic letter to his old teacher, Pen, living quietly under the radar of the Soviet regime. It "almost certainly" got Pen killed by the secret police, Wullschlager says. Chagall's blindness to Soviet horrors verges on the pathological. In 1945, shortly after Bella died, he grieved again over his loss of Russia and composed a letter to Stalin, hoping for an invitation to Moscow.

He briefly cheered up when he settled in with his housekeeper, Virginia Haggard McNeil. They had a son, David, and in the 1950s moved into a villa in Provence, between Picasso and Matisse. Once, when Picasso taunted him about abandoning Russia, Chagall parried that "as a member of the Communist Party," Picasso "should go first," adding, "I hear you are greatly beloved in Russia, but not your painting." Picasso answered: "With you I suppose it's a question of business. There's no money to be made there."

Great stuff. But the biography's end doesn't have many such moments. After the exit of Virginia in 1952 and the entrance of her Russian-Jewish replacement, Vava, who became Chagall's wife and bulldog, it's a blur of commissions, exhibitions, murals and stained-glass windows until he died in 1985. Indeed, Chagall's description of his beloved Russia — "a paper balloon suspended by a parachute" — could fit his own inflated stardom unto death.

Sarah Boxer is the author of a cartoon novel, "In the Floyd Archives," and the editor of an anthology, "Ultimate Blogs."

http://www.nytimes.com/2008/11/16/books/review/Boxer-t.html?8bu&emc=bua2

Heavy Reading

By JAMES CAMPBELL

A GREAT IDEA AT THE TIME

The Rise, Fall, and Curious Afterlife of the Great Books

By Alex Beam

Illustrated. 245 pp. PublicAffairs. $24.95

The humble book has survived many attacks on its integrity over the centuries, whether from tyrannical clerics or fearful governments or the new electronic wizard that promises a peculiarly modern “pleasure of the text” via limitless accessibility. Nevertheless, publishers continue to produce books, while countless numbers of people read them and — a word that crops up frequently in relation to books — love them.

In the middle of the last century, a committee of commercially minded academics came up with its own strategy to undermine the enjoyment of reading. With the backing of the University of Chicago, Robert Maynard Hutchins, Mortimer Adler and a few others whittled the literary, scientific and philosophical canon down to 443 exemplary works. They had them bound in 54 black leatherette volumes, with the overall designation Great Books of the Western World, then hired genial salesmen to knock on suburban doors and make promises of fulfilment through knowledge. In a postwar world in which educational self-improvement seemed within everyone’s reach, the Great Books could be presented as an item of intellectual furniture, rather like their prototype, the Encyclopedia Britannica (which also backed the project). Whereas the Britannica justified its hulking presence in the home as a reference tool, however, the Great Books made a more strident demand — they wanted to be read. Unfortunately, once opened, the volumes were forbidding. Each was a small library in its own right, with slabs of text arranged in

monumental double columns. The Great Books of the Western World were what books should not be: an antidote to pleasure.

The great minds behind the Great Books were Hutchins and Adler. Hutchins was a precocious academic administrator — dean of Yale Law School at age 28, president of the University of Chicago at 30 — Adler a philosopher of ideas, author of works like "How to Read a Book" and a man who, in the words of Joseph Epstein, a colleague in the 1960s, "did not suffer subtlety gladly." The Great Books project was many years in the making and was intertwined with Hutchins's desire to reform the humanities curriculum at Chicago, but in 1952, after years of planning and bargaining with fellow members of the Great Books team — "If Dickens goes, Melville goes" (Dickens did; Melville didn't) — he and Adler saw their dream become a well-upholstered reality.

In "A Great Idea at the Time," Alex Beam presents Hutchins and Adler as a double act: Hutchins the tall, suave one with a gift for leadership; Adler "a troll next to the godlike Hutchins," with a talent for putting students to sleep. Making the acquaintance of Hutchins through his works was, to Beam, "like falling in love." By contrast, "to be reading Mortimer Adler's two autobiographies and watching his endless, self-promotional television appearances was a nightmare from which I am still struggling to awake." As an appendix to the Great Books, Adler insisted on compiling a two-volume index of essential ideas, the easily misspelled Syntopicon. A photograph in "A Great Idea at the Time" shows Adler surrounded by -filing-cabinet drawers, each packed with index cards pertaining to a separate "idea": Aristocracy, Chance, Cause, Form, Induction, Language, Life and so on. The cards registered the expression of those ideas — Adler arrived at the figure of 102 — in the Great Books of the Western World.

Hutchins and Adler's Great Books were a mixture of books you wouldn't dream of reading; books you think you ought to read but know you never will; and many books that, if you haven't read them already, you would admire and possibly enjoy. The last category included the "Iliad," works by Chaucer and Shakespeare, "The Decline and Fall of the Roman Empire," a few novels — "Tom Jones," "War and Peace" — and various works of philosophy. The commercial aspect played on the common desire to harbor all of knowledge — Euclid, Kepler, Bacon, Descartes, Hume, Adam Smith, to name but a few — under one roof.

The texts were presented, however, without annotation, which would prove a hindrance even in the case of relatively accessible works, like Shakespeare's sonnets. The 54 volumes contained practically nothing written in English in the previous 100 years (two works by Charles Darwin, one by William James), but heaps of Plato and Aristotle, some alarming medical remedies of Hippocrates — "Make the irons red-hot, and burn the pile until it be dried up" — and column after column of ancient science, of little interest to anyone but specialists, who would have equipped themselves with more advanced texts anyway. When asked for his views on which classic works to include among the Great Books, the science historian George Sarton pronounced the exercise futile: "Newton's achievement and personality are immortal; his book is dead except from the archaeological point of view."

Hoping to offer the reader what many of the Great Books fail to provide — entertainment — Beam falls over himself in the effort to be breezy and upbeat. No Mortimer Adler, he. "It is hard to resist poking fun," he writes, and resistance is easily overcome. "From the culture's point of view, Adler was a dead white male who had the bad luck to still be alive." When reporting that "War and Peace" was among the selections of Hutchins and Adler, Beam fails to resist adding "no 'Anna Karenina'; too readable!" His plain-man slangy style, which will be appreciated by fans of his column in The Boston Globe, is just as likely to be off-putting to others. Hutchins and his colleagues, Beam writes, "signed a pact with the devil of commerce" and "hawked their books" the way their ad man, William Benton, sold Crest toothpaste. "Forget that it cleans your teeth; you'll be popular! Wisdom of the ages, schmisdom of the ages. Forget about learning — your boss will be impressed, women will seek you out ('Oh! You're reading Fourier's "Theory of Heat." . . . How fascinating!'), your kids will get into college, and so on. . . . Soon enough the Great Books were synonymous with boosterism, Babbittry, and H. L. Mencken's benighted boobocracy. They were everything that was wrong, unchic and middlebrow about middle America."

If not a great book, "A Great Idea at the Time" acts as a good guide to the rise and fall of the project. For a brief period, the Great Books were at the heart of the curriculum at Chicago, and continue to feature strongly elsewhere. In one of the reportorial chapters toward the end of his account, Beam visits St. John's College in Annapolis (it also has a campus in Santa Fe), which still operates a teaching program based on "all Great Books, all the time." In 70 years, little has changed at St John's. "If a boy or girl wants to attend medical school," Beam writes, "that means an additional year . . . of memorizing facts in conventional biology and chemistry classes, not learning the 'truth' behind the science, Great Books-style."

Hutchins and Adler foresaw many obstacles on the way to ushering the Great Books into classrooms and living rooms, overcoming them by persistence, financing — the compilation of the Syntopicon alone took eight years — and a not always likable self-belief. But not even the distilled wisdom of the 54 volumes could have helped them predict that by the 1980s students on campuses throughout the United States would be forming groups and chanting, "Hey, hey! Ho, ho! Western culture's got to go!" sometimes with support of politicians. By then, the Great Books notion had fallen from its commercial and academic high point to being the focus of readings groups. Beam relates his own adventures in one of the "850 active chapters" of the Great Books Foundation, discussing Elizabeth Bishop, Robert Frost and other writers overlooked even in the updated edition of 1990. The Great Books of the Western World are not what they were. But the world's great books, in some mysterious, muddled way, endure.

James Campbell's collection of essays, "Syncopations: Beats, New Yorkers and Writers in the Dark," was recently published. He writes a weekly column in The Times Literary Supplement.

http://www.nytimes.com/2008/11/16/books/review/Campbell-t.html?8bu&emc=bua2

Enough With the Sweet Talk

By JOE QUEENAN

A few years ago, in these very pages, Bruce McCall wrote a flattering review of my book "My Goodness: A Cynic's Short-Lived Search for Sainthood." I was grateful for the praise, particularly coming from someone I admired and envied. But toward the end of the review, McCall said something that caught me completely off guard.

"Somewhere," he wrote, "Mencken is beaming."

No, he wasn't. H. L. Mencken, a self-absorbed curmudgeon, wouldn't have thought much of my efforts. He looked down his nose at everybody, especially those not to the manor born. Mencken, now or then, dead or alive, couldn't have cared less what I wrote. He was from Baltimore, where they keep the beaming to an absolute minimum.

Anyway, the book wasn't that good.

This brings us to the least-discussed subject in the world of belles-lettres: book reviews that any author worth his salt knows are unjustifiably enthusiastic. Authors are always complaining that reviewers missed the whole point of "Few Mourn the Caballero," or took the quote about the merry leper ballerinas out of context, or overlooked the allusions to Octave Mirbeau, or didn't mention that the author once jilted the critic after he kept begging her to go out on a double date dressed as one of the Boleyn sisters. Authors are always complaining that reviewers maliciously cited the least incandescent, least Pushkinian passages in the book, or have a grudge against them because of something that happened the night the Khmer Rouge or Joy Division broke up, or only said mean things because the author went to Exeter while the reviewer had to settle for Andover.

What makes this bellyaching so unseemly is that the vast majority of book reviews are favorable, even though the vast majority of books deserve little praise. Authors know that even if one reviewer hates a book, the next 10 will roll over like pooches and insist it's not only incandescent but luminous, too. Reviewers tend to err on the side of caution, fearing reprisals down the road. Also, because they generally receive but a pittance for their efforts, they tend to view these assignments as a chore and write reviews

that read like term papers or reworded press releases churned out by auxiliary sales reps. This is particularly true in the mystery genre, where the last negative review was written in 1943.

There is nothing inherently unethical or immoral about a needlessly effusive notice, nor any reason to suspect that the reviewer is being pathetically servile because he seeks the author's hand in marriage or expects similar treatment when his own book, "Would That the Khedive Had Not Overslept," comes out in paperback. But such reviews are unfair to the reader, who may be hornswoggled into thinking that Philip Marlowe really would tip his hat at the author, or that the author has gone toe-to-toe with Joseph Conrad and given the ornery old cuss a thrashing. Books are described as being "compulsively readable," when they are merely "O.K."; "jaw-droppingly good," when they are actually "not bad"; "impossible to put down," when they are really "no worse than the last three." Authors are described as a cross between Madame de Staëland Arthur Conan Doyle, or are said to write like Charlotte Brontë on acid, or have out-Dostoyevskied Dostoyevsky and checkmated Euripides, when they are more of a cross between Candace Bushnell and Ngaio Marsh, or write like Willa Cather on Robitussin-DM, or have been narrowly out-Mavis Gallanted by Mavis Gallant, and were lucky to play Edna Ferber to a draw.

The same authors who mope and whine about a negative comment here and there are only too glad to accept praise that is not warranted, kudos they do not deserve. But how often does an author ever come out and admit that the praise showered on his book was excessive, inappropriate, ill-considered, unseemly or flat-out wrong? That's the sort of thing that takes real moral fiber, real guts. You know, like admitting that H. L. Mencken wouldn't have been caught dead beaming at your book.

Kurt Andersen, a co-founder of Spy and the author of "Heyday" and "Turn of the Century," is one of those people. Reached by phone, he admitted to once being given pause when a reviewer likened him to James Joyce.

"I took it as a compliment, but I also thought, well, it's not really true," Andersen said. "Also, I've never been a big Joyce fan, so I couldn't be sure the praise was entirely complimentary."

Margot Livesey, the author of "Criminals," "The Missing World" and the recently published "House on Fortune Street," has written work that has been described as "spellbinding," "delicate," "terrifying" and "enthralling." I have read all her books and can confirm that this praise is fully justified. But Livesey acknowledges that on occasion the homages are enough to make one blush.

"There was one review in The New Yorker which said that my writing was Shakespearian with Murdochian over- — or under-? — tones," she recalled in an e-mail message. "Of course I was pleased, but it did seem a little over the top."

Excessive praise is even worse when it is unwanted praise, or what specialists refer to as dissonant encomium. James B. Stewart, whose Pulitzer Prize-winning articles about Mike Milken and Ivan Boesky led to his 1992 best seller "Den of Thieves," said in an e-mail message that he once upset his publisher by refusing to go on Rush Limbaugh's show after the talk-show host heaped praise on "Blood Sport," his 1996 book about Bill Clinton. This is like having Phil Gramm describe you as being even zanier than Al Gore.

The dark side of flattery, according to P. J. O'Rourke, is attracting a fan base you may not want. Once described as "the funniest writer in America" by Time and The Wall Street Journal, O'Rourke suspects that this raised his profile among libertarians, who for some reason think of themselves as a pack of wild cutups.

"There's a nutty side to libertarians, starting with the Big Girl, Ayn Rand, and going straight through Alan Greenspan," O'Rourke told me over the phone. "When I go to Cato Institute functions, there's always a group of guys who look like they cut their own hair and get their mothers to dress them, with

lots of buttons about legalizing heroin and demanding a return to the gold standard. The institute has tried to weed them out over the years, but they still turn up at the bigger events. As soon as I see them coming toward me, my heart sinks."

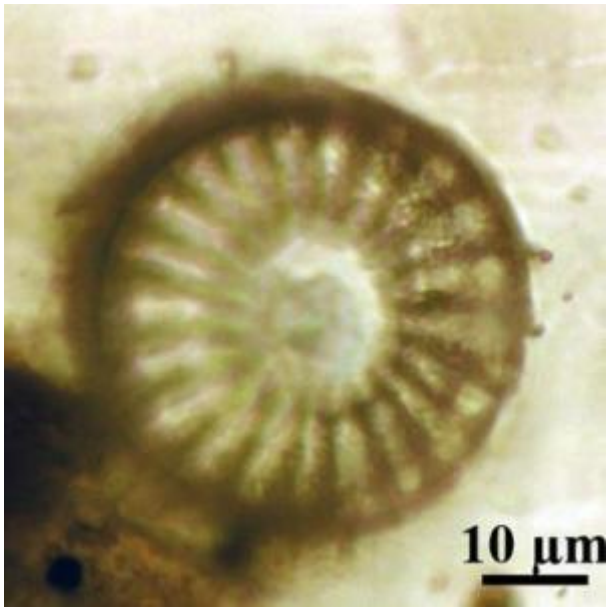
Dave Barry has been carrying around the burden of the same accolade for years. "I once had a review in The New York Times in which a nice reviewer described me as 'the funniest man in America,' " Barry recalled in an e-mail message. "This is a ridiculous assertion; I am not the funniest man in my neighborhood. . . . People introduce me to audiences by saying, 'The New York Times has called him the funniest man in America,' as if the Times editorial board decided this after painstakingly considering all the other American men. The worst was when I was on a book tour in England, where the BBC radio hosts would read the Times quote in such a way as to suggest: Funniest man in America, eh? As if that means anything."

Just as authors dread being labeled "a poor man's Francine du Plessix Gray" or "Satan's errand boy," many authors live in fear of praise that is discomfitingly intimate or jarringly visceral. I for one would never want one of my books referred to as "a big dish of Beluga caviar" sailing in "on a sparkling bed of rice, with a mother-of-pearl spoon," as one of Alice Munro's once was. There's a macabre chumminess to this kind of writing, suggesting that the reviewer may actually be daydreaming about the author in graphic cetacean terms. If I were Munro, I'd add a couple of locks to the door. Deadbolts, in fact.

Joe Queenan's memoir "Closing Time" will be published in April.

http://www.nytimes.com/2008/11/16/books/review/Queenan-t.html?8bu&emc=bub1

Marine Plankton Found In Amber



Diatom in amber. (Credit: Copyright Laboratoire géosciences Rennes)

ScienceDaily (Nov. 14, 2008) — Marine microorganisms have been found in amber dating from the middle of the Cretaceous period. The fossils were collected in Charente, in France. This completely unexpected discovery will deepen our understanding of these lost marine species as well as providing precious data about the coastal environment of Western France during the Cretaceous.

This work was carried out by researchers at the Géosciences Rennes laboratory (CNRS/Université de Rennes 1), together with researchers from the Paléobiodiversité et Paléoenvironnement laboratory in Paris (CNRS/Muséum national d'histoire naturelle/Université Pierre et Marie Curie) and the Centre de Géochimie de la Surface in Strasbourg (CNRS/Université de Strasbourg 1). It was published in the 11 November 2008 issue of PNAS.

Amber is a fossil resin with a reputation for preserving even the most minute details of insects and other terrestrial arthropods (spiders, scorpions, mites) that lived in resiniferous trees. The forest-based provenance of amber in theory makes it impossible for marine animals to be trapped in the resin. Nonetheless, researchers from the Géosciences Rennes laboratory have discovered various inclusions of marine plankton in amber from the Mid-Cretaceous (100 to 98 million years BP). These micro-organisms are found in just a few pieces of amber among the thousands that have been studied, but show a remarkable diversity: unicellular algae, mainly diatoms found in large numbers, traces of animal plankton, such as radiolaria and a foraminifer, spiny skeletons of sponges and of echinoderms.

Carried out together with researchers at the Muséum national d'histoire naturelle, the study of diatoms pushed back by 10 to 30 million years the known date for the appearance of certain marine forms of this type of algae. This new information, taken together with recent data on molecular phylogeny, marks a huge advance in our understanding of the complex evolutionary history of diatoms.

The presence of these marine organisms in the amber is an ecological paradox. How did these marine species become stuck and then trapped in the conifers' resin? The most likely scenario is that the forest producing the amber was very close to the coast, potentially shrouded by plankton-bearing mist or flooded by sea water during storms.

The preservation of marine organisms in amber is an exceptional asset, allowing us to deepen our understanding of these lost species and to have a clear idea about the coastal environment of Western France during the Cretaceous.

Journal reference:

1. V. Girard, A. R. Schmidt, S. Saint Martin, S. Struwe, V. Perrichot, J-P. Saint Martin, D. Grosheny, G. Breton and D. Néraudeau. **Evidence for marine microfossils from amber**. *PNAS*, 11 November 2008

Adapted from materials provided by CNRS (Délégation Paris Michel-Ange).

http://www.sciencedaily.com/releases/2008/11/081112161206.htm

Small Islands Given Short Shrift In Assembling Archaeological Record

Small islands dwarf large ones in archaeological importance, says a University of Florida researcher, who found that people who settled the Caribbean before Christopher Columbus preferred more minute pieces of land because they relied heavily on the sea. (Credit: iStockphoto/Alexander Hafemann)

ScienceDaily (Nov. 14, 2008) — Small islands dwarf large ones in archaeological importance, says a University of Florida researcher, who found that people who settled the Caribbean before Christopher Columbus preferred more minute pieces of land because they relied heavily on the sea.

"We've written history based on the bigger islands," said Bill Keegan, a University of Florida archaeologist whose study is published online in the journal Human Ecology. "Yet not only are we now seeing people earlier on smaller islands, but we're seeing them move into territories where we didn't expect them to at the time that they arrived."

Early Ceramic Age settlements have been found in the U.S. Virgin Islands and Montserrat, for example, but are absent from all of the larger islands in the Lesser Antilles, Keegan said. And all of the small islands along the windward east coast of St. Lucia have substantial ceramic artifacts — evidence of settlement — despite being less than one kilometer, or .62 mile, long, said Keegan, who is curator of Caribbean archaeology at the Florida Museum of Natural History on the UF campus.

It was thought that people preferred larger islands because the land mass of bigger islands could support a more diverse range of habitats and greater numbers of animal species for humans to subsist on, Keegan said. In addition, the focus of long-term evolutionary patterns has favored large islands, he said.

But small islands had coastlines rich with fish, and the absence of dense woodlands made them more suited to farming and hunting small prey such as iguanas, tortoises and hutias, a cat-sized rodent, he said.

“In the short term, small islands often are superior to larger islands, and for a variety of reasons, they were actually people’s first choice,” Keegan said. “They had better wind flow, fewer mosquitoes and more plentiful marine resources. With sufficient water and a relatively small amount of land to grow certain kinds of crops, they had everything one would need.”

Because prehistoric people were drawn to these small islands, they may tell scientists more than settlements on larger islands about early patterns of life, Keegan said. To date, most archaeological excavations have taken place on bigger islands in such countries as Cuba, Dominican Republic and Puerto Rico, he said.

Much of Keegan’s research focused on Grand Turk, Middle Caicos and very small cays in the Turks and Caicos Islands, along with Carriacou in the Grenadine Islands, he said.

Pottery remains he found that were analyzed at the Florida Museum of Natural History’s ceramic technology lab shows that humans often left large islands for small ones, probably initially to take advantage of abundant marine resources along the coastline, he said.

Ceramic pottery sherds recovered from the smaller Turks and Caicos islands, for example, were actually found to have come from Haiti, he said. “Traveling to the Turks and Caicos gave these people an opportunity to get sources of food that weren’t locally available to them,” he added.

In another case, pottery remains were found on an extremely tiny island in the Turks and Caicos that had little soil and was accessible only by a sand spit, Keegan said.

“The island looks just like a rock,” he said. “To think that anyone would have any reason to be out there is just beyond believability. But the island is named Pelican Cay, so people may have gone there to capture sea birds and their eggs.”

People were drawn by the large varieties of fish, tortoises, iguanas and sea turtles that were in much greater supply on Grand Turk than the island of Hispaniola at the time, Keegan said. Remains from loggerhead turtles as big as 1,000 pounds were excavated from Grand Turk, although sea turtle sizes eventually declined to 60 pounds with overexploitation, he said.

“The high rates of return from capturing these animals far outweighed the costs of getting to Grand Turk,” he said. “Such human migration patterns made good economic sense.”

It was probably easier to sail to other islands than traverse from one end of an island to the other through the overgrown vegetation of tropical woodlands, he said.

“Most island archaeologists today, including those in the Caribbean, recognize that the sea was their ancient highway,” he said.

And the smaller the island, the better. “Based on our work, it is clear that marine resources on smaller islands in the Caribbean were abundant, heavily exploited and even sought after by the native peoples,” Keegan said. “You could say that ‘small is beautiful’ or ‘size doesn’t matter.’”

Adapted from materials provided by University of Florida.

http://www.sciencedaily.com/releases/2008/10/081030144633.htm

Fire Risk: Close-up On Habitat–forest Interfaces

In the French Mediterranean region, scattered habitations are gradually gaining on the forest, increasing the risk of fire start-ups and creating new elements that need protection. (Credit: J. Laurent)

ScienceDaily (Nov. 14, 2008) — In the French Mediterranean region, scattered habitations are gradually gaining on the forest, increasing the risk of fire start-ups and creating new elements that need protection. In Aix-en-Provence, Cemagref has developed a quasi-automatic method to map habitat–forest interfaces. This tool is of primary interest to land use managers and the actors involved in the fight against forest fires to prevent risk as well as to protect populations and property in case of fire.

“He who lives in isolation lives blissfully.” This is the principle adopted by a growing number of city dwellers, who, searching for the sun, open spaces, and privacy, are building homes on the edges or in the heart of the Mediterranean mountainous forest areas. According to statistics, this phenomenon should continue to develop, with 20% population growth for the South of France before 20201 . Thus, new land use configurations marked by substantial human activity in contact with combustible vegetation are appearing. These spaces, now called habitat–forest interfaces, are sensitive sources of forest fire start-ups. In addition, because of the presence of property and people that require protection, they are zones of increased vulnerability.

In her doctoral dissertation at Aix-en-Provence, Corinne Lampin-Maillet has designed a simple, rapid, and effective method to map the habitat–forest interfaces on large surface areas and on a large scale. The tool defines the type of interface of any zone considered. This information makes it possible to better define the uses of these spaces according to their sensitivity to fire and therefore to control their development.

Clearly define the notion of interface

The first studies of habitat–forest interfaces appeared in the United States, Canada, and Australia, after the great forest fires of 1985. Other studies have followed in the European Mediterranean countries and at

Cemagref over the last decade. The strong point of Corinne Lampin-Maillet's dissertation is its development of a land use reading method that translates the organization of construction development in interaction with the natural environment as simply as possible. She compared bibliographic data and the opinions of experts of safety services and land use managers, then proposed a relevant definition of the notion of habitat–forest interface to the national context before developing her reading tool. Thus, a construction is said to be "in the habitat–forest interface" if clearing brush is legally required by the French forestry orientation law of 11 July 2001. This concerns constructions located less than 200 m from forests, garrigues, or scrubland. As for the habitat–forest interface zone, it is delimited by the space within a radius of 100 m around these constructions.

Toward a complete decision-support system

Based on this definition, this scientist has established a method founded on teledetection and a spatial analysis tool to map the habitat–forest interfaces over large surfaces. The spatial analysis of inhabited zones takes into account criteria such as the distance between constructions and how they are grouped. Information relative to the horizontal structure of the vegetation in contact with the construction is added, which reflects it capacity to propagate fire. Depending on the vegetation's structure and the type of habitat, as many as 12 types of interface have been identified. The method has been successfully applied to two study zones, one located in the Maures massif covering ten towns and the other in the Bouches-du-Rhône department, covering 30 towns.

At the request of the Ministry of Ecology, a methodological aide was written up in 2007; it set out the principles to describe the habitat–forest interfaces as well as the mapping process, which were particularly useful when elaborating the PPRIF². Since January 2008, the tool has been made available to any person or organization that wishes to apply and test it on a real-life scale. Trials are already planned on the department scale in the South of France and in Aquitaine.

Today, research is continuing so that the habitat–forest interface map can evolve toward a global tool for evaluating risk. Thus, other parameters can be taken into account such as wind, the topographic situation of a given zone, the road network, and the vegetation's vertical structure.

Adapted from materials provided by Cemagref.

http://www.sciencedaily.com/releases/2008/11/081106122820.htm

Light Triggers New Code For Brain Cells

ScienceDaily (Nov. 14, 2008) — Brain cells can adopt a new chemical code in response to cues from the outside world, scientists working with tadpoles at the University of California, San Diego report in the journal Nature.

The discovery opens the possibility that brain chemistry could be selectively altered by stimulating specific circuits to remedy low levels of neural chemicals that underlie some human ailments.

Dark tadpoles don pale camouflage when exposed to bright light. The researchers have now identified cells in the tadpole brain that respond to illumination by making dopamine, a chemical message, or neurotransmitter, recognized by the system that controls pigmentation.

"We used to think activity turned a switch to specify which transmitters a neuron would use only in early development," said co-author Davide Dulcis, a postdoctoral fellow in neurobiology who designed and conducted the experiments. "But this is happening after hatching."

The cells, found in a cluster called the suprachiasmatic nucleus, connect to a gland that releases a hormone that disperses pigments to darken skin. Dopamine squelches hormone release leaving pigments tightly packed in skin cells and the tadpoles nearly transparent.

"The behavior meets an ecological need." Dulcis said. "Pale tadpoles are difficult for predators to see in a bright environment, so the faster the tadpoles change their pigmentation, the better they are able to survive."

Cells in the core of the cluster always make dopamine, but a ring of surrounding cells normally don't, even though they are connected to the gland.

Bright light alters this pattern, however. After just two hours, cells in the surrounding ring show signs of making the new neurotransmitter. Because they are already hooked up to the hormone-producing target, illumination can result in noticeably paler tadpoles in as little as ten minutes.

"The new dopamine neurons are not simply activated at random," said co-author Nicholas Spitzer, a professor of neurobiology who leads the research group. "It's as if they are a kind of national guard, waiting in reserve to be called out. There's a pool of neurons waiting for the right sensory stimulus to be called into action and to adopt a new transmitter."

The signal-switching cells receive a link directly from the eye and are part of a brain circuit shared by a variety of animals from bony fish to humans. Although these cells don't contribute to vision, they do monitor light levels for other purposes, particularly for coordinating daily rhythms of physiology and behavior.

Activity might alter brain chemistry in other circuits as well, the researchers say. Light helps people who experience seasonal affective disorder, for example. Their symptoms of depression, which descend during long winter nights, lift in summer and also abate when they are regularly exposed to bright light, a therapy that can be as effective as anti-depressant drugs.

"Maybe it's the case that for many neurons there is additional circuitry that can be activated under certain circumstances," Spitzer said.

Depleted brain chemistry underlies several diseases, including Parkinson's. If a reserve pool of neurons could be identified and recruited by stimulating particular neural circuitry some of the side effects that stem from flooding the entire brain and body with drugs designed to boost levels of specific neurotransmitters might be avoided, he said.

The National Institutes of Health funded the study.

Adapted from materials provided by University of California - San Diego, via EurekAlert!, a service of AAAS.

http://www.sciencedaily.com/releases/2008/11/081112140359.htm#

Probiotics 'may stop pneumonia'

Probiotics could be used to protect critically ill patients from developing pneumonia, according to scientists.

The friendly bacteria can block the colonisation by dangerous bugs of the airways of ventilated patients, the Swedish study concluded.

The probiotic solution performed just as well as normal antiseptics used to keep pneumonia-causing bacteria at bay, the journal Critical Care reported.

Being more natural it could pose fewer side effects, the authors said.

Friendly bugs

The probiotic bacterium Lactobacillus plantarum 299 is normally present in saliva and is also commonly found in fermented products like pickles and sauerkraut.

Although rare, some patients are allergic to the antiseptics normally used to prevent ventilator-associated pneumonia, namely chlorhexidine.

There is also a very small risk of the pneumonia-causing bacteria developing chlorhexidine resistance.

Pneumonia is a common complication in patients on breathing machines and occurs when harmful bacteria from the mouth, throat or breathing tube are inhaled into the lungs.

This is a plausible idea. But we need much larger trials that focus on clinical outcomes to prove it is an effective and affordable treatment
Bob Marsterton of the British Society for Antimicrobial Chemotherapy

Swabbing the mouth with chlorhexidine is widely recommended to reduce the risk ventilator-associated pneumonia in critically ill patients requiring mechanical ventilation.

Bengt Klarin and colleagues at the University Hospital in Lund, Sweden, compared the probiotic treatment with chlorhexidine in 50 critically ill patients.

Microbiological testing revealed both treatments appeared to be equally effective at preventing potentially harmful bacteria from flourishing in the mouth and throat.

In addition, a probiotic that adheres to mouth lining will be able to work around the clock, unlike antiseptics which wear off after a few hours, say the authors.

The scientists said bigger studies were now needed to investigate the feasibility of using probiotics in this setting.

Bob Marsterton, chair of the British Society for Antimicrobial Chemotherapy's working party on hospital acquired pneumonia, said: "This is a plausible idea. But we need much larger trials that focus on clinical outcomes to prove it is an effective and affordable treatment."

He said chlorhexidine highly effective, affordable and readily available.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7708895.stm

Published: 2008/11/06 00:00:37 GMT

'Condescending Negativism' and Other Transgressions

SEATTLE — Defining "classroom incivility" may begin with which side of the lectern you sit (or stand) on. Professors commonly complain about students texting or e-mailing away on their laptops or phones or, worse, catching up on their zzzz's. To hear David Horowitz and others tell it, however, students are on the receiving end of more than their share of bullying or dismissive behavior, particularly if they disagree with the (usually liberal) views of their professors.

John M. Braxton's view is that classroom incivility is a two-way street, and neither way is good. At a session this week at the Council of Independent Colleges' Institute for Chief Academic Officers here, Braxton, a professor in Vanderbilt University's Higher Education Leadership and Policy Program, discussed past research he and colleagues have conducted showing that various sorts of classroom misbehavior by students and faculty members both can do damage to student engagement and/or academic performance.

Student misbehavior — "disrespectful disruptions" such as receiving cell phone calls or talking loudly to peers in class, or "insolent inattention" such as coming to class drunk or sleeping there — damages other students' level of commitment to their college, Braxton's research has found.

And faculty incivilities — a list of six "inviolable norms" that include such things as "condescending negativism" (treating students and colleagues in a demeaning way), "particularistic grading" (uneven or preferential treatment of students in awarding grades), or moral turpitude (you know what that means) — harm students' perceptions of their academic and intellectual development, which often results in academic underperformance, he says.

While those findings probably won't strike many as controversial, Braxton's suggested course of action may: He urged the provosts and academic deans in attendance to develop faculty codes of conduct for undergraduate college teaching at their institutions, and to set up "teaching integrity committees" to respond to reported violations of norms for teaching behavior. Braxton acknowledged, in response to questions from the sometimes skeptical academic deans, that the creation of such a committee would raise thorny issues — for instance, "Would one violation amount to teaching misconduct" that would bring sanctions? — but he insisted that raising the topic of expectations for faculty behavior will inevitably have its benefits.

"It shows that you're allocating your values around teaching," he said.

Kimberly K. Estep, provost and vice president for academic affairs at Tusculum College, who presented alongside Braxton at the session, said her institution has gotten part of the way there. The Tennessee independent college has for 18 years published a "statement on faculty responsibilities to students" in its Faculty Handbook (see Page 10).

It holds professors to such practical obligations as ensuring that they hold classes as scheduled and teach courses in a manner consistent with the syllabus and the announced objectives, as well as more philosophical requirements that they owe students "a fair and impartial evaluation" of their work and should "always demonstrate respect for the students" and "avoid exploitation of students for personal advantage." (Tusculum's list of concerns specifically cites — in a way that Braxton's six norms does not — the sort of intellectual stifling that Horowitz and other critics accuse professors of frequently engaging in, although Estep and Braxton both say they have seen little evidence of that sort of behavior.)

Tusculum does not go so far as to have a committee to adjudicate potential violations of its code; "This is dangerous ground that John is asking us to traverse," she said. If any college were to create such a panel, Estep said, it would have to be a committee of peers rather than an administrative one, because of the judgment inherent in such concepts as Braxton's "condescending negativism." "I as chief academic officer would not want to be out on that limb, personally," she said. Estep said, though, that Tusculum

has considered assessing faculty members, in terms of remaining on contract, on whether they abide by the statement of faculty responsibilities.

Most of the academic administrators in the audience seemed to consider Braxton's idea of trying to police this sort of faculty behavior impractical, for a number reasons. One described professors' tendency to hide all sorts of questionable behavior behind the shield of "academic freedom"; another bemoaned the increasing tendency of students to consider themselves customers who are always right: "I'm paying x dollars for this and therefore you owe me," as one academic vice president put it.

There was widespread agreement, too, that civility is a slippery topic, because of how bound up it is in issues of culture. An administrator at a historically black college described tensions between some white faculty members who don't understand some of the behaviors of their black students. Another recalled problems that arose when colleagues considered an Israeli Palestinian professor — brought to the campus to help "internationalize our faculty and diversity our culture" — to be "antagonistic and loud," and the professor in question "perceived those complaints as being racist."

That prompted another provost to share a situation at his college involving another visitor — "someone from the foreign country of New York City," he said to laughter, who "dealt with faculty colleagues in a disruptive, abrasive way." The faculty member's response to complaints was that "it's what we do in New York," the academic administrator said, "but he was teaching in the South, and you could say that, at a point, you have to accept the reigning standards of the community you're teaching in."

Braxton acknowledged that those and other issues made the idea of addressing classroom incivility tricky terrain. But it is important to "at least have the conversation around it," he urged, because of the potential impact on students.

— Doug Lederman

The original story and user comments can be viewed online at
http://insidehighered.com/news/2008/11/06/civility.

Migraines 'mean less cancer risk'

Women who suffer regular migraines may have the comfort of knowing they face a much lower risk of breast cancer, say US researchers.

The discovery points to the potential importance of hormone levels in both.

The study of 3,412 women suggests a 30% lower risk for people with a history of disabling headaches.

However, the researchers, from the Fred Hutchinson Cancer Research Center in Seattle, warned more work was needed to confirm the link.

> **While these results need to be interpreted with caution, they point to a possible new factor that may be related to breast cancer risk**
> Dr Christopher Li
> Fred Hutchinson Cancer Center

While an estimated 30% of women will suffer at least one migraine in their lifetime, for a much smaller group, they are a regular feature.

Scientists have connected the condition, which can feature nausea and visual disturbances alongside severe headaches, with fluctuating levels of hormones.

Being pregnant, or on the contraceptive pill, both of which affect hormone levels, can lead to noticeable changes in the frequency and severity of attacks.

The US researchers are the first to look at whether this might have an effect on the chances of developing breast cancer, which, in two of its most common forms is fuelled by the hormones oestrogen and progesterone.

Their group of women included 1,938 who had been diagnosed with breast cancer and 1,474 who had no history of the disease.

Women were asked to report whether they had ever been diagnosed with migraines by a health professional.

Those with a history of migraines were far less likely to go on to develop breast cancer.

Caution urged

Dr Christopher Li, reporting the results in the journal Cancer Epidemiology, Biomarkers and Prevention, said that the hormone hypothesis appeared the most likely.

A high-oestrogen state, he said, such as that found in pregnancy, could be linked to both a reduction in attacks, and the conditions needed to stimulate breast cancer development.

He said: "While these results need to be interpreted with caution, they point to a possible new factor that may be related to breast cancer risk.

"This gives us a new avenue to explore the biology behind risk reduction."

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/health/7710674.stm

Published: 2008/11/06 05:50:22 GMT

'Regret' over missing university

Four fifths of parents who did not go to university regret it, a poll for the Department for Innovation, Universities & Skills suggests.

The survey of 1,421 parents without a degree found 16% believed they would have a better career if they had one.

A total of 13% said they would have better prospects for the future.

And 80% said they intended to encourage their child to go university, with 31% saying they wanted to help their children reach the goals they did not.

The prospect of a good career was the key factor for more than two thirds (70%) of the parents polled, while a secure future for their children was critical to almost half (45%).

Mature students

A separate survey of 1,500 mature students found three quarters regretted not going to university after school.

I will certainly be encouraging my child to go into higher education
Actress Michelle Collins

Of those surveyed, 17% felt they had missed out on life opportunities and 16% had ended up in jobs they didn't enjoy.

Almost a third (31%) felt that higher education was vital for getting a new career, while more than a quarter (28%) said they needed more qualifications to boost their existing careers.

More than a quarter (28%) said their main reason for going to university was the potential to earn more money.

The two polls were conducted to mark the launch of a national awareness campaign to communicate the benefits of higher education to parents and their children.

Support from actress

Actress Michelle Collins, who now regrets not going to university, is supporting the government's campaign.

She said: "I would have liked to go to university straight from school to have more exposure to a cross section of people as well as to study and enhance my existing career options.

"If I had gone on to higher education, I would have studied classics to help me understand a more varied amount of acting roles.

"I always remember my mother encouraging me to go to university but I didn't listen to her, which I now seriously regret.

"I will certainly be encouraging my child to go into higher education when they get to that age."

Higher Education Minister David Lammy said studying for a university qualification could broaden an individual's horizons "in new and exciting ways".

"Getting more people into higher education has never been so important for our country's future, and having a more educated and skilled workforce is something from which we will all benefit."

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/uk_news/education/7710755.stm

Published: 2008/11/06 00:33:53 GMT

New Small-scale Generator Produces Alternating Current By Stretching Zinc Oxide Wires

Georgia Tech Professor Zhong Lin Wang holds a prototype flexible charge pump. The device generates alternating current as zinc oxide wires are stretched and then released. (Credit: Georgia Tech Photo: Gary Meek)

ScienceDaily (Nov. 10, 2008) — Researchers have developed a new type of small-scale electric power generator able to produce alternating current through the cyclical stretching and releasing of zinc oxide wires encapsulated in a flexible plastic substrate with two ends bonded.

The new "flexible charge pump" generator is the fourth generation of devices designed to produce electrical current by using the piezoelectric properties of zinc oxide structures to harvest mechanical energy from the environment. Its development was scheduled to be reported November 9, 2008 in the advance online publication of the journal Nature Nanotechnology.

"The flexible charge pump offers yet another option for converting mechanical energy into electrical energy," said Zhong Lin Wang, Regent's professor and director of the Center for Nanostructure Characterization at the Georgia Institute of Technology. "This adds to our family of very small-scale generators able to power devices used in medical sensing, environmental monitoring, defense technology and personal electronics."

The new generator can produce an oscillating output voltage of up to 45 millivolts, converting nearly seven percent of the mechanical energy applied directly to the zinc oxide wires into electricity. The research has been supported by the U.S. Department of Energy, the National Science Foundation, the Air Force Office of Scientific Research and the Emory-Georgia Tech Center for Cancer Nanotechnology Excellence.

Earlier nanowire nanogenerators and microfiber nanogenerators developed by Wang and his research team depended on intermittent contact between vertically-grown zinc oxide nanowires and an electrode, or the mechanical scrubbing of nanowire-covered fibers. These devices were difficult to construct, and

the mechanical contact required caused wear that limited how long they could operate. And because zinc oxide is soluble in water, they had to be protected from moisture.

"Our new flexible charge pump resolves several key issues with our previous generators," Wang said. "The new design would be more robust, eliminating the problem of moisture infiltration and the wearing of the structures. From a practical standpoint, this would be a major advantage."

To boost the current produced, arrays of the flexible charge pumps could be constructed and connected in series. Multiple layers of the generators could also be built up, forming modules that could then be embedded into clothing, flags, building decorations, shoes – or even implanted in the body to power blood pressure or other sensors.When the modules are mechanically stretched and then released, because of the piezoelectric properties, the zinc oxide material generates a piezoelectric potential that alternately builds up and then is released. A Schottky barrier controls the alternating flow of electrons, and the piezoelectric potential is the driving force of the charge pump.

"The electrons flow in and out, just like AC current," Wang explained. "The alternating flow of electrons is the power output process."

Constructed with zinc oxide piezoelectric fine wires with diameters of three to five microns and lengths of 200 to 300 microns, the new generator no longer depends on nanometer-scale structures. The larger size was chosen for easier fabrication, but Wang said the principles could be scaled down to the nanometer scale."Nanoscale materials are not required for this to work," he said. "Larger fibers work better and are easier to work with to fabricate devices. But the same principle would apply at the nanometer scale."

The wires are grown using a physical vapor deposition method at approximately 600 degrees Celsius. Using an optical microscope, the wires are then bonded onto a polyimide film and silver paste applied at both ends to serve as electrodes. The wires and electrodes were then encased in polyimide to protect them from wear and environmental degradation.To measure the electric energy generated, the researchers subjected the substrate and attached zinc oxide wires to periodic mechanical bending created by a motor-driven mechanical arm. The bending induced tensile strain which created a piezoelectric potential field along the laterally-packaged wires. That, in turn, drove a flow of electrons into an external circuit, creating the alternating charge and discharge cycle – and corresponding current flow.

Increasing the strain rate increased the magnitude of the output electricity, both in voltage and current. Wang believes the frequency of the current is limited only by the mechanical properties of the polyimide substrate.The researchers conducted a number of tests to verify that the current measured was produced by the generator – and not an external measurement artifact. Using the same experimental setup, they stretched carbon fibers and Kevlar fibers coated with polycrystalline zinc oxide, and did not observe current flow. The research team also developed two criteria and eight tests for ruling out experimental artifacts, Wang noted.In addition to Wang, the research team included Rusen Yang and Yong Qin from Georgia Tech and Liming Dai of the Department of Chemical and Materials Engineering at the University of Dayton.For the future, Wang sees the family of small-scale generators enabling development of a new class self-powered wireless sensing systems. The devices could gather information, store it and transmit the data – all without an external power source.

"Self-powered nanotechnology could be the basis for a new industry," he said. "That's really the only way to build independent systems."

Adapted from materials provided by Georgia Institute of Technology.

http://www.sciencedaily.com/releases/2008/11/081109193342.htm

Computer Model Can Predict Human Behavior And Learning

ScienceDaily (Nov. 10, 2008) — A computer model that can predict how people will complete a controlled task and how the knowledge needed to complete that task develops over time is the product of a group of researchers, led by a professor from Penn State's College of Information Sciences and Technology.

Frank Ritter, associate professor of IST and psychology, and his research associates, used the Soar programming language, which is designed to represent human knowledge, on a 20-trial circuit troubleshooting task most recently done by 10 students at the University of Nottingham, UK.

Each participant was to identify faults in a circuit system after memorizing the organization of its components and switches. This process was repeated 20 times for each person, with the series of tests chosen randomly each time. Their choices and reaction times were recorded and compared with the computer model's results.

Much like the students, the computer model, called Diag, learned as it went through each test and developed the knowledge for completing the task quickly and efficiently.

"The model does not merely accurately predict problem-solving time for the human participants; it also replicates the strategy that human participants use, and it learns at the same rate at which the participants learn," Ritter said.

In most cases, the model came within two to four seconds of predicting how long it would take each participant to solve the problem and it fit eight out of the 10 participants' problem-solving times very well. Ritter said the results outlined in the paper were consistent with previous trials, showing the development of regularity in the model.

"The project shows we can predict human learning on a fine-grained level," Ritter said. "Everyone thinks that's possible, but here's an actual model doing it. The model provides a detailed representation of how a transfer works, and that transfer process is really what education is about."

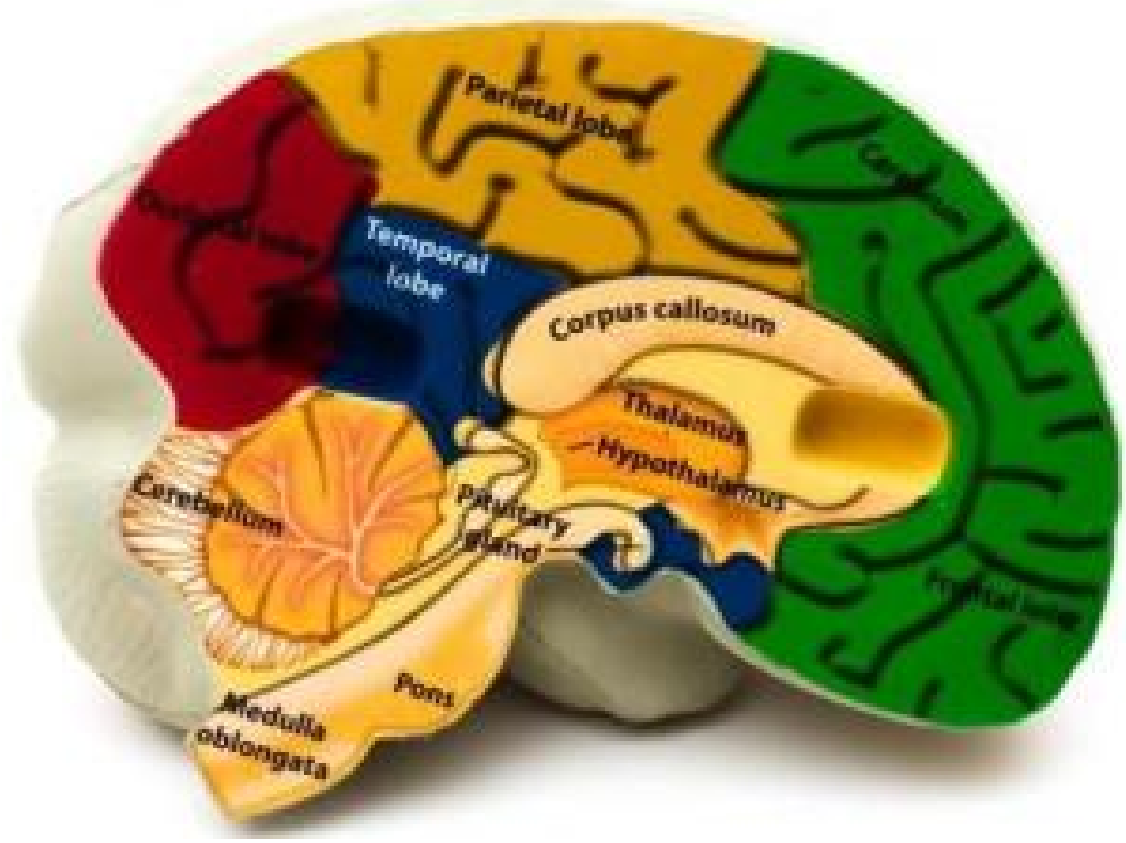
Ritter worked with Peter Bibby and two research assistants at the University of Nottingham.

Journal reference:

1. Ritter et al. **Modeling How, When, and What Is Learned in a Simple Fault-Finding Task**. *Cognitive Science A Multidisciplinary Journal*, 2008; 32 (5): 862 DOI: 10.1080/03640210802221999

Adapted from materials provided by Penn State.
http://www.sciencedaily.com/releases/2008/11/081107143755.htm

Simple Brain Mechanisms Explain Arbitrary Human Visual Decisions



Model of the human brain. (Credit: iStockphoto/Karen Roach)

ScienceDaily (Nov. 10, 2008) — Mark Twain, a skeptic of the idea of free will, argues in his essay "What Is Man?" that humans do not command their minds or the opinions they form. "You did not form that [opinion]," a speaker identified as "old man" says in the essay. "Your [mental] machinery did it for you—automatically and instantly, without reflection or the need of it."

Twain's views get a boost this week from researchers at Washington University School of Medicine in St. Louis and University of Chieti, Italy. In Nature Neuroscience, scientists report that a simple decision-making task does not involve the frontal lobes, where many of the higher aspects of human cognition, including self-awareness, are thought to originate. Instead, the regions that decide are the same brain regions that receive stimuli relevant to the decision and control the body's response to it.

Other researchers had already demonstrated the same principle in primates. But many still assumed that the more complex human brain would have a more general decision-making module that involved the frontal lobe independently of the neural systems for perception and action.

"It is important to understand how the brain makes decisions under normal conditions to gain insight into diseases like Alzheimer's disease, traumatic brain injury or stroke in which decision-making is disrupted," says senior author Maurizio Corbetta, M.D., the Norman J. Stupp Professor of Neurology. "We like to think of our decisions as willful acts, but that may be an illusion. Many decisions may be much more directly and automatically driven by what our brain is sensing."

For the study, lead author Annalisa Tosoni, a graduate student at the University of Chieti, trained volunteers to perform a task that involved discriminating between an image of a face and an image of a

building. Varying degrees of noise obscured the image during the brief time it was visible. Volunteers were asked to indicate which type of image they believed they had seen by either moving their eyes in a particular direction if they had seen a face or pointing their hand in the same direction if they had seen a building.

"This decision is not automatic," Corbetta says. "It requires both attention to the stimuli and control of the response."

Researchers took functional magnetic resonance imaging scans of subjects' brains as they performed the task. The scans were conducted at the Institute of Technology and Advanced Bio-imaging in Chieti as a collaboration between Corbetta; Gaspare Galati, Ph.D., associate professor of psychology at the University of Rome; and Gian Luca Romani, Ph.D., professor of physics at the University of Chieti. To help distinguish between the influx of sensory information and the decision to move the eye or hand, subjects had to wait for 10 seconds after seeing the image before indicating which type it was.

Scientists concentrated on regions of the brain that are responsible for planning actions (eye or hand movements) in the parietal lobe. Activity in these different regions would increase in correspondence with the type of stimulus a subject was being shown (face or building) and the type of response they were planning as a result (eye or hand movement). When the stimulus had less noise and subjects were more confident in their choice, brain activity levels in the appropriate area rose proportionally. In addition, these regions showed activity that related to the choice even when the stimulus was ambiguous.

"This suggests that these regions in the parietal lobe processed all the sensory, decision and motor signals necessary to make and act on the decision," Tosoni says. "In contrast, no area in the frontal lobe, thought to be involved in decision-making, significantly increased its activity at the time of decision."

The training period that preceded the scans could have involved the frontal lobes, Corbetta notes. Those areas may have delegated responsibility for the decision to premotor brain regions as the volunteers learned the task. But once the task was learned, the frontal lobes were silent.

"Even for arbitrary and somehow complex visual decisions, it seems to be purely a matter of the amount of sensory information pushing the brain toward one choice or another " he says.

Tosoni and Corbetta plan next to probe whether more complicated decisions are carried out by this relatively simple sensory-motor mechanism and how decisions are affected by the amount of reward the subject expects when performing simple and complex decisions.

Journal reference:

1. Tosoni A, Galati G, Romani GL, Corbetta M. **Sensory-motor mechanisms in human parietal cortex underlie arbitrary visual decisions**. *Nature Neuroscience*, Online Nov. 9, 2008

Adapted from materials provided by Washington University School of Medicine.

http://www.sciencedaily.com/releases/2008/11/081109193435.htm

Intelligent Walker Designed To Assist The Elderly And People Undergoing Medical Rehabilitation

Intelligent walker. (Credit: Image courtesy of Universitat Politècnica de Catalunya)

ScienceDaily (Nov. 10, 2008) — A team of researchers from the Departments of Software, Automatic Control, Strength of MaMechanical Engineering, Materials and Structural Engineering at the Technical University of Catalonia (UPC), led by Ulises Cortés and Antonio B. Martínez, has designed an intelligent walker (i-Walker) that goes a step beyond conventional walkers as it can communicate with the user, think for itself and react to the environment.

The device can understand a set of voice commands and can be activated by means of simple verbal instructions given by the user (e.g., "take me to the kitchen"). To do this, it includes elements for independent movement and a personalized intelligent software agent.

This tool is based on intelligent multiagent systems technology (personal agents or software systems that observe and interact with their surroundings independently, proactively and rationally and have the ability to learn and communicate). It adapts to the specific assistance requirements of the people who use it and enhances their autonomy by helping them to take decisions that are usually beyond their scope due to physical, mobility or cognitive obstacles imposed by ageing or their illness.

The i-Walker can be used for medical rehabilitation as it can help in the recovery and strengthening of motor skills by allowing the amount of aid provided to the user to be adjusted under medical supervision. Parameters such as the effort made by the user in walking, the distance travelled and the calories burned during movement are recorded and measured by the walker. The system uses an accelerometer to detect possible falls, correct itineraries and turning angles and control braking.

The device is part of the European project Supported Human Autonomy for Recovery and Enhancement of Cognitive and Motor Abilities Using Information Technologies (SHARE-it), led by Ulises Cortés. The project is part of the Sixth Framework Programme and the Information Society Technologies programme, within the area of Ambient Assisted Living.

Universities, research centres, healthcare centres and companies from Spain, Italy, Germany and Romania are taking part in the project. They include UPC, the University of Malaga, the University of Bremen (Germany), Deutsches Forschungszentrum für Künstliche Intelligenz GmbH (Germany), the Ana Aslan International Academy of Aging (Romania), Fondazione Santa Lucia (Italy), Centro Assistenza Domiciliare Azienda Sanitaria Locale RM B (Italy) and Telefónica Investigación y Desarrollo.

SHARE-it: Intelligent Mechanisms for the Home

The main objective of the SHARE-it project is to contribute to developing a new generation of intelligent and semiautonomous welfare technology systems that can be integrated in homes and other places such as hospitals and geriatric institutions. This is new technology that provides mobility support for people who require continuous assistance or monitoring to help them to live autonomously with the highest level of safety and comfort, in short, to increase their quality of life.

The technology includes systems for facilitating communication, intelligent behaviour and mobility support that are intuitive and can interpret the voice, sight, touch and gestures of the user. These systems can provide assistance to users in their daily activities and report their state of health to the people caring for them via monitoring and mobile systems.

Wheelchair and mobility platform

As well as the intelligent walker, the SHARE-it project is also developing other welfare devices: a semiautonomous wheelchair (Roland III) capable of operating both indoors and outdoors and an innovative semiautomatic platform (Spherik) based on a new type of spherical wheel designed for movement in small spaces.

The three mobile systems—walker, wheelchair and platform—can detect the position of the patient in the home and in other known environments such as hospitals and primary-care centres as they include a special monitoring system. They can also adapt their autonomy to the requirements of the user by means of a cognitive model based on interpretation of the information provided by the biosensors and on the person's disability profiles provided by a medical team. This allows them to provide the carers with continuous information on the user's state of health.

Technology that provides welfare

Welfare technology, particularly innovative technology for the elderly, is an emerging area of research in which there is a great need for innovation, especially considering that Spain will have the most elderly population on the planet by 2050 (43% of the population over the age of 60). Currently, 32% of people in Spain over the age of 65 suffer from some kind of disability. The link between age and disability is becoming stronger because life expectancy is increasing. People are living longer thanks to advances in medicine, but there are also more people who have survived severe illnesses and who suffer from chronic disability.

Robotics, artificial intelligence and information and communication technology—such as that included in the intelligent walker developed by UPC—can compensate for the loss of sensory, motor and cognitive functions caused by the passage of time and by disease in the elderly. They can also help to reinforce and stimulate human skills and improve well-being in daily life.

Adapted from materials provided by Universitat Politècnica de Catalunya, via AlphaGalileo.

http://www.sciencedaily.com/releases/2008/11/081107072015.htm

Preventing Traffic Accidents Before They Happen?

ScienceDaily (Nov. 10, 2008) — A new automotive safety systems built by European researchers will alert drivers to potential hazards by using information from the car, other road users and the roadside infrastructure to predict and prevent traffic accidents.

Scientists and researchers across Europe are working in concert to build a new automotive system that fuses information from a wide variety of sources to predict hazardous situations that could lead to an accident.

The system will give drivers early warning of accidents waiting to happen, and thus help drivers avoid crashes and other problems.

A novelty of the system is that it uses comparatively simple and low-cost technologies, many of which already exist. By combining the various information streams and analysing them for potential problems, the researchers hope to develop a powerful safety system that can be deployed rapidly and at little cost.

“We use information from in-vehicle sensors, car-to-car communication and communication with roadside infrastructure to create a picture of driving conditions in real time,” explains Andrea Migliavacca, coordinator of the I-WAY project.

Notable successes

The EU-funded project still has some time to go before completing, but it has already scored a number of notable research successes.

“We are very pleased with our video system for road observation,” reveals Migliavacca. “Our partners wanted a simple, low-maintenance and easy to install unit that could still provide useful information, and we have developed a unit that responds to their needs. They’re very happy with it.”

The external video is used to ensure the driver stays in the correct lane and is one of a series of subsystems used in the I-WAY platform. Some parts, like the radar, have come off the shelf, while other elements, such as the car-to-car communication, were supplied by other European research.

“We did not try to reinvent the wheel,” says Migliavacca. “If there was another European project working on a system we could use, we took that. So we got the car-to-car communication technology from the ‘Car to Car’ communications consortium. They have done a lot of work on this area that we benefited from.”

Recruiting scouts

Car-to-car information turns other road users into scouts. If another car encounters a hazard, it can broadcast that information to nearby vehicles. Similarly, roadside sensors and communication systems, used by the highway control centre to track road conditions, can transmit important information to drivers as they pass by.

Then can warn of oncoming lane closures, temporarily lowered speed limits, road conditions and traffic jams, among others.

Internal sensors complete the package of subsystems. The team developed in-car cameras to monitor the driver as well as grip and electrocardiogram (ECG) sensors on the steering wheel.

The grip and ECG sensors, combined with the eye-tracking internal camera, can reveal the state of the driver, if he or she is stressed, for example.

Situation assessment

I-WAY has completed the first generation of the basic subsystems, and over the coming months it will integrate these systems and test the control software. “This is a situation assessment software, basing its assessment on the information from all the various sensors,” reveals Migliavacca.

“It is primarily intended for highway driving and it is not aimed at accident mitigation, rather it is intended to anticipate hazardous situations and help prevent accidents.”

The computer that will run the assessment software is another early success of the project. “It is a stack computer,” Migliavacca explains. “It is special hardware to manage all the inputs. It is a very good, well engineered solution and it is so successful that it is already available on the market and selling quite well.”

Migliavacca takes particular pride in this result, noting that it is unusual to develop commercially successful technology midway through a project.

In addition to the integration work, the project will continue to improve the basic subsystems.

Adapted from materials provided by ICT Results.

http://www.sciencedaily.com/releases/2008/11/081109074858.htm

Global Warming Predicted To Hasten Carbon Release From Peat Bogs

Marshland in the Alberta foothills. Researchers are concerned that the release of carbon from the world's peat bogs, triggered by global warming, could dwarf fossil-fuel emissions. Peat bogs are plentiful in Canada. (Credit: iStockphoto/Don Wilkie)

ScienceDaily (Nov. 10, 2008) — Billions of tons of carbon sequestered in the world's peat bogs could be released into the atmosphere in the coming decades as a result of global warming, according to a new analysis of the interplay between peat bogs, water tables, and climate change.

Such an atmospheric release of even a small percentage of the carbon locked away in the world's peat bogs would dwarf emissions of manmade carbon, scientists at Harvard University, Worcester State College, and the Japan Agency for Marine-Earth Science and Technology write in the current issue of the journal Nature Geoscience.

"Our modeling suggests that higher temperatures could cause water tables to drop substantially, causing more peat to dry and decompose," says Paul R. Moorcroft, professor of organismic and evolutionary biology in Harvard's Faculty of Arts and Sciences. "Over several centuries, some 40 percent of carbon could be lost from shallow peat bogs, while the losses could total as much as 86 percent in deep bogs."

Typically found at northerly latitudes, peat bogs are swampy areas whose cold, wet environment preserves organic matter, preventing it from decaying. This new work shows how peat bogs' stability could be upset by the warming of the earth, which has disproportionately affected the higher latitudes where the bogs are generally found.

Each square meter of a peat bog contains anywhere from a few to many hundreds of kilograms of undecomposed organic matter, for a total of 200 to 450 billion metric tons of carbon sequestered in peat

bogs worldwide. This figure is equivalent to up to 65 years' worth of the world's current carbon emissions from fossil fuel burning.

"Peat bogs contain vast stores of carbon," Moorcroft says. "They will likely respond to the expected warming in this century by losing large amounts of carbon during dry periods."

Moorcroft and his colleagues simulated the responses of two peat bogs in northern Manitoba to temperature increases of 4 degrees Celsius, or 7.2 degrees Fahrenheit, a gain that is at the conservative end of estimates for the next 100 years. Their modeling looked specifically at water table dynamics, since peat bogs' stability is grounded in their cold, waterlogged nature.

"Previous modeling has assumed that decomposition in peat bogs is like that in a conventional soil," Moorcroft says. "Ours is the first simulation to take a realistic look at the interaction between the dynamics of the water table, peat temperatures, and peat accumulation."

Moorcroft plans to continue the research by expanding his group's analysis of peat bogs and water tables to global scales.

Moorcroft's co-authors are Takeshi Ise, formerly of Harvard and now at the Japan Agency for Marine-Earth Science and Technology, Alison L. Dunn of Worcester State College, and Steven C. Wofsy of Harvard. Their work was supported by Harvard University's Department of Organismic and Evolutionary Biology and by the Japanese Ministry of Education, Culture, Sports, Science, and Technology.

Adapted from materials provided by Harvard University.

http://www.sciencedaily.com/releases/2008/11/081106122249.htm

XDR-TB: Deadlier And More Mysterious Than Ever

ScienceDaily (Nov. 10, 2008) — New research has found that XDR-TB is increasingly common and more deadly than previously known. Extensively drug-resistant tuberculosis (XDR-TB) is a growing public health threat that is only just beginning to be understood by medical and public health officials.

Patients with XDR-TB are four times as likely to fail treatment and three times more likely to die than patients with other forms of multi-drug-resistant TB (MDR-TB), according to a recent study that directly compared patients with XDR-TB to individuals with other types of MDR-TB to determine the differences in treatment outcomes and long-term survival rates. Researchers also found that MDR-TB was "a major threat to public health," representing 2.7 percent of new TB cases in South Korea in 2004, up from 1.6 percent in 1994.

The results were published in the second issue for November of the American Journal of Respiratory and Critical Care Medicine, a journal of the American Thoracic Society.

Since it appeared on the public health radar in 2006, XDR-TB rekindled an urgent interest in preventing, fighting and containing TB. But at the same time, little was known about how XDR-TB changed the face of combating TB on all fronts, from the perspective of the patient, the clinician and the public health official.

"Treatment outcomes [of XDR-TB] have varied among studies, and data on long-term survival are still scarce," wrote Tae Sun Shim, M.D., an associate professor at Asan Medical Center in Seoul, South Korea, and a principal investigator of the study. "[This] is the largest report that we know of that compares patients with XDR-TB with other patients with MDR-TB to determine the impact of XDR-TB on treatment outcomes and long-term survival in mostly HIV-negative patients with MDR-TB."

The study reviewed the medical records of more than 1,400 patients in South Korea with MDR-TB (which includes XDR-TB) from all national hospitals, Korean National TB Association chest clinics and select university hospitals. In addition to the patients' demographic information, their history of TB and previous treatments were noted with regard to outcome. In this study, XDR-TB was defined as MDR-TB resistant to both ofloxacin and at least one second-line injectable drug.

The researchers found that patients with XDR-TB were significantly older than MDR-TB patients, were more likely to have a history of treatment with second-line TB drugs, and more likely to have a history of being treated for TB two or more times.

Among this population, treatment failure was, not surprisingly, much more common when compared to other patients with MDR-TB. While relapse rate among "cured" patients also tended to be higher among patients with XDR-TB, the difference was not statistically significant.

"[Having] XDR-TB was the strongest predictor of both all-cause and TB-related mortality, and survival curves showed higher cumulative mortality among patients with XDR-TB than in other patients with MDR-TB," wrote Dr. Shim. Over the three to seven years that the study's patient population was monitored, approximately 50 percent of those identified with XDR-TB died, which was a mortality rate similar to untreated TB patients in South India, and one that becomes even worse with HIV co-infection.

Perhaps the biggest public health threat associated with XDR-TB, however, is not its particular virulence, but the lack of information and treatment options that medical and public health officials have on which to draw. The collective dearth of knowledge was likened by Giovanni Battista Migliori, M.D., Morgan Richardson, R.N., P.H.N., and Christopher Lange, M.D., Ph.D., co-authors of the accompanying editorial, to the proverbial blind men trying to describe an elephant—too big a task to accomplish with too little information.

The risks of this lack of information are clear. "Regrettably, a new drug [to treat TB] has not been licensed in decades," they wrote, saying that only further research and concerted effort to understand and quantify the effects of the disease can really prevent MDR- and XDR-TB from becoming pandemic health crises.

"As we wait for new diagnostics and drugs that can meet the challenge of XDR-TB, we must work with what we presently have to create the optimal conditions for success and thus seize the opportunity we have to eliminate tuberculosis," they concluded.

Adapted from materials provided by American Thoracic Society, via EurekAlert!, a service of AAAS.

http://www.sciencedaily.com/releases/2008/11/081106064354.htm

Project Virtually Rebuilds Lost Architecture Of The Shakers

This image blends part of an old photo, left, of southwest Ohio Shaker architecture with the virtual reconstruction of the same building (a dwelling house) by a UC team. (Credit: Image courtesy of University of Cincinnati)

ScienceDaily (Nov. 10, 2008) — The Shakers, a religious group that built 19 communities in the United States during the 1800s, had a prolific and distinct architectural construction and design style. Much of that architecture has been lost; however, a UC project aims to virtually rebuild it.

A 19th-century historian traveling in southern Ohio later wrote about his first glimpse of Union Village, a Shaker community located near Harrison, Ohio: "When I caught sight of the first house, my opinion was confirmed that I was on the lands of the Shakers, for the …style of architecture, solid appearance and want of decorative art was before me."

The style of architecture and the construction methods used by the Shakers throughout Middle America and New England were unusual – reflecting an ascetic living and working structure that was both communal and gender-segregated.

Much of this distinct architectural legacy has been lost. However, an ongoing University of Cincinnati public-education project is virtually rebuilding lost structures and interiors using advanced visualization technology.

UC's CERHAS: A history of success

This effort related to reclaiming Shaker architecture and design is led by Jose Kozan, adjunct professor of architecture and research associate in UC's top-ranked College of Design, Architecture, Art, and Planning. He is working in conjunction with other members of the Center for the Electronic Reconstruction of Historical and Archaeological Sites (CERHAS) at UC.

The center – a 21st century leader integrating art and design with technology – has previously led high-visibility, public-education efforts to virtually reconstruct ancient Troy, sites in ancient Greece, the Midwest's lost monumental earthworks built by ancient Native American cultures and other lost or inaccessible art and architecture.

Shakers in southern Ohio

Kozan's project focusing on Shaker architecture began as a preservation and tourism effort in Whitewater Township in southwest Ohio. A local citizens group – the Friends of the White Water Shaker Village – wanted a way to highlight two major Shaker structures (Meeting House and Dwelling House) that remain from a one-time Shaker community known as White Water Shaker Village.

That initial request led to a years' long project by Kozan to collect old photographs of the village as well as old drawings and maps of the area to virtually restore the northernmost portion of the site.

Kozan explained, "Reconstructing the lost buildings or even the lost interiors of existing buildings is a challenging puzzle. We have no surviving plans. Interiors have been dramatically altered and subdivided since the Shakers left the site in 1916. And even for two buildings on the site (Meeting House and Dwelling House), later owners have made additions (i.e., porches and annexes) and changes (i.e., asphalt roof vs. the Shakers' wood shingle roof) that must be virtually removed in order to see the structures as the Shakers knew them."

Distinctive aspects of Shaker architecture

Shaker architecture, with its unusual features and construction methods, provides valuable insights into Shaker life and culture. All of these come to life in Kozan's virtual reconstructions of buildings and interiors once part of the Whitewater Shaker village. Distinctive aspects of that architecture include:

- Interior spaces characterized by austerity and simplicity.
- Separate door entries for men and women to access key structures. Within interiors of dwelling structures, the Shakers also built separate staircases and living spaces for use by men and women.
- Certain structures (like the worship house in White Water Shaker Village) were built without supporting pillars. Instead, roof trusses top every floor, and the floor below hangs from the trusses just above. This allowed for wide, open, uninterrupted floor expanses suitable for Shaker worship (which entailed trembling, shouting, dancing, shaking and singing in order to "shake" or purge sin).
- An emphasis on unadorned structures and implements, such as plain wood pegs for hanging garments or furniture when not in use; durable, functional wood furniture of spare, straight lines; wood floors without carpets; and plain, brown packaging for products like seeds. (Much of this contrasted with the wider society. For instance, seed providers in the late 1800s commonly used colorful paper and boxes as packaging.)

A lasting impact

The simple architecture of their homes, meeting houses and barns have had a lasting influence on American architecture and design.

As a group, the Shakers had what Kozan described as a commitment to savvy use of resources allied to simplicity in building forms, set within site planning that emphasized social structure and social interaction within a communal life. They achieved a well-coordinated design hierarchy within structures and with the placement of structures within the landscape. Their work provided a continuous flow of influences upon generations of American architects and designers.

The UC project to virtually recreate and preserve these structures and interiors is also having a lasting impact on students. Third-year architecture graduate student Jordan Parrott, 30, of Miami, Fla., has worked on the project with Kozan with in and outside of class time.

"It's an exciting project for three reasons," explained Parrott. "First, it's in our own local community. Second, we get to see the results of our work made widely available because our renderings are available on Google Earth. And, finally, it's enabled me to see the many alternatives available in the field of architecture. There are different avenues of work and research, things related to preservation, visualizations and development, open to us as future architects."

Continuing the legacy

UC's Kozan and architecture students have created schematic 3-D virtual models, located online in Google's 3-D Warehouse and Google Earth, of structures that no longer exist but were once part of the White Water Shaker Village site near Harrison, Ohio.

These include:

- Bank barn
- Boys' residence
- Dye house
- Kitchen
- Tobacco barn
- School
- Stable and wagon shed
- Wash (laundry) house
- Women's work shop (known as the Sisters' Shop)
- Wood house

The UC team has also created more detailed 3-D virtual models, also located online, of still-extant structures, providing a view to interiors as they were originally built by the Shakers. The current interiors of the extant structures are in some state of disrepair and have been remade and remodeled numerous times since the village was first established in 1824.

Kozan's long-term goal is to expand these virtual reconstructions to include other historical Shaker communities throughout the U.S., to spread the architectural lessons to be learned, and to encourage tourism via preservation, rebuilding and virtual means throughout an online Shaker network.

In an upcoming class, students will continue work related to completing visualizations of these structures. In keeping with the communal life of the Shakers, Kozan also plans a virtual event where – in a virtual Shaker meeting house interior – online participants from around the world will gather, represented by Shaker avatars.Kozan explained, "I'm promoting these efforts because to do is to learn. By interacting with the design history, students and others can take away the lessons of this legacy, which speak to creating meaning-filled living spaces."

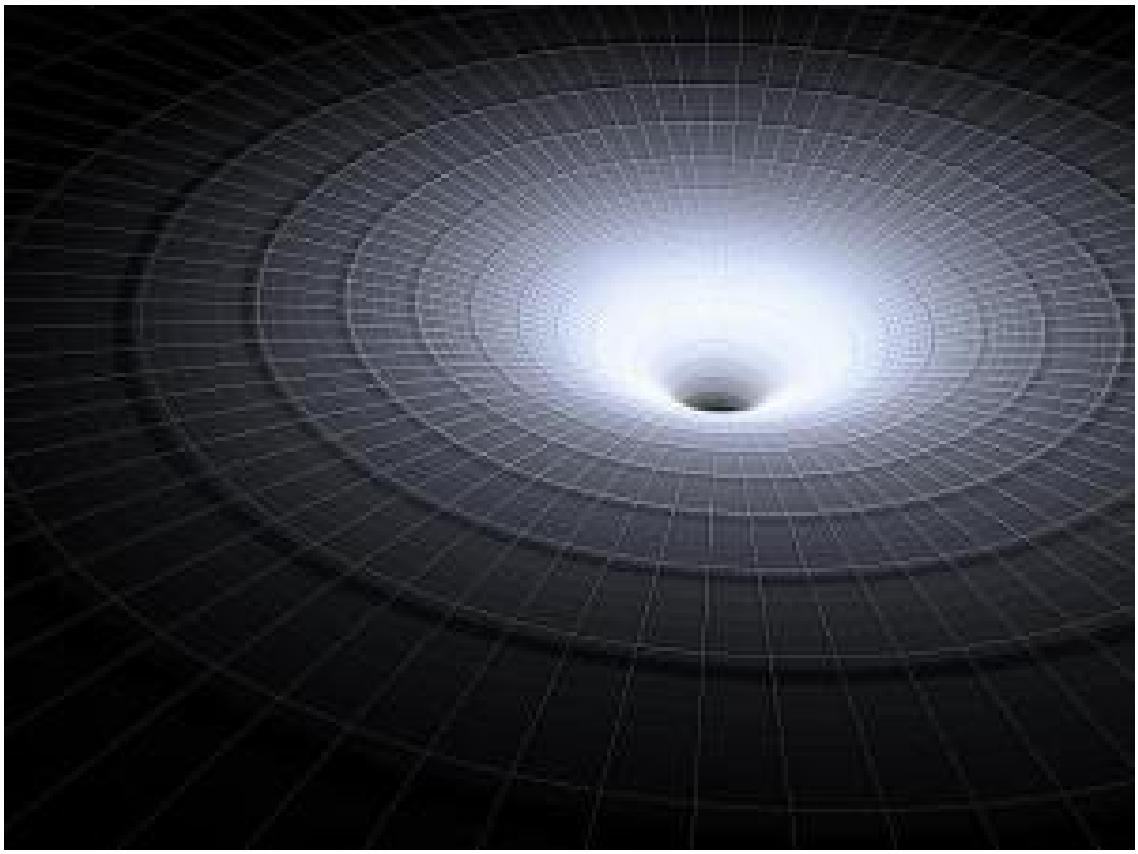
He is also presenting on this work at academic conferences and in journals, including a recently published article in the "Proceedings of the 34th Computer Applications and Quantitative Methods in Archaeology Conference."

Visit the site for Center for the Electronic Reconstruction of Historical and Archaeological Sites (CERHAS) at: http://www.cerhas.uc.edu/

Adapted from materials provided by University of Cincinnati.

http://www.sciencedaily.com/releases/2008/11/081106122247.htm

Physicists Create BlackMax To Search For Extra Dimensions In The Universe



Black holes are theorized to be regions in space where the gravitational field is so strong that nothing can escape its pull after crossing what is called the event horizon. BlackMax simulates these regions. (Credit: iStockphoto/Christophe Rolland)

ScienceDaily (Nov. 9, 2008) — A team of theoretical and experimental physicists, with participants from Case Western Reserve University, have designed a new black hole simulator called BlackMax to search for evidence that extra dimensions might exist in the universe.

Black holes are theorized to be regions in space where the gravitational field is so strong that nothing can escape its pull after crossing what is called the event horizon. BlackMax simulates these regions.

Approximately two years in the making, the computer program enables physicists to test theories about the production and decay of black holes and takes into account new types of effects on both the creation and evaporation of black holes at the new Large Hadron Collider (LHC) currently being commissioned at the European Center for Nuclear Research (CERN) in Geneva, Switzerland.

For example, black holes created at the LHC would be expected to start off spinning.

The spinning of the black hole increases the fraction of the black hole's mass that is dissipated as gravitons–elementary quanta of gravity, which could be used to provide a clue to the existence and structure of extra dimensions. Black holes are being studied with BlackMax by members of the ATLAS Experiment at LHC, one of the two principal large particle detectors at the new collider. Case Western Reserve physicists working with Glenn Starkman on the project are his former doctoral student Dejan Stojkovic, now a visiting professor on the faculty of the State University of New York (SUNY) at Buffalo, and De-Chang Dai, who recently graduated with his doctoral degree in physics, and is now a

postdoctoral fellow working with Stojkovic. Other collaborators are experimental physicists Cigdem Issever and Jeff Tseng of Oxford University and Eram Rizvi from Queen Mary College at the University of London.

ATLAS works much like investigators who search the site of plane crash, and then piece together the debris to find the cause of the plane's disintegration.

BlackMax, by predicting how those pieces will fall, should allow physicists looking at data from the ATLAS experiment to see whether the pattern of particles released into the detector matches what one would expect when a black hole is produced and then falls apart.

The ordinary non-gravitational collisions predicted by the Standard Model of particle physics tend to produce fragments of the proton clumped into a small number of jets.

Decays of black holes should produce more particles than usual. These particles should also come out unusually isotropically—in every direction—and the mix of particles should be more democratic - including for example electrons and similar particles that are not found within the proton.

Under certain circumstances, black hole decay should also produce many gravitons that would themselves pass unnoticed out of the ATLAS, but which would make the remaining emitted particles looking asymmetric and carrying less than the full event energy.

Starkman said that if black holes are found at the LHC it will enable scientists to understand the connection between gravity and quantum mechanics, resolving the inconsistency between two of the great intellectual triumphs of the 20th century - quantum mechanics and Einstein's General Theory of Relativity.

It would also mean the existence of other dimensions to space, and explain why gravity is such a weak force compared to the other three fundamental forces of nature–electromagnetism and the strong and weak nuclear forces.

According to Starkman, the black holes under study at LHC will be very small, extremely hot at more than billion times the temperature of the sun, and their lifespan will consequently be so short that they will decay within tiny fractions of a second of their creation.

He added that there is not enough time for the black hole to cross a human hair, "never mind leaving the detector," he said."What's more important is that the universe has been doing this experiment for billions of years by bombarding the earth's atmosphere (not to mention all the myriad stars) with cosmic rays. So we know if black holes are made at the LHC, they are entirely safe," said Starkman.

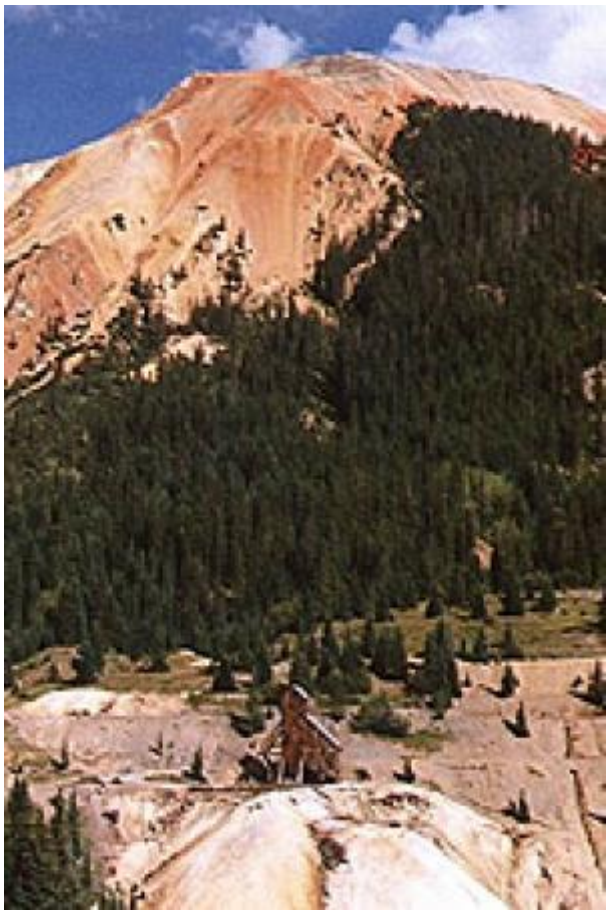
Journal reference:

1. Dai et al. **BlackMax: A black-hole event generator with rotation, recoil, split branes, and brane tension**. *Physical Review D*, 2008; 77 (7): 076007 DOI: 10.1103/PhysRevD.77.076007

Adapted from materials provided by Case Western Reserve University, via EurekAlert!, a service of AAAS.

http://www.sciencedaily.com/releases/2008/11/081107143616.htm

Paper Mill Waste May Be Just Right For Reclaiming Mineland



Adding more paper mill waste can better reclaim mine soil without further harm to downstream water quality. (Credit: Photo courtesy of the U.S. Geological Survey)

ScienceDaily (Nov. 9, 2008) — Paper mill waste can safely be applied at a rate three times higher than the typical rate in Ohio, to reclaim soils of surface-coal mined areas.

Agricultural Research Service (ARS) soil scientist Martin J. Shipitalo found that a 300-ton-per-acre application rate had many benefits, and did not result in major additional negative effects on runoff water quality compared to the standard 100-ton-per-acre rate. Shipitalo is at the ARS North Appalachian Experimental Watershed in Coshocton, Ohio.

This is the first research project to determine the amount of paper mill sludge byproduct that can safely be applied to land without harming downstream water quality.

The project also involved the two Ohio agencies that must grant special approval for the 300-ton-per-acre rate: the Ohio Environmental Protection Agency and the Ohio Department of Natural Resources. And it involved representatives of the paper mill, mining and land reclamation industries.

Shipitalo and colleagues applied sludge from a paper mill to plots on steep slopes in southeast Ohio that had been recently surface-mined. Approximately 10 weeks after the application, grass was planted on the slopes.

The application of paper mill sludge at both rates greatly reduced runoff and erosion from the plots, particularly during the period before grass was planted. But the higher application rate still reduced soil loss 8-fold after the grass was planted and the land had stabilized. Both rates reduced runoff 3- to 6-fold in that same post-planting period.

The high rate of paper mill sludge application increased soil carbon levels, soil pH and calcium to a greater extent than the lower rate. These improvements in soil quality may contribute to more persistent increases in plant growth and continued reductions in runoff and erosion. Also, the large reduction in runoff and erosion could result in lower reclamation costs by reducing the size of required sediment ponds.

The only negative effect of the byproduct was a temporary reduction--up to 10 weeks--of oxygen in the runoff water, but total runoff was reduced.

A paper on this research will be published in the November-December 2008 issue of the Journal of Environmental Quality.

Adapted from materials provided by USDA/Agricultural Research Service.

http://www.sciencedaily.com/releases/2008/10/081031214322.htm

Playing A Game Shows How Personalities Evolved

Researchers offer a new explanation as to why a wide range of personality traits has evolved in humans and other social species. (Credit: iStockphoto)

ScienceDaily (Nov. 9, 2008) — Why do some of us always do the right thing while others only seem to be out for themselves? Research by the universities of Exeter and Bristol offers a new explanation as to why such a wide range of personality traits has evolved in humans and other social species.

'Game theory' is used to predict the behaviour of individuals when making choices that depend on the choices of others. First developed as a tool for understanding economic behaviour, game theory is increasingly used in many diverse fields, ranging from biology and psychology to sociology and philosophy.

Using a mathematical model developed by Professor John McNamara from the University of Bristol, the team adapted the theory to allow individuals playing the 'game' to have some variation in their personalities to start with, and to monitor each other's cooperative tendencies as the game was being played.

McNamara described what happened using this new variation of the game: "What we found is that watching each other's behaviour produced individuals who were more socially aware, which in turn exaggerated the personality traits of both players. Some became more cooperative – because they became aware of the impact their decisions were making on their reputations – while others became less cooperative and exploited trusting individuals for personal gain."

In evolutionary terms, this trend is self-perpetuating: variation begets more variation, increasing the gap between those who trusted and co-operated, and those that exploited trusting individuals.

Dr Sasha Dall from the University of Exeter's School of Biosciences (Cornwall Campus) explains: "Our model showed a 'positive feedback' loop in which variation encourages social awareness, which favours greater personality divergence, maintaining the need for social awareness. In other words, because people operate in such different ways, we need information to decide whether or not trust to them. This encourages a really diverse range of responses which, in turn, makes social awareness all the more important."

Although the model focuses on individuals, the findings have implications for understanding whole societies. They are also significant because they offer an explanation as to why variation has evolved in human beings and other social species.

The findings are published in Proceedings of the Royal Society B.

Adapted from materials provided by University of Exeter.

http://www.sciencedaily.com/releases/2008/11/081103201207.htm

Book Publishers Take Leaps Into Digital

By ERIC PFANNER

PARIS — Long after other media joined the digital revolution, book publishers clung to the reassuringly low-tech tools of printing press, paper and ink.

But now the world of books is starting to go digital, too.

Late last month, American authors and publishers reached an agreement with Google to settle lawsuits over Google's Book Search program, which scans millions of books and makes their contents available on the Internet. The deal lets Google sell electronic versions of copyrighted works that have gone out of print.

"Almost overnight, not only has the largest publishing deal been struck, but the largest bookshop in the world has been built, even if it is not quite open for business yet," wrote Neill Denny, editor of The Bookseller, a trade publication based in London, on his blog.

The settlement remains subject to court approval, and the bookshop would operate only in the United States for now. But the agreement is only one of many initiatives under which books are making what may be the biggest technological leap since Gutenberg invented moveable type.

This month, a group of European national libraries and archives plans to open Europeana, an online database of two million books and other cultural and historical items, including films, paintings, newspapers and sound recordings. Letters from Mozart to his friends, from the Austrian National Library in Vienna are there, along with early printings of his work, from the Bibliothèque Nationale de France.

Meanwhile, publishers are moving ahead with a flurry of digital initiatives, sometimes in a race against Internet start-ups.

"The book business model is under siege, just as the music industry earlier came under siege," said Eileen Gittins, chief executive of Blurb, a Silicon Valley company that helps people publish their own books, using the Internet. "The book publishing business has had a front-row seat to see what happened to the music industry."

Until recently, while the music business was decimated by digital piracy, book sales rose, aided by the ability to browse and buy from online stores like Amazon.

But in the first nine months of this year, book sales in the United States fell 1.5 percent, according to the Association of American Publishers.

Among the few bright spots were sales of so-called e-books, read on devices like Amazon's Kindle, on personal computers or on mobile phones. Wholesale sales of e-books were up 55 percent from a year earlier.

Questions remain over the best way to deliver digital books. In the United States, a surge in sales followed the introduction of the Kindle last year and upgrades in rival devices like the Sony Reader, which allow users to download books wirelessly or from an Internet-connected computer.

But in Europe, where such devices are only slowly becoming available, sales of e-books remain in their infancy. The price of these gadgets — the Kindle, for example, costs $359 — may put off readers.

In Japan, the mobile phone has been the most popular way to read e-books, according to the Digital Content Association of Japan. Sales of digital versions of manga comic books are leading the way. Penguin said it also had high hopes for selling e-books to mobile phone users in India.

About half a million people in more than 50 countries have downloaded Stanza, an application that lets them read e-books on the iPhone, said Michael Smith, executive director of the International Digital Publishing Forum in Toronto.

“The adoption is happening,” he said. “It’s not theory. It’s happening.”

A survey published in conjunction with the Frankfurt Book Fair last month showed that 40 percent of book publishing professionals thought digital sales would surpass sales of paper-and-ink books by 2018.

Now, though, revenue from e-books and other digital sources remains tiny — less than 1 percent of the worldwide sales of Penguin Group, for example, according to Genevieve Shore, digital director for Penguin in London.

But the Google deal with the Association of American Publishers and the Authors Guild could be a catalyst. Under the proposed settlement, Google would share online sales revenue with publishers and authors.

“We’re very excited about it,” Ms. Shore said. “What it means is that a very important player in our online lives, we’re not in conflict with anymore.”

Publishers are exploring other new ways to sell books in digital form. She said Penguin was considering subscription plans, where readers would pay a monthly fee for online access to best sellers. Another possibility would be free or reduced-price online versions of books, supported by advertising — an approach adopted by newspapers on the Internet.

“We will have some interesting new business models on the market in 2009,” she said.

Free electronic versions of some books have been available for years. Project Gutenberg, a volunteer archival effort, makes more than 25,000 books available for download. Feedbooks, a start-up company in Paris, is formatting many of them for use on mobile devices.

There are limits to what readers can find on Feedbooks. George Orwell’s “1984,” for example, is available; the latest best sellers are not. That is because Project Gutenberg focuses on books whose copyrights have expired.

The Google settlement largely concerned works that were still under copyright but no longer in print. Digitizing these books could allow publishers to offer readers vast numbers of additional volumes — the so-called long tail of the Internet.

http://www.nytimes.com/2008/11/10/business/worldbusiness/10kindle.html?_r=1&th&emc=th&oref=slogin

Internet Attacks Grow More Potent

By JOHN MARKOFF

SAN FRANCISCO — Attackers bent on shutting down large Web sites — even the operators that run the backbone of the Internet — are arming themselves with what are effectively vast digital fire hoses capable of overwhelming the world's largest networks, according to a new report on online security.In these attacks, computer networks are hijacked to form so-called botnets that spray random packets of data in huge streams over the Internet. The deluge of data is meant to bring down Web sites and entire corporate networks. Known as distributed denial of service, or D.D.O.S., attacks, such cyberweapons are now routinely used during political and military conflicts, as in Estonia in 2007 during a political fight with Russia, and in the Georgian-Russian war last summer. Such attacks are also being used in blackmail schemes and political conflicts, as well as for general malicious mischief.

A survey of 70 of the largest Internet operators in North America, South America, Europe and Asia found that malicious attacks were rising sharply and that the individual attacks were growing more powerful and sophisticated, according to the Worldwide Infrastructure Security Report. This report is produced annually by Arbor Networks, a company in Lexington, Mass., that provides tools for monitoring the performance of networks.The report, which will be released Tuesday, shows that the largest attacks have grown steadily in size to over 40 gigabits, from less than half a megabit, over the last seven years. The largest network connections generally available today carry 10 gigabits of data, meaning that they can be overwhelmed by the most powerful attackers.

The Arbor Networks researchers said a 40-gigabit attack took place this year when two rival criminal cybergangs began quarreling over control of an online Ponzi scheme. "This was, initially, criminal-on-criminal crime though obviously the greatest damage was inflicted on the infrastructure used by the criminals," the network operator wrote in a note on the attack. The attack employed a method called reflective amplification, which allowed a relatively small number of attack computers to generate a huge stream of data toward a victim. The technique has been in use since 2006.

"We're definitely seeing more targeted attacks toward e-commerce sites," said Danny McPherson, chief security officer for Arbor Networks. "Most enterprises are connected to the Internet with a one-gigabit connection or less. Even a two-gigabit D.D.O.S. attack will take them offline." Large network operators that run the backbone of the Internet have tried to avoid the problem by building excess capacity into their networks, said Edward G. Amoroso, the chief security officer of AT&T. He likened the approach to a large shock absorber, but said he still worried about the growing scale of the attacks.

"We have a big shock absorber," he said. "It works, but it's not going to work if there's some Pearl Harbor event."Over all, the operators reported they were growing more able to respond to D.D.O.S. attacks because of improved collaboration among service providers.

According to the Arbor Networks report, the network operators said the largest botnets — which in some cases encompass millions of "zombie" computers — continue to "outpace containment efforts and infrastructure investment." Despite a drastic increase in the number of attacks, the percentage referred to law enforcement authorities declined. The report said 58 percent of the Internet service providers had referred no instances to law enforcement in the last 12 months. When asked why there were so few referrals, 29 percent said law enforcement had limited capabilities, 26 percent said they expected their customers to report illegal activities and 17 percent said there was "little or no utility" in reporting attacks.

http://www.nytimes.com/2008/11/10/technology/internet/10attacks.html?th&emc=th

Proton Therapy And Concurrent Chemotherapy May Reduce Bone Marrow Toxicity In Advanced Lung Cancer

ScienceDaily (Nov. 14, 2008) — Patients treated for locally advanced non-small cell lung cancer who receive chemotherapy and proton beam therapy have fewer instances of bone marrow toxicity than patients who receive the standard treatment of intensity-modulated radiation (IMRT) and concurrent chemotherapy, according to researchers from The University of Texas M. D. Anderson Cancer Center.

The findings were reported today at the 2008 Chicago Multidisciplinary Symposium in Thoracic Oncology, sponsored by ASTRO, ASCO, IASLC and the University of Chicago. It is the first study to examine the benefits of proton beam therapy and concurrent chemotherapy in advanced lung cancer patients.

The conventional treatment for locally advanced non-small cell lung cancer is intensity-modulated radiation with concurrent chemotherapy. The majority of lung cancer patients who receive this therapy are at risk of bone marrow toxicity, a debilitating side effect of treatment that further weakens a patient's already vulnerable immune system. The occurrence of bone marrow toxicity - the reduction of hemoglobin, neutrophils, lymphocytes and white blood cells - results in a patient's inability to withstand aggressive treatment, rendering it less effective. This condition often leads to infection, bleeding, fatigue and even death.

Researchers compared bone marrow toxicity levels in 142 patients treated for lung cancer between January 2003 and June 2008. All of the patients received chemotherapy; IMRT was administered to 75, while 67 were treated with proton beam therapy. After 17 months, patients treated with concurrent chemotherapy and proton beam therapy experienced significantly less reduction in hemoglobin (0% vs. 4%), neutrophils (4% vs. 17%) and lymphocytes (54% vs. 87%) when compared to those treated with CT and IMRT. These differences remained when the gross tumor volume was considered.

"Our goal is to find the best way to treat the cancer without further weakening the patient," said Ritsuko Komaki, M.D., professor in M. D. Anderson's Division of Radiation Oncology and lead author on the study. "Standard care currently provides a 25 percent five-year survival rate. But as a physician, I have seen how treatment affects patients' overall health: they are tired, suffer from night sweats, are prone to infection and have to compromise their treatment. With proton therapy, we may now have an option that lessens this toxicity so that treatment dosage can be maximized."

Lung cancer is the leading cause of cancer death in the United States, according to the American Cancer Society. In 2008, approximately 215,000 people will be diagnosed with lung cancer and approximately 114,000 people will die from the disease.

Proton beam therapy ionizes cancer cells by stripping away their electrons, consequently mutating the cells' DNA so that they cannot divide and proliferate. Protons are significantly heavier than X-rays, allowing them to travel in a straight path through the body without being deflected. While radiation therapy destroys both the tumor and the healthy tissue surrounding it, proton therapy can target a tumor precisely with little damage to normal tissue.

"This study suggests that proton beam therapy may benefit patients who are extremely vulnerable to bone marrow toxicity," said James Cox, M.D., professor and head of the Division of Radiation Oncology and the study's senior author. "Proton therapy may promise safer and more effective treatment for children, whose bone marrow is still developing, and elderly patients who are more prone to complications and cannot withstand aggressive treatment."

M. D. Anderson is currently working with Massachusetts General Hospital to enroll patients in an NCI-approved randomized prospective clinical trial to confirm these initial findings.

In addition to Komaki and Cox, M. D. Anderson researchers contributing to this study include Samir V. Sejpal, M.D., Xiong Wei M.D., Pamela Allen Ph.D., Richard Amos M.Sc., Radhe Mohan, Ph.D., Joe Y. Chang M.D., Zhongxing Liao, M.D., and Lei Dong, Ph.D., from the Departments of Radiation Oncology, Radiation Physics, and Biostatistics and Applied Mathematics.

Also at the conference, Cox presented his study on proton beam therapy and its effects on tissue toxicity.

Adapted from materials provided by University of Texas M. D. Anderson Cancer Center.

http://www.sciencedaily.com/releases/2008/11/081113091615.htm

New Device To Improve Transistor Quality

ScienceDaily (Nov. 14, 2008) — A new configurable chip, which can correct faults in newly manufactured transistors and can be implemented in mainstream devices such as mobile phones and computers, has been developed by engineers at the University of Southampton.

In a paper just published in Electronics Letters, Dr Peter Wilson and Dr Reuben Wilcock from the University's School of Electronics and Computer Science (ECS), describe the Configurable Analogue Transistor (CAT) which he and his team have developed, and for which they have a patent pending. The CAT approach can be applied to batches of transistors which in testing after manufacture prove to have an unacceptably high variability.

According to Dr Wilson, the manufacturing process for deep submicron technologies is currently very expensive, with the cost of failed devices running into huge figures. Designers create new chip designs and generally simulate how they will perform. When the silicon wafers are produced they will then undergo rigorous electrical testing to ensure that they are working. It is at this point that the designer often realises that some of the chips do not work, which creates a problem of reduced yield, i.e. the number of chips which work out of a batch reduces. This has been an increasing problem for Integrated Circuit designers over the last few years as process technology dimensions have become increasingly small, and the corresponding variability of devices worsened.

"One of the biggest challenges we face when shrinking devices in these new technology nodes is that there is increasing variability in the resulting devices and this is causing unacceptably poor yields in the circuits being produced – particularly in analogue and mixed signal devices where performance is at a premium," said Dr Wilson. "Now with CAT, we can take whole batches of chips and tighten their performance characteristics resulting in massive improvements in yield. Improvements in variability of up to 80 percent can be achieved using this approach."

According to Dr Wilson, the CAT technique can also be applied to existing products to improve their performance and longevity.

"As technology changes over time, the CAT technique allows us to reconfigure devices so that products continue to work," said Dr Wilson. "For example, remote circuits in satellites and sensor devices can be “reprogrammed” and effectively recalibrated to take account of changing characteristics over time and environmental conditions."

Adapted from materials provided by University of Southampton, via AlphaGalileo.

http://www.sciencedaily.com/releases/2008/11/081105083538.htm

Watching Television, Channeling Unhappiness?

ScienceDaily (Nov. 14, 2008) — Are happy or unhappy people more attracted to television? This question is addressed by a new 30-year analysis1 of US national data of nearly 30,000 adults by John Robinson and Steven Martin from the University of Maryland in the US. Examining the activity patterns of happy and less happy people in the General Social Survey (GSS) between 1975 and 2006, the authors found that happy people were more socially active, attended more religious services, voted more and read more newspapers.

In contrast, unhappy people watched significantly more television in their spare time. These results also raise questions about recent and previous time-diary data, in which television rated quite highly when people were asked to rate how they felt when they engaged in various activities in "real time" in these daily diaries. "These conflicting data suggest that TV may provide viewers with short-run pleasure, but at the expense of long-term malaise," said Professor Robinson. He also noted that earlier general satisfaction surveys also showed people rating TV below average as a significantly less satisfying free-time activity on the whole. "What viewers seem to be saying is that while TV in general is a waste of time and not particularly enjoyable, the shows I saw tonight were pretty good."

The authors also noted the many other attractions associated with TV viewing in relation to other free-time activities. Viewers don't have to go anywhere, dress up (or at all), find company, plan ahead, expend energy, do any work-or even pay anything - in order to view. This becomes an unbeatable combination when added to its being quite enjoyable in the short run. This probably accounts for TV taking up more than half of Americans' free time.

The relationship between happiness and television viewing becomes particularly noteworthy, since in theory, engaging in a highly enjoyable activity time like watching television should improve the quality of people's lives.

However, Robinson and Martin's data point in the opposite direction, with unhappy people watching an estimated 20 percent more television than very happy people, after controlling for their education, income, age and marital status - as well as other demographic predictors of both viewing and happiness.What remains unclear is whether happiness leads to lower viewing or more viewing leads to unhappiness. Robinson and Martin recommend that given the time Americans spend watching television, the question of whether it is responsible for unhappiness needs much closer study and clarification.

Unhappy people were also more likely to have unwanted extra time on their hands (51 percent) compared to very happy people (19 percent) and to feel rushed for time (35 percent vs. 23 percent). Of the two, having extra time on their hands was the bigger burden.Professor Martin concluded by making a comparison with addiction: "Addictive activities produce momentary pleasure but long-term misery and regret. People most vulnerable to addiction tend to be socially or personally disadvantaged, with TV becoming an opiate."

Journal reference:

1. Robinson JP & Martin S. **What do happy people do?** *Social Indicators Research*, December 2008 DOI: 10.1007/s11205-008-9296-6

Adapted from materials provided by Springer Science+Business Media.

http://www.sciencedaily.com/releases/2008/11/081113080006.htm

High Temperatures Decrease Antifungal Properties Of Contact Solution

ScienceDaily (Nov. 13, 2008) — Exposure to prolonged temperature elevation reduces antifungal activity of a contact lens solution that was implicated in the epidemic of the eye infection Fusarium keratitis that occurred between 2004 and 2006, according to a new report.

Bausch & Lomb introduced ReNu with MoistureLoc, which contains an antimicrobial agent not found in other solutions, in August 2004, according to background information in the article. The first cases of Fusarium keratitis related to ReNu with MoistureLoc were reported to the U.S. government in March 2006; total of 154 confirmed cases were identified in the United States. "Bausch & Lomb investigators acknowledged that all original cases appear to be related to ReNu with MoistureLoc produced in their Greenville, S.C., plant," the authors write.

According to the article, in 2006, the Food and Drug Administration (FDA) inspected this facility and cited Bausch & Lomb for inadequate temperature control in the production, storage and transport of products produced there. To assess what effect temperature might have on the growth of Fusarium fungus, John D. Bullock, M.D., M.P.H., M.Sc., of the Wright State University Boonshoft School of Medicine, Dayton, Ohio, and colleagues studied six contact solutions, including ReNu with MoistureLoc. "Two bottles of each solution were separately stored at room temperature and 60 degrees Celsius [140 degrees Fahrenheit] for four weeks, serially diluted and then tested for their ability to inhibit growth of 11 Fusarium isolates (seven of which were associated with the keratitis epidemic)," the authors write.

After the 60-degree storage, ReNu with MoistureLoc demonstrated the greatest decline in anti-fungal activity, while Clear Care and ReNu MultiPlus performed the best. When considering just the strains of Fusarium associated with the keratitis epidemic, ReNu with MoistureLoc that was stored at room temperature allowed fungal growth in 27 of 84 combinations (different blends of isolates grown in different solutions and at different levels of dilution), compared with 67 of 84 combinations for the bottle stored at 140 degrees Fahrenheit."The precise temperature, duration of exposure to elevated temperature and extent of temperature fluctuation that may diminish the antimicrobial activity of a particular contact lens solution is not known, and thus, additional studies may be warranted. However, our findings, coupled with the FDA reports of Bausch & Lomb's failure to regulate the storage and transport temperatures of the products manufactured in their Greenville plant, may be significant," the authors conclude.

"Knowledge of the potential loss of antimicrobial activity of contact lens solutions and other pharmaceutical products when exposed to higher temperatures and the risk of such exposure when storing and transporting those products may help prevent such epidemics in the future."Dr. Bullock has served as a consultant for three different law firms concerning the Fusarium keratitis epidemic. The compensation was paid to the Wright State University Foundation and not to Dr. Bullock. No outside funding from any source was provided for this study. Any and all costs associated with this research study were paid for by the authors personally or by CompuNet Clinical Laboratories.

Journal reference:

1. John D. Bullock, MD, MPH, MSc; Ronald E. Warwar, MD; B. Laurel Elder, PhD; William I. Northern, MS. **Temperature Instability of ReNu With MoistureLoc A New Theory to Explain the Worldwide Fusarium Keratitis Epidemic of 2004-2006**. *Archives of Ophthalmology*, November 2008;126(11):1493-1498 DOI: http://archopht.ama-assn.org/cgi/content/short/126/11/1493

Adapted from materials provided by JAMA and Archives Journals.

http://www.sciencedaily.com/releases/2008/11/081110163805.htm

Eye Conditions Linked With Obstructive Sleep Apnea

ScienceDaily (Nov. 13, 2008) — If a good night's sleep helps the brain and body perform better, it's a good guess that sleep problems can cause more than just fatigue. Numerous studies have shown a connection between sleep disorders and medical conditions such as cardiovascular disease, cerebrovascular disease, and metabolic disorders, including the risk of obesity and diabetes mellitus.

In the November issue of Mayo Clinic Proceedings, Mayo Clinic researchers outline several interesting associations between sleep disorders and eye disease.

Obstructive sleep apnea and eye disorders

More than 12 million people in the United States have obstructive sleep apnea -- a potentially serious sleep disorder in which breathing repeatedly stops and starts during sleep. Sleep apnea has several types. The most common is obstructive sleep apnea (OSA), which occurs when throat muscles relax and block the airway.

Multiple studies have identified OSA as an independent risk factor for the development of several medical conditions, including high blood pressure, which are related to impairments or alterations in a person's vascular (circulatory) system. With their own complex and sensitive vascular system, the eyes can sometimes signal and be affected by systemic vascular problems.

"Given the vascular consequences of OSA, it is not surprising that ophthalmologic manifestations exist," explains the article's lead author, E. Andrew Waller, M.D., a Mayo Clinic pulmonologist and sleep specialist.

The researchers conducted a literature search focused on sleep disorders and eye disease. In the article, they discuss a variety of ophthalmologic conditions associated with obstructive sleep apnea. Highlighted below are a few findings.

- **Floppy eyelid syndrome**: This disorder causes eyelids to evert (turn inside-out) spontaneously during sleep, resulting in excessive watering, stickiness, discomfort and blurred vision. While not a serious medical problem, this syndrome can signal that a person also has OSA, which can lead to more significant health problems.
- **Glaucoma**: This condition is the second most common cause of blindness and the most common cause of irreversible blindness. OSA is linked to two forms of this disease -- primary open-angle glaucoma (POAG) and normal-tension glaucoma (NTG). The severity of glaucoma appears to correlate with the number and duration of apnea episodes in patients with OSA.
- **Nonarteritic anterior ischemic optic neuropathy (NAION)**: Research shows an increased incidence of OSA in people diagnosed with NAION. This condition is characterized by the sudden painless onset of vision loss in one eye, often noticed upon awakening. Up to 6,000 patients annually in the United States are diagnosed with this condition, which can cause irreversible vision loss.
- **Papilledema**: People with OSA may have a higher incidence of papilledema, swelling of the optic nerve in both eyes. Papilledema typically occurs due to increased pressure within the skull and can lead to progressively worsening vision and, in some cases, blindness.

According to Dr. Waller, knowing the links between these eye conditions and OSA may hasten early diagnosis and appropriate treatment.

"Our understanding of the mechanisms that link these disorders is minimal," says Dr. Waller. "However, the recognition of these associations is important for primary care physicians, ophthalmologists, and sleep physicians. For patients with OSA, a routine eye examination to evaluate for early signs of glaucoma,

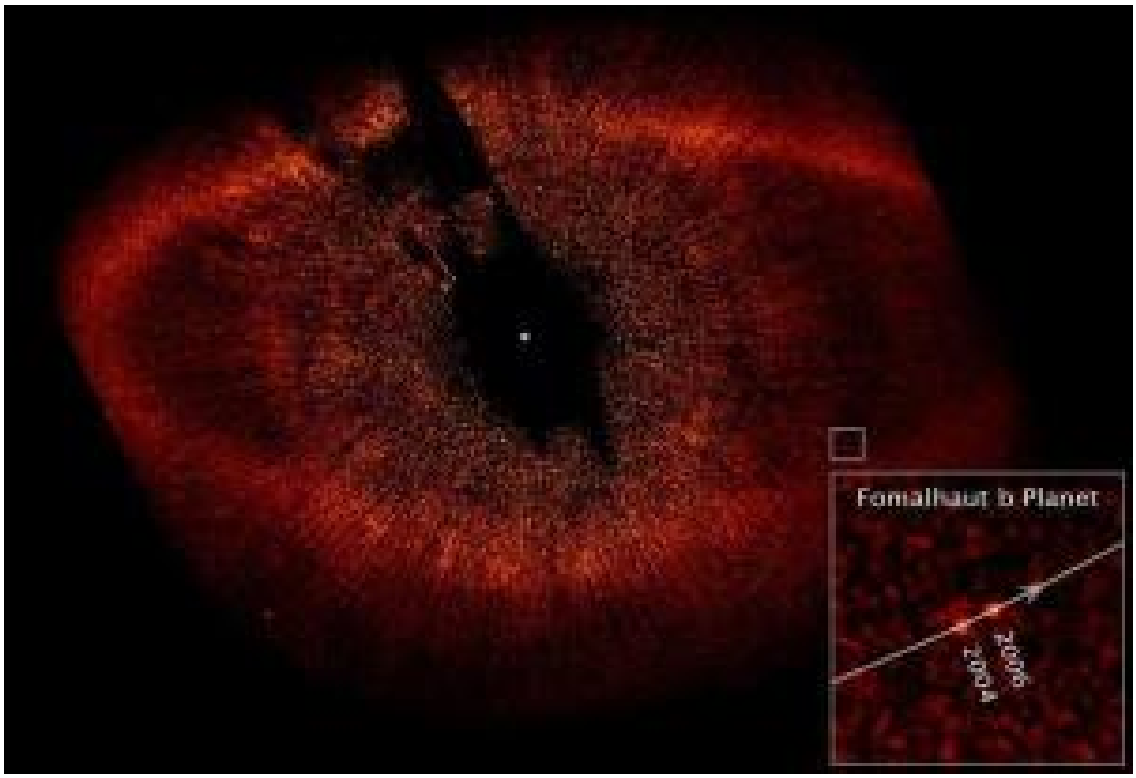
particularly in the setting of visual loss or change, should be recommended. Patients with ophthalmologic diseases known to be associated with sleep apnea should be screened clinically for sleep apnea and referred to a sleep center if signs or symptoms are present."

The authors from Mayo Clinic are Rick Bendel, M.D., ophthalmologist and Joseph Kaplan, M.D., pulmonologist and sleep specialist.

Adapted from materials provided by Mayo Clinic.

http://www.sciencedaily.com/releases/2008/11/081110154040.htm

Hubble Directly Observes A Planet Orbiting Another Star



This image, taken with the Advanced Camera for Surveys aboard NASA's Hubble Space Telescope, shows the newly discovered planet, Fomalhaut b, orbiting its parent star, Fomalhaut. (Credit: NASA, ESA, P. Kalas, J. Graham, E. Chiang, E. Kite (University of California, Berkeley), M. Clampin (NASA Goddard Space Flight Center), M. Fitzgerald (Lawrence Livermore National Laboratory), and K. Stapelfeldt and J. Krist (NASA Jet Propulsion Laboratory))

ScienceDaily (Nov. 13, 2008) — NASA's Hubble Space Telescope has taken the first visible-light snapshot of a planet circling another star.

Estimated to be no more than three times Jupiter's mass, the planet, called Fomalhaut b, orbits the bright southern star Fomalhaut, located 25 light-years away in the constellation Piscis Australis (the Southern Fish).

Fomalhaut has been a candidate for planet hunting ever since an excess of dust was discovered around the star in the early 1980s by NASA's Infrared Astronomy Satellite (IRAS).

In 2004, the coronagraph in the High Resolution Camera on Hubble's Advanced Camera for Surveys produced the first-ever resolved visible-light image of a large dust belt surrounding Fomalhaut. It clearly showed that this structure is in fact a ring of protoplanetary debris approximately 21.5 billion miles across with a sharp inner edge.

This large debris disk is similar to the Kuiper Belt, which encircles the solar system and contains a range of icy bodies from dust grains to objects the size of dwarf planets, such as Pluto.

Hubble astronomer Paul Kalas, of the University of California at Berkeley, and team members proposed in 2005 that the ring was being gravitationally modified by a planet lying between the star and the ring's inner edge.

Circumstantial evidence came from Hubble's confirmation that the ring is offset from the center of the star. The sharp inner edge of the ring is also consistent with the presence of a planet that gravitationally "shepherds" ring particles. Independent researchers have subsequently reached similar conclusions.

Now, Hubble has actually photographed a point source of light lying 1.8 billion miles inside the ring's inner edge. The results are being reported in the November 13 issue of Science magazine.

"Our Hubble observations were incredibly demanding. Fomalhaut b is 1 billion times fainter than the star. We began this program in 2001, and our persistence finally paid off," Kalas says.

"Fomalhaut is the gift that keeps on giving. Following the unexpected discovery of its dust ring, we have now found an exoplanet at a location suggested by analysis of the dust ring's shape. The lesson for exoplanet hunters is 'follow the dust,'" says team member Mark Clampin of NASA's Goddard Space Flight Center.

Observations taken 21 months apart by Hubble's Advanced Camera for Surveys' coronagraph show that the object is moving along a path around the star and therefore is gravitationally bound to it. The planet is 10.7 billion miles from the star, or about 10 times the distance of the planet Saturn from the sun.

The planet's upper-mass limit is constrained by the appearance of the Fomalhaut ring. If the planet were much more massive, it would distort the ring, and the effect would be observable in the ring's structure.

"It took the science team four months of analysis and theoretical modeling to determine that Fomalhaut b could not be more massive than three times the mass of Jupiter. Any more massive than that and its gravity would destroy the vast dust belt encircling the star," Kalas says.

Numerous computer simulations show that circumstellar disks will be gravitationally modified by the tug of one or more unseen planets. The Fomalhaut ring has a sharp inner edge that is likely shaped by the gravitational influence of a planet. The inner edge of our solar system's Kuiper Belt is similarly shaped by the gravitational influence of Neptune.

The planet is brighter than expected for an object of three Jupiter masses. One possibility is that it has a huge Saturn-like ring of ice and dust reflecting starlight. The ring might eventually coalesce to form moons. The ring's estimated size is comparable to the region around Jupiter that is filled with the orbits of the four largest satellites.

Because the Fomalhaut system is only 200 million years old, the planet should be a bright infrared object. That's because it is still cooling through gravitational contraction. However, ground-based telescopic observations at infrared wavelengths have not yet detected the planet. This also sets an upper limit on its mass, because the bigger the planet, the hotter and brighter it would be.

Kalas and his team first used Hubble to photograph Fomalhaut in 2004, and made the unexpected discovery of its debris disk, which scatters Fomalhaut's starlight. At the time they noted a few bright sources in the image as planet candidates. A follow-up image in 2006 showed that one of the objects is moving through space with Fomalhaut but changed position relative to the ring since the 2004 exposure. The amount of displacement between the two exposures corresponds to an 872-year-long orbit as calculated from Kepler's laws of planetary motion.

Fomalhaut moves across the sky at 0.425 arcseconds per year, which is the apparent width of a penny seen from five miles away.

The planet mysteriously dimmed by half a stellar magnitude between the 2004 and 2006 observations. This might mean that it has a hot outer atmosphere heated by bubbling convection cells on the young

planet — sort of a Jupiter on steroids. Or, it might come from hot gas at the inner boundary of a ring around the planet.

The planet may have formed at its location in a primordial circumstellar disk by gravitationally sweeping up remaining gas. Or, it may have migrated outward through a game of gravitational billiards where it exchanged momentum with smaller planetary bodies. It is commonly believed that the planets Uranus and Neptune migrated out to their present orbits after forming closer to the sun and then gravitationally interacted with smaller bodies.

Fomalhaut is much hotter than our sun and is 16 times as bright. This means a planetary system could scale up in size with a proportionally larger Kuiper Belt feature and scaled-up planet orbits. For example, the "frost line" in our solar system — the distance where ices and other volatile elements will not evaporate — is roughly at 500 million miles from the sun. But for hotter Fomalhaut, the frost line is at roughly 1.9 billion miles from the star.

Fomalhaut is burning hydrogen at such a furious rate through nuclear fusion that it will burn out in only 1 billion years, which is 1/10th the lifespan of our sun. This means there is little opportunity for advanced life to evolve on any habitable worlds the star might possess.

Future observations will attempt to see the planet in infrared light and will look for evidence of water vapor clouds in the atmosphere. This would yield clues to the evolution of a comparatively newborn 100-million-year-old planet. Astrometric measurements of the planet's orbit will provide enough precision to yield an accurate mass.

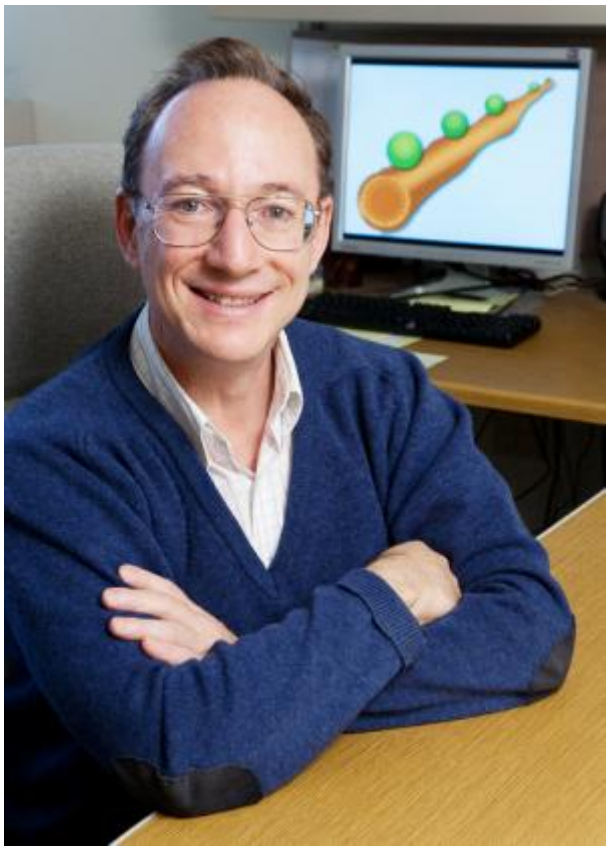
NASA's James Webb Space Telescope, scheduled to launch in 2013, will be able to make coronagraphic observations of Fomalhaut in the near- and mid-infrared. JWST will be able to hunt for other planets in the system and probe the region interior to the dust ring for structures such as an inner asteroid belt.

The science team members are: P. Kalas, J. Graham, E. Chiang, and E. Kite (University of California, Berkeley), M. Clampin (NASA Goddard Space Flight Center, Greenbelt, Md.), M. Fitzgerald (Lawrence Livermore National Laboratory, Livermore, Calif.), and K. Stapelfeldt and J. Krist (NASA Jet Propulsion Laboratory, Pasadena, Calif.).

Adapted from materials provided by NASA/Hubble Space Telescope.

http://www.sciencedaily.com/releases/2008/11/081113151456.htm

Liquid Or Solid? Charged Nanoparticles In Lipid Membrane Decide



Steve Granick, a Founder Professor of Engineering at the U. of I., and colleagues have found that a group of organic compounds called lipids can coexist as liquid and solid in membranes. This patchiness in phospholipid membranes is fundamental to their use as biomolecules and biosensors. (Credit: Photo by L. Brian Stauffer)

ScienceDaily (Nov. 13, 2008) — Like water and ice cubes mixed in a glass, a group of organic compounds called lipids can coexist as liquid and solid in membranes. This patchiness in phospholipid membranes is fundamental to their use as biomolecules and biosensors.

Using charged nanoparticles, researchers at the University of Illinois have found a new way to stimulate patchiness in phospholipid membranes.

"We are seeing a previously unsuspected responsiveness in phospholipid membranes," said Steve Granick, a Founder Professor of Engineering at the U. of I. "What we thought was possible only with the specificity of certain proteins, we now see can happen with simple, charged nanoparticles."

Lipids are the building blocks of cell membranes. In earlier work, Granick and graduate student Liangfang Zhang found a way to stabilize sensitive lipid membranes by attaching charged nanoparticles to the membrane surface.

Now, Granick, Zhang, graduate research assistant Bo Wang and research scientist Sung Chul Bae show that a phospholipid membrane can coexist in two phases – solid and liquid – according to what binds to it. This inherent patchiness presents an additional mechanism for changing the stiffness of phospholipid membranes.

The researchers report their work in a paper to be published next week in the Online Early Edition of the Proceedings of the National Academy of Sciences.

Using fluorescence and calorimetry methods, the researchers studied interactions between charged nanoparticles and membranes formed from single-component lipids. Because the membrane was composed of one sole lipid type, the traditional explanation for spatial patchiness – an uneven distribution of different lipids – was eliminated.

While a variety of nanoparticles was used, the most common type was polystyrene spheres about 20 nanometers in diameter (a nanometer is 1 billionth of a meter). Where the nanoparticles attached to the membrane, the membrane responded by changing phase.

"The electric charge acted as a switch," Granick said. "Nanoparticles with a negative charge switched membranes from liquid to solid. Nanoparticles with a positive charge switched the membranes from solid to liquid."

Phase changes occurred in patches of membranes where phospholipid molecules swiveled after binding to charged nanoparticles. This binding-induced behavior, where the same lipid can coexist in two different phases, offers a new mechanism for modulating stiffness in membranes.

In future work, the researchers plan to study the effects of smaller, charged nanoparticles; the effects of charged nanoparticles on living cells; and novel ways to stabilize lipid membranes for targeted drug delivery.

"These experiments are helping us better understand both the structure of phospholipid membranes and the potential biological effects of exposure to nanoparticles found in our normal, everyday environment," Granick said.

Granick also is a professor of materials science and engineering, of chemistry, of chemical and biomolecular engineering, and of physics; and he is a researcher at the university's Frederick Seitz Materials Research Laboratory and at the Beckman Institute.

The U.S. Department of Energy funded the work.

Adapted from materials provided by University of Illinois at Urbana-Champaign.

http://www.sciencedaily.com/releases/2008/11/081110190649.htm

Those Were The Days: Counteracting Loneliness With Nostalgia

ScienceDaily (Nov. 13, 2008) — With the days getting shorter (and colder) and the Holidays quickly approaching, many of us start thinking back to days gone by. This sentimentality and desire for the past is known as nostalgia. All of us are struck with nostalgic feelings from time to time but a new study in Psychological Science indicates that nostalgia may serve a greater purpose than just taking us back to the good old days.

Psychologists Xinyue Zhou and Ding-Guo Gao from Sun Yat-Sen University, along with Constantine Sedikides and Tim Wildschut from the University of Southampton explored the connection between loneliness and nostalgia. They ran a series of experiments that had participants answer questions related to feelings of loneliness, social support and nostalgia. The study participants included children, college students and factory workers. In addition, the factory workers were also assessed on their resilience (their ability to recover from traumatic events and adverse life situations).

The results showed that individuals who felt the loneliest reported receiving the least amount of social support. What was interesting, however, was that these participants turned out to be the most nostalgic. In addition, when nostalgia was induced in a number of the study participants, they in turn perceived to have the greatest amount of social support. These findings suggest that nostalgia amplifies perceptions of social support, and in this way, counteracts feelings of loneliness. In addition, the findings revealed that the most resilient individuals are more likely to use nostalgia to overcome feelings of loneliness.

These results have very important implications to clinical psychology and indicate that nostalgia may be used in cognitive therapy, as a coping mechanism that individuals turn to when they are confronted with social exclusion. The authors suggest that “individuals could be trained to benefit from the restorative function of nostalgia when actual social support is lacking or is perceived as lacking”.

Journal reference:

1. Xinyue Zhou, Constantine Sedikides, Tim Wildschut, Ding-Guo Gao. **Counteracting Loneliness: On the Restorative Function of Nostalgia**. *Psychological Science*, Volume 19, Issue 10 , Pages1023 - 1029 [link]

Adapted from materials provided by Association for Psychological Science.

http://www.sciencedaily.com/releases/2008/11/081112124422.htm

Brain Implants May Help Stroke Patients Overcome Partial Paralysis

ScienceDaily (Nov. 13, 2008) — Scientists have shown for the first time that neuroprosthetic brain implants may be able to help stroke patients with partial paralysis.

Researchers found that implants known as brain-computer interfaces (BCI) may be able to detect activity on one side of the brain that is linked to hand and arm movements on the same side of the body. They hope to use these signals to guide motorized assistance mechanisms that restore mobility in partially paralyzed limbs.

Partial paralysis on one side of the body results from stroke damage to the opposite side of the brain. This fits with the conventional model of how the brain controls movement, which says signals in one half of the brain control the opposite half of the body. That model led scientists to assume that stroke damage would make it impossible for BCIs to pick up any useful movement control signals from the brain and restore function in the body's paralyzed half.

"In recent years, though, we've come to realize that there's actually some ipsilateral, or same-sided control signals involved in movement," says senior author Eric C. Leuthardt, M.D., assistant professor of neurological surgery, of neurobiology and of biomedical engineering at Washington University School of Medicine in St. Louis and a physician at Barnes-Jewish Hospital. "Now we've shown these signals can be detected and are separable from signals that control the opposite side of the body, which means we may be able to use a BCI to restore function."

BCIs bridge gaps from brain damage and other injuries by using implanted electrodes to link the brain to a computer. The implant relays brain signals to the computer, which interprets those signals to control prosthetic devices or other means of interacting with the environment. In an earlier demonstration of the technology's potential, the same team of scientists showed in 2005 that a patient with a BCI could use the implant to control a video game.

BCIs formerly consisted of small electrodes implanted inside brain tissue to record from individual brain cells. Leuthardt and his colleagues have been developing a different approach known as electrocorticography (ECoG), which uses a plastic sheet filled with electrodes. The sheet rests on the surface of the brain, recording from many neurons at once.

"The old approach was good for acquiring significant signal control, but it suffered from the problem of scar encapsulation," Leuthardt explains. "When the electrodes are in the brain for 3-6 months, scars will form around them that prohibit them from recording brain signals."

Scar tissue does not form around the ECoG grid because it is implanted on the surface of the brain.

Leuthardt's team has shown that the ECoG approach can reveal useful insights into what a patient wants to do by analyzing signals from groups of neurons, rather than single neurons. Examples include a desire to move a hand or to speak.

For the new study, researchers worked with six epilepsy patients. To identify brain areas where seizures originated for possible surgical removal, physicians had temporarily implanted grids of electrodes on the surfaces of patients' brains. This allowed the researchers to ask the patients to perform tasks with their hands and check if the electrode grids could pick up ipsilateral brain signals during the tasks.

"We were able to identify distinct anatomic locations in the brain where these ipsilateral hand control signals occur and to show that they typically are found in the lower-frequency regions of the spectrum of brain activity detected by the BCI," says Leuthardt. "Three of our patients could use these signals or opposite-sided hand control signals to move a computer cursor on a screen."

Although the ECoG implants are currently left in place only temporarily, researchers hope to one day implant them for long-term usage.

Funding from the James S. McDonnell Foundation provided support for this research.

Journal reference:

1. Wisneski KJ, Anderson N, Schalk G, Smyth M, Moran D, Leuthardt EC. **The unique cortical physiology associated with ipsilateral hand movements and neuroprosthetic implications**. *Stroke*, Oct. 16, 2008

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

http://www.sciencedaily.com/releases/2008/11/081112093350.htm

U.S. 'Super Bugs' Invading South America

Dr. Cesar A. Arias works in an infectious disease lab at The University of Texas Medical School at Houston. (Credit: Photo by Melissa McDonald)

ScienceDaily (Nov. 13, 2008) — Two clones of highly antibiotic-resistant organism strains, which previously had only been identified in the United States, are now causing serious sickness and death in several Colombian cities including the capital Bogotá, say researchers at The University of Texas Medical School at Houston. The study, done in collaboration with Universidad El Bosque in Bogotá, is presented in a research letter published in the Nov. 13 issue of the New England Journal of Medicine.

U.S. clones of methicillin-resistant Staphylococcus aureus (MRSA) and vancomycin-resistant Enterococcus faecalis (VREF) have emerged in communities across Colombia. The variation of the MRSA clone, referred to as the USA 300, has been previously reported to be the most important cause of severe skin and soft tissue infections in the United States. The VREF clone is genetically related to a strain that hit a Houston hospital in 1994.

In Colombia before 2005, there were no recorded cases of any community-associated MRSA infections, including USA 300 MRSA. In 2005, there were two: one in Bogotá and one in the city of Villavicencio. Now the number of MRSA infections is climbing across the country. The paper reports a total of 15 infections, some of which were documented in two additional cities between 2006 and 2007, said Cesar A. Arias, M.D., Ph.D., assistant professor of infectious diseases at the UT Medical School at Houston.

The first case of VREF was reported in Bogotá in 2001. Since then, 50 additional cases have been identified at seven hospitals.

"We are tracking and recording these cases to find the link between the U.S. and Colombia. The goal is to find out why and how these organisms got there. With this information, researchers hope to better understand the molecular epidemiology of these super bugs to understand how they spread and how to control them," Arias said. "The UT Medical School will continue to work with Latin American academic institutions to learn more about these antibiotic-resistant organisms."

All patients diagnosed with community-associated MRSA infections suffered severe skin and soft-tissue infections. Some patients also experienced death of tissue surrounding bones, bacteria in the bloodstream

and meningitis, and 20 percent of the patients died. The MRSA infections were treatable with common antistaphylococcal antibiotics, although 40 percent were resistant to tetracycline.

Arias added that the USA 300 clone of MRSA has not only been found in Colombia. In a recent presentation at the annual meeting of the Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC) and Infectious Disease Society of America in Washington, D.C., Arias shared the news that this clone has been recorded in multiple patients in Ecuador and Venezuela.

Other research personnel at the UT Medical School included: Shahreen Chowdhury, Sreedhar R. Nallapareddy, Ph.D. and Barbara E. Murray, M.D. The research was funded in part by the National Institute of Allergy and Infectious Diseases.

Adapted from materials provided by University of Texas Health Science Center at Houston.

http://www.sciencedaily.com/releases/2008/11/081112194922.htm

Decisions, Decisions: Feedback Influences Decision Making

ScienceDaily (Nov. 13, 2008) — Every day we are faced with a multitude of choices, but the majority of these fall into two categories: descriptive choice (based on what we are told) and experiential choice (based on our own personal experience).

An example of these choices would be deciding whether or not to wear a helmet while cycling. If we are told that wearing a helmet is for our safety, then choosing to wear one or not would be a descriptive choice. However, if instead we see that our friends never wear helmets and that they have never been hurt, then choosing to wear one or not would be an experience-based choice.

Numerous studies have shown that people will choose differently, depending on whether they are choosing based on experience or description. But, what is it that causes people to choose differently in the two situations?Indiana University psychologists Ryan Jessup, Anthony Bishara and Jerome Busemeyer were interested in testing if feedback in experiential choice is the cause of the different behavior between the two choice situations. In their study, participants had to select one monetary option from each of two situations. The first option in both situations resulted in them earning very little money, but they were guaranteed to receive it. The second option provided a very good chance (but not certain) to win a slightly larger amount of money in one situation whereas in the other situation they had a chance of earning a lot more money, but the odds of earning it were very low (participants were provided with the probability of success for each option before making their choice). Participants were randomly assigned to groups receiving either no feedback on their choices or receiving feedback (indicating their winnings in previous trials).

The results, reported in the October issue of Psychological Science, a journal of the Association for Psychological Science, suggest that feedback plays a key role in decision making. The psychologists discovered that participants responded differently, depending on whether or not they received feedback, even though they were presented with complete descriptive information. In other words, when people were given feedback about a situation, they began to ignore what they were explicitly told about the situation. The participants who did not receive feedback tended to overweight small probabilities. This resulted in them preferring the small guaranteed outcome when compared to the slightly larger but uncertain outcome while preferring the larger, but more uncertain outcome when compared to the same small guaranteed outcome. The individuals who received feedback showed the exact opposite pattern of preference. They underweighted small probabilities, preferring the slightly larger but uncertain outcome over the small guaranteed win, but chose the small, but certain win over the large but rare outcome.

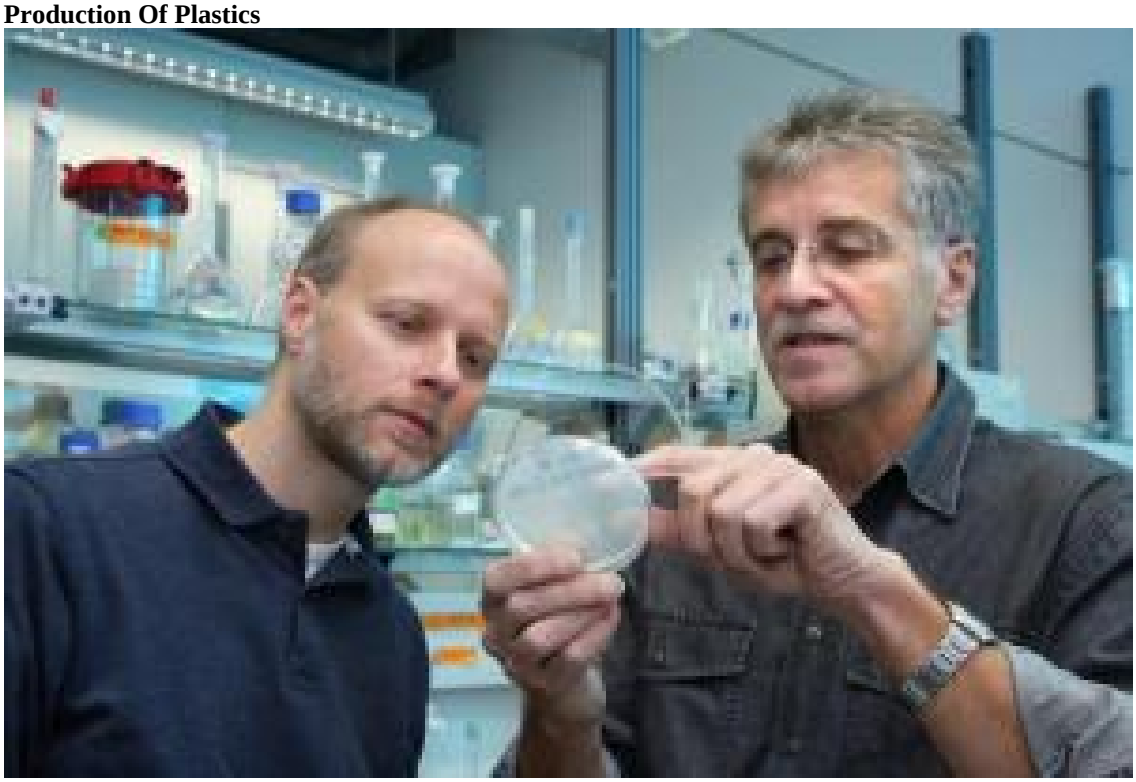
Contrasting with prevailing theories of individual choice in economics, the researchers note that the group receiving feedback began to treat the small probabilities in a more objective way, suggesting that feedback after repeated choice may drive people towards rational decision making.The authors conclude that this study “has implications for behavioral choice theories in economics and psychology, as well as for neurophysiological studies aimed at uncovering the neural substrates underlying choice behavior.”

Journal reference:

1. Ryan K. Jessup, Anthony J. Bishara, Jerome R. Busemeyer. **Feedback Produces Divergence From Prospect Theory in Descriptive Choice**. *Psychological Science*, Volume 19, Issue 10 , Pages1015 - 1022 DOI: 10.1111/j.1467-9280.2008.02193.x

Adapted from materials provided by Association for Psychological Science.

Environmentally Friendly Acrylic Glass Made Of Sugar: New Enzyme Could Revolutionize Production Of Plastics



Microbiologists Dr. Thore Rohwerder (left) from the University of Duisburg-Essen and his mentor Dr. Roland Müller (right) from the Helmholtz Centre for Environmental Research (UFZ) in the laboratory. (Credit: Klaus-D. Sonntag/fotoplusdesign)

ScienceDaily (Nov. 13, 2008) — In future, polymethyl methacrylate (PMMA for short) – better known as acrylic glass – could be made from natural raw materials such as sugars, alcohols or fatty acids. Compared with the previous chemical production process, a biotechnological process is far more environmentally friendly.

PMMA is manufactured by polymerising methyl methacrylate (MMA). In a bacterial strain, scientists at the University of Duisburg-Essen and the Helmholtz Centre for Environmental Research (UFZ) have found an enzyme which could be used for the biotechnological production of a precursor of MMA.

Dr Thore Rohwerder has been nominated as one of three candidates for the European Evonik research award for his discovery. The competition is overseen by Dr Arend Oetker, president of the Stifterverband für die Deutsche Wissenschaft (Association of Donors to German Science). The aim of the award is to encourage young researchers to risk taking the step from the laboratory into business. The topic of the 2008 Evonik research award is "White Biotechnology" (industrial biotechnology). The Science-to-Business Award worth EUR 100,000 was given to Dr. Paul Dalby from the University College London on November 12th in Berlin. Dalby's method for combining enzymes and customizing them for new tasks convinced the international jury.

The newly enzyme discovered by Dr. Thore Rohwerder und Dr. Roland H. Müller, called 2-hydroxyisobutyryl-CoA mutase, makes it possible to turn a linear C4 carbon structure into a branched one. Compounds of this type are precursors of MMA. Parent compounds may of course include intermediate products from the petrochemical industry. The revolutionary aspect, however, is that this enzyme, integrated into metabolically appropriate microorganisms, can also transform sugars and other

natural compounds into the products desired. Until now, the only way to produce this precursor – 2-hydroxyisobutyrate (2-HIBA) – was a purely chemical process based on petrochemical raw materials.

The chemicals industry worldwide is searching for suitable biological processes, so that in future, renewable raw materials can also be used as a basis for MMA synthesis. The mutase presented here provides the solution: an enzyme which shifts a functional group from one position to another within a molecule. While in a post-doc position at the UFZ's Department of Environmental Microbiology, Dr Thore Rohwerder and his mentor Dr Roland H. Müller discovered the enzyme in a newly isolated bacterial strain they found while searching for bacteria to break down the pollutant MTBE (methyl tertiary butyl ether).

The reason attributed by the awards judges to the industrial importance of the discovery was that altogether, in the medium to long term, up to ten percent of today's demand for MMA could feasibly be produced by biotechnological means. The world market is over 3 million tonnes / 4 billion euro. It will take about four years to establish the bacterial system in a functioning technological process (pilot plant). In about ten years, a technological process is then conceivable, with an annual turnover of 150 to 400 million euro.

PMMA is a synthetic plastic developed in 1928 and today produced in great quantities. PMMA is often known colloquially as acrylic glass, as it is mainly used as a shatterproof, lightweight alternative to glass – for example, in protective goggles or vehicle lights. PMMA has many applications, including prosthetics, paints and adhesives. It is also sold under the brand names "Plexiglas®" (Evonik) and "Altuglas" (Arkema).

In the GDR, names used for this plastic included "O-Glas" (for "organic glass") or "Piacryl" (named after the old producer in the GDR, Piesteritz nitrogen works near Wittenberg). The plastic is fragile, but very UV-resistant and thus weatherproof. Its high translucency and low weight mean that acrylic glass has to some extent replaced traditional glass. It was used for the roof of the Olympic stadium in Munich as far back as 1970. Experts predict that the demand for acrylic glass will grow even more in future – for example, for photovoltaic units.

Journal references:

1. Müller RH, Rohwerder T, Harms H. **Degradation of fuel oxygenates and their main intermediates by Aquincola tertiaricarbonis L108**. *Microbiology*, 154:1414-1421 [link]
2. Rohwerder T, Breuer U, Benndorf D, Lechner U, Müller RH. **The alkyl tert-butyl ether intermediate 2-hydroxyisobutyrate is degraded via a novel cobalamin-dependent mutase pathway**. *Appl. Environ. Microbiol.*, [link]

Adapted from materials provided by Helmholtz Centre For Environmental Research - UFZ.

http://www.sciencedaily.com/releases/2008/11/081113085155.htm

Large Waist Can Almost Double Your Risk Of Premature Death, Says Europe-wide Study

New research provides strong evidence that storing excess fat around the waist poses a significant health risk, even in people not considered to be overweight or obese. (Credit: iStockphoto/Rob Friedman)

ScienceDaily (Nov. 13, 2008) — Having a large waistline can almost double your risk of dying prematurely even if your body mass index is within the 'normal' range, according to a new study of over 350,000 people across Europe, published in the New England Journal of Medicine.

The study provides strong evidence that storing excess fat around the waist poses a significant health risk, even in people not considered to be overweight or obese. It suggests that doctors should measure a patient's waistline and their hips as well as their body mass index as part of standard health checks, according to the researchers, from Imperial College London, the German Institute of Human Nutrition, and other research institutions across Europe.

Comparing subjects with the same body mass index, the risk of premature death increased in a linear fashion as the waist circumference increased. The risk of premature death was around double for subjects with a larger waist (more than 120cm or 47.2in for men and more than 100cm or 39.4in for women) compared to subjects with a smaller waist (less than 80cm or 31.5in for men and less than 65cm or 25.6in for women). Body mass index is commonly used to assess if a person is of 'normal' weight.

Each 5cm increase in waist circumference increased the mortality risk by 17% in men and 13% in women.

The ratio of waist to hips was also revealed as an important indicator of health in the study. Lower waist-hip ratios indicate that the waist is comparatively small in relation to the hips. The ratio is calculated by dividing the waist measurement by the hip measurement.

Waist to hip ratio varied quite widely in the European populations in the study. In 98 percent of the study population, waist to hip ratio ranged between 0.78 and 1.10 in men and between 0.66 and 0.98 in women. Within these ranges, each 0.1 unit higher waist-hip-ratio was related to a 34% higher mortality risk in men and a 24% higher risk in women.

An increased risk of mortality may be particularly related to storing fat around the waistline because fatty tissue in this area secretes cytokines, hormones and metabolically active compounds that can contribute to the development of chronic diseases, particularly cardiovascular diseases and cancers, suggest the authors.

Although the main new finding of this study is that waist size increases the risk of premature death independently of body mass index (BMI), the study does support earlier findings showing that a higher body mass index is significantly related to mortality. The lowest risk of death was at a BMI of approximately 25.3 in men and 24.3 in women.

The new research forms part of the European Prospective Investigation into Cancer and Nutrition (EPIC), one of the largest long-term prospective studies in the world.

Professor Elio Riboli, the European coordinator of the EPIC study from the Department of Epidemiology and Public Health at Imperial College London, said: "Although smaller studies have suggested a link between mortality and waist size, we were surprised to see the waist size having such a powerful effect on people's health and premature death. Our study shows that accumulating excess fat around your middle can put your health at risk even if your weight is normal based on body mass index scores. There aren't many simple individual characteristics that can increase a person's risk of premature death to this extent, independently from smoking and drinking. "

Privatdozent Dr Tobias Pischon, the lead author of the paper from the German Institute of Human Nutrition in Potsdam-Rehbrücke, said: "The most important result of our study is the finding that not just being overweight, but also the distribution of body fat, affects the risk of premature death of each individual. Abdominal fat is not only a mere energy depot, but it also releases messenger substances that can contribute to the development of chronic diseases. This may be the reason for the link."The new research does not reveal why some people have a larger waist than others but the researchers believe that a sedentary lifestyle, poor diet and genetic predisposition are probably key factors.

Professor Riboli added: "The good news is that you don't need to take an expensive test and wait ages for the result to assess this aspect of your health - it costs virtually nothing to measure your waist and hip size. Doctors and nurses can easily identify people who need to take certain steps to improve their health by routinely monitoring these measurements. If you have a large waist, you probably need to increase the amount of exercise you do every day, avoid excessive alcohol consumption and improve your diet. This could make a huge difference in reducing your risk of an early death."

Professor Riboli leads a new Interventional Public Health Clinical Programme Group at the UK's first Academic Health Science Centre (AHSC). The AHSC is a unique partnership between Imperial College London and Imperial College Healthcare NHS Trust, which aims to ensure that the benefits of research reach patients more quickly than ever before. Professor Riboli's Interventional Public Health group will find new ways of improving people's health in order to prevent them developing conditions such as diabetes and obesity.For today's prospective EPIC study the researchers looked at 359,387 participants from 9 European countries. The average age of the participants when data were first collected was 51.5 years of age, and 65.4% of the participants were women. During the follow-up period, which averaged 9.7 years, 14,723 of the participants died. Participants with a high BMI, compared with those in the medium range, died more often from cardiovascular diseases or from cancer. Participants with a low BMI tended to die more frequently from respiratory diseases.

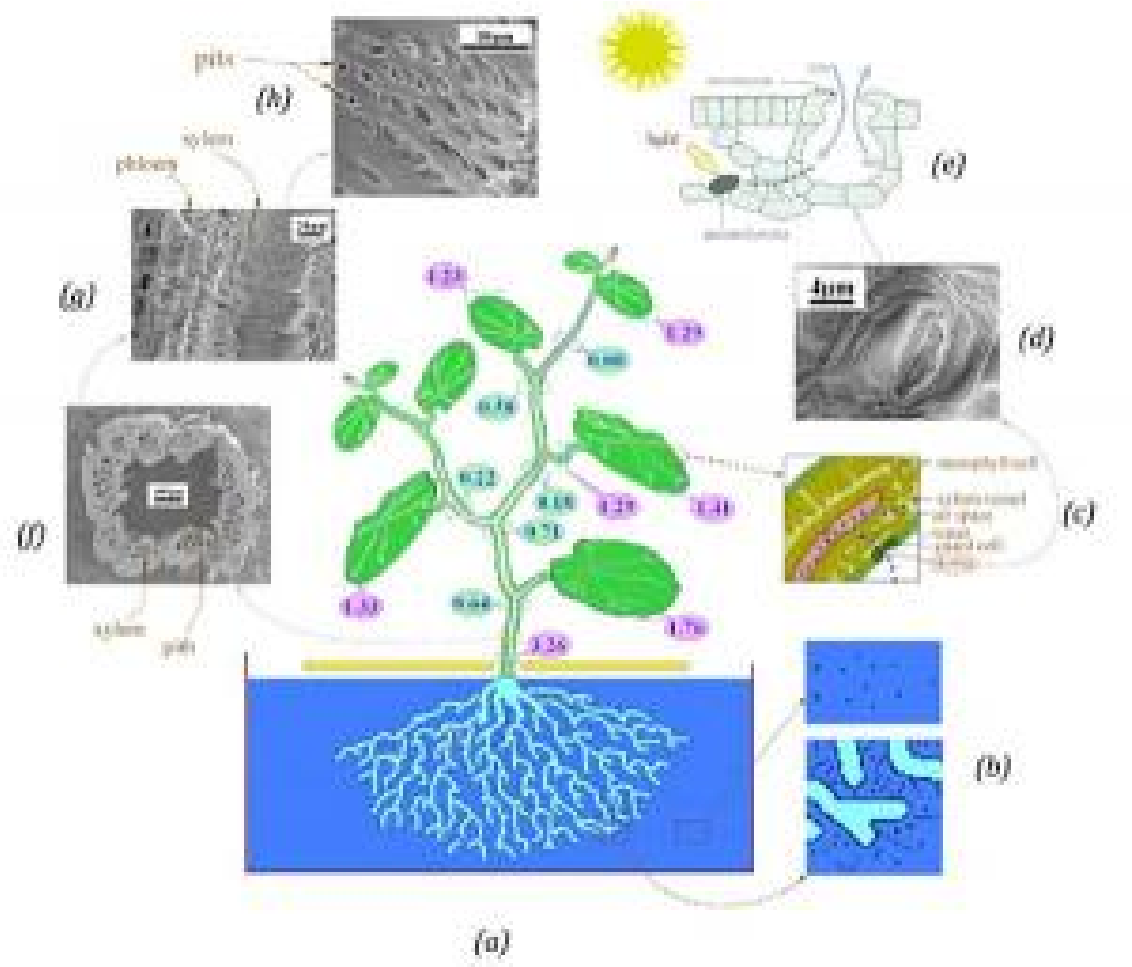
Journal reference:

1. T. Pischon, M.D., M.P.H., H. Boeing, Ph.D., M.S.P.H., et al. **General and Abdominal Adiposity and Risk of Death in Europe**. *New England Journal of Medicine*, November 13, 2008; 359:2105-20

Adapted from materials provided by Imperial College London.

http://www.sciencedaily.com/releases/2008/11/081112194915.htm

Plants Can Accumulate Nanoparticles In Tissues



Magnetic nanoparticles can be taken up, translocate and accumulate in pumpkin plants. The numbers represent magnetic signal strength in various plant tissues in the unit of memu (1 memu = 8.5 x 10 to the 11th particles). (Credit: Figure courtesy of Profs. Yan Jin and John Xiao, University of Delaware)

ScienceDaily (Nov. 13, 2008) — Researchers at the University of Delaware have provided what is believed to be the first experimental evidence that plants can take up nanoparticles and accumulate them in their tissues.

The laboratory study, which involved pumpkin plants, indicates a possible pathway for nanoparticles to enter the food chain. The research also reveals a new experimental approach for studying nanoparticles and their potential impacts.

Yan Jin, professor of soil physics in the University of Delaware College of Agriculture and Natural Resources, and John Xiao, professor of physics and astronomy in the College of Arts and Sciences, led the study, working with colleagues Jung-youn Lee and Harsh Bais at the Delaware Biotechnology Institute, a premier research center at the University of Delaware.

The results were published in a cover article in the Journal of Environmental Monitoring and also were highlighted in Chemical Biology, a journal of the Royal Society of Chemistry.

Nanoparticles are bits of chemicals a thousand times smaller than a human cell. While nanoparticles occur naturally in the environment, they increasingly are being manufactured for use in electronics to cosmetics, fuel cells to medical procedures.

Yet the human and environmental health risks associated with these tiny engineered particles are not well known. Because chemical compounds can take on different properties at such a reduced size--lead in a pencil reportedly becomes stronger than steel, for example--there is concern that these invisible particles could easily be breathed in by humans and animals, with damaging or toxic effects.

“Plants serve as a foundation of the food chain,” noted Jin, who was recently named a fellow of the Soil Society of America. “We demonstrated this possible route for nanoparticles in the environment--whether it poses potential harm to human health depends on many factors. This is a preliminary study, which we hope will spur additional interdisciplinary research by the scientific community.”

The researchers chose pumpkins for the study, Jin said, because they take in a lot of water and are easy to grow.

The plants were grown hydroponically in an aqueous medium to which nanoparticles of iron oxide, or magnetite, a magnetic form of iron ore, were added.

After 20 days of growth, the plants were cut into pieces and dried in a vacuum dessicator. A magnetometer was then used to detect if any of the particles had been absorbed by the plant.

“Our study was a worst-case scenario in order to test the feasibility of our approach in being able to detect the particle,” Xiao noted. “It really provides a new technique for doing this kind of research.”

Xiao, who directs the Center for Spintronics and Biodetection at the University of Delaware, noted that the magnetometer used in his physics research is similar to magnetic resonance imaging (MRI), which uses a powerful magnetic field and radio-frequency pulses to produce images of internal structures in the human body.

The magnetometer subjected the dried pumpkin plants to a low-frequency monotone to vibrate them. The vibration revealed each tiny particle of magnetite's unique magnetic signal and, thus, exact location inside the plant.

The researchers noted that in their initial screening tests, no magnetic signals were detected in lima bean plants compared to the strong signals in pumpkin plants, which suggests that different plants have varied responses to nanosized particles.

Additionally, while the pumpkins were studied primarily in aqueous media, the researchers also tested the plants in sand to which nanoparticles were added, where there was little uptake, and in soil, where there was no uptake of nanoparticles at all, according to Jin.

Jin noted how important interdisciplinary collaboration has been to the research and said she hopes to see plant scientists and molecular biologists involved in future studies to see how nanoparticles actually get into plants.

“Some believe it is a passive process; others are convinced it is an active one,” Jin said. “There could be whole other lines of research,” she noted.

“It's like a saying we have in Chinese,” Jin added. “You throw out a brick and hope to attract a jade.”

The saying, which is a Chinese way of showing humility, demonstrates the speaker's hope that others will improve on an idea.

“We want to stress that our study is very preliminary, and we hope it will stimulate more research in this area,” she said.

The project was funded by the Delaware Experimental Program to Stimulate Competitive Research (EPSCoR), which is supported by the National Science Foundation and the state of Delaware.

Jin and Xiao also recently won a STAR grant from the Environmental Protection Agency to examine the fate and transport of engineered nanoparticles in porous media, including soil and groundwater.

Adapted from materials provided by University of Delaware.

http://www.sciencedaily.com/releases/2008/11/081112093348.htm

Octopus Family Tree Traced Using New Molecular Evidence

Megaleledon setebos, the closest living relative of the octopuses' common ancestor. (Credit: Census of Marine Life)

ScienceDaily (Nov. 13, 2008) — Octopuses started migrating to new ocean basins more than 30 million years ago as Antarctica cooled and large ice-sheets grew.

These huge climatic events created a 'thermohaline expressway' - a northbound flow of deep cold water, providing new habitat for the animals previously confined to the sea floor around Antarctica, according to new research led by Dr Louise Allcock at Queen's School of Biological Sciences and colleagues from Cambridge University and British Antarctic Survey.

Isolated in new habitat conditions, many different species evolved. Some octopuses lost their defensive ink sacs because there was no need for the defence mechanisms in the pitch black waters more than two kilometres below the surface.

Dr Allcock, who was assisted on the study by Dr Jan Strugnell and Dr Paulo Prodöhl from Queen's, said: "It is clear from our research that climate change can have profound effects on biodiversity, with impacts even extending into habitats such as the deep oceans which you might expect would be partially protected from it. "If octopuses radiated in this way, it's likely that other fauna did so also, so we have helped explain where some of the deep-sea biodiversity comes from."

This revelation into the global distribution and diversity of deep-sea fauna, to be reported this week in the respected scientific journal Cladistics, was made possible by intensive sampling during International Polar Year expeditions.

The findings form part of the first Census of Marine Life (CoML), set to be completed in late 2010. It aims to assess and explain the diversity, distribution and abundance of marine life in the oceans, past, present and future.

The project, which began in 2000, involves more than 2,000 scientists from 82 nations.

The findings of a study funded by the National Environment Research Council and will be reported at a conference in Spain. The World Conference on Marine Biodiversity is taking place in Valencia between 11 and 15 November.

Adapted from materials provided by Queen's University Belfast, via EurekAlert!, a service of AAAS.

http://www.sciencedaily.com/releases/2008/11/081112113610.htm

Treating Heart Failure With A Gas

ScienceDaily (Nov. 13, 2008) — At low concentrations, the toxic gas hydrogen sulfide protects the hearts of mice from heart failure, scientists at Emory University School of Medicine have found.

Their findings, presented Nov. 11 at the American Heart Association (AHA) Scientific Sessions conference in New Orleans, suggest that doctors could use hydrogen sulfide to treat humans with heart failure.

Best known for its rotten-egg smell, hydrogen sulfide can pose a deadly threat to miners or sewer workers. However, scientists have recently found that enzymes within the body produce the gas in small, physiological amounts, with multiple beneficial effects such as regulating blood pressure and attenuating inflammation.

David Lefer, PhD, professor of surgery at Emory University School of Medicine, and his team created a model of heart failure in mice by blocking their left coronary arteries either temporarily for an hour or permanently, causing part of their heart muscles to die. Hydrogen sulfide was administered intravenously once a day for a week.

John Calvert, PhD, assistant professor of surgery working with Lefer, presented the findings at the AHA Meeting. "Our results show that hydrogen sulfide can blunt the impact of heart failure on heart function and mortality in a mouse model of heart failure," Calvert says.

Four weeks after artery blockage, mice treated with hydrogen sulfide had an ejection fraction, a measure of heart function, about a third larger than controls (36 compared to 27 percent). He and his colleagues also found similar effects in mice engineered to make more of an enzyme that generates hydrogen sulfide.

Heart failure, a leading cause of hospitalization for the elderly, describes a situation when the heart muscle cannot pump enough blood to meet the body's needs. Previous injury to the heart muscle from a heart attack, obesity, diabetes or high blood pressure are all contributing factors.

In a separate presentation, Calvert (Monday, Nov. 10, 10 a.m. ET) presented experimental data on how hydrogen sulfide works in the heart. The gas appears to stimulate heart muscle cells to produce their own antioxidants and molecules that stave off programmed cell death, a response to the loss of blood flow.

Both Calvert and Lefer are based at Carlyle Fraser Heart Center at Emory Crawford Long Hospital in Atlanta. Some of the research was performed at Albert Einstein College of Medicine in New York, with Susheel Gundewar, Saurabh Jha and John Elrod.

The research was funded by the National Institutes of Health, the American Diabetes Association and by a research grant from the biotechnology firm Ikaria Holdings. Lefer is a paid consultant for Ikaria, which is developing technology for hydrogen sulfide delivery.

Adapted from materials provided by Emory University.

http://www.sciencedaily.com/releases/2008/11/081111112059.htm

New Laser Method Reproduces Art Masterworks To Protein Patterns

enlarge

The research team reproduced the masterwork Girl with a Pearl Earring in the miniature dimension of 200 microns wide or about the thickness of two hairs. (Credit: Santiago Costantino, Université de Montréal)

ScienceDaily (Nov. 13, 2008) — Canadian researchers have created a new protein patterning technique that's enabled them to reproduce complex cellular environments and a miniature version of a masterpiece painting.

According to a new study published in the journal Lab on a Chip, scientists from Université de Montréal, the Maisonneuve-Rosemont Hospital Research Centre, McGill University and the Montreal Neurological Institute have developed a laser technology that can mimic the protein patterns that surround cells in vivo and that could lead to great advances in neuroscience.

To illustrate the precision of their protein patterning technique, the research team reproduced a masterwork of Dutch painter Johannes Vermeer, specifically Girl with a Pearl Earring, in the miniature dimension of 200 microns wide or about the thickness of two hairs. The researchers also used their novel technology to replicate the brain's complex cellular environment. It's a major discovery, since the new laser technology can encourage and guide the growth of finicky nerve cells.

"We have created a system that can fabricate complex methods to grow cells," says Santiago Costantino, the study's lead author and a scientist at the Université de Montréal and Maisonneuve-Rosemont Hospital Research Centre.

"We see this technique as being very relevant to neuroscience and immunology research. With this system, we laid down a chemical gradient to guide the growth of nerve fiber, which is very useful in studying nerve damage and repair."

Flexible and precise

Using laser-assisted protein adsorption by photobleaching (LAPAP), the scientific team bound fluorescently-tagged molecules to a glass slides and created patterns of proteins similar to those of the human body. They then demonstrated how flexible and precise this technique could be by reproducing a fluorescent micro version of Girl With a Pearl Earring.

"The flexibility, precision and ease of this technique will hopefully lead to increased access in protein patterning, which could lead to major advances in science," says Dr. Costantino, who is also a member of the BioFemtoVision Canadian Research Group, which includes researchers from the Université de Montréal and the Institut National de la Recherche Scientifique who are working on developing new laser technologies for vision science.

"Our next goal is to extend laser-assisted protein adsorption by photobleaching to fabricate more complex protein combinations and distributions," adds Dr. Costantino. "We want to improve our imitation of the chemical environment found in the early stages of developing organisms."

This study was funded through grants from the Natural Science and Engineering Council of Canada, the Fonds québécois de la recherche sur la nature et les technologies, Canadian Institutes of Health Research and the Fonds de la recherche en santé du Québec.

Journal reference:

1. Santiago Costantino, Jonathan M. Bélisle, James P. Correia, Paul W. Wiseman and Timothy E. Kennedy. **Patterning protein concentration using laser-assisted adsorption by photobleaching, LAPAP**. *Lab on a Chip*, (in press)

Adapted from materials provided by University of Montreal, via EurekAlert!, a service of AAAS.

http://www.sciencedaily.com/releases/2008/11/081111130846.htm

Rare Hebrew Seal From First Temple Period Discovered In Archaeological Excavations In Jerusalem's Western Wall Plaza

A rare and impressive Hebrew seal was discovered that dates to the latter part of the First Temple period. (Credit: Copyright Israel Antiquities Authority)

ScienceDaily (Nov. 13, 2008) — In archaeological excavations the Israel Antiquities Authority is carrying out at the behest of the Western Wall Heritage Foundation, in the northwestern part of the Western Wall plaza in Jerusalem, a rare and impressive Hebrew seal was discovered that dates to the latter part of the First Temple period. The seal was found in a building that is currently being uncovered, which dates to the seventh century BCE – to the time when the kings Manasseh and Josiah reigned.

The seal will be shown today (Thursday, October 30, 2008) during a study day dealing with "Innovations in the Archaeology of Jerusalem and its Surroundings", organized by the Jerusalem Region of the Israel Antiquities Authority and the Institute of Archaeology of the Hebrew University of Jerusalem.

According to the excavation director, archaeologist Shlomit Wexler-Bdolah of the IAA, "The seal, which apparently belonged to a private individual, is made of black stone, is elliptical in shape and measures 1.2 x 1.4 cm. It is adorned with an engraved decoration of an archer shooting a bow and arrow. The name of the archer is engraved in ancient Hebrew script next to him and reads LHGB (meaning: for Hagab). The name Hagab is mentioned in the Bible in Ezra 2:46, as well as in the Lachish Letters, which also date to the time of the First Temple".

The seal was sent for expert evaluation to Professor Benjamin Sass of the Tel Aviv University and Dr. Tali Ornan of the Hebrew University of Jerusalem. According to them the image of the archer was influenced by Assyrian wall reliefs in which archers are portrayed shooting bows and arrows – such as those that are known from the Lachish relief. The image of the archer appears in profile: he is standing in a firing position with his right foot in front of his left. His face is portrayed schematically but his body, his dress and especially the muscles of his arms and legs stand out prominently. He is barefoot.

His attire includes a headband and a skirt that is wrapped around his hips. A quiver hangs from his back and its straps are drawn tightly across his exposed chest. He is holding a bow and arrow in his hands. His right hand is extended forward holding the bow while his left is pulled back grasping the arrow. The seal is quite unique since this is the first time that a private seal has been discovered that bears a Hebrew name and is decorated in the Assyrian style. The seal attests to the strong Assyrian influence that existed in Jerusalem in the seventh century BCE. It is usually assumed that the owner of private seals were individuals who held government positions. We can suggest that the owner of the seal – Hagab, who chose to portray himself as a Hebrew archer depicted in the Assyrian style – served in a senior military role in Judah.

In the building where Hagab's seal was discovered, archaeologist Wexler-Bdolah has previously found a number of Hebrew seals of individuals that held public positions, as well as ten handles of storage jars for oil and wine that are stamped with royal impressions. According to her, "This building was erected at the foot of the Upper City, at a distance of about one hundred meters from the Western Wall and it looks out over the Temple Mount. The walls of the structure were preserved to an amazing height of approximately five meters. The high quality of its construction and the artifacts that were discovered inside it indicate that the building and especially its inhabitants had a very important status in Jerusalem at the end of the First Temple period."

Adapted from materials provided by Israel Antiquities Authority.

http://www.sciencedaily.com/releases/2008/11/081110174056.htm

Chronic Pain Might Contribute To Suicidal Thoughts

ScienceDaily (Nov. 13, 2008) — New research suggests that patients with chronic pain are more prone than others are to consider suicide. The increased risk remained even when study authors took the possible influence of mental illness into account.

"This is further evidence that we need to be aware of the heightened risk for suicide in those with chronic pain," said Mark Ilgen, lead study author. "More work is needed to figure out who's going to be at the greatest risk and how can we intervene and decrease this risk."

Ilgen and colleagues conducted the study to gain perspective on the link between pain and suicide in the public. Most prior research on this topic had looked only at patients already receiving treatment for their pain, said Ilgen, a psychologist at the Ann Arbor VA Hospital and assistant professor at the University of Michigan.

The researchers examined information collected during a 2001 to 2003 epidemiological survey of 5,692 English-speaking adults in the United States who answered questions about chronic pain and suicidal thoughts in the last 12 months.

The study findings appear in the November/December issue of the journal General Hospital Psychiatry.

After adjusting the figures to account for the effect of mental illness and chronic physical conditions, the researchers found that those who suffered from head pain were almost twice as likely as others to report having suicidal thoughts. They were also more than two times as likely to report suicide attempts.

Those with other types of pain not related to arthritis were four times as liable to have tried to commit suicide.

The researchers also found that almost 14 percent of those with three or more pain conditions reported suicidal thoughts and almost 6 percent of these individuals reported a suicide attempt.

"Pain is one of those factors that may make someone feel more hopeless and less optimistic about the future and increases the chances that they will think about suicide," Ilgen said.

Still, "the vast majority of people with any of these forms of pain are not suicidal," he said.Thomas Joiner, a psychology professor at Florida State University who has written a book on suicide motivations, said people accustomed to pain might think they could tolerate suicide.

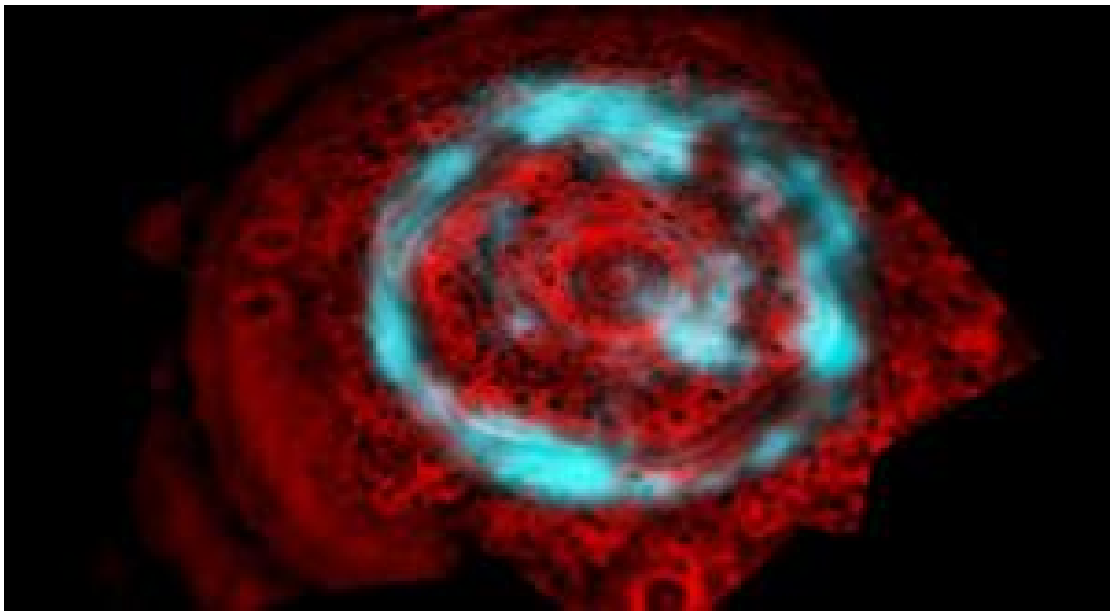
"The natural and deep fear of pain, injury and death stops people from hurting themselves, and this includes people who have high desire for suicide," Joiner said. "It might not be as hard for someone who has already had to contend with a lot of physical pain.""This particular view has not gotten enough attention, probably because, in the public mind, a kind of fearlessness does not seem to fit with suicide. But here, the public mind is mistaken," Joiner said.

Ilgen MA, et al. Pain and suicidal thoughts, plans and attempts in the United States. General Hosp Psychiatry, 30(6)), 2008.

Adapted from materials provided by Center for the Advancement of Health.

http://www.sciencedaily.com/releases/2008/11/081111211309.htm

Cassini Finds Mysterious New Aurora On Saturn



This image of the northern polar region of Saturn shows both the aurora and underlying atmosphere, seen at two different wavelengths of infrared light as captured by NASA's Cassini spacecraft. (Credit: NASA/JPL/University of Arizona)

ScienceDaily (Nov. 13, 2008) — Saturn has its own unique brand of aurora that lights up the polar cap, unlike any other planetary aurora known in our solar system. This odd aurora revealed itself to one of the infrared instruments on NASA's Cassini spacecraft.

"We've never seen an aurora like this elsewhere," said Tom Stallard, a scientist working with Cassini data at the University of Leicester, England. Stallard is lead author of a paper that appears in the Nov. 13 issue of the journal Nature. "It's not just a ring of auroras like those we've seen at Jupiter or Earth. This aurora covers an enormous area across the pole. Our current ideas on what forms Saturn's aurora predict that this region should be empty, so finding such a bright aurora here is a fantastic surprise."

Auroras are caused by charged particles streaming along the magnetic field lines of a planet into its atmosphere. Particles from the sun cause Earth's auroras. Many, but not all, of the auroras at Jupiter and Saturn are caused by particles trapped within the magnetic environments of those planets.

Jupiter's main auroral ring, caused by interactions internal to Jupiter's magnetic environment, is constant in size. Saturn's main aurora, which is caused by the solar wind, changes size dramatically as the wind varies. The newly observed aurora at Saturn, however, doesn't fit into either category.

"Saturn's unique auroral features are telling us there is something special and unforeseen about this planet's magnetosphere and the way it interacts with the solar wind and the planet's atmosphere," said Nick Achilleos, Cassini scientist on the Cassini magnetometer team at the University College London. "Trying to explain its origin will no doubt lead us to physics which uniquely operates in the environment of Saturn."

The new infrared aurora appears in a region hidden from NASA's Hubble Space Telescope, which has provided views of Saturn's ultraviolet aurora. Cassini observed it when the spacecraft flew near Saturn's polar region. In infrared light, the aurora sometimes fills the region from around 82 degrees north all the

way over the pole. This new aurora is also constantly changing, even disappearing within a 45 minute-period.

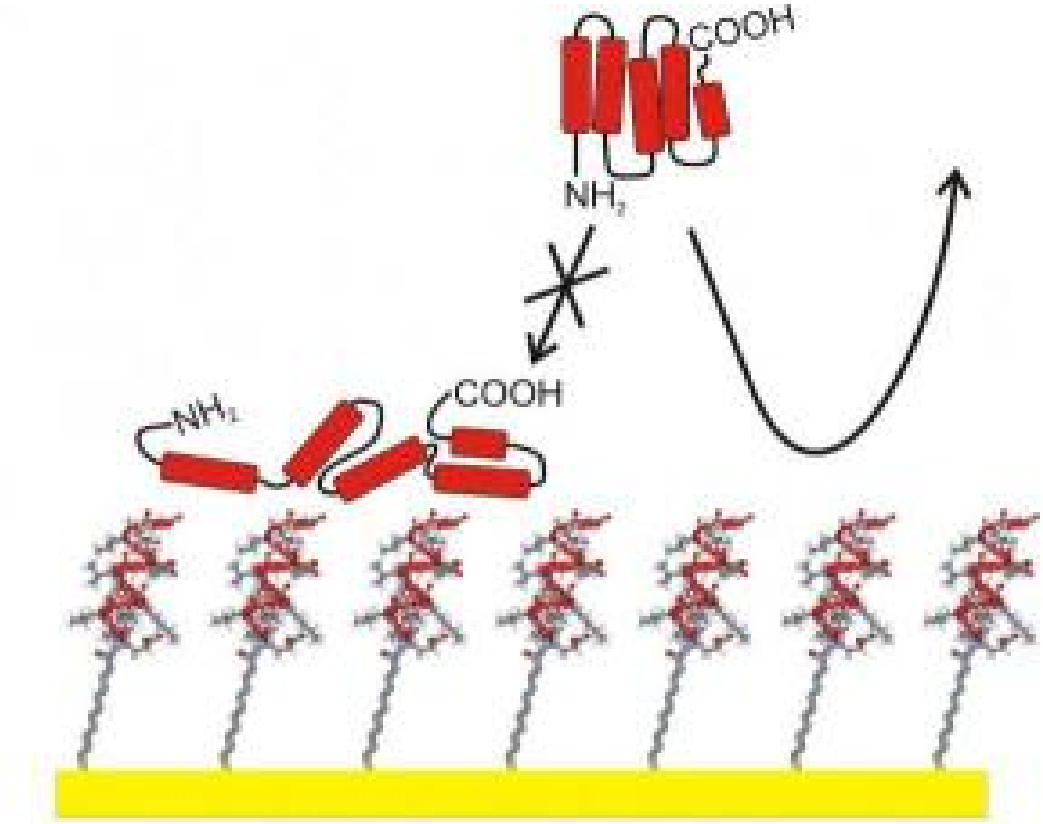
The Cassini-Huygens mission is a cooperative project of NASA, the European Space Agency and the Italian Space Agency. The Jet Propulsion Laboratory, a division of the California Institute of Technology in Pasadena, manages the mission for NASA's Science Mission Directorate, Washington, D.C. The Cassini orbiter was designed, developed and assembled at JPL. The visual and infrared mapping spectrometer team is based at the University of Arizona, Tucson

The new views are available online at: http://www.nasa.gov/cassini and http://saturn.jpl.nasa.gov.

Adapted from materials provided by NASA/Jet Propulsion Laboratory.

http://www.sciencedaily.com/releases/2008/11/081112142129.htm

Contact Lenses That Germs Can't Adhere To? Scientists Breed Designer Molecular Furs On Surfaces



The scientists breed "made-to-measure" molecular "furs" on surfaces, with the individual "hairs" consisting of peptides, short proteins. These peptides control the biocompatibility, i.e. which proteins adsorb. By using a specific peptide, the scientists were even able to create a surface which is totally resistant to proteins, a feature which is highly desirable for particular purposes (e.g. for contact lenses). (Credit: Image courtesy of Ruhr-Universitaet-Bochum)

ScienceDaily (Nov. 13, 2008) — Proteins play a decisive role in both the tolerability of contact lenses and the adherence of mussels to the hulls of ships. They develop a biofilm during their initial contact with the foreign material. This highly complex process is extremely difficult to study. Scientists in Bochum, working in collaboration with colleagues in Frankfurt and Marburg, have developed a new method of investigation that simplifies the decoding of the mechanisms involved.

The scientists breed “made-to-measure” molecular “furs” on surfaces, with the individual “hairs” consisting of peptides, short proteins. These peptides control the biocompatibility, i.e. which proteins adsorb. By using a specific peptide, the scientists were even able to create a surface which is totally resistant to proteins, a feature which is highly desirable for particular purposes (e.g. for contact lenses).

Residual proteins are responsible for the rejection reaction of implants

During the first contact of a body fluid with foreign objects (e.g. implants), proteins are immediately adsorbed by the surface of this material. During this process, they are however damaged, lose their function and develop a biofilm. The exact nature of this biofilm, which is dependent upon the surface of the material and pretreatment, then determines whether the body rejects the implant or whether it grows inward as desired. Precise comprehension of these processes is aggravated because the adsorbed protein layers are extremely complex and thus elude meticulous research.

Peptide coating grows on a layer of gold

Researchers in Physical Chemistry (Prof. Christof Wöll) and Inorganic Chemistry (Prof. Nils Metzler-Nolte) of the Ruhr-University have developed a new class of molecules with which biofilms with predefined properties can be fabricated in a straightforward fashion. The first step consists of the application of a molecular "anchor" to short protein chains (peptides) comprised of few amino acids. If these molecular hybrids come into contact with gold, they are anchored by rigid chemical bonds to the metal, subsequently developing a coating as thick and long as the molecule.The surface of the gold layer is extremely even, thus it serves as "platter" on which diverse analytical methods can be used for precise investigation of peptide coatings. This layer is especially usefully for analysis of the adsorption of proteins. SPR (surface plasmon resonance) is a common method and enables rapid determination of the type of proteins adsorbed by peptide coatings, as well as the speed of adsorption. The data gained enables prognoses of possible rejection by the human immune system.

No protein adsorbs

In order to demonstrate the extreme flexibility of this method the scientists in Bochum made use of a peptide sequence optimized for protein rejection. The result of the analysis of the biocoating created by anchoring these peptides on the Au-surface was surprising. The protein rejection rate of the first sequence tested was almost as high as the best substance used for this purpose to date. Prof. Wöll was somewhat amazed and stated that the research team had selected the peptide amino sequence merely based on the fact that hydrophilic peptides are more likely to reject proteins, as is also the case with twisted peptides.The resultant surface completely resisted the adsorption of proteins. This property is, for example, desirable for the hulls of ships to prevent the adherence of mussels, which in turn increase the resistance and thus fuel consumption. This feature is also desirable for contact lenses, because it is conceivable that daily cleaning would then possibly no longer be necessary. The major criterion during the development of implant material is the creation of surfaces that only adsorb specific proteins thus ensuring firm growth into the body. Prof. Wöll is certain that the new method developed by his research team will help to create "tailor made" materials for this purpose.

SAMs assemble themselves

One of the fundamental properties for the synthesis of these biocompatible coatings is the development of self-assembled monolayers (SAMs) from organothiols. At the chair of Physical Chemistry I, these ultrathin, but structurally well-defined, molecular layers have already been investigated in detail and subject to constant improvement for a number of fields of application for over a decade. This highly interdisciplinary field of research necessitates excellent collaboration between the members of the faculties of physical chemistry and synthetic chemistry, the latter being capable of synthesizing the required organothiols. The peptides used in this study were connected to the thiol linkers employing an only recently developed synthesis strategy - so-called "click" chemistry - which has been improved by Prof. Metzler-Nolte. Totally diverse molecules, in this case peptides and the thiol anchor, can simply be "clicked" together using this method.

Journal reference:

1. Chelmowski, Rolf; Koester, David; Prekelt, Andreas; Terfort, Andreas; Winkler, Tobis; Kerstan, Andreas; Grunwald, Christian, Metzler-Nolte, Nils; Wöll, Christof. **Peptide-based SAMs that resist the adsorption of proteins**. *Journal of the American Chemical Society*, S. 14952 Nr. 130, 2008

Adapted from materials provided by Ruhr-Universitaet-Bochum, via AlphaGalileo.

http://www.sciencedaily.com/releases/2008/11/081112074908.htm

Heating Heart With Catheter Works Better Than Drugs For Heart Rhythm Disorder, Study Shows

ScienceDaily (Nov. 13, 2008) — Treating a common heart rhythm disorder by burning heart tissue with a catheter works dramatically better than drug treatments, a major international study has found.

One year after undergoing a treatment called catheter ablation, 75 percent of patients with an irregular heartbeat called atrial fibrillation were free of symptoms. By comparison, only 21 percent of those treated with drugs were symptom-free. Results were so convincing the trial was halted early.

The ablation group also scored significantly higher on a quality-of-life scale.

The study included 159 patients at 19 centers, including 15 centers in the United States. Results were presented at the American Heart Association 2008 Scientific Sessions in New Orleans by lead researcher Dr. David Wilber, director of the Cardiovascular Institute at Loyola University Stritch School of Medicine in Maywood, Il.*

Atrial fibrillation, often called A-Fib, is the most common form of irregular heartbeat. Electrical signals, which regulate the heartbeat, become erratic. Instead of beating regularly, the upper chambers of the heart quiver. Not all the blood gets pumped out, so clots can form. Atrial fibrillation can lead to strokes and heart failure.

A-Fib patient Robin Drabant, 34, of Hanover Park, Il., said the condition once "made me feel like I was 90 years old with a failing heart." She was on a maximum dose of an A-Fib medication, which caused fatigue. Despite the drug, she still had episodes almost every day, lasting from 10 seconds to an hour or longer. "I would lose my breath and could feel my heart racing and fluttering," she said.

Wilber performed a catheter ablation on Drabant last May, and she no longer has A-Fib episodes. "I had great results," she said.

A-Fib symptoms include heart palpitations, dizziness, fatigue, shortness of breath and fainting. "A lot of people are disabled," Wilber said. "They have no energy. They can't work. They have a very poor quality of life."

More than 2 million Americans have atrial fibrillation, and there are about 160,000 new cases each year. The number is increasing, due in part to the aging population and the obesity epidemic.

Drugs such as beta blockers and calcium channel blockers can slow the heart rate during an A-Fib episode. Other drugs such as flecainide and propafenone can help maintain a normal rhythm. When drugs don't work or produce unacceptable side effects, alternative treatments include a pacemaker, surgery and catheter ablation.

In the ablation procedure, an electrophysiologist destroys small areas of heart tissue that are responsible for the erratic electrical signals. A catheter (thin flexible tube) is guided through blood vessels to the heart. The tip of the catheter delivers radiofrequency energy that heats and destroys tissue. Possible adverse effects include irritation of the lining of the heart, fluid in the lungs or around the heart, bleeding, clots and stroke.

In the study, 103 patients with frequent episodes of atrial fibrillation were randomly assigned to undergo ablation and 56 similar patients were randomly assigned to receive drug therapy. All patients had experienced at least three episodes of atrial fibrillation during the previous six months and had failed at least one attempt to control the rhythm with drugs.

*The study was funded by Biosense Webster, which makes the ThermoCool catheter used in the trial. Wilber is a consultant to the company.

The study was the largest to date to compare ablation to drug therapy for atrial fibrillation. Earlier studies involved single centers and smaller sample sizes, Wilber said. An additional study called CABANA is designed to determine whether ablation patients live longer than patients receiving medication. Researchers will follow about 3,000 patients for three years.

Adapted from materials provided by Loyola University Health System.

http://www.sciencedaily.com/releases/2008/11/081111163000.htm

Drought Tolerant Plants? New Technique Enables Assessment Of Drought Performance

Drought tolerance in plants. Botanists are increasingly engaged in efforts to cultivate plants that have low water requirements. (Credit: iStockphoto/Alexander Hafemann)

ScienceDaily (Nov. 13, 2008) — Measurement of chlorophyll fluorescence is an effective way of determining how well plants can cope with low-water conditions. The technique allows a quantitative and precise determination of viability in intact, drought-stressed plants.

Due to the increasing demands of industrial, municipal and agricultural consumption on dwindling water supplies, botanists are increasingly engaged in efforts to cultivate plants that have low water requirements. Barry Pogson led a team of researchers from the Australian National University who investigated whether chlorophyll fluorescence could be used in the assessment of plant water status during such studies.

He said “We found that plants’ viability during increasing water deficit could be measured and quantified by measuring changes to the maximum efficiency of photosystem II (Fv/Fm), and that this was easily measurable by chlorophyll fluorometry.”

Other methods of assessing plants’ performance under water deficit have serious drawbacks. Methods that involve detaching parts of the plant are destructive and survival studies rely on qualitative observation of physical symptoms of water deficit stress such as turgor loss, chlorosis, and other qualities that can vary greatly between specimens and are also sensitive to experimental conditions.

Chlorophyll fluorescence is non-invasive and minimal technical expertise and a basic understanding of fluorometry. Pogson said “By correlating the decline in the Fv/Fm parameter to loss of viability, our procedure allows the monitoring of survival under water deficit conditions, namely defining a threshold of 33% of well-watered Fv/Fm values.”

This procedure may complement existing methods of evaluating drought performance while also increasing the number of tools available for assessment of other plant stresses.

Journal reference:

1. Nick S Woo, Murray R Badger and Barry J Pogson. **A rapid, non-invasive procedure for quantitative assessment of drought survival using chlorophyll fluorescence**. *Plant Methods*, 2008, 4:27 DOI: 10.1186/1746-4811-4-27

Adapted from materials provided by BioMed Central/Plant Methods, via AlphaGalileo.

http://www.sciencedaily.com/releases/2008/11/081112075037.htm

Only One In Eight Educational Television Programs For Children Is Of High Quality, Study Shows

ScienceDaily (Nov. 13, 2008) — Dale Kunkel, communication professor at The University of Arizona, was one of the lead researchers in a new study by Children Now, which shows that only 1 in 8 children's education TV programs meet high quality standards.

Commercial television broadcasters are required by law to air a minimum of three hours per week of children's educational programming. The goal of the Children's Television Act (CTA) is to increase the availability of high-quality educational programs, such as PBS's Sesame Street and Mr. Rogers' Neighborhood. However, the guidelines that determine what qualifies as an "educational" program do not address the quality of the educational content.

Kunkel, with fellow researchers Barbara J. Wilson (University of Illinois) and Kristin L. Drogos (University of Illinois), analyzed 120 episodes across 40 program titles. Each show was evaluated on a range of educational criteria that are associated with children's learning from television.

Their findings indicate that most programs designated as E/I offer only limited educational value for child viewers: Only one of every eight E/I shows (13%) is rated as highly educational. Nearly one of every four (23%) were classified in the lowest category of "minimally educational." Most E/I programs (63%) were judged to be "moderately educational."

Children's programming is part of the "payment" broadcasters are supposed to deliver in return for their use of the publicly-owned airwaves. Kunkel observed, "Commercial broadcasters are clearly falling short in meeting their obligation to the nation's children."

Kunkel has testified as an expert witness on children's media topics at numerous hearings before the U.S. Senate, the U.S. House of Representatives and the Federal Communications Commission.

The researchers also found that 28 percent of E/I episodes were high in aggressive content, which includes physical or social aggression, undermining the purpose of E/I programming.

Studies conducted in the 1990s found that between 20 and 33 percent of E/I programs were rated as "highly educational." Thus, the new data suggest that educational quality is at the lowest point yet measured for E/I shows aired on commercial channels.

PBS shows were rated more educational than E/I programs shown on commercial stations (9.1 vs. 7.9 on a 12-point scale.) PBS programs tended to emphasize cognitive-intellectual lessons (55 percent of programs); whereas, commercial channels relied largely on social-emotional lessons (67 percent of programs), such as sharing or getting along with others.

The study reveals that the majority of stations (59 percent) deliver only the minimum required amount of educational programming, with just 3 percent of stations nationally offering more than four hours per week. Furthermore, 75 percent of stations schedule E/I programming exclusively on weekends, despite the fact that children watch an average of three hours of television per day every day of the week.

Eight commercial and public broadcast series earned an exemplary rating for their educational content: Sesame Street (PBS), Beakman's World (Commercial), Between the Lions (PBS), 3-2-1 Penguins (Commercial), Cyberchase (PBS), The Suite Life of Zack and Cody (Commercial), Fetch! With Ruff Ruffman (PBS) and Teen Kids News (Commercial).

"With ample models for success on public and commercial television, the mystery is why so many children's programs are still so weak at conveying educational messages," said Kunkel. "The study

certainly suggests that the FCC should be monitoring compliance with the children's programming requirements much more closely in the future."

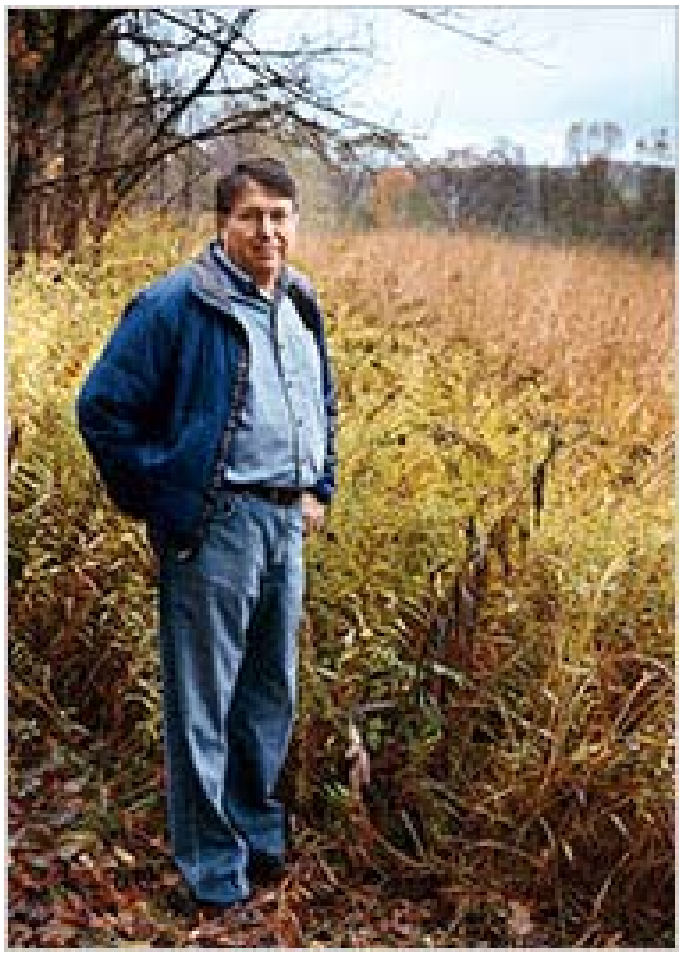
The report "Educationally/Insufficient? An Analysis of the Educational Quality & Availability of Children's E/I Programming" is being released November 12. Federal Communications Commissioner Jonathan Adelstein will offer remarks on the policy implications of the research and a panel of media industry, academic and advocacy experts will discuss the findings.

Adapted from materials provided by University of Arizona, via EurekAlert!, a service of AAAS.

http://www.sciencedaily.com/releases/2008/11/081112113557.htm

What Is Art For?

By DANIEL B. SMITH



Last April I asked the writer Lewis Hyde if he would take a trip with me to Walden Pond, in Concord, Mass. At 63, Hyde has boyishly tousled brown-gray hair, freckled, soft-looking cheeks and the slightly abstracted gaze of a man who spends a disproportionate amount of his time in library carrels. He has an ironic streak, but his default mode is a kind of easygoing acquiescence, and so one slate gray Saturday afternoon he picked me up in Cambridge, where he lives and works half the year, and drove us the 12 miles west to Walden.

Hyde knows the area well — among his ongoing projects is a detailed series of annotations of Henry David Thoreau's essays — and he led me down a dirt path from the parking lot to the site of the cabin where, more than 150 years ago, Thoreau wrote his celebrated paean to solitude and self-reliance. The cabin no longer exists. In its place there is a lightly excavated, cordoned-off square of soil and, to its side, a waist-high cairn erected in commemoration by generations of pilgrims.

Our own visit wasn't commemorative, but it was a pilgrimage of a sort. Hyde has been writing and publishing for more than three decades, and he has received numerous high-profile awards, including a MacArthur "genius grant" in 1991, but his name is still obscure to most readers. His body of work is slim; he has published two books, a volume of poems and a smattering of essays, translations and edited anthologies. His reputation, however, is rich. David Foster Wallace called him "one of our true superstars of nonfiction." Hyde's fans — among them Zadie Smith, Michael Chabon and Jonathan Lethem — routinely use words like "transformative" and "life-altering" to describe his books, which they've been

known to pass hand to hand like spiritual texts or samizdat manifestoes. The source of much of this reverence is Hyde's first book, "The Gift" (1983), which has never been out of print (it was recently rereleased by Vintage in a 25th-anniversary edition) and which tries to reconcile the value of doing creative work with the exigencies of a market economy.

Hyde began his career as a poet in the naturalistic vein of Gary Snyder or Mary Oliver, but over the years he has transformed himself into an accomplished scholar. "The Gift," the core argument of which depends on establishing an analogy between the making of art and how objects accrue value in traditional "gift economies," has been praised as the most subtle, influential study of reciprocity since the French anthropologist Marcel Mauss's 1924 essay of the same name. His second book, "Trickster Makes This World" (1998), a cross-cultural study of the mischievous, mythological trickster figure (examples from the 20th century include Duchamp, Picasso and Ginsberg), weaves together literary strands from West Africa, India and China and concludes with a new translation of the "Homeric Hymn to Hermes," for which Hyde spent months working one on one with a tutor in ancient Greek. Jonathan Lethem told me that when he first read "The Gift," he pictured its author as a kind of inapproachable seer, either long dead or soaring so high in the intellectual stratosphere as to be unreachable. "It'd be like reading a book by Nietzsche or Freud when they were alive and thinking, Oh, I gotta send this guy a note!"

Hyde's admirers often point out with awe (and his reviewers with frustration) that his books are all but impossible to summarize. Hyde doesn't object to this assessment. He wrote "The Gift" because he could find no place where his own motivations for writing poetry were well articulated, but articulating them required a poet's suggestiveness. "One thing I've always liked to read is the kind of literature you find in Jung and Freud, which combines personal anecdote, philosophy, mythology, dreams," he told me in his Cambridge office last May. "I like the way it jumps from one discursive realm to another." His books exhibit this lively heterogeneity to an at-times dizzying extent; in the course of 12 pages in "The Gift," Hyde hops from a discussion of a Pali Buddhist parable to Marx's "Capital" to the Ford Pinto and then moves quickly on, in the next 3 pages, to Christmas, country-western music and the psychological fates of Vietnamese refugees in Southern California.

In the late 1990s, Hyde began extending his lifelong project of examining "the public life of the imagination" into what had become newly topical territory: the "cultural commons." The advent of Internet file-sharing services like Napster and Gnutella sparked urgent debates over how to strike a balance between public and private claims to creative work. For more than a decade, the so-called Copy Left — a diverse group of lawyers, activists, artists and intellectuals — has argued that new digital technologies are responsible for an unprecedented wave of innovation and that excessive legal restrictions should not be placed on, say, music remixes, image mashups or "read-write" sites like Wikipedia, where users create their own content. The Copy Left, or the "free culture movement," as it is sometimes known, has articulated this position in part by drawing on the tradition of the medieval agricultural commons, the collective right of villagers, vassals and serfs —"commoners" — to make use of a plot of land. This analogy is also central to Hyde's book in progress, which looks closely at how the tradition of the commons was transformed once it was brought from Europe to America.

For the Copy Left, as for Hyde, the last 20 years have witnessed a corporate "land grab" of information — often in the guise of protecting the work of individual artists — that has put a stranglehold on creativity, in increasingly bizarre ways. Over dinner not long ago, he told me about the legal fate of Emily Dickinson's poems. Dickinson died in 1886, but it was not until 1955 that an "official" volume of her collected works was published, by Harvard University Press. The length of copyright terms has expanded substantially in the last century, and Harvard holds the exclusive right to Dickinson's poems until 2050 — more than 160 years after they were first written. When the poet Robert Pinsky asked Harvard for permission to include a Dickinson poem in an article that he was writing for Slate about poetic insults, it refused, even for a fee. "Their feeling was that once the poem was online, they'd lose control of it," Hyde told me.

In highlighting the absurd ways in which intellectual copyright has overreached, Hyde brings to mind such iconic Copy Left figures as Lawrence Lessig, a constitutional-law scholar at Stanford. Yet Hyde's new book, which he allowed me to read in draft form (it is unfinished and untitled), addresses what he considers a more fundamental issue. We may believe there should be a limit on the market in cultural property, he argues, but that doesn't mean that we have "a good public sense" of where to set that limit. Hyde's book is, at its core, an attempt to help formulate that sense.

If this sounds like a heady goal, it is. But it is also eminently practical, and eminently American. For Hyde, redressing the balance between private (corporate, individual) and common (public) interests depends not just on effective policy but also on recovering the idea of the cultural commons as a deeply American concept. To that end, he excavates a history of the American imagination in which the emphasis is not on the lone genius (Thoreau scribbling hermetically in the Massachusetts woods) but on the anonymous pamphleteer, the inventor eager to share his discoveries. In an essay that offers a preview of his book (posted, fittingly, on his Web site), Hyde posits that the history of the commons and of the creative self are, in fact, twin histories. "The citizen called into being by a republic of freehold farms," he writes, "is close cousin to the writer who built himself that cabin at Walden Pond. But along with such mainstream icons goes a shadow tradition, the one that made Jefferson skeptical of patents, the one that made even Thoreau argue late in life that every 'town should have … a primitive forest …, where a stick should never be cut for fuel, a common possession forever,' the one that led the framers of the Constitution to balance 'exclusive right' with 'limited times.' It is a tradition worth recovering."

For nearly 10 years, Hyde has devoted himself to that task.

Hyde's Cambridge office is located in the back of a converted carriage house near Porter Square, in the residential heart of the town. The space was offered to him rent-free by an architect who had seen him speak about "The Gift" and who liked the idea of sponsoring a "poet in residence" at her firm. Hyde's office is bright and inviting, with meticulous piles of papers covering the surfaces, books on American intellectual and legal history stacked on the shelves and, tacked to a far wall, photocopies of several abstract drawings by the artist Max Gimblett — part of a collaborative project to reproduce an ancient parable of Buddhist enlightenment.

The countercultural air these illustrations give off goes hand in hand with Hyde's reputation. He has often been criticized for a sort of hippie anti-corporatism. Not surprisingly, he has also been praised for the same thing: in recent years, "The Gift" has been adopted as something like the theory bible of the Burning Man festival. Yet the association hardly matches the style of his mind, which is sharp and skeptical and far from starry-eyed. Years ago, when Hyde's hippie friends fled the city to "live off the land," he would make sport of their idealism. "Smelting your own iron yet?" he would ask. "Distilling that kerosene?" He prefers to think of himself in an aesthetic light rather than a political one, as a writer who is upholding the tradition of the "poet-essayists who never stop being poets": Czeslaw Milosz, William Carlos Williams, D. H. Lawrence, Emerson, Thoreau.

Hyde's link with this tradition is temperamental as well as literary. In many ways, his life embodies the diversity of experiences and exchanges he is at such pains to value in his nonfiction. Although he is currently a fellow at Harvard's Berkman Center for Internet and Society and a tenured professor of creative writing at Kenyon College in Ohio, his self-identification remains that of a "scholar without institution" — a writer and thinker working outside the public and academic arenas.

As wide-ranging as Hyde's intellectual flights have been, they haven't carried him far from his origins. His Cambridge office is located six blocks from where he was born, in 1945, to a father studying for a Ph.D. in optical physics and a mother with a master's in psychology. The atmosphere was intellectual, but in a way that Hyde now sees as narrow. "I was raised in a family where science was the real thing," he says. "Science was the thing you did."

As a teenager, Hyde thought he might become a geologist. By the time he was through with his studies, he had made poetry his vocation. He attended the University of Minnesota in the early '60s, benefiting enormously from the various figures he encountered there: John Berryman, who taught poetry at the university and became a model of impassioned devotion to literature; Robert Bly, whom he met on a bus to an antiwar demonstration in D.C. and who encouraged him to try his hand at translation; Garrison Keillor, then the editor of the campus literary magazine, who was the first person to take Hyde's poetic efforts seriously and who published Hyde's earliest nonfiction. He spent a few years in a graduate program in comparative literature at the University of Iowa and then, bored by academia, quit and moved to western Minnesota to write.

It was in its way as much a move to the literary wilderness as was Thoreau's move to Walden. To make ends meet, Hyde worked as a carpenter and bluffed his way into a job as an electrician at a mobile-home factory. He eventually headed East, following a girlfriend — and was unceremoniously dumped while standing at a pay phone in West Virginia. Unmoored in Boston, armed with only a youthful bravado and an essay he wrote about schizophrenia titled "The Tuber Mind," Hyde presented himself at the psychiatric ward at Cambridge City Hospital and announced, "I'm here to be your poet in residence!" He was hired as the night guy on the drunk ward.

Strangely, the job marked the beginning of Hyde's lifelong study of the roots of the creative imagination, and of his literary ascent. At the time, Berryman was writing and publishing his landmark "Dream Songs." In the anguished, self-pitying tone of the poems, Hyde heard an echo of the tales spun by the residents on the ward, and he wrote a long essay drawing the parallel. "Alcohol and Poetry: John Berryman and the Booze Talking," published in 1975, was widely anthologized and widely debated. More important, it won Hyde a $7,500 grant from the National Endowment for the Arts, which he lived on for a year and a half as he haunted libraries, tramped around and tried to figure out what he wanted to do next, and how. "I worked on how I work" is how he puts it.

At the time, Hyde's passion for poetry was quickly being matched by a passion for cultural anthropology, particularly the writings of Ivan Illich, an Austrian priest-cum-social-critic who drew wide public attention for his book "Deschooling Society" (1971) — a polemic against modern public education. Hyde traveled to Cuernavaca, where Illich ran a language center and salon for Western missionaries heading to Latin America. It was Illich who lent Hyde a book of anthropology that contained a chapter about Marcel Mauss's essay on gift exchange. Hyde's intellectual course for the next several years was set.

The work captivated Hyde. "There was language in this which seemed to me metaphorically related to creativity," he told me. Mauss was a scholar of the old polymathic sort — a sociologist, a linguist, a historian of religion, a Sanskrit expert, a philosopher. His essay on gift exchange drew on the work of the seminal turn-of-the-century ethnographers Franz Boas and Bronislaw Malinowski to explore aboriginal societies in which the person of consequence — the man or woman who is deemed worthy of adulation, respect and emulation — is not the one who accumulates the most goods but the one who disperses them. Gift economies, as Mauss defines them, are marked by circulation and connectivity: goods have value only insofar as they are treated as gifts, and gifts can remain gifts only if they are continually given away. This results in a kind of engine of community cohesion, in which objects create social, psychological, emotional and spiritual bonds as they pass from hand to hand.

The ideas resonated deeply with Hyde. For nearly a decade he had been struggling to explain — to his family, to nonartist friends, to himself — why he devoted so much of his time and energy to something as nonremunerative as poetry. The literature on gift exchange — tales, for example, of South Sea tribesman circulating shells and necklaces in a slow-moving, broad circle around the Trobriand Islands — gave him the conceptual tool he needed to understand his predicament, which was, he came to believe, the predicament of all artists living "in an age whose values are market values and whose commerce consists almost exclusively in the purchase and sale of commodities." For centuries people have been speaking of talent and inspiration as gifts; Hyde's basic argument was that this language must extend to the products of talent and inspiration too. Unlike a commodity, whose value begins to decline the moment it changes

hands, an artwork gains in value from the act of being circulated—published, shown, written about, passed from generation to generation — from being, at its core, an offering.

Hyde worked on "The Gift" for seven years, barely scraping by, spending long months hunting through obscure folk tales for narratives that reflected what he came to call "the commerce of the creative spirit." When the book was finally published, the critic Martha Bayles castigated it in The New York Times for naïvely "esp[ying] a noble savage in every struggling artist" — a critique that was echoed elsewhere. Yet the artistic community immediately embraced Hyde's work. A bevy of poets, including Robert Pinsky, Donald Hall and Gary Snyder, published a group letter in The Times responding to Bayles's review and praising Hyde's "search to regain the unity of economic, aesthetic, social and religious life." Bill Viola, the pioneering video artist, remembers New York artists in the 1980s excitedly exchanging dog-eared, marked-up copies. "In a society that mostly talks about money," says Margaret Atwood, who keeps a half-dozen copies of "The Gift" on hand at all times to distribute to artists she thinks will benefit from it, "Lewis carved out a little island where you can say, 'Life doesn't always work that way.' "

Since the mid-1980s, when his work began to gain in popularity, Hyde has often been invited to speak publicly about creativity and gift exchange. Invariably, the discussions following his lectures have wound their way to a practical question: If creative work doesn't necessarily have any market value, how is the artist to survive?

In the course of writing "The Gift," Hyde underwent an intellectual transformation on this subject. He began the work believing there was "an irreconcilable conflict" between gift exchange and the market; the enduring (if not necessarily the happy) artist was the one who most successfully fended off commercial demands. By the time he was finished, Hyde had come to a less-dogmatic conclusion. It was still true, he believed, that the marketplace could destroy an artist's gift, but it was equally true that the marketplace wasn't going anywhere; it had always existed, and it always would. The key was to find a good way to reconcile the two economies.

Following this line of thinking, Hyde grew enamored of a bill introduced in 1994 by the Democratic senator Christopher Dodd of Connecticut. The "Arts Endowing the Arts Act" was an unusual piece of legislation. It proposed auctioning off 20 additional years of copyright protection for creative works and using the proceeds to build a permanent endowment for the arts and humanities. In essence, Dodd wanted to create a gift economy.

The bill failed to gain any traction. The entertainment industry, led by Disney, which faced the imminent expiration of its massively lucrative copyrights on Mickey Mouse, Pluto and Donald Duck, lobbied for the expansion of copyright terms without restriction. In 1998, the Sonny Bono Copyright Term Extension Act passed, adding 20 years to the length of copyright, both pro- and retroactively, and ensuring that thousands of creative works poised to enter the public domain remained in private hands.

As we sat in Hyde's office on a warm day last spring, he talked passionately about why the C.T.E.A. was not only unfortunate but also unconstitutional. For Hyde, as for many legal and political scholars, the C.T.E.A. (the "Mickey Mouse Protection Act" to its detractors) represents a blatant abrogation of the purpose of intellectual-property law. As he sets out to show in his book, copyright was enshrined in the Constitution for civic rather than commercial purposes. For the founders, intellectual property was a great privilege; copyrights and patents were primarily meant to serve, in Madison's words, as "encouragements to literary works and ingenious discoveries." By extending copyright retroactively, Hyde told me, the C.T.E.A. negated the logic of incentive: Mickey Mouse can't be invented twice.

Hyde is not a free-culture purist; he holds copyrights on his books, and those copyrights contribute to his income. But the passing of the C.T.E.A. convinced him, as it did many observers, of what Hyde calls a looming "market triumphalism." "I see in the paper that there is now a Congressional proposal to have a White House level 'IP Czar,' " he wrote in an e-mail message to me in May. "Daily this stuff ticks me off!"

The C.T.E.A. spurred Hyde to action. He wrote letters to every member of the Senate Judiciary Committee. He published an op-ed, the first of his career. In 1999, with the writer Brendan Gill and Archibald Gillies, then the director of the Andy Warhol Foundation, he started the Creative Capital Foundation, a nonprofit that offers financial support to artists in return for a small percentage of any net profits generated by their work, which the foundation uses to finance other projects. He helped organize a low-fee writers' room in Boston. And in 2004, he became a fellow at Berkman.

For all his activism, however, Hyde maintains that little of true political worth will be accomplished until the very terms of the "intellectual property" debate are changed. This was brought home to me one rainy evening last April, when Hyde and I met at a Harvard auditorium to attend a lecture on corruption in Congress by Lawrence Lessig. For a decade, Lessig has been the most-visible exponent of the position that institutions like Berkman were founded to promote: that the Internet should serve as a virtual communal space. In 2002, Lessig helped found Creative Commons, an organization that carves a middle path between the near-absolute stringency of intellectual-property law and absolute generosity by allowing creators to specify the level of control they want to maintain over their work.

After the lecture, as we walked across the darkened campus, I mentioned to Hyde that I had found Lessig's talk to be logical and well crafted.

"A little too well crafted, if you ask me," Hyde said.

This took me by surprise — Hyde is a polite man who rarely speaks critically of others — and I later asked him to elaborate. "Look, Lessig is a lawyer," he said. "I like him, I think he's solid. But it's a very particular way of thinking." Hyde himself makes use of the Creative Commons, yet there's a formality to the setup that troubles him. "All of the C.C. licenses use the lever of the law," he said. "They have the assumption of private ownership behind them. So Lessig, in a certain sense, is confining himself to one slice of this stuff, which is not as capacious as a true commons would be."

"Capaciousness" is the keynote of Hyde's own approach to the commons and suggests why he might feel a little out of place at a Harvard think tank. To date, the most prominent thinkers to adapt the idea of the commons to contemporary issues have been lawyers — most notably, Lessig and a current Berkman co-director, Yochai Benkler — and, being lawyers, they have an instinct to draw sharp distinctions that lead to policy solutions. Thus Lessig is careful to distinguish between "rivalrous" resources, like drinking water, in which one person's use by definition competes with another's, and "nonrivalrous" resources, like the English language, which cannot be depleted no matter how many people make use of them.

Hyde is interested in this distinction, too. "Shakespeare's plays," he writes, "will never collapse, no matter how many people read them — and such commons therefore serve as a kind of limiting case for the argument that the market will serve us well in every sphere of life." Yet he is more interested in "fleshing out" (a pet phrase) how the commons can embody cherished values — indeed, cherished American values — that private property cannot. As Hyde sets out to show, the contemporary impulse to think of culture as "intellectual property" contains far more of "property" than the founders intended.

Thinker-politicians like Jefferson, Adams and Madison were just as familiar as we are with the metaphor that likens created work to physical property, especially to a landed estate. But they thought of that landed estate in a new way — as the basis of a republic. An American's land was his own — he owed allegiance to no sovereign — but his ownership imposed on him an almost sacred moral requirement to contribute to the public good. According to Hyde, this ethic of "civic republicanism" was the ideological engine that drove the founders' conception of intellectual property, and to his mind, it undercuts the ethic of "commercial republicanism" that dominates our current conception of it. Our right to property is not absolute; our possessions are held in trust, as it were. Seen through the prism of early civic Republicanism, Hyde asks, what might the creative self look like? Do we imagine that self as "solitary and self-made"? Or as "collective, common and interdependent"?

There's a line of Emerson's from 'Self-Reliance,' " Hyde told me one day in his office, "where he says of Benjamin Franklin: 'Where is the master who could have instructed Franklin? Every great man is a unique.' Well, it's crazy! There's a long list of masters who taught Franklin! And yet the Emersonian song is the one that sticks in everyone's head."

Suffice it to say that Hyde goes to heroic lengths to unstick it — and with a striking directness. A full 60 pages of his new manuscript are devoted to debunking the Emersonian view of Franklin as "America's first self-made man" and replacing it with a portrait of Franklin as a "commoner," a man whose defining talent was for absorbing, repurposing and synthesizing the culture around him, like some colonial M.C. The law of conservation of charge, the eponymous stove, the precise path of the Gulf Stream: Hyde shoves aside each of Franklin's "discoveries" to uncover thick foundations of pre-existing knowledge and scientific collaboration. The point of all this is not to prove that Franklin wasn't a genius but to show that his genius didn't burst out of thin air. "It takes a capacious mind to play host to … others and to find new ways to combine what they have to offer," Hyde writes, "but not a mind for whom there are no masters, not a 'unique.' Quite the opposite — this is a mind willing to be taught, willing to be inhabited, willing to labor in the cultural commons."

In Franklin, Hyde has found a subject to give canonical voice to his own beliefs. Despite Franklin's notorious talents of self-promotion, he was explicit that his inventions were not and should not be his to claim as property. Offered an exclusive patent on the Franklin stove, he refused on the grounds that the invention was based on previous innovations — specifically, on theories of heat and matter articulated by Isaac Newton and the Dutch physician Hermann Boerhaave. "That as we enjoy great advantages from the inventions of others," Franklin wrote in his "Autobiography," "we should be glad of an opportunity to serve others by any invention of ours, and this we should do freely and generously."

Of course, you might say, this was an easy position for Franklin to take: he was rich. People need their copyrights to live. But that's exactly Hyde's point: copyrights are utilitarian things. They generate money to pay a mortgage and buy groceries and continue working. Extended too far beyond their practical usefulness, copyrights not only contradict their original intent; they also wall creators off from the sources of their inventiveness. Genius, Hyde believes, needs to "tinker in a collective shop."

"I've thought of doing a version of Emerson in which you simply take every sentence of 'Self-Reliance' and flip it," Hyde says. "So like at the beginning he says, 'Yesterday I read in a book somebody stating very well an idea I had myself, and I felt ashamed that I hadn't expressed it myself.' Well, you could say, 'Yesterday I read in a book somebody stating very well an idea I had myself, and I felt glad that I was not alone, and that my ideas were not my ideas.' You know, where is the master who could teach Emerson?"

There happens to be an answer to this question — many answers, in fact. As Emerson himself acknowledged, his intellectual life was chaotic with debts, influences and fellow travelers. And the greatest influence of all was an influence that looms large in Hyde's own work as well, and whose quietly unsettling, deeply informed prose bears a more-than-passing resemblance to his own: Thoreau. Hyde still isn't sure if Thoreau will make an appearance in his commons book, but it's possible. In 1998, he published an essay in which he took the same approach to Thoreau as he does to Franklin, showing that for all his vaunted individualism, Thoreau could not have produced his work without the rich community and communal institutions surrounding him in Concord. It was the first expression of the thesis that would grow into the heart of Hyde's new project, and it was the first piece of the project that I read.

It was also the impetus for our trip to Walden, and to the site of Thoreau's cabin. Although, as Hyde's essay strives to make clear, it wasn't really Thoreau's cabin at all but Emerson's. The older man owned the land and acquired the structure after his protégé vacated. He offered the land in the first place because he believed — rightly as it turned out — that with a little space and solitude, Thoreau could do great work. He had already employed Thoreau as a handyman and tutor and given him access to his circle of illustrious friends and his unrivaled library. In other words, "Walden," the premier document of American individualism, was in a sense born out of the generosity of the American prophet of self-reliance.

I had hoped to talk about these issues as Hyde and I walked alongside the pale water to Thoreau's cabin, but the path was too narrow for us to chat comfortably, and we made our pilgrimage mainly in silence. The next day, however, things got a little more capacious, as it were. Hyde invited me to have brunch with him and his wife at his house in Cambridge. It is a beautiful, bright house, in whose back garden stands the trellis-covered studio — a former turkey pen — where Hyde was a tenant when he wrote "The Gift." Afterward, as we sat around his dining-room table, Hyde got up, pulled a CD by the Canadian singer-songwriter Bruce Cockburn off a shelf and handed it to me. The album contained a song called "The Gift." "I'll leave you with this ringing in your ears," he said, and pressed play on his stereo. The melody was jaunty, and the lyrics were unambiguously based on Hyde's masterpiece:

> In this cold commodity culture
>
> Where you lay your money down
>
> It's hard to even notice
>
> That all this earth is hallowed ground …
>
> The gift keeps moving
>
> Never know where it's going to land
>
> You must stand back and let it
>
> Keep on changing hands.

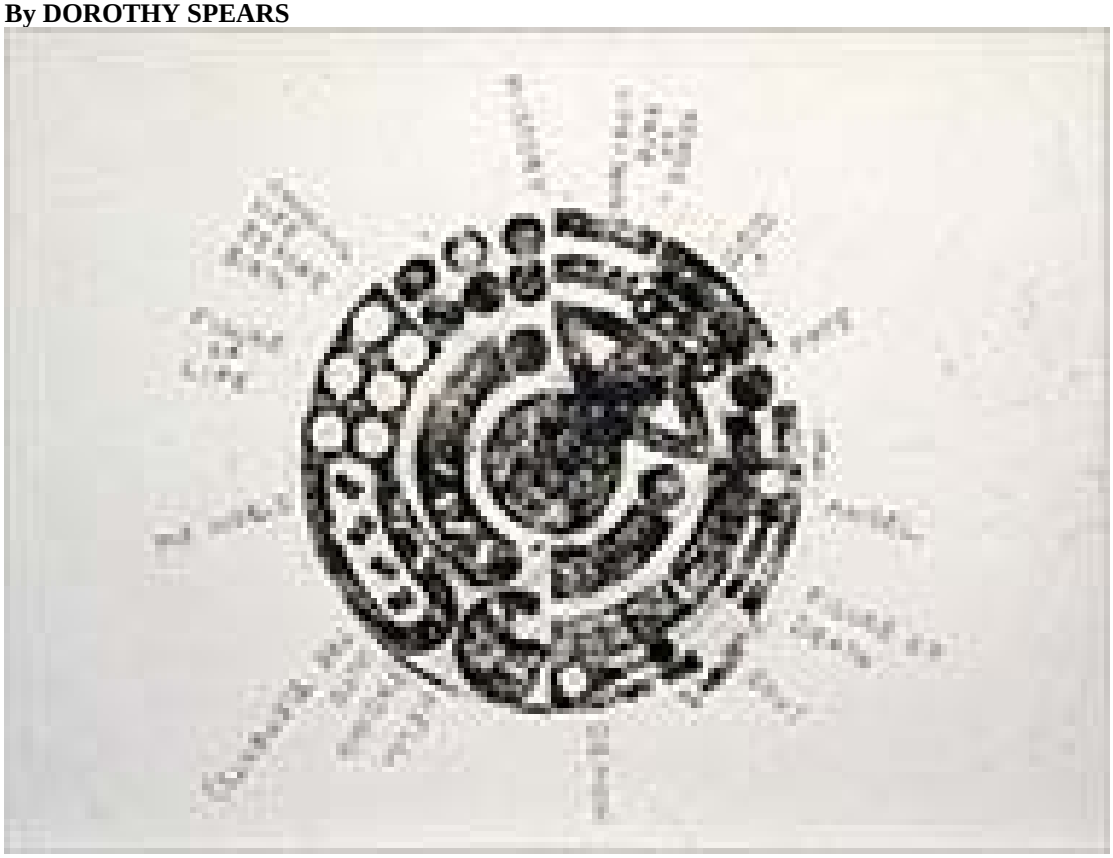
As Cockburn strummed and sang, I read through the liner notes and noticed that Hyde was credited as an inspiration alongside E. E. Cummings and, wryly, the manager of the Chernobyl nuclear-power plant. I mentioned this to Hyde. He grinned, opened his hands and gave a curt bow. "All illustrious company to be in," he said.

Daniel B. Smith is the author of "Muses, Madmen, and Prophets: Hearing Voices and the Borders of Sanity," from which his last article for the magazine was adapted.

http://www.nytimes.com/2008/11/16/magazine/16hyde-t.html?ref=design

Mapping an Imagined Order, Page by Page

By DOROTHY SPEARS



MATT MULLICAN loves to scribble. “This is my studio,” he said on a recent morning, gesturing around the fluorescent-lighted space in Lower Manhattan that serves as a workshop, office, storage room and clearinghouse for his artwork. “But I don’t really work here. My studio is in my notebook, and where I travel.”

As if to prove the point, he plucked a sketchbook off a metal bookshelf and opened it.

A Christmas gift from his parents dated Dec. 26, 1970, it was filled in a single day by Mr. Mullican, now 57, when he was still a high school senior. A miniature tour of Pop Art history, it is strikingly precocious.

Inside, a colored-pencil sketch of a spoon dunked in coffee uncannily channels Claes Oldenburg. Contour drawings of a fountain pen and a pencil mimic the spirit and stylish lines of Andy Warhol. A series of drawings depict both the ingredient (lighter fluid) and the tool (a spoon) used for Robert Rauschenberg’s famous photo-transfer process.

And yet the elongated scrawl of the artist’s own name and a drawing of an automobile juxtaposed with the words “fast car” written in the shape of a vehicle, is all Mr. Mullican.

“I used to be really into Formula One race cars,” he said. Judging from the way his drawings correspond to the words alongside them, he was also clearly interested in exploring how both pictures and words trigger human responses.

Mr. Mullican's high school notebook foreshadows what has become for him a career-long investigation: How do we all insert ourselves into the imagery that bombards us every day? Why does the pain of another person, or even a stick figure, become our own? What is the basis of human empathy? How can thoughts and emotions be communicated visually?

"It's all about projection," Mr. Mullican said. "I'm sitting in front of you now, and you're seeing me. But you're also seeing lots of other things, based on your own experiences."

This "subject-object" divide, as it is known in philosophical circles, is nothing new, according to João Ribas, a curator at the Drawing Center in SoHo. But what intrigues him about Mr. Mullican's work, he said, was "the way Matt attempts to collapse this split through the medium of drawing."

That process is explored in "Matt Mullican: A Drawing Translates the Way of Thinking," an exhibition that opens Friday at the center. Featuring more than 100 artworks made over 35 years, it includes Mr. Mullican's stick-figure sketches, videos of him drawing while under hypnosis, large-scale rubbings based on original works on paper that have since been photocopied and cut out, and vitrines displaying — you guessed it — notebooks.

"Matt always carries a notebook around," said the artist John Baldessari, the master of California conceptualism and a former teacher to Mr. Mullican. "He's always jotting things down. He has a very fertile imagination."

Mr. Mullican has been traveling quite a lot in recent months. In September and October, for example, a mini-retrospective of his mixed-media work at Gallery Klosterfelde in Berlin overlapped with a show of his monumental rubbings at the Karsten Schubert gallery in London. He is also one of 40 artists from 20 countries exhibiting at the São Paulo Biennial in Brazil through Dec. 6.

Mr. Mullican's mad-scientist-style musings have taken a variety of forms, from virtual tours conducted via computer and 3D goggles to color-coded charts, banners, maps and architectural models. Etched granite sculptures commissioned by, among others, the Metropolitan Transit Authority in New York, the Swiss Bank Corporation and Middlebury College in Vermont are chock full of ideas about how the universe is ordered. And in decades of performances given while under hypnosis, Mr. Mullican has consistently exposed the private realm of his unconscious to public scrutiny in the hope of tapping universal patterns of behavior.

These performances typically begin when the hypnotized Mr. Mullican shuffles out onto the stage, dazed and squinting. But by the time they end, he has often managed to draw an array of words and symbols on an enormous sheet of paper. "I would never say what is the basis of my work," Mr. Mullican said. "That's too big a statement." But he will allow that, "to a degree, drawing is at the core of my practice."

Drawing, that is, and talking.

Mr. Mullican's fascination with both dates back to his early childhood. Born in 1951 in Santa Monica, Calif., to Luchita Hurtado, a Surrealist painter from Venezuela, and the American painter Lee Mullican, he recalls that, "before I could even talk, I would see my father put a painting on the wall to discuss it with friends." Mr. Mullican's response as a toddler was to make a drawing of his own and stick it on the wall. Inevitably the drawing would fall, he said, and he would stand before an empty wall, spouting gibberish.

In spite of his parents' artistic pedigrees — Morris Graves, Mark Tobey and Isamu Noguchi were among their long Who's Who of artist friends — the family was often financially strapped. In an effort to economize, they moved in 1955 to Caracas, Venezuela, where Mr. Mullican said, "I spoke only Spanish,

and forgot all of my English." Then in 1956 they resettled in New York City, and, he said, "I relearned English and forgot all my Spanish."

To make sense of his linguistic upheaval, Mr. Mullican began piecing together the signs and symbols of distant cultures and multiple time periods in much the way that his father, a cartographer for the United States Army during World War II, had learned to translate vast bodies of land and sea into an intricate series of pattern and lines.

He was also influenced by his parents' collection of Oceanic and tribal art. New Guinea architectural posts, Navajo rugs and totem poles purchased cheaply during the family's extensive travels "just filled up the house," he recalled.

"Every single object depicted some kind of cosmology," he said.

In 1959, when his father won a Guggenheim fellowship, the family moved to Rome, and the young Mullican briefly dreamed of becoming an archaeologist. His parents took him to Pompeii, he said, and "I was totally into it."

Back in Los Angeles he experienced an epiphany when he saw Mr. Oldenburg's sculptures of a giant upside-down ice cream cone and a hamburger at Virginia Dwan's gallery. Captivated by what he called "both the color, and the Surrealist idea of blowing up a small object into this big abstract thing," Mr. Mullican became a devotee of Pop Art while amassing a collection of first-edition comic books.

Yet his itinerant upbringing took a toll. "My school record was horrible," he said. Between his academic struggles and his mother's insistence that he repeat 10th grade to avoid the Vietnam-era draft, he said, he was almost 20 when he graduated from high school. By that time he had already bought a Rapidograph pen and had filled notebook after notebook.

Before graduating he won a $1,000 college scholarship through a school art competition with his notebooks and large-scale drawings. An announcement was made over the school's public-address system.

"I was such a nobody," Mr. Mullican said. "Almost a nonperson. I had learned how to disappear. So that was an exciting moment for me."

Buoyed, he entered the California Institute of the Arts in Valencia, where he befriended the artists David Salle, James Welling, Troy Brauntuch and Jack Goldstein and enrolled in Mr. Baldessari's fabled "Post-Studio Art" course. Asked what he remembered best about the young Mr. Mullican, Mr. Baldessari said: "His mind. I couldn't shut him off."

For a student exhibition in their windowless third-floor classroom, he recalled, Mr. Mullican tacked a dried leaf to the wall. Then, positioning five students at strategic intervals inside and outside the building, Mr. Mullican handed each of them a mirror. By tilting the mirrors, they directed sunlight from outside, up the stairs, down a corridor, and onto the classroom wall, where Mr. Mullican used a magnifying glass to burn the leaf.

Reminded of this work, he laughed. "Oh, right," he said. "That's when I really got John's attention." The two remain friends, and collaborated on a project last spring at Tracy Williams, Mr. Mullican's gallery in Greenwich Village.

Over the last three decades, Mr. Mullican said, he began exhibiting with high-profile dealers like Mary Boone and Barbara Gladstone. But because his cerebral multidisciplinary work has never been an easy sell, he said, he also began working with a large pool of dealers internationally. While commissions from

schools, corporations and governments have helped him make ends meet, he said, his midcareer period has been something of a grind. “Once you go through that,” he said, “you’re humbled. It just tests your obsession.”

Yet recently, Mr. Mullican said, “people finally seem to be understanding what I’m up to.” Having seen one of his rubbings or a flag or a series of drawings at an art fair, he said, a member of the art cognoscenti may decide to call him up. Now that interest in his work has quickened, he is preparing for shows at the Stuk Kunstencentrum in Leuven, Belgium; the Haus der Kunst in Munich; and the Nouveau Musée/Institut d’Art Contemporain in Villeurbanne, France, near Lyon.

Mr. Mullican is at a loss to explain the flurry of exhibitions. At the same time, he said, he is feeling more mortal these days.

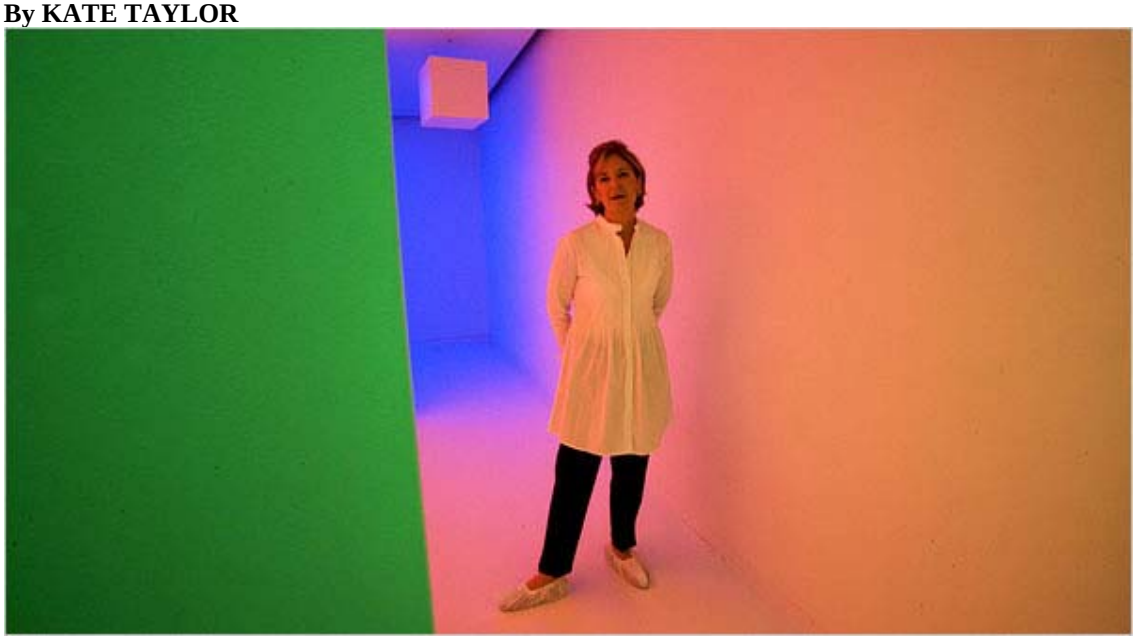
“It’s odd,” he said, shaking his head and sighing. “I’ve been doing this for what? Almost 40 years? Looking at your old work, you’re also looking at your life.”

Then his brow furrowed, and he grabbed a notebook.

http://www.nytimes.com/2008/11/16/arts/design/16spea.html?ref=design

Budding Ambassador for Latin American Art

By KATE TAYLOR



Estrellita Brodsky's life is not that of your typical graduate student. Instead of frugal dinners of ramen or grilled cheese, there are $1,000-a-head museum galas. Home is an apartment on Park Avenue, not a share with roommates in Brooklyn. And although she is hoping to finish her dissertation, which focuses on Latin American artists in postwar Paris, by January, Ms. Brodsky is not planning to enter the academic job market any time soon.

Instead she is devoting more and more energy these days to figuring out how to use her wealth and connections as one of the city's leading arts philanthropists, along with her scholarly perspective gained from her studies at New York University, to raise the profile of Latin American art in museums, the academy and the international art market.

For two years Ms. Brodsky has endowed the post of the Latin American art curator at the Museum of Modern Art, held by Luis Pérez-Oramas. Her encouragement led Harvard to create a position for a Latin American art specialist in its history of art and architecture department. Currently she is in discussions with the Harvard Art Museum about financing Latin American acquisitions as the museum moves into collecting contemporary art.

In a sign of her growing prominence in the field, Ms. Brodsky presided on Thursday as chairwoman at the opening night of Pinta, a Latin American art fair in its second year, which runs through Sunday at the Metropolitan Pavilion and B. Altman Building in Chelsea. (Last year the chairwoman was the collector Patricia Phelps de Cisneros, a trustee at MoMA.)

Mauro Herlitzka, a co-director of Pinta, said Ms. Brodsky was an obvious choice not just because of her prominence as a collector, philanthropist and society figure — she is married to the real estate scion Daniel Brodsky, who is also a major cultural donor — but also because of her scholarly background.

"She's very comprehensive in her understanding" of the Latin American art world, he said. "She supports it at MoMA, and she's also involved with curatorship."

Glenn Lowry, the director of MoMA, described Ms. Brodsky as "exacting and demanding" as a donor, "but in the best sense."

Although MoMA has collected Latin American art with some consistency since its founding, at other institutions and in art history departments Latin American art was for a long time either ghettoized or excluded from the Western art historical canon. Survey courses might have mentioned Diego Rivera or other muralists, partly because they executed major works in the United States.

Only in the last 15 years have scholars fully embraced the contributions of Latin American artists to 20th-century abstract movements, particularly in the areas of installation and performance. At the same time the rise of international art fairs has brought greater attention to contemporary artists working in Latin America.

In a recent interview at her apartment, filled with work by artists like Jesús Rafael Soto, Julio Le Parc and Gego (Gertrude Goldschmidt), as well as the odd European, Ms. Brodsky discussed her quest to help bring Latin American art to the forefront.

Apart from her passion for the art and its history, she said she wanted Latin Americans in the United States, particularly young people, to feel pride in their culture's creative achievements.

Growing up in New York City in the 1950s and '60s, with parents who had immigrated from Venezuela and Uruguay, Ms. Brodsky, 56, said she learned how ignorant most of her young peers were about Latin America.

"It was pretty much, 'Oh, were your parents Indians, living in the jungle?' " she said of her classmates in the fourth or fifth grade. Her great-great-grandfather on her mother's side, Juan Idiarte Borda, was the president of Uruguay. He was assassinated in 1897 — presumably, the theory goes, by a political foe — "but we don't talk about that," she said with a wry smile.

Ms. Brodsky is the youngest of four sisters, who all live in the city. Her sister Jacqueline Weld Drake is the chairwoman of Casita Maria, a settlement house that serves Hispanic communities in East Harlem and the South Bronx.

Ms. Brodsky attended the Brearley School in Manhattan and then Sarah Lawrence College before marrying Mr. Brodsky, the son of the real estate developer Nathan Brodsky and now a partner in the Brodsky Organization. They have three children: Alex, 31; Katy, 29; and Thomas, 26. (Daniel Brodsky sits on the boards of the Metropolitan Museum of Art, New York City Ballet and New York University.)

Her scholarly and philanthropic interests took a while to germinate. When her children were young, her life was not that different from any other Upper East Side socialite's: "mommy teas" at school, volunteering at the Met. When Katy was in the second grade, Ms. Brodsky went back to school to earn a master's degree in art history at Hunter College, focusing on Impressionism.

In 1995 a friend enlisted her to help organize an exhibition on the Taíno, pre-Colombian inhabitants of the Caribbean, at El Museo del Barrio. She traveled to Haiti, the Dominican Republic, Puerto Rico and Cuba helping to arrange loans. The overall experience was transformative, she said.

In a visitors' comment book at the exhibition, she recalled, "A little kid said, 'My name is Taino, and I'm so happy now to learn what I'm named after.' I thought that was so cute: Here was this kid, who probably felt like a little bit of an outsider because he had this strange name, who now felt proud about his heritage."

Realizing that the museum was important but needed help with fund-raising, Ms. Brodsky joined its board in 1997 and began recruiting friends, many of whom had barely heard of the museum, to support it. She rose to become the board's chairwoman, and with the artist and lecturer Tony Bechara, its chairman, she started an annual gala. By the time she left the board, in 2003, the gala regularly raised $500,000.

Beyond finding her philanthropic niche at El Museo, Ms. Brodsky realized how much more she wanted to learn. She decided to go back to school for a doctorate, this time focusing on Latin America. Her husband and children were supportive, and she was accepted to the Institute of Fine Arts at N.Y.U., where she is now completing her dissertation on the artists Soto and Le Parc.

She clearly relishes living with art, regarding the objects in her apartment as beloved if sometimes eccentric friends. On a recent afternoon, for instance, a sculpture by the Belgian artist Pol Bury, made of little curling pieces of metal that rotate slowly when a motor is turned on, was making an unpleasant squeaking sound that carried into the next room. "I think I have to oil the poor thing," Ms. Brodsky said, after turning it off to restore quiet.

Among the many other pieces in her apartment are a striking black-and-white geometrical painting by the Cuban artist Carmen Herrera; a light sculpture by the Argentine artist Martha Boto; and an interactive sculpture by Le Parc.

Despite the national decline in real estate values, which seems certain to have some impact on the family business, Ms. Brodsky said she expected to be able to continue giving "strategically," including to Harvard, where the director of the Art Museum, Thomas Lentz, said there is an urgent need to play catch up on Latin American art. "It has very clearly been a missing piece in the collection here," he said.

Ms. Brodsky, who recently organized a show of the Venezuelan artist Carlos Cruz-Díez, which is on view through January at the Americas Society on Park Avenue, said she saw herself as part of a group of people who are helping to raise the status of Latin American art, including Mrs. Cisneros at MoMA; Tiqui Atencio Demirdjian, a major donor to the Tate Modern in London; and Mr. Bechara, a trustee at El Museo.

With the growing number of Latin American immigrants in the United States, she suggested, their effort has gained momentum in the last year or two.

"The timing is right," she said.

http://www.nytimes.com/2008/11/15/arts/design/15brod.html?ref=design

Chelsea: Art Chockablock With Encyclopedic Range

By ROBERTA SMITH

The art world's rolling-in-money days may be dwindling, but you'd never know it from the plethora of substantial gallery shows in Chelsea right now. Maybe the most habitually denounced of all art ZIP codes is staging a last grand stand, signaling its intention to go down fighting or at least to put a good face on things. Maybe it is just pulling out the stops during the fall art auctions, when lots of collectors are in town.

Whichever it is, this weekend Chelsea provides an ever-humbling, close to encyclopedic survey of ways of making and showing art. It runs the gamut from blue chip to schlock, die-hard hip to clueless, and good to pedestrian to egregious, often within close proximity. There are two- and three-gallery franchises (Gladstone, Gagosian, Paula Cooper, 303, Matthew Marks) and tiny holes in the wall, especially on 27th Street. Galleries continue to arrive as others relocate to the Lower East Side.

The array reminds you that the No. 1 rule for looking at art is: no rules. You must be willing to be betrayed by your taste, or put another way, to let yourself be dazed and confused by art that runs counter to your most dearly held ideals, agendas, prejudices and so-called standards.

My favorite show by a least favorite artist is Petah Coyne's over-the-top exhibition of tarlike masses of black-red roses and entangled creatures both feathered and furred (stuffed, of course) at Galerie Lelong. It is a statement about environmental and material waste that itself wastes material. Ms. Coyne is pushing her Victorian aesthetic to the limit, so don't miss it.

In Chelsea you can sense the over-enthusiasm for beautifully made but regressive Chinese art, especially on West 25th Street. Yet on the same street you may be drawn into Gana Art, as I was, by the paintings of Sa Suk-Won. In his first show in New York this 48-year-old Korean artist paints on calligraphy-covered chalkboards, reiterating neo-Expressionism with fans, whisks, headdresses and other Asian artifacts. The paintings remind you that any art idea is as alive as an individual artist can make it.

Bringing order to the viewing options is the critical equivalent of herding cats. Formulate a few tidy categories — whether determined by decade, style, generation, nationality or medium — and instantly they start to erode and merge. Take, for example, Eric Fischl's intriguing exhibition of bronzelike life-size figurative sculpture at Mary Boone, dematerialized and improved, it would seem, by his attention to the sculptures of Degas and El Greco's ethereal beings. They can be grouped with other forays into figurative sculpture by younger artists, including Matthew Monahan's chopped-up statues of statues at Anton Kern, Anne Chu's further excavations of the genre at 303 (on 21st Street) and the Belgian artist Berlinde De Bruyckere's lugubrious waxen husks at Yvon Lambert, in her first solo show in this country.

But Mr. Fischl's efforts may be more at home with the abundant shows of other artists who emerged in the 1980s, several of which happen to be on the same block. At Gagosian, Richard Prince's new canvases feature naked ladies and a Rastafarian guitarist, and riff on centuries of bather motifs in Mr. Prince's continued effort to merge painting and photography in a new way. (With its repeating disembodied heads, "Inquisition" is the best and least fleshy.) At Metro Pictures, Cindy Sherman's latest exposures of the anguished artifice of aging display her skills as a make-up artist and actress. And at Gladstone, Lari Pittman presents some of the best paintings of his career, countering his commercial art detailing and excavations from popular culture with bits of flowing, often fluorescent brushwork.

Another example: Robert Moskowitz, whose spare New Image paintings of the 1970s helped set the stage for '80s rejection of pure abstraction, is showing new work at D'Amelio Terras. He could be grouped with other '70s painters like Ron Gorchov at Nicholas Robinson and Cora Cohen at Michael Steinberg, who both reprise aspects of Abstract Expressionism with remarkable vigor. But Mr. Moskowitz also fits with artists who engineered various escapes from Minimalist severity, like the sculptors Jackie Winsor (a show of earlyish work at Paula Cooper on 21st Street) and Richard Nonas (Esso Gallery).

Polar opposites are another form of temporary order. In this regard no show is more adept at changing partners as Frank Stella's stunning display of '60s canvases at Van de Weghe Fine Art. On its own this show of radiantly fresh works suggests that Mr. Stella produced nearly a career's worth of abstraction in less than a decade. His fierce and influential high formalism finds an opposite in Tomma Abts's latest abstractions (overrated, to my eye) at David Zwirner. Small, surgically precise, restrained in palette and spatially ambiguous, they are everything that Mr. Stella's paintings are not, yet they speak the same geometric language. Also talking the talk are the new laid-back geometries of the painter Dan Walsh in a show of prints, paintings on paper and handmade books at Paula Cooper's West 23rd Street outpost.

On another track there's the pioneering Conceptualist Joseph Kosuth, who disputed Mr. Stella's formalism with the notion that art could be read as well as looked at. His works from the late 1960s (when he was in his early 20s) can be seen in a show at Sean Kelly; it includes his classic blown-up Photostats of dictionary definitions and a little known work from 1965 titled "Five Fives (to Donald Judd)," that counts from 1 to 25 in five lines of neon words, creating its own kind of sculptural progression.

Also countering Mr. Stella from a completely different angle is Albert York, a Morandi-like painter who has remained indifferent to the battling art movements of the '60s, '70s and '80s. Mr. York's first exhibition in Chelsea contains small lusciously built-up still lifes, landscapes and art historical asides made during those decades. It can be seen at a temporary amalgam of the Taxter & Spengemann and Andrew Kreps galleries called T&Sn'Kreps that is operating out of Taxter's old West 22nd Street space until their new gallery near Union Square is finished.

Upstairs from Mr. York's exhibition you'll find one of several group shows available for viewing, this one at the Monya Rowe Gallery (just relocated from 26th Street), where Angela Dufresne's new paintings make a strong impression. On West 27th Street, Dinter Fine Art has mounted another carefully assembled group show, this one large, X-rated and titled "How to Cook a Wolf, Part 1." At Greene Naftali on 26th Street a group show of drawings by gallery artists surrounds a small solo show of Ricci Albenda's color studies. And in the same building (the large art hive 508-526 West 26th Street) Hudson Franklin has an

especially effective show of photographs, “The World Is All That Is the Case,” selected by the artist Arthur Ou.

Among the many exhibitions to be seen in this building, the New York gallery debuts of two young painters stand out. At Massimo Audiello, Jason Karolak is showing canvases in which shaky geometric images creep across the color spectrum one mosaiclike stroke at a time. At Thomas Erben, Haeri Yoo’s jumbled forms seem to operate in the colorful, cosmic gap between Amy Sillman and Dana Schutz, but there are much worse places to be.

Another young artist, Paula Wilson, opts for a crammed excess of color and form in her debut at Bellwether, but also employs a raft of competing art mediums: painting, drawing, relief, mini-mosaics, woodblock, faux woodblock and even faux woodblock frames. At the shoe-box-size Bespoke Gallery on 27th Street, Joe Sola make his New York debut with a video and bright gouaches about male haplessness.

Among shows by more established artists, Lisa Sanditz at CRG brings newfound coherence and ambition to the horror vacui approach to painting in opulent semi-abstract images of cityscapes and one-product markets (socks, for example) made during a recent trip to China. In her second solo at Murray Guy, the Norwegian artist Ann Lislegaard makes a dazzling return with two double-screen digital videos; they explore aspects of the modernist past and the sci-fi future by layering black and white images into restlessly changing montages. Kelley Walker’s latest efforts at Paula Cooper continue to confuse the mechanical, the handmade, the labor-intensive and the digital. While beautiful and mysterious, these large silkscreen collages on canvas of brick walls seem slightly staid when seen in quantity.

Should you tire of the latest thing, there are glimpses of American art’s Abstract Expressionist past, in shows of Elmer Bischoff’s sinuous abstractions from around 1950 at George Adams; Nicholas Marsicano’s more liquid, figural works, also from the 1950s, at Mitchell Algus; and Joan Mitchell’s exuberant paeans to paint and nature at Cheim & Read. And if you can’t get enough of it, there are outstanding shows on the way to and from those mentioned here.

http://www.nytimes.com/2008/11/14/arts/design/14chel.html?ref=design

Exploring Old Rome Without Air (or Time) Travel

By ELISABETTA POVOLEDO

ROME — First Google Earth turned millions of Internet users into virtual travelers who could fly to any spot on the globe. Then its Sky feature took them to other galaxies. Now Google Earth has embraced a frontier dating back 17 centuries: ancient Rome under Constantine the Great.

Soaring above a virtual reconstruction of the Forum and the Palatine Hill or zooming into the Colosseum to get a lion's-eye view of the stands, Google Earth's 400 million users will be able to explore the ancient capital as easily "as any city can be explored today," Michael T. Jones, chief technology officer of Google Earth, said Wednesday at a news conference at Rome's city hall.

Ancient Rome 3D, as the new feature is known, is a digital elaboration of some 7,000 buildings recreating Rome circa A.D. 320, at the height of Constantine's empire, when more than a million inhabitants lived within the city's Aurelian walls.

In Google Earth-speak it is a "layer" to which visitors gain access through its Gallery database of images and information. "In this case the layer is above ground and not below where it should be" from an archaeological point of view, said Bernard Frischer, the director of the University of Virginia's Institute for Advanced Technology in the Humanities.

Google had planned to activate the feature on Wednesday morning, but a spokesman said there would be a short delay because of technical difficulties. By Wednesday night, however, the feature was up and running. (Web visitors in the United States can watch a video demonstration of the feature at earth.google.com/rome.)

For nearly three decades Professor Frischer has been the driving force of an effort to bring ancient Rome to virtual life. The Google Earth feature is based on his Rome Reborn 1.0, a 3-D reconstruction first developed in 1996 at the University of California, Los Angeles, and fine-tuned over the years with partners in the United States and Europe.

Of the 7,000 buildings in the 1.0 version, around 250 are extremely detailed. (Thirty-one of them are based on 1:1 scale models built at U.C.L.A.) The others are sketchier and derived from a 3-D scan of data collected from a plaster model of ancient Rome at the Museum of Roman Civilization here.

Archaeologists and scholars verified the data used to create the virtual reconstruction, although debates continue about individual buildings. “We’re happy when scholars disagree with us,” Professor Frischer said. “It makes for good scholarship.”

The Rome Reborn model went through various incarnations over the years as the technology improved. Originally it was developed to be screened in theaters for viewers wearing 3-D glasses or on powerful computers at the universities contributing to the project, rather than run on the Internet. That all changed in June 2007, when Professor Frischer presented Rome Reborn at a news conference in Rome. The next day he received a call from Google Earth.

“The poetry was good, but it was caught in a tree,” said Mr. Jones of Google Earth. “So we asked if we could help to make it better.” It took several months for Google engineers to format the data “and do Google things so that everyone can see it,” he said.

To experience Ancient Rome 3D, a user must install the Google Earth software at earth.google.com, select the Gallery folder on the left side of the screen and then click on “Ancient Rome 3D.”

Past Perfect Productions, a company that specializes in 3-D cultural heritage models, owns the global and exclusive commercial rights to Rome Reborn and collaborated with the Institute for Advanced Technology in the Humanities and Google Earth on this project.

Joel Myers, Past Perfect’s chief executive, said the Roman theme had proved popular for his company. “Ancient Rome is a symbol of Western civilization, but it’s also got that fantasy element, what with gladiators, centurions and brutal or crazy emperors,” he said. He cited an audio guide that Past Perfect produced with 3-D reconstructions of the Colosseum and another it plans to release soon on the Forum.

In recent years films like “Gladiator” and the HBO series “Rome” have also stirred popular interest in the city. And on Nov. 20 “3D Rewind Rome,” a high-tech show based on the University of California simulation, is to open in a theater near the Colosseum.

Rome’s mayor, Gianni Alemanno, suggested Wednesday that the Google Earth feature could gratify tourists who are disappointed to find that the city’s ancient monuments are in ruins. “They may not be enough to involve the tourist in the experience of Roman civilization,” he said. “The public needs the hook-up with virtual reality.”

Information bubbles in the Google Earth feature provide details for more than 250 buildings, and more advanced information is also available through links to Platner and Ashby’s Topographical Dictionary of Ancient Rome, Stanford’s Digital Forma Urbis Romae Project, the German Archaeological Institute catalog and many other scholarly sources Professor Frischer said that now that Ancient Rome 3D would be available to millions, he hoped it would become a scholarly work in progress, open to changes and contributions from other scholars. “The great thing about digital technology,” he said, is that it can be updated constantly “and supports different opinions.”

Mr. Jones of Google Earth said that the company would like to present 3-D tours of other historical cities but that it was up to historical experts to provide the scholarship. “When archaeologists rise up, we’re ready to share their research with the world,” he said. “There’s no shortage of cities or civilizations that deserve to be understood in the same way.”

Meanwhile a 2.0 version of Rome Reborn is under development, and the project could expand to show Rome in different eras. “There’s always something to discover,” Professor Frischer said. He paused, then added, “Please don’t make me say it, but, after all, Rome wasn’t built in a day.”

http://www.nytimes.com/2008/11/13/arts/design/13anci.html?ref=design

EU seeks to expand energy grids

The European Commission has unveiled plans to diversify the EU's energy imports and reduce dependence on Russia, the main gas supplier.

The EU will remain dependent on imported fossil fuels for many years to come, the Strategic Energy Review says.

Some member states "are overwhelmingly dependent on one single supplier," the document says, without naming Russia.

It urges the EU to develop energy infrastructure in the Baltic states and the Mediterranean region.

It also wants the EU to build a North Sea offshore grid, to link up national electricity grids in north-western Europe and plug in the numerous planned offshore wind farms.

KEY POINTS AND FULL REPORT
Infrastructure needs and diversifying energy supplies
External energy relations
Oil and gas stocks and crisis response mechanisms
Energy efficiency
Making best use of EU's indigenous energy resources
Most computers will open this document automatically, but you may need Adobe Reader

"It should become, together with the Mediterranean Ring and the Baltic Interconnection project, one of the building blocks of a future European supergrid," the strategy paper says.

A Mediterranean energy ring - interconnecting electricity and gas networks - "is essential to develop the region's vast solar and wind energy potential," it says.

Eastern priorities

Currently imports account for 61% of EU gas consumption - and 42% of those imports come from Russia. By 2020, the commission says, gas imports are expected to grow to 73% of consumption.

So another priority is to get firm commitments from gas suppliers in the Middle East and Central Asia, including their involvement in gas pipeline construction.

"A southern gas corridor must be developed for the supply of gas from Caspian and Middle Eastern sources, which could potentially supply a significant part of the EU's future needs," the commission says.

Two major gas pipeline projects - Nabucco and South Stream - are being developed to deliver gas to southern Europe, from Central Asia and Russia, respectively.

The commission's proposals will be considered by EU governments and the European Parliament, who have to sign off specific EU projects.

Presenting the package on Thursday, EU Commission President Jose Manuel Barroso said energy prices had risen by an average of 15% in the EU in the last year alone.

"We must break the vicious energy cycle of increased energy consumption and increased imports," he said.

One way to do that is to stick to the EU's green energy goals, contained in the climate change package, he said.

Meeting the targets on renewables and energy efficiency would cut EU energy imports by 26%, he predicted.

'Energy solidarity'

He also highlighted the total reliance of eight EU states on Russia for their gas as "a problem we must address". He was speaking on the eve of EU-Russia talks in Nice, France.

"We must shield European citizens from the risk that external suppliers cannot honour their commitments," he said.

A gas price war between Russia and Ukraine in the winter of 2006 disrupted gas supplies to some EU states.

"Stronger solidarity is also essential in boosting interconnections inside the EU, so that member states can help each other out in tackling shortfalls.

"And we need a more common approach with third countries. If we can't have a single voice as Europeans we must at least have a single message," Mr Barroso said.

The recent volatility in oil and gas prices underlines the need for more transparency in member states' data on energy stocks, the commission says.

It wants data on commercial oil stocks in the EU to be published weekly. Data on member states' strategic oil stocks is already published by the EU.

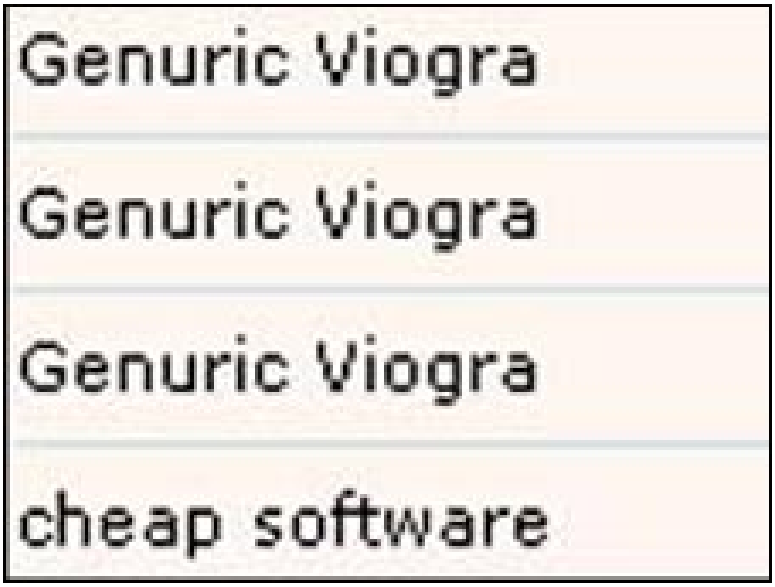
The commission does not call for obligatory strategic gas stocks, saying they are at least five times more expensive than oil stocks.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/europe/7727028.stm

Published: 2008/11/13 14:04:33 GMT

Spam plummets as gang leaves net

The closure of a web hosting firm that is believed to have had spam gangs as clients has led to a drastic reduction in junk mail.



Two US internet service providers have pulled the plug on the firm McColo following an investigation by the Washington Post newspaper.

Anti-spam firm Ironport has seen junk mail levels drop by 70% since McColo was taken offline on 11 November.

But, it warned, it will be a temporary respite from the menace of spam.

Plug pulled

"It is an unprecedented drop but will be a temporary outage as the networks move from North America to places where there is less scrutiny," said Jason Steer, a spokesman for Ironport.

The Washington Post has been gathering data on McColo for the past four months and passed the information to its internet service providers, Global Crossing and Hurricane Electric.

Both decided to pull the plug on the firm on Tuesday.

It is believed that it hosted gangs running botnets - networks of computers that have been taken over by criminals to send malicious software and spam.

According to MessageLabs, botnets are responsible for over 90% of spam.

Increasingly the tech industry is fighting back.

"All the US internet peering companies are under much more scrutiny. The authorities and the internet community have woken up to the problem," said Mr Steer.

But while it might make criminals think more carefully about what they do, it will not stop them, he thinks.

"Spam levels will come back to normal as we build up to Thanksgiving and Christmas," he said.

A recent study by computer scientists from the University of California, Berkeley and UC, San Diego (UCSD) found that spammers manage to turn a profit despite only getting one response to every 12.5m emails they send.

Story from BBC NEWS:
http://news.bbc.co.uk/go/pr/fr/-/2/hi/technology/7725492.stm

Published: 2008/11/13 10:41:27 GMT

The Novelist in His Literary Labyrinth

By JANET MASLIN

2666

By Roberto Bolaño

Translated by Natasha Wimmer

898 pages. Farrar, Straus & Giroux. $30.

There's a four-and-a-half-page-long monster sentence early in the first part of Roberto Bolaño's five-part posthumous magnum opus "2666." It's nothing particularly showy or strenuous. A lot of commas adorn this story of a Swabian who promoted cultural events for a Frisian town that was visited by an elusive literary genius who might or might not have been named Benno von Archimboldi and who spoke with a woman who went to Buenos Aires and met a little gaucho who presented her with a riddle that Archimboldi solved on the spot. For all its twists and turns the sentence reads as if Bolaño wrote it without breaking a sweat.

But Bolaño must have known that such prodigious effort would not go unrewarded. He surely knew, given the torrential, erudite, teasing and self-referential nature of his work, that he would attain Archimboldian stature some day. His literary legacy, like Archimboldi's, would be cryptic and daunting yet quite literally infatuating. When the four critics in "The Part About the Critics," the first section of "2666," become smitten by such temptingly impenetrable-sounding books as "Bifurcaria Bifurcata," "Lethaea" and "Bitzius," they speak for us all.

The work of Bolaño, the Chilean poet and novelist who died in 2003 at the age 50 from liver disease and would now be enjoying literary superstar status if fate had been kinder, is particularly explosive for those who read it in English, since so much of it has been translated in such a short time. Last year "The Savage Detectives" (which, like "2666," has been translated with wonderful agility by Natasha Wimmer) catapulted him from obscurity to worshipful adulation. And that book seems modest compared with "2666." It also seems no less open-ended than "2666," though "2666" was not quite complete when Bolaño died. "If that novel had been published posthumously," the Spanish literary critic Ignacio Echevarría asks about "The Savage Detectives" in an afterword to "2666," "would it not have given rise to all kinds of speculation about its unfinished state?"

It's a fair point. Bolaño preferred an open-ended approach, one that does not significantly diminish "2666" in either scope or ambition. Like Thomas Wolfe, whom he does not otherwise resemble, Bolaño produced a staggeringly voluminous output as an early death approached and left editors and publishers to do the carving (in Wolfe's case) or polishing (in Bolaño's). Not to mention the explaining. To amplify the mysterious title "2666" Mr. Echevarría quotes a 1999 Bolaño story, one that cites "a cemetery in the year 2666, a forgotten cemetery under the eyelid of a corpse or an unborn child, bathed in the dispassionate fluids of an eye that tried so hard to forget one particular thing that it ended up forgetting everything else."

Happily, that passage offers no clue about what makes "2666" so mesmerizing. Far better to think of David Lynch, Marcel Duchamp (both explicitly invoked here) and the Bob Dylan of "Highway 61 Revisited," all at the peak of their lucid yet hallucinatory powers. Bolaño's references were sufficiently global to encompass all that, and to interweave both stuffy academia and tawdry gumshoe fiction into this book's monumentally inclusive mix. The real chronicle of unsolved sex crimes in Ciudad Juárez, Mexico, with hundreds of women dead and the identities of their killers still unclear, grounds "2666" and eerily connects its five separate installments.

"2666" opens with "The Part About the Critics," in which various Archimboldians find themselves as ardently interested in one another as they are in the writings of their aged, ghostly Prussian hero. By the end of that section Archimboldi has been tracked to Mexico but remains out of view. "2666" earns its place in posterity by burying a hint at the book's overall secret, to the extent that it has one, in the midst of one critic's story. Among the more piquant images, in a book that is crammed to the gills with them, is that of a geometry text hanging on a clothesline, in a Duchamp homage. The second Bolaño installment, "The Part About Amalfitano," tacks some actual geometry and specific philosophers onto that same figurative image.

Amalfitano, yet another Archimboldian who surfaced in the first section, gets "2666" several steps closer to Santa Teresa, which is Bolaño's version of Juárez, and to the idea of murdered women. Here in this part of northern Mexico, there are "aquifers rising from their hiding places" and "water that coated teeth with a smooth ocher film." Amalfitano is sufficiently tormented to hear a voice that he imagines as his grandfather's. "Call me pops," the voice says. "So everything lets us down, including curiosity and honesty and what we love best," Amalfitano decides at the end of their conversation. "Yes," says the voice, articulating something fundamental about Bolaño, "but cheer up, it's fun at the end."

The third section, "The Part About Fate," introduces a Harlem journalist named Oscar Fate and illustrates, rather amazingly at this point given Bolaño's scope so far, that he was not perfectly comfortable with every known culture and every part of his planet. Despite a recipe for brussels sprouts and a theory that Woody Allen is a member of the Ku Klux Klan, the Fate section is more entertaining than plausible. But it too is pulled toward Santa Teresa, and the mounting dread of the crime spree takes a turn for the surreal. In the spirit of a discussion of David Lynch films, a video store clerk says of Mexico, "Every single thing in this country is an homage to everything in the world, even the things that haven't happened yet." "2666" wanders into the desert for its longest section, "The Part About the Crimes," a metronomic litany of murder victims that becomes increasingly graphic as it progresses (though Bolaño avoids gratuitous gore and brings a mournful eloquence to these descriptions). Almost 300 slow pages later, with "The Part About Archimboldi," this epic, maddening, mesmerizing adventure picks up energy as it nears its end. Archimboldi appears, not quite living up to his fanfare. The book tightens its focus, to the extent that a book with a huge population but no real principals can do so. And a description of Archimboldi's prose offers a crystallization of Bolaño's.

"The style was strange," it is said here, really about both of these literary lions. "The writing was clear and sometimes even transparent, but the way the stories followed one after another didn't lead anywhere." And: "In the end, all that was really left was nature, a nature that dissolved little by little in a boiling cauldron until it vanished completely." All fair except for the vanishing. Vanishing: the exact opposite of what "2666" will do.

http://www.nytimes.com/2008/11/13/books/13masl.html?th&emc=th

A Senior Fellow at the Institute of Nonexistence

By RICHARD PÉREZ-PEÑA

It was among the juicier post-election recriminations: Fox News Channel quoted an unnamed McCain campaign figure as saying that Sarah Palin did not know that Africa was a continent.

Who would say such a thing? On Monday the answer popped up on a blog and popped out of the mouth of David Shuster, an MSNBC anchor. “Turns out it was Martin Eisenstadt, a McCain policy adviser, who has come forward today to identify himself as the source of the leaks,” Mr. Shuster said.

Trouble is, Martin Eisenstadt doesn’t exist. His blog does, but it’s a put-on. The think tank where he is a senior fellow — the Harding Institute for Freedom and Democracy — is just a Web site. The TV clips of him on YouTube are fakes.

And the claim of credit for the Africa anecdote is just the latest ruse by Eisenstadt, who turns out to be a very elaborate hoax that has been going on for months. MSNBC, which quickly corrected the mistake, has plenty of company in being taken in by an Eisenstadt hoax, including The New Republic and The Los Angeles Times.

Now a pair of obscure filmmakers say they created Martin Eisenstadt to help them pitch a TV show based on the character. But under the circumstances, why should anyone believe a word they say?

“That’s a really good question,” one of the two, Eitan Gorlin, said with a laugh.

(For what it’s worth, another reporter for The New York Times is an acquaintance of Mr. Gorlin and vouches for his identity, and Mr. Gorlin is indeed “Mr. Eisenstadt” in those videos. He and his partner in deception, Dan Mirvish, have entries on the Internet Movie Database, imdb.com. But still. ...)

The pranksters behind Eisenstadt acknowledge that he was not, through them, the anonymous source of the Palin leak. He just claimed falsely that he was the leaker--and they say they have no reason to cast doubt on the original story. For its part, Fox News Channel continues to stand behind its story.

Mr. Gorlin and Mr. Mirvish say the blame lies not with them but with shoddiness in the traditional news media and especially the blogosphere.

“With the 24-hour news cycle they rush into anything they can find,” said Mr. Mirvish, 40.

Mr. Gorlin, 39, argued that Eisenstadt was no more of a joke than half the bloggers or political commentators on the Internet or television.

An MSNBC spokesman, Jeremy Gaines, explained the network’s misstep by saying someone in the newsroom received the Palin item in an e-mail message from a colleague and assumed it had been checked out. “It had not been vetted,” he said. “It should not have made air.”

But most of Eisenstadt’s victims have been bloggers, a reflection of the sloppy speed at which any tidbit, no matter how specious, can bounce around the Internet. And they fell for the fake material despite ample warnings online about Eisenstadt, including the work of one blogger who spent months chasing the illusion around cyberspace, trying to debunk it.

The hoax began a year ago with short videos of a parking valet character, who Mr. Gorlin and Mr. Mirvish said was the original idea for a TV series.

Soon there were videos showing him driving a car while spouting offensive, opinionated nonsense in praise of Rudolph W. Giuliani. Those videos attracted tens of thousands of Internet hits and a bit of news media attention.

When Mr. Giuliani dropped out of the presidential race, the character morphed into Eisenstadt, a parody of a blowhard cable news commentator.

Mr. Gorlin said they chose the name because “all the neocons in the Bush administration had Jewish last names and Christian first names.”

Eisenstadt became an adviser to Senator John McCain and got a blog, updated occasionally with comments claiming insider knowledge, and other bloggers began quoting and linking to it. It mixed weird-but-true items with false ones that were plausible, if just barely.

The inventors fabricated the Harding Institute, named for one of the most scorned presidents, and made Eisenstadt a senior fellow.

It didn’t hurt that a man named Michael Eisenstadt is a real expert at the Washington Institute for Near East Policy and is quoted in the mainstream media. The real Mr. Eisenstadt said in an interview that he was only dimly aware of the fake one, and that his main concern was that people understood that “I had nothing to do with this.”

Before long Mr. Gorlin and Mr. Mirvish had produced a short documentary on Martin Eisenstadt, supposedly for the BBC, posted in several parts on YouTube.

In June they produced what appeared to be an interview with Eisenstadt on Iraqi television promoting construction of a casino in the Green Zone in Baghdad. Then they sent out a news release in which he apologized. Outraged Iraqi bloggers protested the casino idea.

Among the Americans who took that bait was Jonathan Stein, a reporter for Mother Jones. A few hours later Mr. Stein put up a post on the magazine’s political blog, with the title “Hoax Alert: Bizarre ‘McCain Adviser’ Too Good to Be True,” and explained how he had been fooled.

In July, after the McCain campaign compared Senator Barack Obama to Paris Hilton, the Eisenstadt blog said "the phone was burning off the hook" at McCain headquarters, with angry calls from Ms. Hilton's grandfather and others. A Los Angeles Times political blog, among others, retold the story, citing Eisenstadt by name and linking to his blog.

Last month Eisenstadt blogged that Samuel J. Wurzelbacher, Joe the Plumber, was closely related to Charles Keating, the disgraced former savings and loan chief. It wasn't true, but other bloggers ran with it.

Among those taken in by Monday's confession about the Palin Africa report was The New Republic's political blog. Later the magazine posted this atop the entry: "Oy — this would appear to be a hoax. Apologies."

But the truth was out for all to see long before the big-name take-downs. For months sourcewatch.org has identified Martin Eisenstadt as a hoax. When Mr. Stein was the victim, he blogged that "there was enough info on the Web that I should have sussed this thing out."

And then there is William K. Wolfrum, a blogger who has played Javert to Eisenstadt's Valjean, tracking the hoaxster across cyberspace and repeatedly debunking his claims. Mr. Gorlin and Mr. Mirvish praised his tenacity, adding that the news media could learn something from him.

"As if there isn't enough misinformation on this election, it was shocking to see so much time wasted on things that didn't exist," Mr. Wolfrum said in an interview.

And how can we know that Mr. Wolfrum is real and not part of the hoax?

Long pause. "Yeah, that's a tough one."

http://www.nytimes.com/2008/11/13/arts/television/13hoax.html?th&emc=th

Speaking Out for a Group Once Unheard-Of: Aging With AIDS

By KAREN BARROW

In the early 1990s, a diagnosis of AIDS was both a likely death sentence and a stigma. There were few treatment options, and many Americans were terrified of people infected with H.I.V.

Today, because of antiretroviral therapy and an array of drugs to treat both symptoms and side effects, AIDS has become a chronic condition to be managed, at least in the developed world. No longer is the face of AIDS emaciated and covered with lesions; Americans with the disease are stronger and healthier, their concerns fading from public view.

Myron Gold, 67, is one of them. In 1993, Mr. Gold was walking in Manhattan around Christmastime when he collapsed and was rushed to the emergency room. A social worker later walked in and loudly announced that he had H.I.V.

Mr. Gold remembers the panic on the faces of the other patients. “When you said that in ’93, you emptied the whole emergency room,” he said. “Everyone ran for their lives.”

Still, he was unfazed by his diagnosis. A former fashion designer who became an AIDS and gay-rights activist, he was already familiar with the disease and how it ravaged the body. He was given a prescription for AZT, the most common treatment at the time, and was told he had six months to live.

Fifteen years later, he is alive and relatively well — and that, paradoxically, is the problem.

“This is not an illness about people in their 20s and teens,” he said. “This is an illness about every age spectrum, from young to old.”

In fact, 29 percent of those infected with H.I.V. are over 50. And because the immune system deteriorates with age, the virus is all the more aggressive in older people.

“I’ve been through 28 medications,” Mr. Gold said. His T cells — a component of the immune system, used as a marker of its health — “are low and they’re not working.”

Moreover, conditions that are often part of the aging process, like arthritis and dementia, can also be caused by H.I.V. So sorting through symptoms and effectively treating them — not to mention avoiding dangerous drug interactions — can be daunting.

There is also an alarming rate of infection among older Americans. In 2005, 15 percent of new H.I.V. and AIDS diagnoses were among people over the age of 50, according to the Centers for Disease Control and Prevention. Yet government recommendations call for routine AIDS screening only up to age 64, omitting the elderly population.

“What about people 65 and older?” Mr. Gold asked. “They’re having unprotected sex, they’re using drugs.”

He says that is why he continues his advocacy for people with AIDS and for stronger prevention efforts. He sits on both the New York and national boards of the nonprofit group Association of H.I.V. Over 50, attends City Council meetings and has spoken before Congress and the New York Legislature.

Not long ago, he visited a senior center in the Canarsie section of Brooklyn to discuss safe sex practices. The women who attended, “all over 80 years old,” he said later, rushed toward the table afterward for the free condoms he was distributing. (“They said to me, ‘It’s not for me, it’s for my grandson,’ ” he said.)

Politicians don’t like to talk about the spread of AIDS among the elderly, Mr. Gold says; nobody wants to hear about Grandma’s sex life. But he adds that change cannot happen without open discussion.

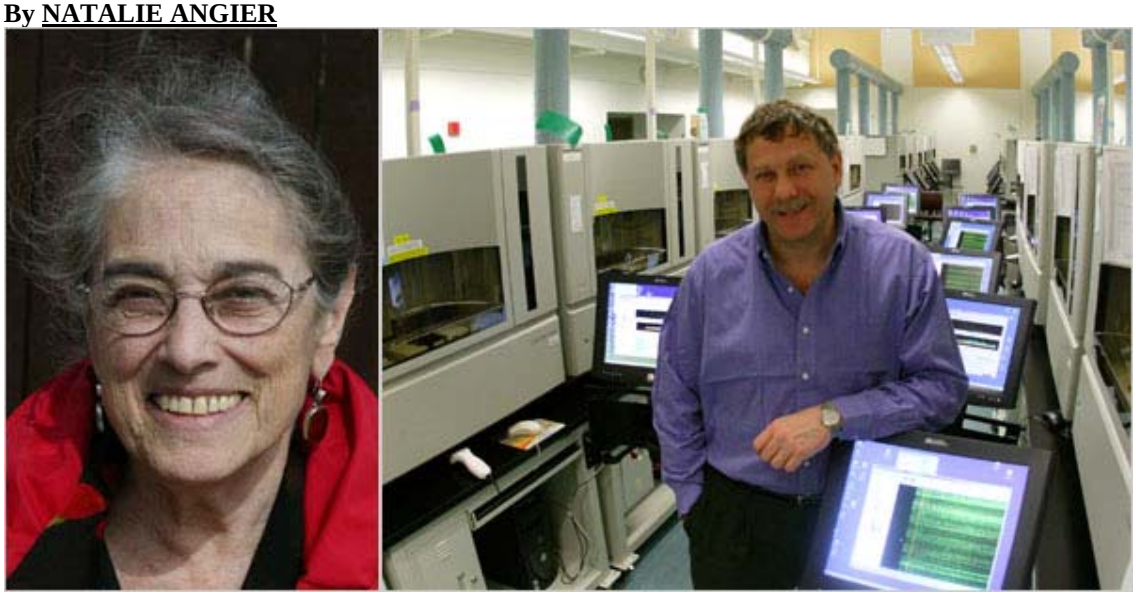
Mr. Gold is proud that he has long outlived his initial diagnosis, but AIDS has weakened his body and he now relies on an electric scooter to get to advocacy meetings and speaking events. Still, he keeps going.

“My work is what feeds me now,” he said. “Call me in 10 years, I’ll still be here.”

http://www.nytimes.com/2008/11/11/health/11voic.html?nl=8hlth&emc=hltha1

Scientists and Philosophers Find That 'Gene' Has a Multitude of Meanings

By NATALIE ANGIER



I owe an apology to my genes. For years I offhandedly blamed them for certain personal defects conventionally associated with one's hereditary starter pack — my Graves' autoimmune disease, for example, or my hair, which looks like the fibers left behind on the rim of an aspirin bottle after the cotton ball has been removed, only wispier. Now it turns out that genes, per se, are simply too feeble to accept responsibility for much of anything. By the traditional definition, genes are those lineups of DNA letters that serve as instructions for piecing together the body's proteins, and, I'm sorry, but the closer we look, the less instructive they seem, less a "blueprint for life" than one of those disappointing two-page Basic Setup booklets that comes with your computer, tells you where to plug it in and then directs you to a Web site for more information.

Scientists have learned that the canonical "genes" account for an embarrassingly tiny part of the human genome: maybe 1 percent of the three billion paired subunits of DNA that are stuffed into nearly every cell of the body qualify as indisputable protein codes. Scientists are also learning that many of the gene-free regions of our DNA are far more loquacious than previously believed, far more willing to express themselves in ways that have nothing to do with protein manufacture.In fact, I can't even make the easy linguistic transition from blaming my genes to blaming my whole DNA, because it's not just about DNA anymore. It's also about DNA's chemical cousin RNA, doing complicated things it wasn't supposed to do. Not long ago, RNA was seen as a bureaucrat, the middle molecule between a gene and a protein, as exemplified by the tidy aphorism, "DNA makes RNA makes protein." Now we find cases of short clips of RNA acting like DNA, transmitting genetic secrets to the next generation directly, without bothering to ask permission. We find cases of RNA acting like a protein, catalyzing chemical reactions, pushing other molecules around or tearing them down. RNA is like the vice presidency: it's executive, it's legislative, it's furtive.

For many scientists, the increasingly baroque portrait of the genome that their latest research has revealed, along with the muddying of molecular categories, is to be expected. "It's the normal process of doing science," said Jonathan R. Beckwith of Harvard Medical School. "You start off simple and you develop complexity." Nor are researchers disturbed by any linguistic turbulence that may arise, any confusion over what they mean when they talk about genes. "Geneticists happily abuse 'gene' to mean many things in many settings," said Eric S. Lander of the Broad Institute. "This can be a source of enormous consternation to onlookers who want to understand the conversation, but geneticists aren't bothered."

In Dr. Lander's view, the "kluges upon kluges" are an occupational hazard. "We're trying to parse an incredibly complex system," he said. "It's like the U.S. economy. What are your functional units? Employees and employers? Consumers and producers? What if you're a freelancer with multiple employers? Where do farmers' markets and eBay map onto your taxonomy?" "You shouldn't be worried about the fact that you have to layer on other things as you go along," he said. "You can never capture something like an economy, a genome or an ecosystem with one model or one taxonomy — it all depends on the questions you want to ask."

Dr. Lander added: "You have to be able to say, this is Tuesday's simplification; Wednesday's may be different, because incredible progress has been made by those simplifications."

For other researchers, though, the parlance of molecular biology is desperately in need of an overhaul, starting with our folksy friend, gene. "The language is historical baggage," said Evelyn Fox Keller, a science historian and professor emeritus at M.I.T. "It comes from the expectation that if we could find the fundamental units that make stuff happen, if we could find the atoms of biology, then we would understand the process." "But the notion of the gene as the atom of biology is very mistaken," said Dr. Keller, author of "The Century of the Gene" and other books. "DNA does not come equipped with genes. It comes with sequences that are acted on in certain ways by cells. Before you have cells you don't have genes. We have to get away from the underlying assumption of the particulate units of inheritance that we seem so attached to."

Dr. Keller is a big fan of the double helix considered both in toto and in situ — in its native cellular setting. "DNA is an enormously powerful resource, the most brilliant invention in evolutionary history," she said. "It is a far richer and more interesting molecule than we could have imagined when we first started studying it."

Still, she said, "it doesn't do anything by itself." It is a profoundly relational molecule, she said, and it has meaning only in the context of the cell. To focus endlessly on genes, she said, keeps us stuck in a linear, unidirectional and two-dimensional view of life, in which instructions are read out and dutifully followed.

"What makes DNA a living molecule is the dynamics of it, and a dynamic vocabulary would be helpful," she said. "I talk about trying to verb biology." And to renoun it as well. Writing last year in the journal PloS One, Dr. Keller and David Harel of the Weizmann Institute of Science suggested as an alternative to gene the word dene, which they said could be used to connote any DNA sequence that plays a role in the cell. So far, Dr. Keller admits, it has yet to catch on. Complex as our genome is, it obviously can be comprehended: our cells do it every day. Yet as the physician and essayist Lewis Thomas once noted, his liver was much smarter than he was, and he would rather be asked to pilot a 747 jet 40,000 feet over Denver than to assume control of his liver. "Nothing would save me or my liver, if I were in charge," he wrote.

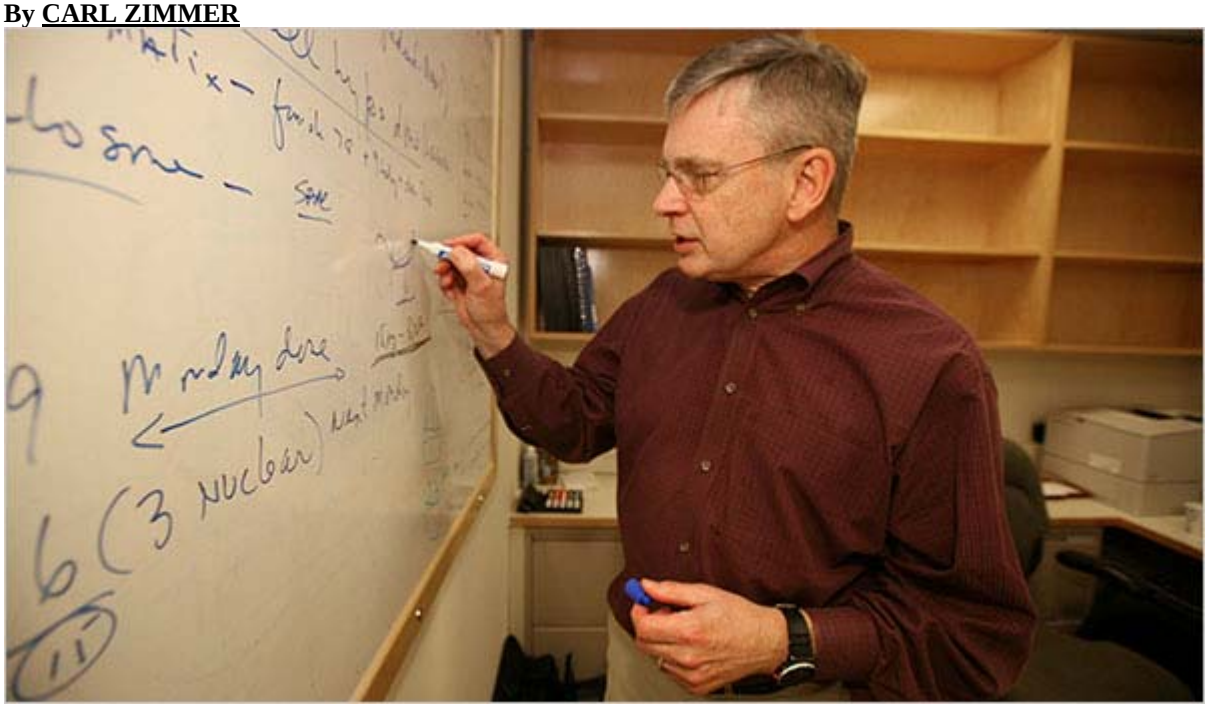
In a similar vein, we may never understand the workings of our cells and genomes as comfortably and cockily as we understand the artifacts of our own design. "We have evolved to solve problems," Dr. Keller said. "Those do not include an understanding of the operation of our own systems — that doesn't have much evolutionary advantage." It's quite possible, she said, that biology is "irreducibly complex," and not entirely accessible to rational analysis. Which is not to say we're anywhere near being stymied, she said: "Our biology is stretching our minds. It's another loop in the evolutionary process."

And if canonical genes are too thin a gruel to explain yourself to yourself, you can always reach for the stalwart of scapegoats. Blame it all on your mother, who surely loved you too much or too little or in all the wrong ways.

http://www.nytimes.com/2008/11/11/science/11angi.html?nl=8hlth&emc=hltha1

Now: The Rest of the Genome

By CARL ZIMMER



Over the summer, Sonja Prohaska decided to try an experiment. She would spend a day without ever saying the word "gene." Dr. Prohaska is a bioinformatician at the University of Leipzig in Germany. In other words, she spends most of her time gathering, organizing and analyzing information about genes. "It was like having someone tie your hand behind your back," she said.

But Dr. Prohaska decided this awkward experiment was worth the trouble, because new large-scale studies of DNA are causing her and many of her colleagues to rethink the very nature of genes. They no longer conceive of a typical gene as a single chunk of DNA encoding a single protein. "It cannot work that way," Dr. Prohaska said. There are simply too many exceptions to the conventional rules for genes.

It turns out, for example, that several different proteins may be produced from a single stretch of DNA. Most of the molecules produced from DNA may not even be proteins, but another chemical known as RNA. The familiar double helix of DNA no longer has a monopoly on heredity. Other molecules clinging to DNA can produce striking differences between two organisms with the same genes. And those molecules can be inherited along with DNA.

The gene, in other words, is in an identity crisis.

This crisis comes on the eve of the gene's 100th birthday. The word was coined by the Danish geneticist Wilhelm Johanssen in 1909, to describe whatever it was that parents passed down to their offspring so that they developed the same traits. Johanssen, like other biologists of his generation, had no idea what that invisible factor was. But he thought it would be useful to have a way to describe it.

"The word 'gene' is completely free from any hypothesis," Johanssen declared, calling it "a very applicable little word."

Over the next six decades, scientists transformed that little word from an abstraction to concrete reality. They ran experiments on bread mold and bacteria, on fruit flies and corn. They discovered how to alter

flowers and eyes and other traits by tinkering with molecules inside cells. They figured out that DNA was a pair of strands twisted around each other. And by the 1960s, they had a compelling definition of the gene.

A gene, they argued, was a specific stretch of DNA containing the instructions to make a protein molecule. To make a protein from a gene, a cell had to read it and build a single-stranded copy known as a transcript out of RNA. This RNA was then grabbed by a cluster of molecules called a ribosome, which used it as a template to build a protein.

A gene was also the fundamental unit of heredity. Every time a cell divided, it replicated its genes, and parents passed down some of their genes to their offspring. If you inherited red hair — or a predisposition for breast cancer — from your mother, chances were that you inherited a gene that helped produce that trait.

This definition of the gene worked spectacularly well — so well, in fact, that in 1968 the molecular biologist Gunther Stent declared that future generations of scientists would have to content themselves with "a few details to iron out."

The Details

Stent and his contemporaries knew very well that some of those details were pretty important. They knew that genes could be shut off and switched on when proteins clamped onto nearby bits of DNA. They also knew that a few genes encoded RNA molecules that never became proteins. Instead, they had other jobs, like helping build proteins in the ribosome.

But these exceptions did not seem important enough to cause scientists to question their definitions. "The way biology works is different from mathematics," said Mark Gerstein, a bioinformatician at Yale. "If you find one counterexample in mathematics, you go back and rethink the definitions. Biology is not like that. One or two counterexamples — people are willing to deal with that."

More complications emerged in the 1980s and 1990s, though. Scientists discovered that when a cell produces an RNA transcript, it cuts out huge chunks and saves only a few small remnants. (The parts of DNA that the cell copies are called exons; the parts cast aside are introns.) Vast stretches of noncoding DNA also lie between these protein-coding regions. The 21,000 protein-coding genes in the human genome make up just 1.2 percent of that genome.

The Genome

In 2000, an international team of scientists finished the first rough draft of that genome — all of the genetic material in a human cell. They identified the location of many of the protein-coding genes, but they left the other 98.8 percent of the human genome largely unexplored.

Since then, scientists have begun to wade into that genomic jungle, mapping it in fine detail.

One of the biggest of these projects is an effort called the Encyclopedia of DNA Elements, or Encode for short. Hundreds of scientists are carrying out a coordinated set of experiments to determine the function of every piece of DNA in the human genome. Last summer they published their results on 1 percent of the genome — some 30 million "letters" of DNA. The genetic code is written in letters, like the title of the movie "Gattaca," with each letter standing for a molecule called a base: guanine (G), adenine (A), thymine (T), cytosine (C). The Encode team expects to have initial results on the other 99 percent by next year.

Encode's results reveal the genome to be full of genes that are deeply weird, at least by the traditional standard of what a gene is supposed to be. "These are not oddities — these are the rule," said Thomas R. Gingeras of Cold Spring Harbor Laboratory and one of the leaders of Encode.

A single so-called gene, for example, can make more than one protein. In a process known as alternative splicing, a cell can select different combinations of exons to make different transcripts. Scientists identified the first cases of alternative splicing almost 30 years ago, but they were not sure how common it was. Several studies now show that almost all genes are being spliced. The Encode team estimates that the average protein-coding region produces 5.7 different transcripts. Different kinds of cells appear to produce different transcripts from the same gene.

Even weirder, cells often toss exons into transcripts from other genes. Those exons may come from distant locations, even from different chromosomes.

So, Dr. Gingeras argues, we can no longer think of genes as being single stretches of DNA at one physical location.

"I think it's a paradigm shift in how we think the genome is organized," Dr. Gingeras said.

The Epigenome

But it turns out that the genome is also organized in another way, one that brings into question how important genes are in heredity. Our DNA is studded with millions of proteins and other molecules, which determine which genes can produce transcripts and which cannot. New cells inherit those molecules along with DNA. In other words, heredity can flow through a second channel.

One of the most striking examples of this second channel is a common flower called toadflax. Most toadflax plants grow white petals arranged in a mirror-like symmetry. But some have yellow five-pointed stars. These two forms of toadflax pass down their flower to their offspring. Yet the difference between their flowers does not come down to a difference in their DNA.

Instead, the difference comes down to the pattern of caps that are attached to their DNA. These caps, made of carbon and hydrogen, are known as methyl groups. The star-shaped toadflax have a distinct pattern of caps on one gene involved in the development of flowers.

DNA is not just capped with methyl groups; it is also wrapped around spool-like proteins called histones that can wind up a stretch of DNA so that the cell cannot make transcripts from it. All of the molecules that hang onto DNA, collectively known as epigenetic marks, are essential for cells to take their final form in the body. As an embryo matures, epigenetic marks in different cells are altered, and as a result they develop into different tissues. Once the final pattern of epigenetic marks is laid down, it clings stubbornly to cells. When cells divide, their descendants carry the same set of marks. "They help cells remember what genes to keep on, and what genes can never be turned on," said Bradley Bernstein of Harvard University.

Scientists know much less about this "epigenome" than the genome. In September, the National Institutes of Health began a $190 million program to start mapping epigenetic marks on DNA in different tissues. "Now we can chart all these changes beyond the gene," said Eric Richards of Cornell University.

This survey may provide clues to the origins of cancer and other diseases. It has long been known that when DNA mutates, a cell may become prone to turning cancerous. Some studies now suggest that when epigenetic marks are disturbed, cells may also be made more vulnerable to cancer, because essential genes are shut off and genes that should be shut off are turned on. What makes both kinds of changes particularly dangerous is that they are passed down from a cell to all its descendants.

When an embryo begins to develop, the epigenetic marks that have accumulated on both parents' DNA are stripped away. The cells add a fresh set of epigenetic marks in the same pattern that its parents had when they were embryos.

This process turns out to be very delicate. If an embryo experiences certain kinds of stress, it may fail to lay down the right epigenetic marks.

In 1944, for example, the Netherlands suffered a brutal famine. Scientists at the University of Leiden recently studied 60 people who were conceived during that time. In October, the researchers reported that today they still have fewer epigenetic marks than their siblings. They suggest that during the 1944 famine, pregnant mothers could not supply their children with the raw ingredients for epigenetic marks.

In at least some cases, these new epigenetic patterns may be passed down to future generations. Scientists are debating just how often this happens. In a paper to be published next year in The Quarterly Review of Biology, Eva Jablonski and Gal Raz of Tel Aviv University in Israel assemble a list of 101 cases in which a trait linked to an epigenetic change was passed down through three generations

For example, Matthew Amway of Washington State University and his colleagues found that exposing pregnant rats to a chemical for killing fungus disrupted the epigenetic marks in the sperm of male embryos. The embryos developed into adult rats that suffered from defective sperm and other disorders, like cancer. The males passed down their altered epigenetic marks to their own offspring, which passed them down to yet another generation.

Last year Dr. Amway and his colleagues documented an even more surprising effect of the chemical. Female rats exposed in the womb avoided mating with exposed male rats. The scientists found this preference lasted at least three generations.

While these experiments are eye-opening, scientists are divided about how important these generation-spanning changes are. "There's a lot of disagreement about whether it matters," Dr. Richards said.

RNA in the Spotlight

Epigenetic marks are intriguing not just for their effects, but also for how they are created in the first place. To place a cap of methyl groups on DNA, for example, a cluster of proteins must be guided to the right spot. It turns out they must be led there by an RNA molecule that can find it.

These RNA guides, like the RNA molecules in ribosomes, do not fit the classical concept of the gene. Instead of giving rise to a protein, these RNA molecules immediately start to carry out their own task in the cell. Over the last decade, scientists have uncovered a number of new kinds of RNA molecules that never become proteins. (Scientists call them noncoding RNA.) In 2006, for example, Craig Mello of the University of Massachusetts and Andrew Fire of Stanford University won the Nobel Prize for establishing that small RNA molecules could silence genes by interfering with their transcription.

These discoveries left scientists wondering just how much noncoding RNA our cells make. The early results of Encode suggest the answer is a lot. Although only 1.2 percent of the human genome encodes proteins, the Encode scientists estimate that a staggering 93 percent of the genome produces RNA transcripts.

John Mattick, an Encode team member at the University of Queensland in Australia, is confident that a lot of those transcripts do important things that scientists have yet to understand. "My bet is the vast majority of it — I don't know whether that's 80 or 90 percent," he said.

"When you cross the Rubicon and look back, you see the protein-centric view as being quite primitive," he said.

Certain versions of those RNA-coding genes may raise the risk of certain diseases. As part of the Encode project, scientists identified the location of variations in DNA that have been linked to common diseases like cancer. A third of those variations were far from any protein-coding gene. Understanding how noncoding RNA works may help scientists figure out how to use drugs to counteract genetic risks for diseases. "This is going to be a huge topic of research this coming decade," said Ewan Birney, one of the leaders of the Encode project at the European Bioinformatics Institute.

Despite the importance of noncoding RNA, Dr. Birney suspects that most of the transcripts discovered by the Encode project do not actually do much of anything. "I think it's a hypothesis that has to be on the table," he said.

David Haussler, another Encode team member at the University of California, Santa Cruz, agrees with Dr. Birney. "The cell will make RNA and simply throw it away," he said.

Dr. Haussler bases his argument on evolution. If a segment of DNA encodes some essential molecule, mutations will tend to produce catastrophic damage. Natural selection will weed out most mutants. If a segment of DNA does not do much, however, it can mutate without causing any harm. Over millions of years, an essential piece of DNA will gather few mutations compared with less important ones.

Only about 4 percent of the noncoding DNA in the human genome shows signs of having experienced strong natural selection. Some of those segments may encode RNA molecules that have an important job in the cell. Some of them may contain stretches of DNA that control neighboring genes. Dr. Haussler suspects that most of the rest serve no function.

"Most of it is baggage being dragged along," he said.

But the line between the useless baggage and the useful DNA is hard to draw. Mutations can make it impossible for a cell to make a protein from a gene. Scientists refer to such a disabled piece of DNA as a pseudogene. Dr. Gerstein and his colleagues estimate that there are 10,000 to 20,000 pseudogenes in the human genome. Most of them are effectively dead, but a few of them may still make RNA molecules that serve an important function. Dr. Gerstein nicknames these functioning pseudogenes "the undead."

Alien DNA

Much of the baggage in the genome comes not from dead genes, however, but from invading viruses. Viruses repeatedly infected our distant ancestors, adding their DNA to the genetic material passed down from generation to generation. Once these viruses invaded our genomes, they sometimes made new copies of themselves, and the copies were pasted in other spots in the genome. Over many generations, they mutated and lost their ability to move.

"Our genome is littered with the rotting carcasses of these little viruses that have made their home in our genome for millions of years," Dr. Haussler said.

As these chunks of viral DNA hop around, they can cause a lot of harm. They can disrupt the genome, causing it to stop making essential proteins. Hundreds of genetic disorders have been linked to their leaps. One of the most important jobs that noncoding RNA serves in the genome is preventing this virus DNA from spreading quickly.

Yet some of these invaders have evolved into useful forms. Some stretches of virus DNA have evolved to make RNA genes that our cells use. Other stretches have evolved into sites where our proteins can attach and switch on nearby genes. “They provide the raw material for innovation,” Dr. Haussler said.

In this jungle of invading viruses, undead pseudogenes, shuffled exons and epigenetic marks, can the classical concept of the gene survive? It is an open question, one that Dr. Prohaska hopes to address at a meeting she is organizing at the Santa Fe Institute in New Mexico next March.

In the current issue of American Scientist, Dr. Gerstein and his former graduate student Michael Seringhaus argue that in order to define a gene, scientists must start with the RNA transcript and trace it back to the DNA. Whatever exons are used to make that transcript would constitute a gene. Dr. Prohaska argues that a gene should be the smallest unit underlying inherited traits. It may include not just a collection of exons, but the epigenetic marks on them that are inherited as well.

These new concepts are moving the gene away from a physical snippet of DNA and back to a more abstract definition. “It’s almost a recapture of what the term was originally meant to convey,” Dr. Gingeras said.

A hundred years after it was born, the gene is coming home.

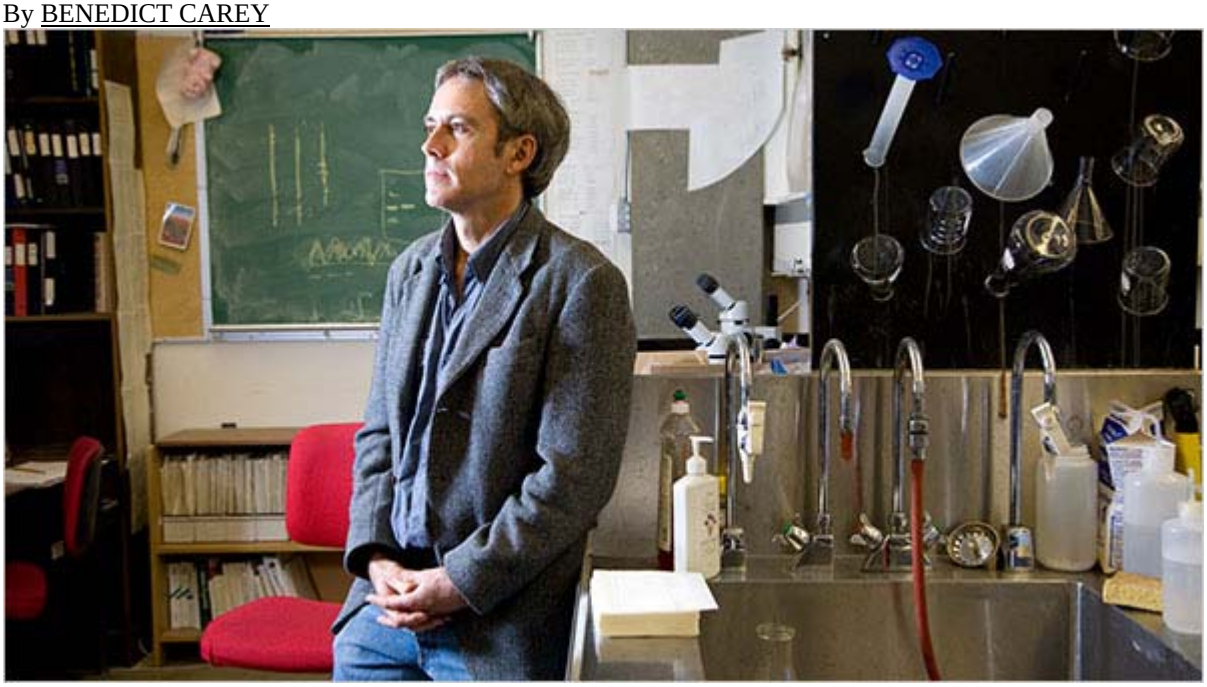
This article has been revised to reflect the following correction:

Correction: November 13, 2008
An article on Tuesday about new genetic research and new ideas of what a gene is misstated the number of nucleotide bases, or “letters” of DNA, that would constitute 1 percent of the human genome. One percent would be 30 million bases, or “letters,” not 3 million.

http://www.nytimes.com/2008/11/11/science/11gene.html?nl=8hlth&emc=hltha1

In a Novel Theory of Mental Disorders, Parents' Genes Are in Competition

By BENEDICT CAREY



Two scientists, drawing on their own powers of observation and a creative reading of recent genetic findings, have published a sweeping theory of brain development that would change the way mental disorders like autism and schizophrenia are understood.

The theory emerged in part from thinking about events other than mutations that can change gene behavior. And it suggests entirely new avenues of research, which, even if they prove the theory to be flawed, are likely to provide new insights into the biology of mental disease.

At a time when the search for the genetic glitches behind brain disorders has become mired in uncertain and complex findings, the new idea provides psychiatry with perhaps its grandest working theory since Freud, and one that is grounded in work at the forefront of science. The two researchers — Bernard Crespi, a biologist at Simon Fraser University in Canada, and Christopher Badcock, a sociologist at the London School of Economics, who are both outsiders to the field of behavior genetics — have spelled out their theory in a series of recent journal articles.

"The reality, and I think both of the authors would agree, is that many of the details of their theory are going to be wrong; and it is, at this point, just a theory," said Dr. Matthew Belmonte, a neuroscientist at Cornell University. "But the idea is plausible. And it gives researchers a great opportunity for hypothesis generation, which I think can shake up the field in good ways."

Their idea is, in broad outline, straightforward. Dr. Crespi and Dr. Badcock propose that an evolutionary tug of war between genes from the father's sperm and the mother's egg can, in effect, tip brain development in one of two ways. A strong bias toward the father pushes a developing brain along the autistic spectrum, toward a fascination with objects, patterns, mechanical systems, at the expense of social development. A bias toward the mother moves the growing brain along what the researchers call the psychotic spectrum, toward hypersensitivity to mood, their own and others'. This, according to the theory, increases a child's risk of developing schizophrenia later on, as well as mood problems like bipolar disorder and depression.

In short: autism and schizophrenia represent opposite ends of a spectrum that includes most, if not all, psychiatric and developmental brain disorders. The theory has no use for psychiatry's many separate categories for disorders, and it would give genetic findings an entirely new dimension.

"The empirical implications are absolutely huge," Dr. Crespi said in a phone interview. "If you get a gene linked to autism, for instance, you'd want to look at that same gene for schizophrenia; if it's a social brain gene, then it would be expected to have opposite effects on these disorders, whether gene expression was turned up or turned down."

The theory leans heavily on the work of David Haig of Harvard. It was Dr. Haig who argued in the 1990s that pregnancy was in part a biological struggle for resources between the mother and unborn child. On one side, natural selection should favor mothers who limit the nutritional costs of pregnancy and have more offspring; on the other, it should also favor fathers whose offspring maximize the nutrients they receive during gestation, setting up a direct conflict.

The evidence that this struggle is being waged at the level of individual genes is accumulating, if mostly circumstantial. For example, the fetus inherits from both parents a gene called IGF2, which promotes growth. But too much growth taxes the mother, and in normal development her IGF2 gene is chemically marked, or "imprinted," and biologically silenced. If her gene is active, it causes a disorder of overgrowth, in which the fetus's birth weight swells, on average, to 50 percent above normal.

Biologists call this gene imprinting an epigenetic, or "on-genetic," effect, meaning that it changes the behavior of the gene without altering its chemical composition. It is not a matter of turning a gene on or off, which cells do in the course of normal development. Instead it is a matter of muffling a gene, for instance, with a chemical marker that makes it hard for the cell to read the genetic code; or altering the shape of the DNA molecule, or what happens to the proteins it produces. To illustrate how such genetic reshaping can give rise to behavioral opposites — the yin and yang that their theory proposes — Dr. Crespi and Dr. Badcock point to a remarkable group of children who are just that: opposites, as different temperamentally as Snoopy and Charlie Brown, as a lively Gaugin and a brooding Goya.

Those with the genetic disorder called Angelman syndrome typically have a jerky gait, appear unusually happy and have difficulty communicating. Those born with a genetic problem known as Prader-Willi syndrome often are placid, compliant and as youngsters low maintenance.

Yet these two disorders, which turn up in about one of 10,000 newborns, stem from disruptions of the same genetic region on chromosome 15. If the father's genes dominate in this location, the child develops Angelman syndrome; if the mother's do, the result is Prader-Willi syndrome, as Dr. Haig and others have noted. The former is associated with autism, and the latter with mood problems and psychosis later on — just as the new theory predicts.

Emotional problems like depression, anxiety and bipolar disorder, seen through this lens, appear on Mom's side of the teeter-totter, with schizophrenia, while Asperger's syndrome and other social deficits are on Dad's.

It was Dr. Badcock who noticed that some problems associated with autism, like a failure to meet another's gaze, are direct contrasts to those found in people with schizophrenia, who often believe they are being watched. Where children with autism appear blind to others' thinking and intentions, people with schizophrenia see intention and meaning everywhere, in their delusions. The idea expands on the "extreme male brain" theory of autism proposed by Dr. Simon Baron-Cohen of Cambridge.

"Think of the grandiosity in schizophrenia, how some people think that they are Jesus, or Napoleon, or omnipotent," Dr. Crespi said, "and then contrast this with the underdeveloped sense of self in autism. Autistic kids often talk about themselves in the third person."

Such observations and biological evidence are hardly enough to overturn current thinking about disorders as distinct as autism and schizophrenia, experts agree. “I think his work is often brilliant,” Dr. Stephen Scherer, of the University of Toronto and the Hospital for Sick Children, said by e-mail message of Dr. Crespi. At the same time, Dr. Scherer added, “For autism there will not be one unifying theory but perhaps for a proportion of families there are underlying common variants” of genes that together cause the disorder.

The theory also does not fit all of the various quirks of autism and schizophrenia on flip sides of the same behavioral coin. The father of biological psychiatry, Emil Kraepelin, in the late 1800s made a distinction between mood problems, like depression and bipolar disorder, and the thought distortions of schizophrenia — a distinction that, to most psychiatrists, still holds up. Many people with schizophrenia, moreover, show little emotion; they would seem to be off the psychosis spectrum altogether, as the new theory describes it.

But experts familiar with their theory say that the two scientists have, at minimum, infused the field with a shot of needed imagination and demonstrated the power of thinking outside the gene. For just as a gene can carry a mark from its parent of origin, so it can be imprinted by that parent’s own experience.

The study of such markers should have a “significant impact on our understanding of mental health conditions,” said Dr. Bhismadev Chakrabarti, of the Autism Research Center at the University of Cambridge, “as, in some ways, they represent the first environmental influence on the expression of the genes.”

http://www.nytimes.com/2008/11/11/health/research/11brain.html?nl=8hlth&emc=hltha2