Infoteca's E-Journal

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Mother Madness

Spend every moment with your child? Make your own baby food and use cloth diapers? Erica Jong wonders how motherhood became such a prison for modern women.

By ERICA JONG

Unless you've been living on another planet, you know that we have endured an orgy of motherphilia for at least the last two decades. Movie stars proudly display their baby bumps, and the shiny magazines at the checkout counter never tire of describing the joys of celebrity parenthood. Bearing and rearing children has come to be seen as life's greatest good. Never mind that there are now enough abandoned children on the planet to make breeding unnecessary. Professional narcissists like Angelina Jolie and Madonna want their own little replicas in addition to the African and Asian children that they collect to advertise their open-mindedness. Nannies are seldom photographed in these carefully arranged family scenes. We are to assume that all this baby-minding is painless, easy and cheap.

Josef Koudelka/Magnum Photos

We like to think mothering has always been the same, but it's encompassed practices as diverse as baby farming, wet nursing and infanticide.

Today's bible of child-rearing is "The Baby Book" by William and Martha Sears, which trumpets "attachment parenting." You wear your baby, sleep with her and attune yourself totally to her needs. How you do this and also earn the money to keep her is rarely discussed. You are just assumed to be rich enough. At one point, the Searses suggest that you borrow money so that you can bend your life to the baby's needs. If there are other caregivers, they are invisible. Mother and father are presumed to be able to do this alone—without the village it takes to raise any child. Add to this the dictates of "green" parenting—homemade baby food, cloth diapers, a cocoon of clockless, unscheduled time—and you have our new ideal. Anything less is bad for baby. Parents be damned.

We also assume that "mother" and "father" are exclusive terms, though in other cultures, these terms are applied to a variety of aunts, uncles and other adults. Kinship is not exclusively biological, after all, and you need a brood to raise a brood. Cooperative child-rearing is obviously convenient, but some anthropologists believe that it also serves another more important function: Multiple caregivers enhance the cognitive skills of babies and young children. Any family in which there are parents, grandparents, nannies and other concerned adults understands how readily children adapt to different caregivers. Surely this prepares them better for life than stressed-out biological parents alone. Some of these stressed-out parents have come to loathe Dr. Sears and his wife and consider them condescending colonialists in love with noble savagery.

The mega-popularity of "The Baby Book" by William and Martha Sears, has helped spur the "attachment parenting" trend, where moms and dads are told to cater to their children. Author and feminist activist Erica Jong says it's an unhealthy trend that may harm parents and children.

Someday "attachment parenting" may be seen as quaint, but today it's assumed that we can perfect our babies by the way we nurture them. Few of us question the idea, and American mothers and fathers run themselves ragged trying to mold exceptional children. It's a highly competitive race. No parent wants to be told it all may be for naught, especially, say, a woman lawyer who has quit her firm to raise a child. She is assumed to be pursuing a higher goal, and hard work is supposed to pay off, whether in the office or at home. We dare not question these assumptions.

No wonder that Elisabeth Badinter's book "Le Conflit: La Femme and La Mere" ("The Conflict: Woman and Mother") has become a best seller in France and will soon be published around the world. Ms. Badinter dares to question attachment parenting, arguing that such supposedly benign expectations victimize women far more than men have ever done. Attachment parenting, especially when combined with environmental correctness, has encouraged female victimization. Women feel not only that they must be ever-present for their children but also that they must breast-feed, make their own baby food and eschew disposable diapers. It's a prison for mothers, and it represents as much of a backlash against women's freedom as the right-to-life movement.

Celebrity Moms

When a celebrity mother like the supermodel Gisele Bündchen declares that all women should be required to breast-feed, she is echoing green-parenting propaganda, perhaps unknowingly. Mothers are guilty enough without more rules about mothering. I liked breast-feeding. My daughter hated it. Mothers must be free to choose. But politicians may yet find ways to impose rules on motherhood. Mandatory breast-feeding isn't imminent, but it's not hard to imagine that the "food police" might become something more than a punch line about overreaching government. Mothers, after all, are easy scapegoats.

In truth, nothing is more malleable than motherhood. We like to imagine that mothering is immutable and decreed by natural law, but in fact it has encompassed such disparate practices as baby farming, wet-nursing and infanticide. The possessive, almost proprietary motherhood that we consider natural today would have been anathema to early kibbutzniks in Israel. In our day motherhood has been glamorized, and in certain circles, children have become the ultimate accessories. But we should not fool ourselves: Treating children like expensive accessories may be the ultimate bondage for women.

Is it even possible to satisfy the needs of both parents and children? In agrarian societies, perhaps wearing your baby was the norm, but today's corporate culture scarcely makes room for breast-feeding on the job, let alone baby-wearing. So it seems we have devised a new torture for mothers—a set of expectations that makes them feel inadequate no matter how passionately they attend to their children.

I try to imagine what it would have been like for me to follow the suggestions of attachment parenting while I was a single mother and full-time bread-winner. I would have had to take my baby on lecture tours, in and out of airports, television stations and hotels. But that was impossible. Her schedule and mine could not have diverged more. So I hired nannies, left my daughter home and felt guilty for my own imperfect attachment. I can't imagine having done it any other way. Even if every hotel and every airport had had a beautiful baby facility—which, of course, they didn't—the schedules of children are not so malleable. Children are naturally afraid of unfamiliar baby sitters, so parents change their lives to accommodate them. In the absence of societal adjustment to the needs of children, parents have to revise their own schedules.

We are in a period of retrenchment against progressive social policies, and the women pursuing political life today owe more to Evita Peron than to Eleanor Roosevelt. "Mama grizzlies" like Sarah Palin never acknowledge that there are any difficulties in bearing and raising children. Nor do they acknowledge any helpers as they thrust their babies into the arms of siblings or daddies. The baby has become the ultimate political tool.

2,000 Years of Parenting Advice

- Proper measures must be taken to ensure that [children] shall be **tactful and courteous** in their address; for nothing is so deservedly disliked as tactless characters. —*"The Education of Children," Plutarch, A.D. 110*
- I will also advise his feet to be wash'd every day in cold water, and to **have his shoes so thin, that they might leak and let in water**.… It is recommendable for its cleanliness; but that which I aim at in it, is health; and therefore I limit it not precisely to any time of the day. —*"Some Thoughts Concerning Education," John Locke, 1693*
- But let mothers deign to nurse their children, **morals will reform themselves**, nature's sentiments will be awakened in every heart, the state will be repeopled. —*"Emile: or, On Education," Jean-Jacques Rousseau, 1762*
- Even very little children are happy when they think they are useful. **"I can do some good—can't I, mother?"** is one of the first questions asked.…Let them go out with their little basket, to weed the garden, to pick peas for dinner, to feed the chickens, &c. —*"The Mother's Book," Lydia Maria Child, 1831*
- Babies under six months old should **never be played with**; and the less of it at any time the better for the infant. —*"The Care and Feeding of Children," L. Emmett Holt, 1894*
- **Never hug and kiss them**, never let them sit in your lap. If you must, kiss them once on the forehead when they say good night. Shake hands with them in the morning. Give them a pat on the head if they have made an extraordinary good job of a difficult task. —*"Psychological Care of Infant and Child," John B. Watson, 1928*
- The more people have studied different methods of bringing up children the more they have come to the conclusion that what good mothers and fathers instinctively feel like doing for their babies is usually best after all. Furthermore, all parents do their best job when they have a natural, easy confidence in themselves. **Better to make a few mistakes from being natural** than to do everything letter-perfect out of a feeling of worry. —*"The Common Sense Book of Baby and Child Care," Benjamin Spock, 1946*

Indeed, although attachment parenting comes with an exquisite progressive pedigree, it is a perfect tool for the political right. It certainly serves to keep mothers and fathers out of the political process. If you are busy raising children without societal help and trying to earn a living during a recession, you don't have much time to question and change the world that you and your children inhabit. What exhausted, overworked parent has time to protest under such conditions?

The first wave of feminists, in the 19th century, dreamed of communal kitchens and nurseries. A hundred years later, the closest we have come to those amenities are fast-food franchises that make our children obese and impoverished immigrant nannies who help to raise our kids while their own kids are left at home with grandparents. Our foremothers might be appalled by how little we have transformed the world of motherhood. None of these parenting patterns is encoded in our DNA. Mothering and fathering are different all over the world. Our cultural myth is that nurturance matters deeply. And it has led to "helicopter parenting," the smothering surveillance of a child's every experience and problem, often extending as far as college. It has also led to pervasive anxiety (among parents and children alike) and the deep disappointment that some parents suffer when their kids become less malleable during their teenage years.

Giving up your life for your child creates expectations that are likely to be thwarted as the child, inevitably, attempts to detach. Nor does such hyper-attentive parenting help children to become independent adults. Kids

who never have to solve problems for themselves come to believe that they can't solve problems themselves. Sometimes they fall apart in college.

Much of the demand for perfect children falls on mothers, and now we are hearing a new drumbeat: the idea that prenatal life determines post-natal life. In her much-discussed new book, "Origins: How the Nine Months Before Birth Shape the Rest of Our Lives," Annie Murphy Paul describes the ever-expanding efforts of researchers to determine how maternal diet, weight, stress, exercise and other factors can influence fetal development. Ms. Paul is sensibly resistant to alarmism on these issues, but you cannot read her book without asking: And who is in charge of prenatal life? The mother! Does one glass of wine doom your child to fetal alcohol syndrome? No, but you could be forgiven for thinking so, judging by the hysterical reaction that often greets an expectant mother who dares to sip Chardonnay.

What is so troubling about these theories of parenting—both pre- and postnatal—is that they seem like attempts to exert control in a world that is increasingly out of control. We can't get rid of the carcinogens in the environment, but we can make sure that our kids arrive at school each day with a reusable lunch bag full of produce from the farmers' market. We can't do anything about loose nukes falling into the hands of terrorists, but we can make sure that our progeny's every waking hour is tightly scheduled with edifying activities.

Growing Up With Ma Jong

What was Erica Jong like as a mother? Read daughter Molly Jong-Fast's account.

Our obsession with parenting is an avoidance strategy. It allows us to substitute our own small world for the world as a whole. But the entire planet is a child's home, and other adults are also mothers and fathers. We cannot separate our children from the ills that affect everyone, however hard we try. Aspiring to be perfect parents seems like a pathetic attempt to control what we can while ignoring problems that seem beyond our reach.

Some parenting gurus suggest that helicopter parenting became the rage as more mothers went to work outside the home. In other words, it was a kind of reaction formation, a way for mothers to compensate for their absence and guilt and also for the many dangerous and uncontrollable things in the modern family's environment. This seems logical to me. As we give up on ideals of community, we focus more and more on our individual children, perhaps not realizing that the community and the child cannot be separated.

In the oscillations of feminism, theories of child-rearing have played a major part. As long as women remain the gender most responsible for children, we are the ones who have the most to lose by accepting the "noble savage" view of parenting, with its ideals of attachment and naturalness. We need to be released from guilt about our children, not further bound by it. We need someone to say: Do the best you can. There are no rules.

—Erica Jong is a novelist, poet and essayist whose 20 books have been published around the world. "Fear of Flying" is her best-known novel, with 20 million copies in print.

http://online.wsj.com/article/SB10001424052748704462704575590603553674296.html

How much energy is there really arriving from offshore plants?

05 November 2010 Physikalisch-Technische Bundesanstalt (PTB)

European cooperation project develops measuring technique for energy transfer by means of direct current
Joint press release of PTB and Braunschweig Technical University

Using wind energy where the wind blows strongest – what a fascinating idea! The first offshore plants are already being erected, and many more are planned. But the farther they are away from the coast, the more urgent becomes the problem of transferring the current with as low a loss as possible. Over long distances, this is possible only with direct current. To exactly determine the unavoidable losses also in this case, and to set up a metrological infrastructure for a future network of direct current transfer paths, a European cooperation project has been launched in which a great number of metrology institutes is involved. The starting signal for this project came from Braunschweig, from a close cooperation between the Technical University (TU) and the Physikalisch-Technische Bundesanstalt (PTB) which are now both intensively involved in the new project.

Already now the networks are getting narrow. The integrated European high-voltage network is used to complete capacity. Connecting other energy generators - such as wind power stations, hydropower plants or solar power plants - is hardly possible any more; new ways for the current must be found. As the construction of high-voltage power lines is often thwarted by protests from residents and does not come into consideration for offshore plants anyway, subterranean cables must be used. What is being planned is nothing less than a new transfer network all over Europe. If current is to be transferred via cables - and over such large distances - this is possible only with direct current, because in that case, the losses are lower.

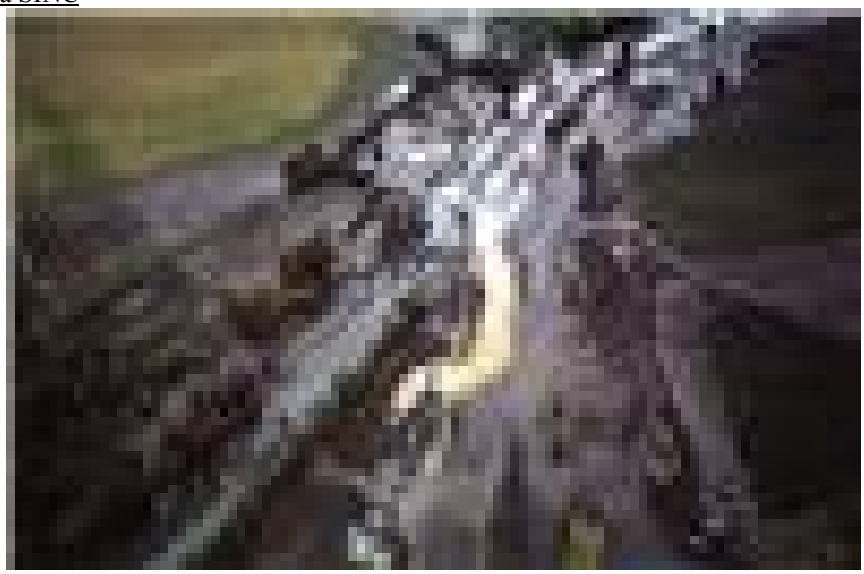
The networks used so far, however, work with alternating current. This has been the case since the end of the 19th century, when the decision was taken to use alternating current instead of direct current for the large-area distribution of current. The decision was based on the fact that - at that time - a simple and effective current transfer with high voltage and, thus, without great losses, was possible only for alternating current. But this

was long ago. And since in semiconductor electronics, new heavy-duty circuit breakers have been developed which allow even high powers to be converted efficiently from direct current to alternating current and vice versa, there is, in principle, nothing standing in the way of the new direct current network.
Regenerative energy generation plants supplying their current via direct current cables are already in existence. When the current is fed into the integrated high-voltage network, it must be transformed into alternating current. "Up to now it has only been possible to measure the amount of the transport losses for alternating current – the whole range of direct current is still a 'Black Box' for us", declares Wolfgang Lucas, who is responsible for the project at PTB.
This is due to the fact that standardized measuring techniques have existed so far only for alternating current. It is high time to extend the whole metrological infrastructure also to direct current technology. This infrastructure has a scientific side such as, for example, the development of increasingly better measuring instruments. And there is a bureaucratic side - namely an efficient system for checking these measuring instruments. In Germany, PTB is the highest authority for type examinations, for example for electricity meters (up to now, however, only for alternating current). "But we are already well prepared for direct current technology", points out Lucas.
In the project, Braunschweig Technical University has been assigned the task of investigating, in closer detail, the losses of the heavy-duty circuit breakers in the converters of the high-voltage direct current stations, and to reduce them. The head of the project, Michael Kurrat, emphasizes: "The starting signal came from Braunschweig, from the extraordinarily efficient cooperation between TU and PTB in exactly this field."
The other participants in the project are the national metrology institutes of Sweden (project management), the Netherlands, Turkey, Italy, Great Britain, and Finland. The project is financed within the scope of the European Metrology Research Programme (EMRP), with which the European metrology institutes coordinate their research. The project has been officially launched on September 1st and will, for the time being, be operated for three years. The participants expect decisive impulses for the European high-voltage direct current network - as they are required for projects like "Desertec". Other areas in which direct current plays a role (e.g.: photovoltaic facilities or electric cars) will also benefit from the project.
http://www.ptb.de/en/aktuelles/archiv/presseinfos/pi2010/pitext/pi100930.html

http://www.alphagalileo.org/ViewItem.aspx?ItemId=89078&CultureCode=en

Soil Needs Decades to Recover from a Spill

05 November 2010 Plataforma SINC



Twelve years after the spillage at Aznalcóllar (Spain), a team led by the National Museum of Natural Science (NMNS-Spanish National Research Council) states that the soil affected has recovered "reasonably well". Their study of nematodes (microscopic soil worms that are indicators of the biological state of soil) confirmed the "enormous" impact of heavy metals and is useful for predicting the effect of the red mud spillage in Hungary.

One month ago, a spillage of red mud with toxic material from the aluminium holding pond in the city of Kolontar devastated the west of Budapest (Hungary) and reached the Danube. The immediate consequences were the loss of ten human lives and the destruction of houses and crops. In Spain, the Aznalcóllar spillage in 1998 affected the fauna in the soil of Doñana and exterminated several species. Some nematodes disappeared in the first few months after the disaster.

"The abundance and diversity of these animals was affected immediately, but in the long term, the nematodes themselves did not suffer any irreparable damage," the main author of the study and researcher at the NMNS (SNRC) in Madrid Alfonso Navas told SINC.

The study, published recently in Nematropica, compared samples from the unpolluted and polluted areas. According to the results, the diversity and maturity of nematodes was "significantly" lower in the polluted area than in the unpolluted area. "Nickel and Copper appear to be the most toxic metals for the nematode community," Navas added.

"The issue is not whether or not the nematodes disappear, because that is impossible, but whether the nematode fauna, which plays a biological role and recycles organic matter, has suffered damage and also whether the soil has felt the effects of the spill", the researcher specified. "It could take tens of years for the soil to recover," the expert added.

"An impact such as a spillage of this type affects soil structure. Even though it can recover in the long term, the immediate function of the micro fauna is altered for decades", Navas insists. The direct impact of such spillages is also coupled with the fact that majority contain heavy metals.

According to the researchers, Aznalcóllar has been "restored in exemplary fashion", a process that began with a determined and rapid response on behalf of the SNRC and the Regional Government of Andalucía".

However, "some of that soil is still affected by heavy metals, although there is no reason to dramatise because they have been immobilised by physical and chemical corrective measures", Navas indicated. According to the researcher, the surroundings of the Doñana National Park were also used for mining, where "there were already a large number of heavy metals".

The Largest Ecological Disaster in Hungary

On the 4th of October, the Hungarian aluminium holding pond in the city of Kolontar ruptured sending toxic red mud into at least 40km2 of the West of Budapest. Houses, farms, crops and human lives were lost. The "extraordinary" fertility of the plains of the Danube was also affected. "It is highly likely that this area will not be able to be used to grow crops for a long time," Navas said.

Furthermore, "in Hungary, action was not taken as efficiently or quickly as was to be expected, as in Aznalcóllar, and toxic pollutants have probably reached a much greater depth than was the case in Spain", the expert stated.

The "advantage" of the Spanish spillage is that a mud crust was formed which saw pollutants remain on the surface, therefore making it possible to remove them mechanically. In Hungary "it was not hot enough for such a crust to form and the content of the spillage percolated into the soil", the scientist said.

If heavy metals filter into the soil, "biodiversity is reduced and the productivity of the soil, in both physical and nutritional terms, is noticeably affected. Without the biological natural components of the soil, the latter is not moved or aired and therefore becomes compact over time," Navas indicated.

The Spanish biologist believes Aznalcóllar could serve as a model for how to act in Hungary. The nematodes and earthworms play a "fundamental" role because they accelerate the cycle of nutrients and see to it that the latter interchange. "Without the micro fauna, the roots of plants asphyxiate and do not grow, leading to a reduction in the (agricultural and forest) fertility of the soil," Navas concludes.

http://www.alphagalileo.org/ViewItem.aspx?ItemId=89081&CultureCode=en

Rare Skin Cancer Vaccine - Early Stage Research Begins

05 November 2010 Yorkshire Cancer Research
Leeds-based scientists, funded by Yorkshire Cancer Research headquartered in Harrogate, North Yorkshire, plan to introduce the genetic material of a virus into normal human skin cells to produce skin cells that have features of Merkel Cell Carcinoma cancers.
Researchers at the University of Leeds have taken their first steps towards understanding why a rare skin cancer that is rapidly growing in incidence in Europe and the USA is not recognised by the body's immune system.
Merkel cell carcinoma (MCC) arises from uncontrolled growth of skin cells and usually develops on sun-exposed areas as a firm, painless, red-coloured bump that grows over several weeks to months.
The condition typically develops in people aged 65 and over and those with weakened immune systems and there are currently around 1500 cases a year in the UK with one third of these proving fatal.
During recent research, around 80 percent of MCCs on human skin were shown to contain a virus termed Merkel cell polyomavirus which is believed to be associated with the growth of this cancer.
Now Leeds-based scientists, funded by Yorkshire Cancer Research headquartered in Harrogate, North Yorkshire, plan to introduce the genetic material of this virus into normal human skin cells to produce skin cells that have features of MCC cancers.
They will use these synthetic MCC cancer cells along with real MCC cell patient samples to analyse the reactions of human immune cells against them.
The scientists ultimately hope to increase current knowledge about the human body's ability to eliminate MCC cancer cells to help develop a vaccine in the future.
Professor Eric Blair, who is leading the project, said: "Since a virus is involved in the development of Merkel cell carcinoma skin cancer it is important to understand how the virus prevents the immune system attacking the MCC tumour.
"We are aiming to develop strategies to prevent or eradicate tumours and improve the prognosis of patients who suffer with this terrible skin disease which is currently extremely poor."

http://www.alphagalileo.org/ViewItem.aspx?ItemId=89072&CultureCode=en

A safety switch prevents a big bang

05 November 2010 Physikalisch-Technische Bundesanstalt (PTB)

For a drastic simplification of explosion protection, three PTB scientists receive this year's Technology Transfer Prize of the IHK Braunschweig

In most cases, a spectacular accident must first occur in order to make the public aware of a problem that lurks continually in many areas of industry: the danger of explosions due to electrical sparks. The simplest method to prevent such explosions is called "Intrinsic Safety". The intention thereby is to prevent ignitable sparks from even being created. Up to now, this has only been possible with small devices having a power of up to approx. 2 Watts - thus, above all, in process measuring and control technique. A new concept that has been developed at the Physikalisch-Technische Bundesanstalt (PTB) in cooperation with industrial partners, increases this limit now up to 50 Watts and thus makes application possible in many more technical fields. The technology which is already being marketed under the name "Power-i"/DART and which is to be launched as an international IEC standard, promises the industry great cost savings. For their development and the successful technology transfer, the three PTB scientists Ulrich Johannsmeyer, Udo Gerlach and Thomas Uehlken will on 5th November receive this year's Technology Transfer Prize of the Industrie- und Handelskammer (IHK) (Chamber of Industry and Commerce), Braunschweig.

There's something in the air: Whether in chemistry, oil processing or pharmacy – combustible gases, vapours, mists or dusts occur often here, where even one spark can lead to an explosion. In order to prevent electrical and mechanical devices and equipment from becoming an ignition source in such environments, there are various protection principles which are specified in the national, European and also global standards. The "Intrinsic Safety" type of protection has for many years now established itself in process measuring and control technique. Thereby, the electrical voltages, currents and powers for the devices in the explosion-hazardous area are limited to such low values by specially constructed supply units, which are installed

outside of the explosion-hazardous area so that a danger of explosion due to sparks or hot surfaces can be excluded with reasonable certainty. The intrinsically safe-supplied units can then – as opposed to all other explosion protection methods – be operated, adjusted, modified, serviced and exchanged while live.
But up to now, that has been solely possible where only small sparks occur. The electrical power may as a rule be a maximum of 2 W – the typical range for process measuring and control technique. For a long time now, end users and manufacturers have wanted a considerably higher active power while at the same time keeping all the positive characteristics of Intrinsic Safety. And this is exactly what the new "Power-i"/DART technology offers. DART here stands for "Dynamic Arc Recognition and Termination".

"Power-i is different from previous concepts", states Udo Gerlach, the project leader at PTB. "The principle of an emergency shutdown is just as simple as it is effective." The safety-related validated, intelligent monitoring system recognizes a spark already while it is forming and then shuts down the system in a controlled and quick manner, before the spark can even become ignitable. "Thus, complex, expensive constructural safety measures can now be replaced with the new technology", explains Ulrich Johannsmeyer, head of the department. For the first time, up to 50 W output power is possible, whereby motors, actuators, lighting and much more can be powered. This means that for all these devices, explosion protection will become considerably less expensive and simpler in practical application.

The interest from industry is great. Therefore, PTB, together with 13 renowned German manufacturing companies, started a consortial project in June 2009 in order to jointly bring forward the "Power-i" technology and initiate the necessary steps towards international standardization. The project runs until the end of 2011. However, there are now already first marketable devices with this technology: a process analytical device and a fieldbus data communications system, which were introduced in spring 2010 at the Hannover Messe (Hanover Fair). Many other devices are being developed at various companies and will be developed to marketability.

Ulrich Johannsmeyer is very optimistic about the future: "The market potential of devices with "Power-i"/DART Technology is very high. The sales volume of German manufacturers with explosion-protected field devices lies at several hundred million euros per year. And the new technology could obtain a considerable portion of it." Thus, the strong market position of the German explosion protection industry could be expanded still further.
http://www.ptb.de/en/aktuelles/archiv/presseinfos/pi2010/pitext/pi101105.html

http://www.alphagalileo.org/ViewItem.aspx?ItemId=89069&CultureCode=en

Should Our Biggest Climate Change Fear Be Fear Itself?
05 November 2010 Wiley - Blackwell
Matthias Dörries reveals the role of fear in our understanding of climate change

From apocalyptic forecasting to estimates of mass extinctions, climate change is a topic which is filled with fearful predictions for the future. In his latest research, published in WIREs Climate Change, historian Matthias Dörries examines the cultural significance of fear and how it became a central presence in current debates over climate change.

Climatic change, as represented by the media, often prompts headlines predicting disastrous events, frequently adopting fear laden language including analogies with war and warnings of the imminence or irreversibility of pending catastrophes. For Professor Matthias Dörries from the University of Strasbourg, a culture of fear is alive, and doing very well.

Professor Dörries looks at the issue of fear from a historical perspective, asking how our current society has come to conceive of climate change in terms of catastrophe and fear.

"Recently historians have underlined the necessity to revise the grand Enlightenment narrative of science as antidote to fear," Dörries stresses. "We should now look at how popular and scientific discourses frame fear, and study the constructive and destructive functions of these fear discourses in societies."

The 1960s and 1970s were characterised by an increasing appropriation of the future by science, leading to a rise of fear discourses by scientists themselves. "For the very long run, science has indeed some terrifying prospects to offer for the planet Earth, and on a scale of decades, science has identified serious threats, such as anthropogenic climate change," Dörries remarks.

"The current discourse of fear over climate change reflects the attempts to come to grips with the long-term issue of anthropogenic climate change," concludes Dörries. "They are appeals for action, they imply claims to power, they stress that the issue is political and cultural, not merely a matter of science and reason alone."

- **Full bibliographic information**Matthias Dörries "Climate catastrophes and fear", WIREs Climate Change, Wiley-Blackwell, 2010, DOI: 10.1002/wcc.79

  http://onlinelibrary.wiley.com/doi/10.1002/wcc.79/abstract

http://www.alphagalileo.org/ViewItem.aspx?ItemId=89057&CultureCode=en

Uncovering the mysteries of climate history in Southern Patagonia

05 November 2010 Universidad de Barcelona
Charting the paleoclimate in regions of Patagonia and reconstructing the dynamics of glaciations from thousands of years ago are the main goals of a new scientific project whose participants will include Professor David Serrat, from the UB's Department of Geodynamics and Geophysics, who has a distinguished career in various research areas, in particular geomorphology and geoarcheology studies in Tierra del Fuego, the Antarctic and Europe.

The project, which will run from 3-12 November, will focus on an extensive area of more than 100,000 hectares located close to Lake Viedma, part of the *Los Glaciares* national park in the south-western part of Santa Cruz province in Patagonia. The research will be carried out within the collaborative framework set up in 1986 by the UB and the Southern Centre for Scientific Research (CADIC) and will also involved the San Juan Bosco National University of Patagonia. Experts taking part in the project will include Jorge Oscar Rabassa from the Institute of Catalan Studies (IEC), Federico Ponce from the CADIC, and Óscar Martínez from the National University of Patagonia.

As David Serrat explains, "Specifically, we want to study a group of geological formations known as drumlins in Southern Patagonia, a region that remains largely unexplored by geologists". Drumlins are small, oval hillocks formed below the ice by the movement of glaciers. These landforms often appear in clusters known as drumlin fields, which stretch back in the direction of the ice flow under which they were created. Drumlins are one of the only types of ancient glacial structures that can still be found in temperate regions of the plant and can shed new light on the Earth's paleoclimate.

The project team will study the largest area of drumlins in Patagonia, found in an arid region whose climate has helped to conserve ancient geological forms. David Serrat explains that, "drumlins can only be formed

under specific geomorphological conditions, within narrow temperature margins and ice thicknesses. Therefore, they can provide very precise information about the paleoclimate of the area in which they are found. More than the size of the study area, in this case the most important factor is the excellent state of conservation of the drumlins. The dryness of the soil has preserved the structures in largely the same form as the ice created thousands of years ago, which enables us to identify the dynamics of glacial retreat in the area and to determine the past movements of ice sheets".

Serrat goes on to say that, "If we also have the chance to take sediment samples and date them using isotopic techniques, we can learn about the climate conditions of the past and reconstruct the geological situation of Southern Patagonia during the most recent period of glaciation, which took place between 30,000 and 20,000 years ago". Professor Serrat is the co-author of a pioneering study on the sedimentology of drumlins found outside the Polar regions, which offered the first description of the drumlin fields on Gable Island (1987) in the Beagle Channel, a tectonic basin that connects the Pacific and Atlantic Oceans at the southernmost point of South America, in sub-Antarctic latitudes.

David Serrat, who has served as both Dean of the Faculty of Geology and Vice-Rector for Research at the UB, has taught postgraduate classes at the University of Sao Paulo (Brazil), the Catholic University of the North (Chile) and the Southern Centre for Scientific Research (Argentina). Currently President of the Science and Technology Section of the IEC, Serrat has also been Secretary and President of the Catalan Institute of Natural History (ICHN) and the Spanish Quaternary Workgroup (now the AEQUA) and Rector of the University of Vic.

http://www.ub.edu/web/ub/en/menu_eines/noticies/2010/10/58.html

http://www.alphagalileo.org/ViewItem.aspx?ItemId=89045&CultureCode=en

Unexpectedly small effects of mutations in bacteria bring new perspectives

05 November 2010 Uppsala Universitet
Most mutations in the genes of the Salmonella bacterium have a surprisingly small negative impact on bacterial fitness. And this is the case regardless whether they lead to changes in the bacterial proteins or not. This is shown by Uppsala University scientists in an article being published today in the journal Science.

The researchers have examined the impact of mutations on the rate of growth of the Salmonella bacterium and show that most mutations have generally very small effects. Moreover the negative effects are of the similar magnitude for changes that lead to substitution of amino acids in proteins (so-called non-synonymous mutations) as for mutations that do not change the protein sequence (so-called synonymous mutations).

"The findings open an entirely new chapter for experimental studies of mutations and show that we need to change our view of how mutations lead to negative effects," says Professor Dan Andersson, lead author of the study.

A central question in evolutionary biology, medical genetics, species-conservation biology, and animal breeding is how and why mutations affect an organism's capacity to survive. Usually these questions are studied in DNA sequence analyses from which conclusions have been drawn about what mutations are most common and have become established in the DNA of the organism.

The Uppsala scientists have used another – experimental – method whereby they can use various genetic tricks to introduce random individual mutations into any chosen gene, a method that has previously been used primarily in viruses. Two genes that code for proteins that are included in ribosomes were mutated, and using extremely sensitive growth measurements, doctoral candidate Peter Lind showed that most mutations reduced the rate of growth of bacteria by only 0.5–1 percent. No mutations completely disabled the function of the proteins, and very few had no impact at all.

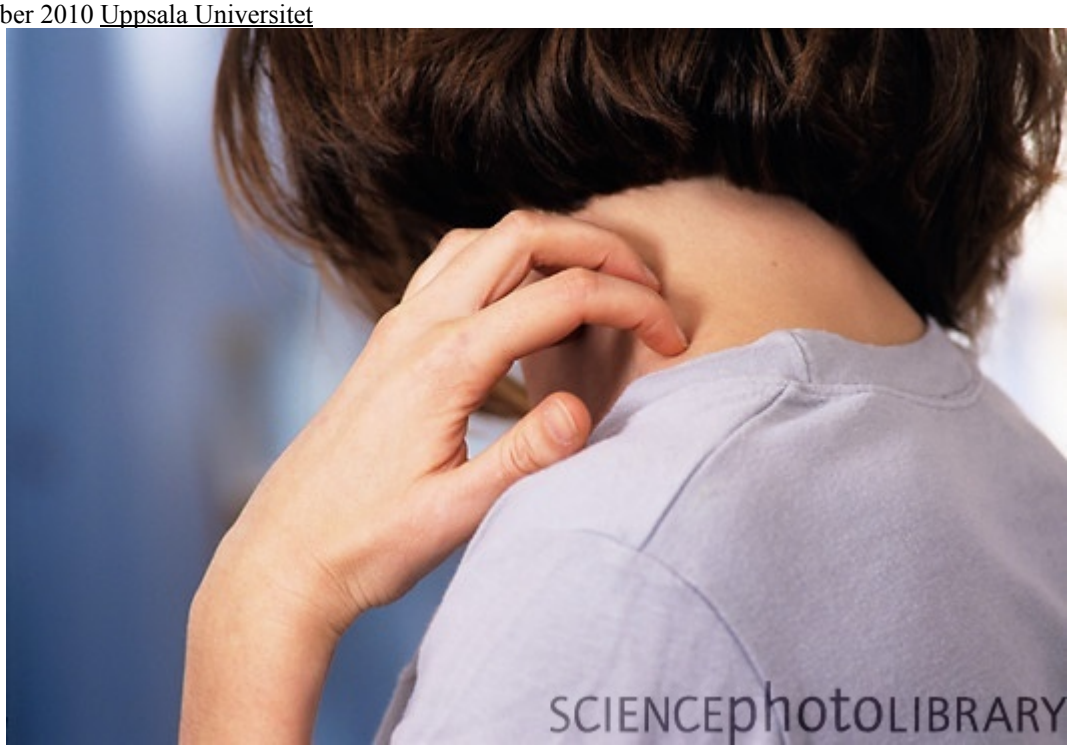
Even more surprising was the fact that mutations that do not change the protein sequence had negative effects similar to those of mutations that led to substitution of amino acids. A possible explanation is that most mutations may have their negative effect by altering mRNA structure, not proteins, as is commonly assumed.
http://www.sciencemag.org/cgi/content/abstract/330/6005/825

- **Full bibliographic information**Mutational Robustness of Ribosomal Protein Genes
  Peter A. Lind, Otto G. Berg, Dan I. Andersson
  Science 5 November 2010:
  Vol. 330. no. 6005, pp. 825 - 827
  DOI: 10.1126/science.1194617

http://www.alphagalileo.org/ViewItem.aspx?ItemId=89042&CultureCode=en

Burning pain and itching governed by same nerve cells

04 November 2010 Uppsala Universitet



We all know how hard it is not to scratch when we have an itch. But how can an itch be alleviated? In a new study published today in the prestigious journal Neuron, researchers at Uppsala University present the surprising finding that the same nerve cells that are active when we experience heat pain are also associated with itching.

There are disorders and conditions that entail increased itching and can be extremely troublesome for those suffering from it. The mechanisms behind itching are not well understood today. For one thing, what is it about scratching that relieves itching?

In the current study, which was performed on mice, the research team led by Professor Klas Kullander at the Department of Neuroscience examined the nerve cells that transfer heat pain. When these nerve cells had lost its capacity to signal, the mice reacted less to heat, as expected, but surprisingly they also started to itch incessantly.

"These findings link together pain from a burn with regulating sensitivity to itching, which was highly surprising and interesting," says Klas Kullander.

Extreme itching is very unpleasant and difficult to treat. For example, it is a common complication following operations and burns. Eczema and other skin disorders can also lead to general itchiness. Greater knowledge of the underlying factors paves the way for developing new forms of treatment for itching, for example, activating pain fibers to reduce itching, which is supported by these findings.

"In the long run, and with the help of more research, we will hopefully be able to fully elucidate what nerve

fibers conduct the itching itself, and then we will be able to extinguish the itch at the source," says Klas Kullander.

- **Full bibliographic information**Reference: Malin C. Lagerström, Katarzyna Rogoz, Bjarke Abrahamsen, Emma Persson,Björn Reinius,Karin Nordenankar,Caroline Ölund,Casey Smith,José Alfredo Mendez,Zhou-Feng Chen,John N. Wood, Åsa Wallén-Mackenzie, Klas Kullander. VGLUT2-Dependent Sensory Neurons in the TRPV1 Population Regulate Pain and Itch, Neuron, Volume 68, Issue 3, 529-542.
  Neuron published online November 4th, at 12.00 US Eastern

http://www.alphagalileo.org/ViewItem.aspx?ItemId=89015&CultureCode=en

Femme Fatale

By KATHRYN HARRISON
CLEOPATRA
A Life
By Stacy Schiff
Illustrated. 368 pp. Little, Brown & Company. $29.99

Papyri crumble away. What remains of her home is 20 feet underwater. She died before Jesus was born. Her first biographers never met her, and she deliberately hid her real self behind vulgar display. A cautious writer would never consider her as a subject. Stacy Schiff, however, has risen to the bait, with deserved confidence. "Saint-Exupéry: A Biography" and "Véra (Mrs. Vladimir Nabokov)" demonstrated her mastery of the form. "The Great Improvisation," Schiff's analysis of Benjamin Franklin's years in Paris, revealed a different genius: the intellectual stamina required to untangle the endlessly tricky snarls created by the intersection of human personalities and international relations.

"Mostly," Schiff says of "Cleopatra: A Life," "I have restored context." The claim stops sounding humble when we understand what it entails. Although it's not Schiff's purpose to present us with a feminist revision of a life plucked from antiquity, in order to "restore" Cleopatra — to see her at all — one must strip away an "encrusted myth" created by those for whom "citing her sexual prowess was evidently less discomfiting than acknowledging her intellectual gifts." Lucan, Appian, Josephus, Dio, Suetonius, Plutarch — the poets, historians and biographers who initially depicted Cleopatra were mostly Roman and all male, writing, for the most part, a century or more after her death with the intent to portray her reign as little more than a sustained striptease.

And although Alexandria was the intellectual capital of the known world and Egypt an ancient pioneer of gender equality, the country had "no fine historian" to counter the agendas of those for whom "impugning independent-minded women was a subspecialty." As Schiff observes, Cleopatra may boast "one of the busiest afterlives in history," including incarnations as "an asteroid, a video game, a cliché, a cigarette, a slot machine, a strip club, a synonym for Elizabeth Taylor," but the single piece of documentary evidence that might be traced to her own hand is "perhaps and at most, one written word" (translated as "Let it be done," with which she or her scribe signed off on a decree). The woman left no primary sources.

Born in 69 B.C., Cleopatra ascended the throne of Egypt at 18. As childhood was not a subject of great interest to the ancients, Schiff explains, "players tended to emerge fully formed" into the public consciousness, their recorded lives beginning when they first influenced history. To distract the present-day reader from the absence of her subject's early years, Schiff neatly draws our attention to a different, albeit geographic, femme fatale — Alexandria. Balanced on the sparkling Mediterranean coast, with a parade-ready colonnade running the length of the city and mechanical marvels like hydraulic lifts, coin-operated machines and statues with flickering eyes, Egypt's capital made Rome look like the "provincial backwater" it was. Schiff's rendering of the city is so juicy and cinematic it leaves one with the sense of having visited a hopped-up ancient Las Vegas, with a busy harbor and a really good library.

When Cleopatra came to power it was, in accordance with her father's will, as co-ruler with her 10-year-old brother, Ptolemy, to whom she was wed. Probably her parents were also full siblings. The Egyptian practice of incest among royals was adopted by her Macedonian forebears, who had ruled Egypt since the death of Alexander the Great. But Cleopatra had no more intention of consummating a pro forma marriage than she did of sharing power with a little boy. Educated rigorously with an eye to her future rule, she'd paid careful attention to her father's missteps as well as his triumphs. To keep her crown required Rome's allegiance, which she captured in 48 B.C., swiftly and with the flair and ingenuity for which she would be remembered. Goaded into exile as a result of a failed attempt to oust Ptolemy and his advisers, Cleopatra, 21, had herself stuffed into a sturdy sack, smuggled back into her own palace, and presented thus to Julius Caesar, who, taking advantage of Egypt's political upheaval, had installed himself in the capital. While even her detractors agree, grudgingly, that Cleopatra was blessed with megawatt charisma as well as a formidable intelligence —

she spoke nine languages — there is no record of how she persuaded Caesar to support her hegemony rather than making Egypt a province of Rome, and "no convincing political explanation" for his remaining with her in Alexandria for months while his own empire languished. We do know that when he left, Cleopatra was pregnant. Clearly a seduction had been accomplished, and she had far the most to gain from it.

To discover what truths remain after two millenniums, Schiff must consider her limited and inconsistent sources through the lenses of anthropology, archaeology and psychology, revealing a ruler who, centuries before those disciplines had been invented, used a similar set of tools to consolidate and maximize the power she inherited. What Schiff describes as Cleopatra's ability "to slide effortlessly from one idiom to another" depended on what was in fact an astute and arduous campaign to secure the allegiance of a people whose religion and culture she borrowed to suit her own ends. Detractors misrepresented her use of jaw-droppingly over-the-top spectacle as proof of decadence rather than the art of a political visionary. From the beginning of her reign, the young queen had manipulated her largely illiterate populace by staging elaborate productions that underscored and cemented the idea of her divinity and her therefore incontestable rule.

Gliding up the Nile, having styled herself as Isis, Cleopatra presented Caesar to "cheering crowds" agog at the gigantic royal barge embedded with gold and ivory and bearing colonnades and 18-foot gilded statues. For as long as nine weeks Cleopatra displayed herself and her alpha mate as "the earthly visitation of two living gods." And her auspiciously timed pregnancy allowed her to advertise the fertility of their union. When her child was born, she named him Caesarion and, in a further reworking of the myth she inherited, installed "little Caesar" as her co-ruler after his father's assassination in 44 B.C. Caesar fit neatly into the role of Isis's partner, Osiris. The supreme male divinity was murdered by enemies who spared his "young male heir and a devoted quick-thinking consort." As Schiff dryly observes, "the Ides of March handily buttressed the tale."

Egypt had the wealth to underwrite Roman wars; Cleopatra needed Roman clout to keep her throne; it had long been Rome's intent to annex Egypt. In 41 B.C., Mark Antony, intending to learn where Cleopatra's post-Caesar loyalties lay, summoned her to Tarsus. Fluent in pantheons other than Egypt's, Cleopatra there descended as Venus, with an entourage befitting the goddess of love. Her silver-oared barge had purple sails and an orchestra of lyres, flutes and pipes, everything perfumed by "countless incense offerings." Fair maidens dressed as nymphs and graces worked the ropes while beautiful cupids fanned the queen under her golden canopy. The "blinding explosion of color, sound and smell" captivated another gaping multitude, and the equally astonished Mark Antony followed Cleopatra back to Alexandria. Again using biology to shape destiny, she promptly bore him a son and a daughter, and then another son; she and her lover remained together for the better part of a decade. Death didn't part so much as bind them together indefinitely, with tandem suicides concluding their biographies on a note of high drama and guaranteeing the staying power of a romance that had held their contemporaries in thrall.

Cleopatra mythologized herself before anyone else had the chance. Roman contemporaries misread the pageants she acted out; early biographers were biased, xenophobic, politically motivated and sometimes sensationalistic, writing for an audience that expected to be dazzled by intrigues reflecting its assumptions. It's dizzying to contemplate the thicket of prejudices, personalities and propaganda Schiff penetrated to reconstruct a woman whose style, ambition and audacity make her a subject worthy of her latest biographer. After all, Stacy Schiff's writing is distinguished by those very same virtues.

Kathryn Harrison writes both fiction and nonfiction. Her new novel, "Enchantments," will be published next year.

http://www.nytimes.com/2010/11/07/books/review/Harrison-t.html?_r=1&nl=books&emc=booksupdateema1

I Feel Bad About My Memory

By JANET MASLIN
I REMEMBER NOTHING
And Other Reflections
By Nora Ephron
137 pages. Alfred A. Knopf. $22.95.

Nora Ephron worries about a failing memory in the title piece of "I Remember Nothing," her inviting new collection of essays. But even her most amnesiac readers still remember "I Feel Bad About My Neck," the 2006 collection that this new book closely resembles. That resemblance is helpful in some ways and alarming in others.

Each of these books is 137 pages long. Their covers are similarly formatted, with the same font used for the author's name. One of her back-cover portraits was taken by someone named Elena, the other by someone named Ilona; either way, Ms. Ephron looks attractive, accessible and well worth listening to. Her repackaged aperçus are now $3 more expensive than they were four years ago. She is now 69, not 65, and her sense of creeping mortality has changed accordingly.

But the most salient comparisons are those between the lengths and origins of each book's articles. "I Feel Bad About My Neck" had 15 entries, most of them tight, beguiling, exemplary essays written for print magazines (O, Vogue, The New Yorker) and The New York Times. "I Remember Nothing" has 23 pieces, and most of them are much shorter and less shapely. Some sound like the hurried Huffington Post blog entries that they seemingly were. The single strangest inclusion is a one-paragraph item titled "I Just Want to Say: Chicken Soup" and asks whether chicken soup creates colds instead of curing them. This is the inexplicably truncated lead paragraph of a much longer Op-Ed article from The Times headlined "The Chicken Soup Chronicles." And all it amounts to is the wry, five-sentence version of a one-liner.

All these questions about journalistic provenance arise from the best essay in "I Remember Nothing." It is an article about Ms. Ephron's first, excited glimpses of journalism as a profession, and it is fittingly called "Journalism: A Love Story." Here she writes about rising from a lowly "mail girl" at Newsweek in 1962 to a more elite "researcher," the person charged with filling in the "tk" (journalists' shorthand for "to come") in a sentence like: "There are tk light bulbs in the chandelier in the chamber of the House of Representatives." The newspaper strike that began in late 1962 propelled Ms. Ephron into parodying a New York Post column. Dorothy Schiff, then The Post's publisher, felt that anyone able to parody The Post ought to be able to write for it and hired Ms. Ephron. A well-loved, much-mimicked, wonderfully tk writer was born.

Later in this collection Ms. Ephron makes passing reference to writing for Harold Hayes's Esquire and Clay Felker's New York, talking about "an era when people really cared about magazines" and saying "it was seriously fun to be part of it." But the blog fragments in "I Remember Nothing" attest that she is now part of something else, something a lot more casual and a lot less carefully considered. It would have been immensely useful to the world at large (though perhaps not so helpful to Ms. Ephron personally) if that part of her own story and journalism's were tales she'd been willing to tell.

Instead "I Remember Nothing" is fluffy and companionable, a nifty airport read from a writer capable of much, much more. Ms. Ephron retains her magnetic hold on a reader's attention even when she is writing about how restaurants can turn Pellegrino water from a beverage into a blight. As she demonstrates time and again in this book, she can write an entertaining riff about practically anything or anybody. (Lillian Hellman figures prominently in a couple of essays.) Not-quite-necessary subjects include her objection to the egg-white omelet, her Scrabble addiction and her thinning cowlick, which she nicknames her Aruba. "You don't know what an Aruba is," she writes in typically bright, confiding style, "but you're about to find out."

Take her Teflon. Please. In one typically short-winded screed, she laments that her Teflon-coated frying pans have been declared dangerous and will have to be gotten rid of. "Meanwhile, I am going to make one last ricotta pancake breakfast," she writes, and then throws in a recipe. "Heat up a Teflon pan until carcinogenic

gas is released into the air," she instructs. Ms. Ephron always knows how to hit a bull's-eye while making a point.

"I Remember Nothing" can't match some of the too-true reminiscences in "I Feel Bad About My Neck," like the classic "On Maintenance," the one about how much money and effort it takes to keep her from looking like a mustachioed bag lady. But this new book certainly tries. One piece follows the fortunes of a restaurant meat loaf that gets named Nora's Meat Loaf, supposedly in her honor — and goes on to explain how it is possible for a meat loaf to flop. The piece on memory says as much about popular culture as it does about Ms. Ephron's own neurological situation. Whose fault is it that she can no longer identify anybody in People magazine?

"The Six Stages of E-Mail" is a very funny guide to the novelty of e-mail: from the thrill of being "friends but not" online to the burdens of spam ("FW: Grapes and raisins toxic for dogs") to the completion of the cycle ("Call me"). And it attests to something unmistakable in Ms. Ephron's work: She always understands exactly what kind of writing she is doing. It's just that sometimes she's ready to explain her priorities. And sometimes she'd rather not.

http://www.nytimes.com/2010/11/05/books/05book.html?ref=books

Stray Cat Blues

By LIZ PHAIR
LIFE
By Keith Richards with James Fox
Illustrated. 564 pp. Little, Brown & Company. $29.99

This review will appear in the Nov. 14 Book Review.
He's been a global avatar of wish fulfillment for over four decades and managed to eke more waking hours out of a 24-hour day than perhaps any other creature alive (thanks, Merck cocaine and amphetamines!). As Keith puts it: "For many years I slept, on average, twice a week. This means that I have been conscious for at least three lifetimes."
You better believe it. This cat put the *joie* in *joie de vivre*. As the legendary guitarist for the Rolling Stones, Keith Richards has done more, been more and seen more than you or I will ever dream of, and reading his autobiography, "Life," should awaken (if you have a pulse and an I.Q. north of 100) a little bit of the rock star in you.
"If you want to get to the top, you've got to start at the bottom," he says, "same with anything." Born in 1943 to parents who met as factory workers, Keith was raised in Dartford, an industrial suburb of London. Through the marshes behind the many "lunatic asylums" that seemed to populate Dartford in disproportionate numbers, Keith learned what it felt like to be helpless and afraid, serving as a daily punching bag for bullies on his way home from school. By the time he fought back and won, he'd discovered a fury in himself for which he would later become infamous. The plight of the underdog was his passionate crusade, and anyone or anything that represented injustice in his eyes was fair game. Kate Moss recounts a hilarious anecdote from 1998 in which Keith, sidestepping the festivities of his daughter Angela's wedding at his manor house, Redlands, finds he's short some spring onions he laid on a chopping block while fixing himself a light nosh of bangers and mash. When the thieving guest totters into the kitchen with the greens playfully tucked behind his ears, Keith grabs two sabers from the mantelpiece and goes chasing after the poor guy in a homicidal rage. I won't even touch on the incident involving shepherd's pie.
Music is at the core of "Life," as it is at the core of Keith. His grandfather Gus, patriarch of the bohemian family on his mother's side, played a pivotal role in developing Keith's love and respect for music. They took long walks together, sometimes all day, talking about the world and stopping at various establishments where Gus, ushered into a back room by his hosts, would leave the young Keith outside, with time to ponder his grandfather's mischievous and gamboling private life. Gus had been a sax player in a dance band in the '30s and knew just how to get a young boy interested in a musical instrument. "I'll never forget the guitar on top of his upright piano every time I'd go and visit, starting maybe from the age of 5," Keith says. "I thought it was always there. And I just kept looking at it, and he didn't say anything, and a few years later I was still looking at it. 'Hey, when you get tall enough, you can have a go at it,' he said. I didn't find out until after he was dead that he only brought that out and put it up there when he knew I was coming to visit." Keith's first guitar, bought when he was 15, became so much a part of him he was rarely without it, sleeping with his arm draped across its body like a girlfriend: his primary relationship.
Keith's values were set early and have remained consistent to a remarkable degree. Disloyalty is about as low as you can go in his book, one step lower, even, than screwing up the music. Women? Take 'em. Vices? First round's on me! But never, ever, EVER cross a mate. It's an idea born of his Boy Scout days as head of the Beaver Patrol. He found he had a knack for marshaling troops, leading by example and rarely pulling rank. (For parents keen on enrolling their children in wholesome activities to secure a respectable future and avoid exactly what became of Keith Richards, keep in mind: he was a choirboy, too.)
It's only after Keith's been kicked out of technical school that he hits his stride as a musician, obsessively studying Chess Records artists of the '50s like Chuck Berry, Bo Diddley, Willie Dixon, Muddy Waters and John Lee Hooker. His old school pal Mick Jagger shares his passion for Delta blues, and soon they form a band whose nascent lineup will become the Rolling Stones.

Musically, these are the formative years. Keith learns to play against the silence, to make what isn't there as audible as what is, standing on the shoulders of the American blues greats. He marvels: "It wasn't loud, necessarily, it just came from way down deep. The whole body was involved; they weren't just singing from the heart, they were singing from the guts." He describes his style: "I find myself trying to play horn lines all the time on the guitar. . . . If it's an A chord, a hint of D. Or if it's a song with a different feeling . . . a hint of G should come in somewhere, which makes a seventh, which then can lead you on. Readers who wish to can skip Keef's Guitar Workshop, but I'm passing on the simple secrets anyway, which led to the open chord riffs of later years — the 'Jack Flash' and 'Gimme Shelter' ones."

Believe me, you won't want to miss a thing. The most impressive part of "Life" is the wealth of knowledge Keith shares, whether he's telling you how to layer an acoustic guitar until it sounds electric, as he did on the classic Stones track "Street Fighting Man," or how to win a knife fight. He delivers recipe after recipe for everything rock 'n' roll, and let me say it's quite an education.

In 1964, the year of the British Invasion, when both the Stones and the Beatles broke big in America, Keith and the band had been touring for a while in Britain, sharing the stage with colorful characters like Little Richard and the Ronettes, whose lead singer, Ronnie Bennett (later Ronnie Spector), was one of Keith's early romances. The Stones cut their teeth on the road, starting in 1963: "Between then and 1966 — for three years — we played virtually every night, or every day, sometimes two gigs a day. We played well over a thousand gigs, almost back to back, with barely a break and perhaps 10 days off in that whole period." It was a lifestyle that would lead Keith toward drugs as a way to cope with its extremity.

Nineteen sixty-four was also a year of great cultural shifts: the burgeoning youth culture, the civil rights movement and the early antiwar protests all intersected in the irreverent personas of the Rolling Stones. They were white, but sounded black. They played American music, but came from England. They dressed like women and didn't cut their hair, yet everyone's wife, girlfriend or daughter went mad for their raw sexuality. Worst of all, they remained resolutely lax about the strictures of the law. As Bobby Keys, Keith's best friend and the sax player on some Stones records, tells it, "The American music scene, the whole set of teenage idols and clean-cut boys from next door and nice little songs, all that went right out the . . . window when these guys showed up!"

One theme in the book that really stuns is the extent to which Keith Richards has been pursued by the police on nearly every continent for the duration of his career. They're pulling over buses, battering down doors and hanging out of trees trying to get a charge that will stick to music's most notorious and, thus far, ne'er-long-incarcerated bad boy. The archetype of the rock 'n' roll antihero is, by now, a familiar image. What is shocking to remember is that Keith himself invented it. It's obvious he just doesn't give a damn about the rules the rest of us live by.

The book opens with a Keystone Kops-worthy caper in which Keith, his bandmate Ronnie Wood and a friend are busted in Arkansas while on tour in 1975, all three of them flinging drugs off their persons like spigots in the Trevi Fountain, attempting to rid themselves of illegal substances before they are searched. Neither the hunters nor their prey play their parts well in this farce. Keith and his companions are too stoned to dodge the incoming, and the authorities too compromised by the heady publicity of it all to get the job done. It's a dilemma that proves to be an enduring asset for the Stones: "The choice always was a tricky one for the authorities who arrested us. Do you want to lock them up, or have your photograph taken with them and give them a motorcade to see them on their way?"

As their popularity grows, so does their stardust. "Suddenly we were being courted by half the aristocracy, the younger scions, the heirs to some ancient pile, the Ormsby-Gores, the Tennants, the whole lot. I've never known if they were slumming or we were snobbing." It's a blue-collar fairy tale, but distance between Mick and Keith begins to steadily expand — so much so, Keith confesses, that "I haven't gone to his dressing room in, I don't think, 20 years." The Glimmer Twins, once so close Keith claims they had "identical taste in music," now get caught up in the drug-fueled circus that defines middle-period Rolling Stones, the late '60s and early '70s. These are the golden years, the years of "Sticky Fingers" and "Beggars Banquet," when excess converges with success in such a way as to make it all seem causal. But a certain guest at the party makes quite an impression and stubbornly refuses to leave: heroin.

Keith's drug habit progresses, but he moves into one of the most prolific writing periods of his career. He and Mick compose most of the songs for "Beggars Banquet," "Let It Bleed," "Sticky Fingers" and "Exile on Main Street" while Keith is under the influence. Pulled by the poppy and pushed by cocaine, Keith acquires a taste for working unholy hours in the studio that damn near kill his colleagues. He goes round the clock and considers it mutiny if anyone toiling with him leaves the deck. "I realized, I'm running on fuel and everybody else isn't. They're trying to keep up with me and I'm just burning. I can keep going because I'm on pure cocaine . . . I'm running on high octane, and if I feel I'm pushing it a little bit, need to relax it, have a little bump of smack." He's trying to impress upon his readers not the foolishness of this diet but rather the impossibility of its being replicated, since drugs of this caliber are no longer available, and few have the discipline to stick to the recommended doses. No wonder Johnny Depp modeled his "Pirates of the Caribbean" character, Capt. Jack Sparrow, on this rakish and tippling taskmaster.

Around this time, Keith hooks up with the Rolling Stones' answer to Yoko Ono: Anita Pallenberg. She and Keith fall for each other hard while she's still the girlfriend of his bandmate Brian Jones. Keith takes pains to describe what an ass Brian was at the time, falling prey to the vanity of fame, as a way to excuse himself. And indeed, Keith levies the same complaint against Mick Jagger, offering a diagnosis of L.V.S., or "lead vocalist syndrome." In regard to their differing approaches to the pressures of stardom, he says: "Mick chose flattery, which is very like junk — a departure from reality. I chose junk." Mick and Anita end up having an affair while thrown together on the set of the film "Performance," and Keith makes sure to give as good as he got, sleeping with Marianne Faithfull, Mick's main squeeze at the time, behind his back. "While you're missing it, I'm kissing it," Keith says with boyish glee, adding: "It probably put a bigger gap between me and Mick than anything else, but mainly on Mick's part, not mine. And probably forever."

If Keith weren't such a brilliant character, the reader might weary of his hypocrisy. But the truth is, he's hilarious. I got tired of jotting "hahahaha" and "LOL" in the margins. James Fox, Keith's co-author, deserves a lot of credit for editing, organizing and elegantly stepping out of the way of Keith's remembrances. Reading "Life" is like getting to corner Keith Richards in a room and ask him everything you ever wanted to know about the Rolling Stones, and have him be completely honest with you. Here's how he describes recording: "Well, I've got to tame this beast one way or another. But how to tame it? Gently, or give it a beating? . . . I'll take you twice the speed I wrote you! You have this sort of relationship with the songs. . . . You ain't finished till you're finished, O.K.? . . . No, you weren't supposed to go *there*. Or sometimes you're apologizing: I'm sorry about that. No, that was certainly not the way to go. Ah, they're funny things. They're babies."

Keith and Anita have three children together, but their 2-month-old son, Tara, dies while Keith is away working. The pain will stay with him forever. At the time, Marlon, his elder son, is on the road for a spell with his dad, providing a light at the end of the tunnel for Keith, who deals with these tough emotions in the midst of a bacchanalia on overdrive. According to Marlon, there was never anything that crazy on tour. This is where the two photo sections really tell the story: a beautiful shot of Keith, wind in his hair, turning his back on the crowd, barely conscious, and another of Keith rolling off the jetway into his private limo, Jack Daniel's in hand, with all the self-assurance of the heir apparent, flanked by a beefy, uncomprehending, and likely disapproving, fleet of drivers. "We had become a pirate nation," he says about the 1972 American tour, "moving on a huge scale under our own flag, with lawyers, clowns, attendants."

Money is the dark matter of the Rolling Stones' universe, warping and shifting things from the background. In the lean years, Keith would double-string his guitar so the strings would last longer. Later, as the money came in fast and thick, more serious consequences followed mistakes they made, like blindly signing a contract drawn up by their manager Allen Klein that caused them to lose millions. Klein, Keith says, "ended up owning the copyright and the master tapes of all our work — anything written or recorded in the time of our contract with Decca. . . . He got the publishing of years of our songs and we got a cut of the royalties." There was more trouble as they tried to climb out of the financial hole Klein had dug for them in England: "We were in the ludicrous situation where Klein would be lending us money that we could never afford to repay because he hadn't paid the tax and anyway we'd spent the money. The tax rate in the early '70s on the highest earners was 83 percent, and that went up to 98 percent for investments and so-called unearned income. So that's the same as being told to leave the country." Heading for Villa Nellcôte in France, the Stones record perhaps their most critically acclaimed album, "Exile on Main Street."

One glorious image from this period is of Keith driving his speedboat, Mandrax, across the crystal blue waters of the Mediterranean, out for a morning cruise with his mates: "We would record from late in the afternoon until 5 or 6 in the morning, and suddenly the dawn comes up and I've got this boat. Go down the steps through the cave to the dockside; let's take Mandrax to Italy for breakfast. . . . No passport, right past Monte Carlo as the sun's coming up with music ringing in our ears."

The Stones record "Goats Head Soup" in Jamaica, and after the session's over, Keith and family decide to stay on. He immerses himself in Rasta culture, fascinated by reggae music and its defiant political tradition. "They're not going to work for Babylon; they're not going to work for the government. For them that was being taken into slavery." He finds renewed inspiration in the hybrid musical form and takes pride in being accepted. Though it's his capacity to tolerate marijuana in large doses that initially endears him to the Rastafarians, it's easy to see how Keith's core values harmonize with this way of life. He may be famous, but first and foremost, he's a musician.

Notable names tramp through Keith's remarkably preserved memory by the dozens, almost too ubiquitous to lend an impact. John Lennon makes a cameo, hunched over a toilet after having tried to keep up with Keith. When Bob Marley is described as a Johnny-come-lately, you know you're dealing with the crème de la crème. There are poignant moments, too, tossed out with no more windup than the chuck of one's car keys to a valet, like this insightful gem about Ronnie Wood: "Ronnie is the most malleable character I've ever met and a real chameleon. He doesn't really know who he is. It's not insincere. He's just looking for a home. He has a sort of desperation for brotherly love. He needs to belong. He needs a band."

Keith and Anita's relationship runs aground, and he falls in love with the sunny Patti Hansen, finally an influence of stability and relative restraint in his life. They have two daughters, Alexandra and Theodora, and Keith begins to clear his head of drugs and take stock of his career. Frankly, he has the time. "Brenda," as he calls Mick, has gone off to do a solo project with which Keith takes great umbrage, believing it an unparalleled betrayal of their principles and the pact they made when they formed the Rolling Stones. "Mick had become uncertain, had started second-guessing his own talent. . . . He forgot his natural rhythm. I know he disagrees with me. What somebody else was doing was far more interesting to him than what he was doing. He even began to act as if he wanted to be someone else."

Keith's response is to dive headlong into a project of his own, sinking deeper roots as a rhythm and blues guitar player in the X-Pensive Winos. He loves putting together a dream team of guys he's always wanted to work with, and takes to the stage as if it were a fresh pursuit. But neither Mick nor Keith can escape the fact that they are better together than alone. People feel a certain way about the music that first made them feel a certain way about themselves. In the end, Mick and Keef are like an old married couple, trading sharp jabs but devoted.

After Keith falls out of a tree in 2006 and incurs a life-threatening hematoma, he receives get-well wishes from world dignitaries, Tony Blair included: "Dear Keith, you've always been one of my heroes." Keith does a double take: "England's in the hands of somebody who I'm a hero of?" For the original antiestablishment bad boy, it's hard to believe how far he's come: "The streets named for us only a few years after we were being shoved up against the wall."

"I'm not here just to make records and money," he says. "I'm here to say something and to touch other people, sometimes in a cry of desperation: 'Do you know this feeling?' " The irony is, his feeling of fighting the world is exactly what the world loves so much about Keith: he did it his way.

Liz Phair's albums include "Exile in Guyville" and, most recently, "Funstyle."

http://www.nytimes.com/2010/11/14/books/review/Phair-t.html?ref=books

The Way Home Is Through Huapapa

By NIGEL PITMAN

Alvaro del Campo An aerial view of the town of Huapapa, Peru, on the southern bank of the Putumayo River.

Monday, Nov. 1

Yesterday reminded me of that old Army ad that showed guys jumping out of a plane at dawn and boasted that they got more done before breakfast than most people do all day. Around camp, that description usually only applies to the ornithologists — and most especially to Debby, who is invariably the first one to hit the trails. Yesterday, though, the rest of us were giving those parachutists and birders a run for their money. By 9 o'clock we had packed up our tents, broken down camp, hauled the gear to the heliport, loaded everything into the helicopter, done some aerial surveys of the forests around camp, flown north until we reached the Putumayo River, touched down in the town of Huapapa, and begun presenting the preliminary results of our inventory to a congress of local communities that happened to be in session there.

The meeting in Huapapa had brought together representatives from about a dozen villages along the Putumayo. These are towns with populations ranging in size from a few dozen to a couple hundred inhabitants, and they are a complex mix of Bora, Huitoto, Ocaina, Maijuna, Ticuna, Yaguas and nonindigenous peoples. The meeting had been called to work through a long list of issues, but our biological and social inventories were on the agenda that morning. This was the first time we had seen the social team during the trip, since while we were in the field they had been working in the communities — carrying out interviews and censuses and accompanying people on their day-to-day business, which included things like canoe-building, fishing and plantain harvests.

For about an hour, the social and biological teams stood before the gathering in the simple meeting house and described our preliminary findings (which are astonishing, and which Doug will summarize for you in his next entry). In our prep session the night before we had talked about the risks of putting the room to sleep with scientific jargon, so Max was under strict orders to avoid the word "Pseudoplatystoma" in his talk, regardless of how excited he was about it. Likewise, Rudolf made do without "Brachycephalidae" and Bob without "beryllium-10." The cultural diversity in the room was already so great, though, that a little Latin would hardly have seemed out of place. The first question from the audience was addressed to us in Huitoto.

Dick Smith of the Peruvian NGO Instituto del Bien Común wrapped up the presentation with a brief history of local communities' efforts to formalize their territories and the use of natural resources within them. He

Alvaro del Campo The ichthyologist Max Hidalgo presenting results of the biological inventory to a community gathering in Huapapa.
Nigel Pitman and Douglas Stotz

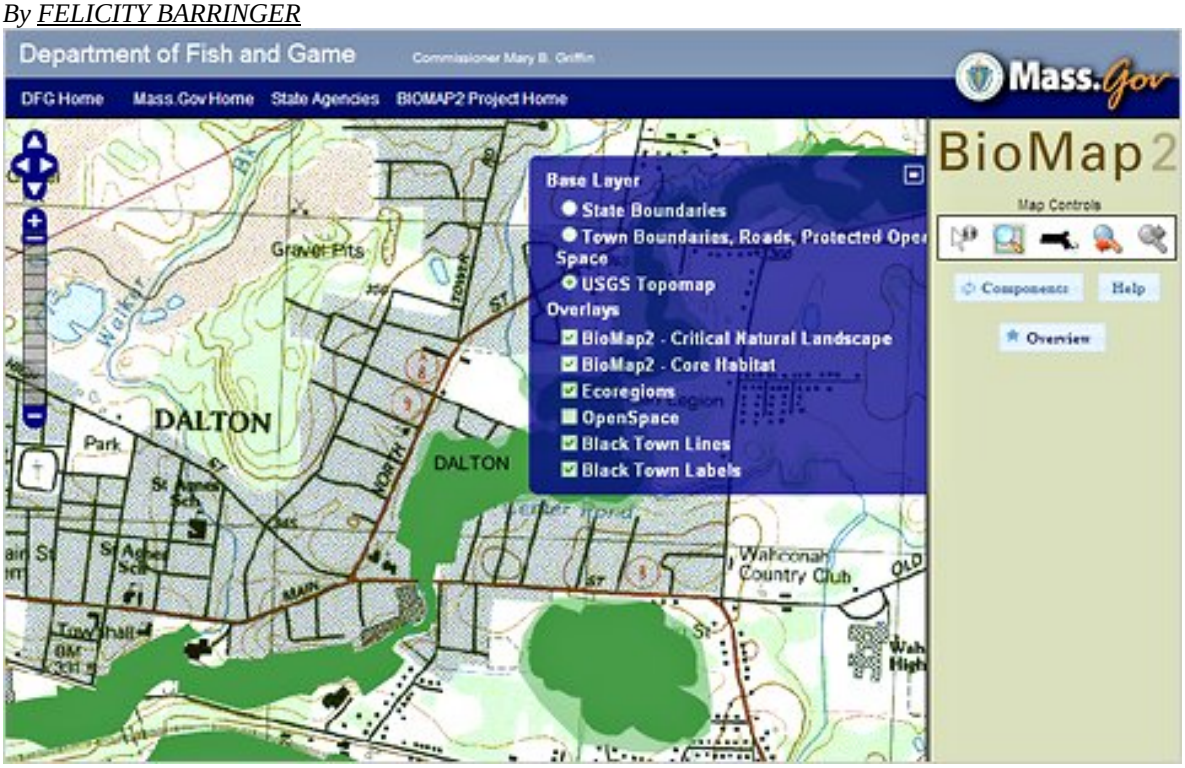
also described a couple of existing proposals to establish multiple-use and strictly protected areas in the forests adjacent to the communities. This was a prelude to the much more intensive discussions with these communities over the coming months that will weigh the advantages and disadvantages of these proposals, explore alternative proposals and seek a consensus about which parts of the landscape should be open for sustainable logging, hunting and other uses, and which should be set aside for strict protection. By the time our presentation came to an end, the 40 representatives seated in the audience had been joined by an equal number leaning in the windows and doors to listen, some of whom now and then requested a chance to talk by raising a hand and calling out "¡Señor presidente! ¡Mi opinión!"

Nigel Pitman The botanist Zaleth Cordero photographing forests during an overflight of a large wilderness area in northeastern Peru.
It was all over too fast. Three hours later we were back in Iquitos, having paused to refuel in Pebas. A few minutes after crowding into the lobby of the hotel, our little team, which had been together in the woods for two weeks, began dispersing one by one with their room keys until at last the lobby was deserted. And then we really were back in the city, alone again with the strangeness of hotel rooms and of water that comes out of metal pipes, but comforted by the far-off voices of our own beloved families.

http://scientistatwork.blogs.nytimes.com/2010/11/04/the-way-home-is-through-huapapa/?ref=science

Mapping Ecosystems, the Better to Conserve Them

By FELICITY BARRINGER



Massachusetts Department of Fish and Game The Massachusetts BioMap yields layers of information on land that needs protection.

Environmentalists have a special affinity for maps. Whether terrestrial or marine, the environment and its ills are tied to a geography that can be expressed in a rectilinear scale.

As science progresses, so do the maps. Witness the latest effort from the state of Massachusetts.

To ensure that largely private efforts to set aside land do the most public good, the state Department of Fish and Game has just unveiled the latest and most elaborate version of its online BioMap, complete with instructions on how to use it.

With both climate change and suburbanization built into the state's biological future, the map, as its developers write in their introduction, "provides a framework for protection and stewardship of those lands and waters that are most important for conserving biological diversity."

There are two potential audiences for the map, said Henry Woolsey, the program manager for the state's Natural Heritage and Endangered Species Program. If you are part of a town, or a regional or a state-level agency, and set out to do land conservation, he said, the BioMap suggests what lands you should acquire.

"The Commonwealth of Massachusetts is spending $50 million a year on open space protection," he said. "This BioMap is a major driver of where it gets invested."

While that may be its primary use, it can also raise a warning flag for developers who may be eying a site that is the natural home of a threatened species.

What is more, the map, which went live on the Web on Thursday evening, gives a sense of how shoreline ecosystems and the marine and terrestrial life that depends on them will move should sea levels rise as much as a meter and a half as a result of climate change, Mr. Woolsey said.

It has about 500 different layers of information, 400 of them related to individual species that state officials have identified as threatened by extinction. Many of the rest deal with identifying varieties of ecosystems, from the salt marshes of the coast to the limestone wetlands of the Berkshires.
"We have about 80 or so different types of communities — salt marshes, level bogs, pitch pine scrub oak barrens," Mr. Woolsey said. "Other levels deal with individual birds, like whippoorwills and warblers, as well as butterflies and moths."
Yet the Massachusetts map is hardly the only graphic call to arms available on the Internet. For some years, the World Resources Institute has used maps and graphics to underline its research findings, most recently with a map designed to help Ugandan farmers decide where to concentrate their livestock infrastructure.
And the Washington-based Environmental Working Group has for years been working on perfecting the use of maps as polemics, from its immensely detailed map-based report on "Who Owns The West" to agricultural subsidy maps.
As more and more groups find ways to integrate their data with Google Maps, the cartographic products can only get richer.

http://green.blogs.nytimes.com/2010/11/05/mapping-ecosystems-the-better-to-conserve-them/?ref=science

Higher Levels of Lead Seen in City Tap Water

By MIREYA NAVARRO

New York City health and environmental officials on Thursday advised residents to run their tap water for at least 30 seconds before drinking or cooking with it after testing showed a rise in the percentage of homes with elevated levels of lead.

The city is required to test for lead in tap water each year under the federal Safe Drinking Water Act. In tests conducted from June to September in homes in older buildings known to have lead in their plumbing, 30 of 222 samples — or about 14 percent — exceeded allowable lead levels.

Last year, only 5.4 percent of the samples had elevated levels, city officials said.

The officials emphasized that the results did not pose a health threat and that lead levels have been in decline since the 1990s. But the federal Environmental Protection Agency, which defines samples above 15 parts per billion as elevated, requires public notification whenever more than 10 percent of the samples exceed that level.

The tests found levels in the range of 16 to 30 parts per billion.

"The elevations seen in the city's recent tests have been too small to pose clear health threats," Thomas Farley, the city's health commissioner, said in a statement. "But the best level of lead exposure is zero, especially for children and pregnant women."

Farrell Sklerov, a spokesman for the city's Department of Environmental Protection, which does the water testing, said the last time the city issued a similar public advisory was in 2005. The department is investigating the cause of the latest rise in lead levels, he added.

But Mr. Sklerov said that lead levels in tap water have been dropping, largely because the environmental department adds a common food preservative, phosphoric acid, to the water to create a protective coating on pipes and prevent the leaching of metals.

Lead service lines have not been installed in the city since 1961, Mr. Sklerov said, and the use of lead solder in plumbing was banned in 1987. But the department estimates that about 100,000 of its 835,000 water customers still have lead pipes.

Because water that sits in those pipes for several hours is more likely to have lead in it, residents are advised to reduce their potential for exposure by running the tap for half a minute until it is cold. (Hot water absorbs lead more easily.)

Eric Goldstein, a lawyer who monitors drinking water issues at the Natural Resources Defense Council, echoed city officials' suggestions.

"The latest test results are reason for caution, not panic," he said. "Lead exposures from all sources have declined significantly for New Yorkers over the past several decades. But every practical step should be taken to eliminate all lead exposures, especially for babies and toddlers."

He also urged residents to take advantage of the city's free testing program for lead in tap water at nyc.gov/html/dep/html/drinking_water/lead_index.shtml.

City officials advise using the first stream of tap water for plants or for household cleaning.

http://www.nytimes.com/2010/11/05/nyregion/05lead.html?ref=science

Putting Nutrition at the Head of the School Lunch Line

By LESLEY ALDERMAN

Eirini Vourloumis for The New York Times
Elementary school students line up for their turn to choose fresh vegetables from the salad bar at P.S. 29.

THE lunch menu at my son's elementary school — Public School 29 in Brooklyn — looked very tempting recently: vegetarian chili, sofrito brown rice, confetti corn salad, pico de gallo, salad bar, milk. Making the menu even more appealing was the price: $1.50.

When a school lunch is nutritious and tasty, it's one of the best health bargains around. Lunches provided through the National School Lunch Program, which is subsidized by the federal government, cost parents about $1.25 to $2, typically less than it would cost to make the meal at home. For lower-income families, the bill is less, or even free.

P.S. 29 students are lucky; their school participates in Wellness in the Schools, a nonprofit program that places culinary school graduates in New York City public schools to create appealing meals from wholesome ingredients. Across the country, many other school districts are beginning to make healthy food a priority by starting school gardens, using local produce and involving parents in the meal planning.

Still, at many schools, lunches are neither tasty nor nutritious. While more than 70 percent of schools serve lunches that meet the guidelines for nutrients like vitamins, minerals and protein, many serve meals that are high in fat, salt and sugar, according to a School Nutrition Dietary Assessment study.

Even cafeterias that serve up healthy choices like whole wheat pizza, salad and bean burritos may also offer nutritionally suspect items like chicken nuggets and fries that children can buy on their own. A study by the federal Centers for Disease Control and Prevention in 2006 found that 23.5 percent of high schools offered fast food from places like Pizza Hut and Taco Bell.

School lunches must meet a minimum calorie limit set by the government, but it's up to individual schools to decide how the calories are apportioned. If a meal has not reached the limit, the cook can toss on extra slices of bread to bring up the count.

"School lunches are based on an outdated idea — that hungry kids only need calories," said Margo G. Wootan, director of nutrition policy at the Center for Science in the Public Interest, a health advocacy group. "But what hungry kids need is healthy food."

If the White House has its way, school lunches will become universally healthier. The first lady, Michelle Obama, and the secretary of agriculture, Tom Vilsack, have made child nutrition a priority for the current administration and worked with Congress to make changes to the Child Nutrition Act which was passed by the Senate and awaits approval by the House. The updated bill gives schools more money to spend per meal, and includes provisions to upgrade menus and ban junk food from vending machines and lunch lines.

School lunches may be inexpensive, but it's hardly money well spent if your child learns a lifetime of poor eating habits and has an increased risk of obesity, diabetes and other chronic (not to mention expensive) ailments. If you'd like to make sure your child is getting nutritious, affordable food, consider the suggestions below.

BACK TO SCHOOL Go to your child's school and see for yourself what is being served. Pick a day and eat lunch with your child, or offer to volunteer in the lunchroom.

"One of the first indications of a good lunch program is enthusiasm among the people serving the food," said Marion Nestle, professor of nutrition and food studies at New York University and author of "What to Eat" (North Point Press, 2007). Are the people who are making the food and serving it to the children engaged? Do they know the children's names?

"If they take pride in their work, it will show in how they interact with the kids," said Ms. Nestle.

Look at the quality of what is being served. Pizza can come from a fast-food distributor, or it can be made on the premises with fresh ingredients. Are there alternatives to the main entree? If a child does not like the vegetarian chili being served, for instance, is a server willing to offer the child a healthy alternative?

If you want to know more details about the school's approach to lunch, ask to see a copy of the wellness policy. Every school district is supposed to have a policy that addresses school food, nutrition education and physical activity, Ms. Wootan said.

"You can also ask for the nutrition content of the entrees the school is serving — about half of schools track these numbers," she added.

COACH YOUR CHILD If the school offers wholesome entrees, encourage your child to try them. Though school lunches are uneven in quality, children who eat them are more likely to drink milk and eat fruit and vegetables than those who bring their own lunch, according to data from the S.N.D.A.

"Be an advocate for your child's food experience," said the restaurant owner Henry Rinehart, who serves on the board of the New York Coalition for Healthy School Food and volunteers in the kitchen of his son's Manhattan public school. "Serve on the food committee, approach local chefs and ask them to help upgrade your school's menu," Mr. Rinehart suggested.

START PACKING If school lunches are not a nutritionally viable option where you live (or your child is a very picky eater), then combine good nutrition with economies of scale. Rather than buy prepackaged food items, which are expensive, wasteful and often not that healthy, invest in a lunchbox, a Thermos and plastic containers for sandwiches, leftovers and vegetables.

"Packaged kids meals help children maintain a taste for salt and fat," Ms. Nestle pointed out. "They also make kids think that they should only eat 'kid food.' " For example, Lunchables, the popular meals-in-a-box for children, contain highly processed ingredients and beverages like Kool-Aid.

Instead, make sandwiches on 100 percent whole wheat bread, which has more fiber, vitamins and minerals than plain wheat bread. (Check the ingredients: whole wheat should be the first one listed.) Fill the sandwiches with cheese and tomatoes or peanut butter and jelly. "Sandwiches are ideal — they are portable, have several ingredients and a decent amount of calories," said Ms. Nestle.

If you have leftovers from last night's dinner — pasta, say, or lean meats — warm them up and place them in an insulated container in your child's lunch. Give your child low-fat milk or juice that is clearly labeled "100 percent juice."

Don't forget some fruit and vegetables, too. Make sure the offerings look and taste good so your child won't just dump them in the trash. Put steamed broccoli or baby carrots in one container and a tasty dressing in another for dipping. Cut apple slices and sprinkle them with lemon juice to keep them from getting brown (the excuse my child uses to toss them out).
Find more healthy options for children at tinyurl.com/6nlxft, under the pull-down themes "Lunchbox Fixes" and "Kids Week."
And if your child still cries for Lunchables or pizza? Keep offering healthy options, suggested Mr. Rinehart, owner of Henry's on the Upper West Side. "The best way to create a diverse eater is to let kids get a little hungry."

http://www.nytimes.com/2010/11/06/health/06patient.html?ref=health

Listening to Patients Living With Illness

By PAULINE W. CHEN, M.D.

Wiry, fair-haired and in his 60s, the patient had received a prostate cancer diagnosis a year earlier. When his doctors told him that surgery and radiation therapy were equally effective and that it was up to him to decide, he chose radiation with little hesitation.

But one afternoon a month after completing his treatment, the patient was shocked to see red urine collecting in the urinal. After his doctors performed a series of tests and bladder irrigations through a pencil-size catheter, he learned that the bleeding was a complication of the radiation treatment.

He recalled briefly hearing about this side effect three months earlier, but none of the reports he had been given or collected mentioned it, and once he had recovered from the angst of the emergency room and the doctor's office visits and the discomfort of the clinical work-up, he didn't give it more thought — until a few weeks later, when he started bleeding again.

By the time I met him, he was in the middle of his third visit to the hospital. "I feel like I'm tied to this place," he said. He showed me a plastic jug partly filled with urine the color of fruit punch, and he described a post-treatment life marked by fear of going to the bathroom and discovering blood. "If I had known that my life would be like this after radiation," he sighed, "I would have chosen the surgery."

Whether conducted at a laboratory bench or in clinical trials, medical research has long been driven by a single overriding goal — the need to find a cure. Usually referred to more modestly as a search for "the most effective treatment," this standard has served as both a barometer of success and a major criterion for funding. Most published studies are marked by a preponderance of data documenting even minor blips in laboratory values or changes in the size of a spot of cancer or area of heart muscle damage on specialized X-rays. Some studies bolster the apparent success of their results with additional data on societal effects like treatment costs or numbers of workdays missed.

Few studies, however, focus on the patient experience.

The result of all this emphasis on cure has been a nearly embarrassing richness of choice for patients with diabetes, heart disease, H.I.V. infections and even some cancers. The increasingly sophisticated treatment regimens that now make up medicine's armamentarium have transformed once life-threatening diseases into chronic ones, but in the process have given rise to a group of individuals who are caught in the unenviable position of living with an illness that never quite goes away. No longer forced to make once-in-a-lifetime life-or-death treatment decisions, they instead struggle each day with the side effects of the very treatments that keep them alive.

For many of these patients, the most important question becomes not "What treatment will allow me to live the longest?" but rather "Which treatment can I live with?"

Now, according to a paper published last month in the policy journal Health Affairs, the Patient-Centered Outcomes Research Institute, a new initiative mandated by the federal health care overhaul, may offer a chance to alter the prevailing winds of medical research so the needs of this growing segment of the patient population are addressed. With a 21-member board made up of individuals from both the public and private sectors, the institute has a mandate to set the agenda for research comparing treatments for common diseases and to finance the most important studies. But according to the paper's authors, the potential of such an enterprise will be fully realized only if the institute supports initiatives and strategies that place the patient experience not only front and center in research but also smack in the middle of the medical mainstream.

"To some extent, we've conquered death," said Dr. Albert W. Wu, lead author and a general internist and professor of health policy and management at the Johns Hopkins Bloomberg School of Public Health in Baltimore. "Now we have people living with chronic illnesses, and how they experience quality of life every day has become an important part of how they are doing and whether the treatments are worthwhile."

To effectively capture the patient perspective, Dr. Wu and his co-authors propose making patient-reported outcomes a more routine part of clinical studies and practice and administrative data collection, in some cases requiring the information for reimbursement. For several months now, they have been incorporating data

about patient experiences into routine medical practice at Johns Hopkins. Using a dedicated portal called PatientViewpoint.org, patients can, at the suggestion of their physicians, fill out surveys about their energy levels, social functioning, mental health, nausea and pain. The information is then handled like more traditional clinical testing; access is reserved for the patients themselves and their doctors.

Currently, the site is open only to patients diagnosed with breast or prostate cancer, but Dr. Wu and his colleagues hope that eventually all doctors will be able to order patient surveys that measure experiences like levels of pain, physical functioning or depression, proactively identifying results that are high or low, then reviewing those results with patients. And despite initial concerns that patients might feel overburdened by the questionnaires, most have been enthusiastic.

"Patients want to have more conversations with their physicians and other providers about these kinds of issues," Dr. Wu said. "Sometimes it's difficult to cover all this information during the medical encounter, and these surveys may be another opportunity to do that."

Not all clinicians or researchers, however, are eager to embrace patient-reported outcomes. Many have never received training in the research methods involved and are skeptical about the value of a discipline or drill that is unfamiliar. "This is considered to be squishy, soft stuff," Dr. Wu said. "It's still not something you can order on a laboratory slip."

Nonetheless, Dr. Wu is hopeful that the new Patient-Centered Outcomes Research Institute will provide more direction to all researchers, while establishing new and more comprehensive standards that require patient-reported and quality-of-life outcomes. "I think we have a real opportunity right now, and this institute has great potential to be a positive force in understanding how treatments work and what's effective and for whom," he said.

But he also cautioned: "We have to remember to include the patients. We have to include their perspective if we want to come up with evidence that they can really use to make better decisions for themselves about treatment and care."

http://www.nytimes.com/2010/11/04/health/views/04chen.html?ref=health

CT Scans Cut Lung Cancer Deaths, Study Finds

By GARDINER HARRIS

Claudia Henschke

Suspicious nodules that may indicate lung cancer can be seen in a CT scan of the lung (above), but not in an X-ray

WASHINGTON — Annual CT scans of current and former heavy smokers reduced their risk of death from lung cancer by 20 percent, a huge government-financed study has found. Even more surprising, the scans seem to reduce the risks of death from other causes as well, suggesting that the scans could be catching other illnesses.

The findings represent an enormous advance in cancer detection that could potentially save thousands of lives annually, although at considerable expense. Lung cancer will claim about 157,000 lives this year, more than the deaths from colorectal, breast, pancreatic and prostate cancers combined. Most patients discover their disease too late for treatment, and 85 percent die from it.

No screening method had proved effective at reducing mortality from the disease. Four randomized controlled trials done during the 1970s showed that chest X-rays, while they helped catch cancers at an earlier stage, had no effect on overall death rates. Since then, researchers have suggested that CT scans — which use coordinated X-rays to provide three-dimensional views — could detect lung tumors at an even earlier stage than X-rays.

"This is the first time that we have seen clear evidence of a significant reduction in lung cancer mortality with a screening test in a randomized controlled trial," said Dr. Christine Berg of the National Cancer Institute.

Cancer doctors and others predicted that the study's results would soon lead to widespread use of CT scans, in particular for older smokers, who have a one in 10 chance of contracting lung cancer.

"These people are worried about lung cancer, and now there is an opportunity to offer them something," said Dr. Mary Reid, an associate professor of oncology at the Roswell Park Cancer Institute in Buffalo.

But health officials involved in the study refused to endorse widespread screening of current or former smokers, saying more analysis of the study's results is needed to further identify who benefited most. Such an analysis is months away. And they pointed out that the study offers no reassurance about the safety of smoking or the advisability of CT scans for younger smokers or nonsmokers.

"No one should come away from this thinking that it's now safe to continue to smoke," said Dr. Harold E. Varmus, director of the National Cancer Institute.

Patients wishing to get a CT lung screen will most likely have to pay the roughly $300 charge themselves, since few insurers pay for such scans unless an illness is suspected. The federal Medicare program will soon reconsider paying for such screens, a Medicare official said.

The study, called the National Lung Screening Trial, was conducted by the American College of Radiology Imaging Network and the cancer institute. It involved more than 53,000 people ages 55 to 74 who had smoked at least 30 pack-years — one pack a day for 30 years or two packs a day for 15 years. Ex-smokers who had quit within the previous 15 years were included in the group.

Each was given either a standard chest X-ray or a low-dose CT scan at the start of the trial and then twice more over the next two years. Participants were followed for up to five years. There were 354 lung cancer deaths among those who received CT scans and 442 among those who got X-rays. The $250 million study, which began in 2002, was paid for by the cancer institute and carried out at 33 sites.

Its preliminary results were announced days after an independent monitoring board determined that the benefits of CT scans were strong enough to stop the trial. The study will be published in the coming months.

The study found that for every 300 people who were screened, one person lived who would otherwise have died during the study. But one-quarter of those given CT scans were found to have anomalies, nearly all of which were benign. These false signals generally led to more worry, more CT scans and sometimes to lung biopsies and thoracic surgery.

"There are economic, medical and psychological consequences of finding these abnormalities," Dr. Varmus said.

Deaths due to all causes declined by 7 percent among study participants who received CT scans, suggesting the tests helped to detect other life-threatening diseases besides lung cancer.

Dr. Claudia Henschke, a clinical professor of radiology at Mount Sinai Medical Center and a longtime advocate for use of CT to screen for lung cancer, said the study was likely to have underestimated the benefits of CT scans because participants were screened only three times. Had the screening continued for 10 years, as many as 80 percent of lung cancer deaths could have been averted, she said. Dr. Henschke's research has been controversial because of its statistical methods and its financing, which included money from a tobacco company. She earns royalties from makers of CT machines.

"What we also have found is that low-dose CT scan gives information on cardiovascular disease, emphysema" and other pulmonary diseases, Dr. Henschke said. "Those are the three big killers of older people. There is just tremendous potential."

But Dr. Edward F. Patz Jr., professor of radiology at Duke who helped devise the study, said he was far from convinced that a thorough analysis would show that widespread CT screening would prove beneficial in preventing most lung cancer deaths. Dr. Patz said that the biology of lung cancer has long suggested that the size of cancerous lung tumors tells little about the stage of the disease.

"If we look at this study carefully, we may suggest that there is some benefit in high-risk individuals, but I'm not there yet," Dr. Patz said.

Since 46 million people in the United States smoke and tens of millions more once smoked, a widespread screening program could cost billions annually. Any further refinement of those most at risk could reduce those costs. Low-dose CT scans expose patients to about the same radiation levels as mammograms. Little is known about how the cumulative risks of years of such scans would balance the benefits.

The study's results could have both legal and political consequences. Suits against tobacco companies have sought to force cigarette makers to pay for annual CT screens of former smokers. But with the science uncertain, those claims have so far been rebuffed. Congress has diverted some research money to create pilot CT lung screening programs, diversions that may gain momentum now.

Some Obama administration officials argued during the debate on the health care law that patients' health was often harmed by getting too many tests and procedures that, if reduced, would improve health while reducing costs. This study suggests that, at least in lung cancer, spending more on tests saves lives.

Laurie Fenton, president of the Lung Cancer Alliance, which has lobbied for widespread CT lung screening, said the debate about the advisability of such scans is now over.

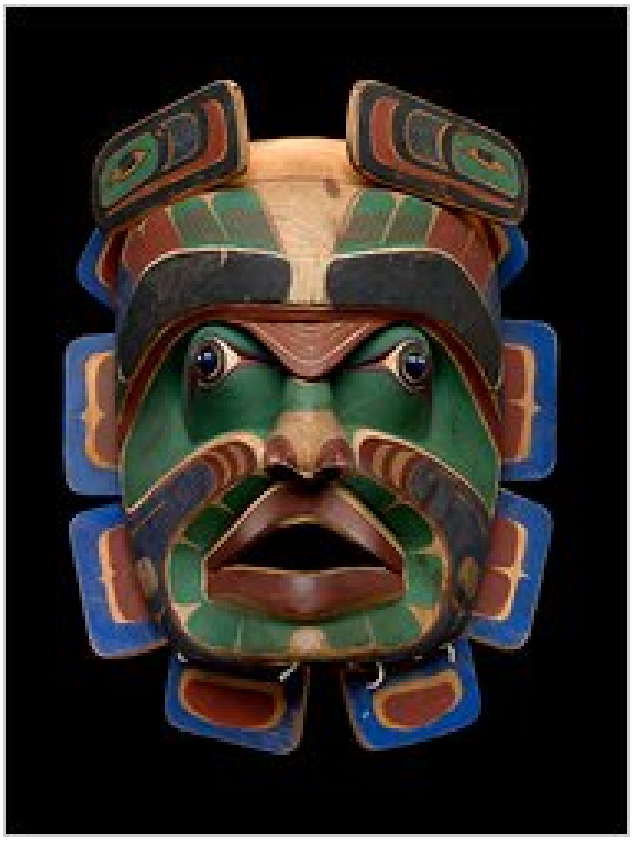
"The challenge now shifts from proving the efficacy of the method to developing the proper quality standards, infrastructure and guidelines to bring this needed benefit to those at high risk for the disease — now," Ms. Fenton said.

But Dr. Peter B. Bach, a pulmonologist at Memorial Sloan-Kettering Cancer Center in New York, said no one should rush out and get a CT scan yet because further analysis will better define whom the screening helped.

"Very soon we'll have an answer about who should be screened and how frequently," Dr. Bach said, "but we don't have that answer today."

http://www.nytimes.com/2010/11/05/health/research/05cancer.html?ref=health

Grace and Culture Intertwined
By HOLLAND COTTER



National Museum of the American Indian
A potlatch dance mask made by the carver Bob Harris, a member of the Vancouver Island Tribe, around 1900

American Indian art is some of the most beautiful ever made anywhere on earth. Some of us have loved it as long as we can remember. And with a new permanent-collection installation at the National Museum of the American Indian in Lower Manhattan, we can love it even more.

One reason is that we can see it clearly now, which hasn't been so true at that museum before. The old Museum of the American Indian, at Broadway and 155th Street in Washington Heights, which opened in 1922, had limited space. Objects were crammed into display cases, which were wedged into narrow rooms. The art was so glorious, from ancient Mayan effigies to 1930s spruce-root baskets the size of wrens' nests, that the crunch almost didn't matter. Still, when the Smithsonian Institution took charge of the museum in the 1980s, with a promise of expanded quarters, first in the United States Custom House in Lower Manhattan, later in Washington, the plan sounded good.

But the 1993 opening of the George Gustav Heye Center in the Custom House, named for the collection's founder, brought changes not just in location but also in institutional mission. Now using a roster of largely Native American curators, a former ethnology museum that doubled as an art museum became a center for American Indian culture, old and new.

The earlier exhibition style was abandoned, replaced by multimedia displays incorporating video interviews, ambient vocal commentary and extensive interpretive texts. In general, visitors were encouraged to view works less as subjects of passive contemplation than as ideological vehicles with messages to deliver. A number of visitors who came with art museum expectations felt that the emphasis on social and political

context, combined with the electronic bells and whistles, reduced the collection to a set of illustrations for this idea or that.
Time passed, a series of stimulating temporary shows came and went at the museum, and some of us began to rethink our initial take. The turning point for me was the 2002 exhibition "Spirit Capture: Native Americans and the Photographic Image." A committed connoisseur — and Western museology is built on connoisseurship — would have greeted the show with dismay. Almost all of the 200 photographs, many with images dating to the 19th century, were presented by new rather than vintage prints, often on an exaggerated scale.
Yet the cumulative effect of the images, whatever their physical form, was profoundly moving. I realized that to be moved by the show was tacitly to accept the idea that this museum was not a standard-model art institution or, put another way, that this museum's definition of art differed from the one I was used to: it located art primarily in ideas and information rather than in precious material forms.
This philosophy, which was also applied to the National Museum of the American Indian that opened on the Mall in Washington in 2004, was very much a product of the postmodern era.
Although disparaged by many art establishment insiders, it did valuable work in breaking with old givens about what modern museums were supposed to do (exhibit limited types of objects in a neutral setting), and not do (add sociological, never mind moralizing, commentary).
If the Museum of the American Indian's curators had overromanticized Indian cultures, they had also put a check on a seldom-questioned ethnological romanticism that assumed those cultures to be dead and gone. If the museum's style was politically correct to a fault, it did correct certain faulty versions of cultural history.
Now more time has passed. Ideas and tastes have changed again. The museum has revised and refined some of its own controversially revisionist thinking. And the new permanent collection at the Heye Center, called "Infinity of Nations: Art and History in the Collections of the National Museum of the American Indian," and scheduled to be in place for 10 years, is different from its predecessor.
The bells and whistles have been toned way down.
There are fewer videos, shorter texts. The only recorded voices, activated by visitors from touch screens, are brief interviews with various historians who closely studied specific objects in preparation for the reinstallation.
The installation itself, overseen by Cécile R. Ganteaume, an associate curator at the museum, is arranged by geographical region, beginning — to the far left as you enter the main gallery — with Tierra del Fuego at the tip of South America, moving through Brazil and Mexico and farther into North America, ending with Inuit work from the Canadian Arctic.
For some scholars, defining American Indian cultures by region is an outmoded method, unrealistically schematic. But Ms. Ganteaume takes care to keep geographical borders loose and permeable by pointing out crosscurrents of influence that constantly moved through them, propelled by long-distance trade, wars, migrations and the forced displacements of entire Indian nations after the European arrival.
She shows, for example, stone tools carved in Arctic Canada that were discovered in Vermont, and evidence that chocolate, along with tropical birds, traveled at an early date from Mesoamerica to New Mexico.
Boundless multiplicity is the rule.
But the big departure, within the context of this museum, is a new emphasis on aesthetics, beauty and art with a capital A. We've all had the notion drummed into us that Indian languages have no word for art in its modern Western sense; that Indian material culture is fundamentally instrumental, that its meaning lies in function. Yet a glance around the installation reveals evidence of highly developed, pervasive and diversified concepts of beauty embodied in the 700 objects here.
An introductory lineup of headgear from across the Americas delivers that news in a stroke, as our eyes move from a big, bright, halolike circle of macaw and heron feathers from Brazil; to a checkerboard-patterned Peruvian pillbox cap; to a Haida headdress from British Columbia with the carved head of a cosmic beast, glinting with shell inlay, positioned like a miner's lamp.
The lamp's light spreads, symbolically, through the long gallery's serpentine path, which is flanked on both sides by tall glass cases full of drums, masks, quivers, shirts, shields and pots, and is interrupted at intervals by free-standing items deemed particularly worthy of contemplation.

On an ancient Mayan stone relief from Guatemala near the beginning of the processional route, a man encased in the protective armor of a ritual ball player bends and dips with the grace of a dancer. Farther on there's a battle scene engraved on a hollow gourd by the artist Mariano Flores Kananga. Done around 1925, it is thought to show eyewitness accounts of a deadly clash between Peruvian and Chilean armies that Kananga may have fought in.

Much later on the route stands a boldly imagined potlatch dance mask made by the master carver Bob Harris, a member of the Vancouver Island Tribe, around 1900. Painted in bright greens and blues, its bulging fish eyes inlaid with light-catching beads, it depicts a mythic ruler of the marine world, and was carved at a time when the potlatch ceremony, central to tribal identity, was outlawed by the Canadian government. Some artists turned to making masks for the tourist trade just to keep the tradition alive.

The show has many prestige items and power objects linked to specific historical figures. Some of these things are tremendously charismatic. But what surfaces again and again is evidence of a peculiarly intimate kind of beauty associated with ordinary personal adornment. It's there in a pair of men's dangle earrings made of toucan feathers and iridescent beetle wings from Amazonian Ecuador, and meant to attract the ladies.

It's also there in a pair of 19th-century Plains moccasins splashed with sky-blue beadwork blossoms, and in a lavishly beaded Inuit woman's parka, a monument of practical outerwear that both projects a sense of majestic, extraterrestrial mystery — it looks alive — and is capacious enough to accommodate a mother and a squirming, nursing baby.

Dating from the late 19th or early 20th century, this garment seamlessly fuses ethnic tradition and self-expression, as, in a different way, does a piece by the contemporary artist Bently Spang, which concludes the installation. Titled "War Shirt #2, Modern Warrior Series," this sculptural version of a ceremonial shirt is made entirely from stitched-together photographs of the artist's Northern Cheyenne family at home on a reservation in Montana.

With this 2003 piece, conceived, like most contemporary art, for museum display, we technically cross a decisive line from ethnology to art. Or do we? And if we do, which objects fall on which side? Mr. Spang's shirt is a spare but passionate visual essay on the still-tough subject of ethnic identity. The bead-encrusted parka, the flower-spattered slippers, the rainbow-colored earrings, all gathered as ethnological specimens, are exercises in unnecessary beauty.

Is there really a dividing line between any of these works of art? No.

Is there a bottom line to all of them? Yes: love.

"Infinity of Nations: Art and History in the Collections of the National Museum of the American Indian" remains on permanent view at the George Gustav Heye Center, 1 Bowling Green, Lower Manhattan; nmai.si.edu.

http://www.nytimes.com/2010/11/06/arts/design/06infinity.html?ref=design

Meager Means, Rich Imagination
By ROBERTA SMITH

American Folk Art Museum
"Eugne Von Bruenchenhein": The American Folk Art Museum, includes pinup-style photos of this self-taught artist's wife, Marie.

The self-taught artist Eugene Von Bruenchenhein was a slight man of meager means. Born in Marinette, Wis., in 1910, the son of a sign painter and shopkeeper, he never finished high school, and once the family moved to Milwaukee, lived most of his life in a small house built by his father. He was too short to serve in the Army during World War II. He worked in a flower shop and then a bakery, and after health problems forced an early retirement in 1959, when he was 49, he got by on a Social Security check of $220 a month until his death in 1983.

But Von Bruenchenhein (pronounced BROON-shen-hine) made the most of everything that came his way. Everything included his love of plants and his wife and muse, Marie; his ability to make ingenious use of all kinds of scavenged materials; and an outsize imagination apparently further expanded by recreational drugs. When he died, he left a large and unruly universe of muliple mediums crammed into the Milwaukee house. Comprising photographs, paintings, sculptures and drawings, it was known only to family and close friends. After his death a friend, Daniel Nycz, brought his work to the attention of Russell Bowman, who was director of the Milwaukee Art Museum.

Von Bruenchenhein's hyper-productive creative existence is receiving its first in-depth museum exhibition at the American Folk Art Museum. Organized by Brett Littman, a guest curator who is the executive director of the Drawing Center in SoHo, the show is overdesigned and ultimately too small and tame to do Von Bruenchenhein's achievement full justice; it especially scrimps on his luridly colored, slightly greasy looking hallucinatory paintings from the 1950s and early '60s. But it nonetheless reveals the artist as a kind of dazzlingly weird, subsistence-level Renaissance man, laying out the fruits of his labor with a clarity that makes them feel of a piece.

Near the beginning of the show a small sign that Von Bruenchenhein incised in foil-covered insulation and displayed in his kitchen announces the scope of his ambition: "Freelance Artist — Poet and Sculptor — Inovator — Arrow maker and Plant man — Bone artifacts constructor — Photographer and Architect — Philosopher." (This, in its entirety, serves as the exhibition's subtitle.)

Of this cavalcade of characters, "Plant man" seems to have come first and remained foremost, the energy source for all the others. But his stepmother was equally important. After his mother died, when he was 7, Von Bruenchenhein's father married Elizabeth Mosley, a former schoolteacher in Panama who had returned to the United States to become a chiropractor. A painter of floral still lifes and a writer of pamphlets on things like reincarnation, she fostered Von Bruenchenhein's love of the natural world (and, it would seem, a certain kind of free thinking). He considered her his mentor until she died in 1938.

The time Mosley spent in Panama cannot be underestimated, given Von Bruenchenhein's subsequent emphasis on tropical and exotic flora. In the 1930s he built a greenhouse and grew cactus, joined the local Cactus Club, studied botany and often said he was a horticulturalist.

But his real artistic blossoming seems to have been inspired by Marie, whom he met in 1939, when she was 19 and he was 29, and married four years later. Over the next decade or so he took thousands of photographs of her in various states of undress, often wearing clunky heels, garters, scarves, and draped with pearls or flowers. When she dons dresses, they are floral prints. She is almost always seen against one of three or four floral backdrops, seated on small patterned rugs. Despite frequently bared breasts and thighs, the photos feel remarkably innocent.

Von Bruenchenhein's images belong to the complex history of set-up photography that gained critical mass in the early 1980s. Like a proto-Cindy Sherman, Marie assumes female, Hollywood-related roles. She serves as chaste pinup girl, Tahitian princess (or tourist), would-be starlet, Breck Girl, young Madonna (although they had no children) and much more.

Von Bruenchenhein's willing collaborator, Marie is, however, rarely completely at ease. There's an awkwardness, even a subtle deer-in-the-headlights alarm that registers in these images and is perhaps the most direct reflection of Von Bruenchenhein's personality available to us. It speaks to the intensity of his ambition, which one can imagine may have verged on the tyrannical, to her desire to please and to the undoubtedly claustrophobic quality of their enterprise. Marie Von Bruenchenhein was 63 when her husband died; she survived him by less than a decade.

In the 1950s Von Bruenchenhein, partly inspired by tests of the hydrogen bomb, began painting on small masonite panels or cardboard. At the rate of about one a day, he turned out slightly garish semi-abstractions, manipulating paint with his fingers, combs and other small objects, including brushes made from Marie's hair.

These combustible little images suggest exotic plants, strange sea creatures or cosmic fireworks, as well as cover art for science-fiction novels; they hint at visionary architecture. Unfortunately there are only three examples of the 1950s paintings in the show, and they are relatively quiet ones at that.

The mid-1960s brought a rash of drawings made with ballpoint pens, rulers and French curves that are the least known of Von Bruenchenhein's work. Many of them were glued into a large album of wallpaper samples that is also part of the show, and that viewers can page through in digital animation. Their fine-lined forms oscillate among templelike buildings, floral designs, spaceships and outlandish stringed instruments — and often resemble distant cousins of Frank Stella's painted-relief series from the 1970s.

Meanwhile in the late '60s Von Bruenchenhein began concentrating on sculpture in two distinct mediums. From clay scrounged from construction sites he made ceramics baked in his coal oven and decorated with whatever kind of paint he could find. The show includes small, oddly tentacled flowers related to some of the sea creatures in his paintings (although not the ones here); individual concaved leaves whose mixtures of color are especially rich; and perforated vases assembled from smaller ceramic leaves that suggest laurel wreaths run amok. In these pieces Von Bruenchenhein's weirdness turns Victorian, especially in a flame-colored leaf-vase sitting on an ochre-colored pedestal that suggests an ornate occasional table.

There is a similar emphasis on the incremental in the little thrones and towers he made out of salvaged chicken and turkey bones, using airplane glue and paint. Oddly inhabited even though empty — thanks to the

protrusions of bones — the thrones befit a man who sometimes referred to himself and his wife as the king and queen of his self-created realm.

A gold-painted tower, made mostly from vertebrae, is a creepier matter. But it does, however, dovetail with eight larger paintings from the late 1970s, when Von Bruenchenhein was painting exclusively on cardboard. Featuring lacy, visionary skyscrapers of an Art Deco sort, these works once more take advantage of mundane physicality, using the ridges and honeycomb of the cardboard, softened by paint, to suggest crenellated or brickwork surfaces or occasionally climbing vines.

The skyscrapers emerging from lush, tropical greenness do their best to tie things together. They connect to the bone tower and leaf-vases and the space-age designs of the drawings. They suggest the profound attraction of fantasy, the conjuring of other worlds that starts with the photographs of Marie.

But they lack the intensity and inventive paint handling of the paintings of the 1950s and ’60s, which show Von Bruenchenhein unbound. They have a place in the history of postwar painting, as surely as Marie in her many guises has one in postmodern photography.

Von Bruenchenhein belongs among the great American outsider artists whose work came to light or resurfaced in the last three decades of the 20th century: Henry Darger, Martin Ramírez, Bill Traylor, James Castle and Morton Bartlett. But Von Bruenchenhein was not an isolate. He wanted people to see his work, wanted to sell it and approached galleries in Milwaukee without luck. One can imagine him being thrilled at the attention his work has received since his death, just as one can imagine him perusing the careful Folk Art Museum show and saying, “More, more, more.”

“Eugene Von Bruenchenhein” runs through Oct. 9 at the American Folk Art Museum, 45 West 53rd Street, Manhattan; (212) 265-1040; folkartmuseum.org.

http://www.nytimes.com/2010/11/05/arts/design/05eugene.html?ref=design

Dead Coral Found Near Site of Gulf Oil Spill
By JOHN COLLINS RUDOLF

Lophelia II 2010, NOAA OER and BOEMRE
Branches of coral, with brittle starfish attached, several miles from the site of the blown-out BP well in the Gulf of Mexico.
By JOHN COLLINS RUDOLF

A survey of the sea floor near BP's blown-out well in the Gulf of Mexico has turned up dead and dying coral reefs that were probably damaged by the oil spill, scientists said on Friday.
The coral sites lie seven miles southwest of the well, at a depth of about 4,500 feet, in an area where large plumes of dispersed oil were discovered drifting through the deep ocean last spring in the early weeks after the spill.
The large swaths of darkened coral and other damaged marine organisms were almost certainly dying from exposure to toxins, scientists said.
The corals were discovered on Tuesday by scientists aboard a National Oceanic and Atmospheric Administration research vessel, using a submersible robot equipped with still and video cameras and sampling tools.
The documented presence of oil plumes in the area, the close proximity of BP's well and the recent nature of the die-off make it highly likely that the spill was responsible, said Charles Fisher, a marine biologist from Penn State University who is the chief scientist on the gulf expedition, which was financed by the federal government.
'I think that we have a smoking gun," he said. "The circumstantial evidence is very strong that it's linked to the spill."
A brownish substance covered many of the dead or dying reefs but was probably dead tissue and sediment, not oil, Dr. Fisher said.
Natural oil seeps from the sea floor exist throughout the Gulf of Mexico but are unlikely to have caused such a dramatic coral die-off, he added. "We have never seen anything like this at any of the deep coral sites that we've been to, and we've been to quite a lot of them," he said.
Further study is needed to conclusively link the coral die-off to BP's oil, scientists said, and the survey team took a variety of samples from the site to test for the presence of hydrocarbons and dispersant.

Whether these samples will yield direct evidence leading back to the spill is unclear. "No one yet knows if the signature of whatever toxin killed these corals can be found in their skeletons after the tissue sloughs off," Dr. Fisher said.

The discovery of the dead corals is among the first evidence that oil from the BP well may have harmed marine life in the deep ocean, a concern raised by many biologists soon after the April 20 blowout that caused the spill. At an estimated five million barrels, it was the largest oil spill in the nation's history.

Federal officials said the discovery highlighted the need for further study of the effect of the spill on the deep ocean.

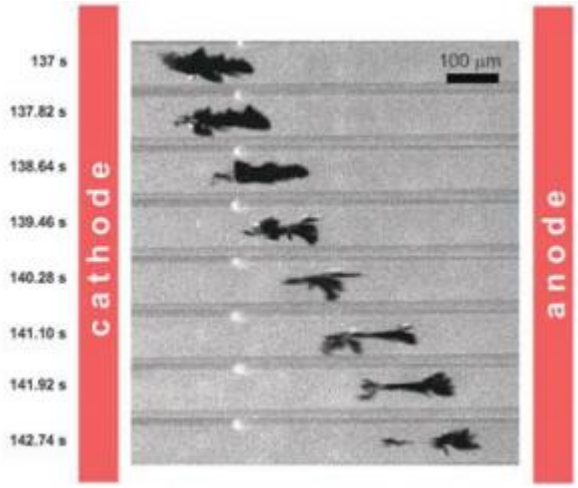
"These observations capture our concern for impacts to marine life in places in the Gulf that are not easily seen," Jane Lubchenco, the director of the National Oceanic and Atmospheric Administration, said in a statement. "Continued, ongoing research and monitoring involving academic and government scientists are essential for comprehensive understanding of impacts to the gulf."

The ocean floor near the site of the well is still largely unexplored and is probably home to many other deepwater coral communities that scientists are eager to study for possible oil impacts. Scientists will return to the same region on an expedition in December for more research. Research on deepwater corals is typically conducted using advanced submersibles or remotely operated underwater vehicles.

Meanwhile, coral sites in shallower waters farther from the well have not suffered visible damage, scientists say, although they are still studying these reefs for signs of less acute long-term impacts.

http://www.nytimes.com/2010/11/06/science/earth/06coral.html?ref=science

New Propulsion Method Developed for Metallic Micro And Nano-Objects



Example of propulsion of a zinc dendrite. (Credit: Image courtesy of CNRS; Copyright Kuhn/ISM)

ScienceDaily (Nov. 7, 2010) — A new propulsion method for metallic micro- and nano-objects has been developed by researchers from the Institute of Molecular Sciences (Institut des sciences moléculaires, CNRS/ENSCBP/Universités Bordeaux 1 and 4). The process is based on the novel concept of bipolar electrochemistry: under the influence of an electric field, one end of a metallic object grows while the other end dissolves. Thanks to this permanent self-regeneration, objects can move at speeds of the order of a hundred micrometers per second.

This work, published in the *Journal of the American Chemical Society*, could find applications in fields ranging from nanomedicine to micromechanics.

Several approaches are currently being explored to induce controlled directional motion of nano-or micro-objects. In particular, scientists are studying the use of so-called 'fuel molecules' which, by decomposing, can propel a dissymmetric object. Other potential avenues include reproducing natural systems by mimicking the motion of bacteria or the rotation of well-known biological systems such as ATP synthase.

For the first time, two researchers from the Bordeaux Institute of Molecular Sciences (CNRS/ENSCBP/Universités Bordeaux 1 and 4) have shown that such motion can be induced using a novel approach called bipolar electrochemistry. The chemists apply an electric field to metallic objects, which then have a different charge at each end, namely a positive charge at one end and a negative charge at the opposite end. This polarization is high enough for opposing redox chemical reactions to occur on both sides. Thus, the object is oxidized and dissolves at one end, while a metal salt present in the solution is reduced and metal is deposited at the other end, causing the object to expand. This process finally induces self-regeneration of the object while causing it to move. The motion brought about in this way is directed towards one of the two electrodes. Speed can be controlled by varying the potential difference between the electrodes.

The advantage of this method is that no conventional fuel is required to induce this motion. Moreover, such micromotors could be adapted so as to push other objects in a predetermined direction and disappear once their task is completed. This novel process opens up new prospects in various fields of application, ranging from micromechanics to nanomedicine.

Story Source:

The above story is reprinted (with editorial adaptations by Science*Daily* staff) from materials provided by **CNRS (Délégation Paris Michel-Ange)**.

Journal Reference:

1. Gabriel Loget and Alexander Kuhn. **Propulsion of Microobjects by Dynamic Bipolar Self-Regeneration**. *Journal of the American Chemical Society*, 2010 DOI: 10.1021/ja107644x

http://www.sciencedaily.com/releases/2010/11/101103152000.htm

Genetic 'Battle of the Sexes' More Important to Evolution Than Thought, Beetle Study Suggests

These are two male broad-horned flour beetles locked in battle. (Credit: Dr. Kensuke Okada)

ScienceDaily (Nov. 7, 2010) — A new study of beetles shows a genetic 'battle of the sexes' could be much harder to resolve and even more important to evolution than previously thought.

This battle, observed across many species and known as intralocus sexual conflict, happens when the genes for a trait which is good for the breeding success of one sex are bad for the other -- sparking an 'evolutionary tug-o-war' between the sexes.

It has previously been thought these issues were only resolved when the trait in question evolves to become sex-specific in its development -- meaning the trait only develops in the gender it benefits and stops affecting the other. An example of this is male peacocks' tails, used for mating displays, which are not present in females.

However, a new study by the universities of Exeter (UK), Okayama and Kyushu (both Japan) published Nov. 4 in *Current Biology* shows this doesn't always bring an end to conflict -- as even when the trait becomes sex-specific, knock-on effects can still disadvantage the other sex.

Professor Dave Hosken, from the Centre for Ecology & Conservation (Cornwall) at the University of Exeter, said: "This kind of genetic tussle is everywhere in biology. For example, in humans, male hips are optimised for physical activity, whereas female hips also need to allow child bearing. That's the sort of evolutionary conflict we're talking about, and these conflicts were previously thought to be resolved by sex-specific trait development.

"What we're seeing in this study is that this isn't always the end of the sexual conflict. This means it's no longer clear how or when, if ever, these conflicts get fully resolved and this means it could be more important to the evolutionary process than has generally been thought."

In this study, the researchers looked at broad-horned flour beetles, where males have massively enlarged mandibles used to fight other males for mating supremacy. The enlarged mandibles aren't present in the females at all -- meaning this is a sex-specific trait.

By selectively breeding the beetles for larger or smaller mandible size, the researchers were able to show that the bigger the mandibles were -- the more successful the males were in breeding. There was a corresponding counter-effect on females, however, as females from larger mandibled populations were less successful.

Professor Takahisa Miyatake, from the Graduate School of Environmental Science at Okayama University, said: "We looked at all the possible reasons for this and found that while the females did not develop the larger mandibles, they did inherit many of the other characteristics that made the enlarged mandibles possible in males. This included a reduced abdomen size, which could affect the number of eggs a female can carry -- giving a possible explanation for the disadvantage.

"So here we see a sex-specific trait which is still having a negative effect on the sex which doesn't show it. This means that even though it looks like this genetic conflict is over, it's still ongoing and there's no easy way to end it."
Kensuke Okada, also from Okayama University, said: "The view that sex-limited trait development resolves this kind of genetic battle of the sexes is based on the assumption that traits are genetically independent of each other, which is frequently not true.
"What we're seeing here is that genetic architecture can provide a general barrier to this kind of conflict resolution."

Story Source:
The above story is reprinted (with editorial adaptations by Science*Daily* staff) from materials provided by **University of Exeter**, via EurekAlert!, a service of AAAS.

Journal Reference:

1. Tomohiro Harano, Kensuke Okada, Satoshi Nakayama, Takahisa Miyatake, and David J. Hosken. **Intralocus Sexual Conflict Unresolved by Sex-Limited Trait Expression**. *Current Biology*, 2010; DOI: 10.1016/j.cub.2010.10.023

http://www.sciencedaily.com/releases/2010/11/101104154219.htm

Looking Older Than Your Age May Not Be a Sign of Poor Health

New research shows that even though most adults want to avoid looking older than their actual age, looking older does not necessarily point to poor health. (Credit: iStockphoto/Dieter Hawlan)

ScienceDaily (Nov. 7, 2010) — Even though most adults want to avoid looking older than their actual age, research led by St. Michael's Hospital shows that looking older does not necessarily point to poor health. The study found that a person needed to look at least 10 years older than their actual age before assumptions about their health could be made.

"Few people are aware that when physicians describe their patients to other physicians, they often include an assessment of whether the patient looks older than his or her actual age," says Dr. Stephen Hwang, a research scientist at St. Michael's Hospital and an associate professor at the University of Toronto. "This long standing medical practice assumes that people who look older than their actual age are likely to be in poor health, but our study shows this isn't always true."

For patients, it means looking a few years older than their age does not always indicate poor health status. The study found that when a physician rated an individual as looking up to five years older than their actual age, it had little value in predicting whether or not the person was in poor health. However, when a physician thought that a person looked 10 or more years older than their actual age, 99 per cent of these individuals had very poor physical or mental health.

"Physicians have simply assumed that their quick assessment of how old a person looks has diagnostic value," explains Dr. Hwang. "We were really surprised to find that people have to look a decade older than their actual age before it's a reliable sign that they're in poor health. It was also very interesting to discover that many people who look their age are in poor health. Doctors need to remember that even if patients look their age, we shouldn't assume that their health is fine."

The researchers studied 126 people between the ages of 30 to 70 who were visiting a doctor's office. Participants completed a survey that accurately determined whether they had poor physical or mental health. Each person was photographed, and the photographs were shown to 58 physicians who were told each person's actual age and asked to rate how old the person looked.

The study, published in the *Journal of General Internal Medicine*, provides new insights and questions into the value and limitations of a long standing medical practice of judging a person's health by how old they appear.
***Editor's Note**: This article is not intended to provide medical advice, diagnosis or treatment.*

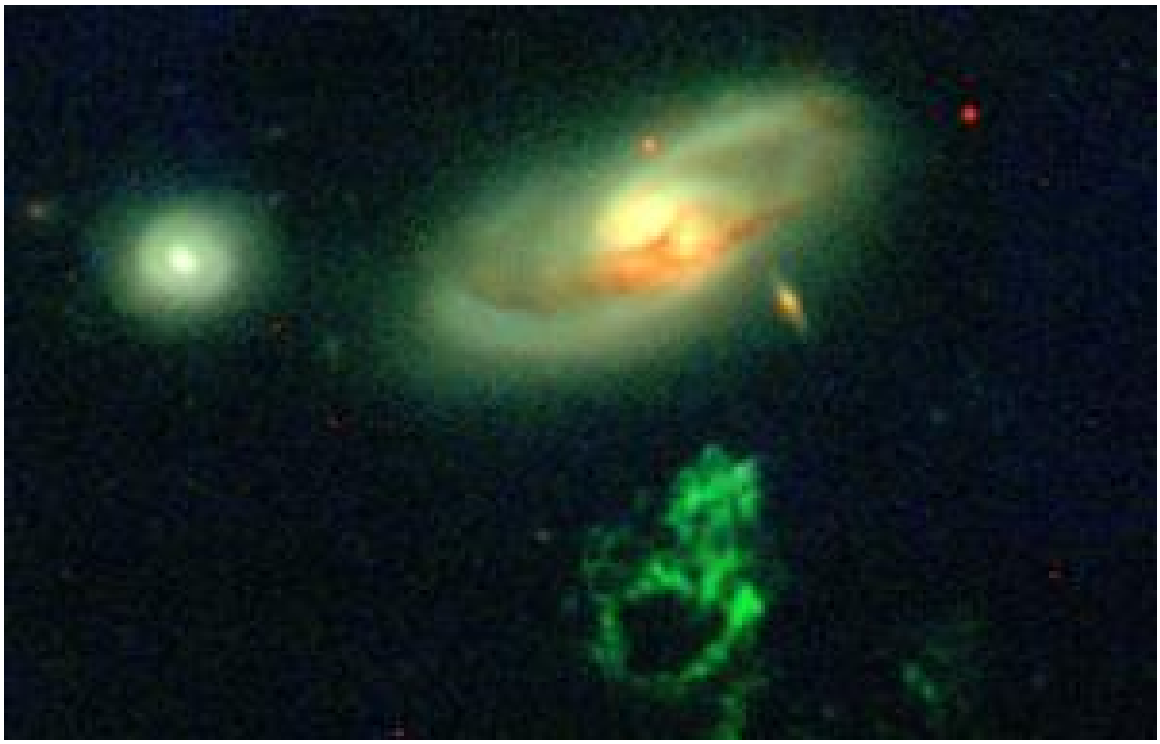
Story Source:
The above story is reprinted (with editorial adaptations by Science*Daily* staff) from materials provided by **St. Michael's Hospital**, via EurekAlert!, a service of AAAS.

Journal Reference:

1. Stephen W. Hwang, Mina Atia, Rosane Nisenbaum, Dwayne E. Pare, Steve Joordens. **Is Looking Older than One's Actual Age a Sign of Poor Health?** *Journal of General Internal Medicine*, 2010; DOI: 10.1007/s11606-010-1537-0

http://www.sciencedaily.com/releases/2010/11/101105124239.htm

Cosmic Curiosity Reveals Ghostly Glow of Dead Quasar



The green Voorwerp in the foreground remains illuminated by light emitted up to 70,000 years ago by a quasar in the center of the background galaxy, which has since died out. () (Credit: Photo by WIYN/William Keel/Anna Manning)

ScienceDaily (Nov. 6, 2010) — While sorting through hundreds of galaxy images as part of the Galaxy Zoo citizen science project two years ago, Dutch schoolteacher and volunteer astronomer Hanny van Arkel stumbled upon a strange-looking object that baffled professional astronomers. Two years later, a team led by Yale University researchers has discovered that the unique object represents a snapshot in time that reveals surprising clues about the life cycle of black holes.

In a new study, the team has confirmed that the unusual object, known as Hanny's Voorwerp (Hanny's "object" in Dutch), is a large cloud of glowing gas illuminated by the light from a quasar -- an extremely energetic galaxy with a supermassive black hole at its center. The twist, described online in the Astrophysical Journal Letters, is that the quasar lighting up the gas has since burned out almost entirely, even though the light it emitted in the past continues to travel through space, illuminating the gas cloud and producing a sort of "light echo" of the dead quasar.

"This system really is like the Rosetta Stone of quasars," said Yale astronomer Kevin Schawinski, a co-founder of Galaxy Zoo and lead author of the study. "The amazing thing is that if it wasn't for the Voorwerp being illuminated nearby, the galaxy never would have piqued anyone's interest."

The team calculated that the light from the dead quasar, which is the nearest known galaxy to have hosted a quasar, took up to 70,000 years to travel through space and illuminate the Voorwerp -- meaning the quasar must have shut down sometime within the past 70,000 years.

Until now, it was assumed that supermassive black holes took millions of years to die down after reaching their peak energy output. However, the Voorwerp suggests that the supermassive black holes that fuel quasars shut down much more quickly than previously thought. "This has huge implications for our understanding of how galaxies and black holes co-evolve," Schawinski said.

"The time scale on which quasars shut down their prodigious energy output is almost entirely unknown," said Meg Urry, director of the Yale Center for Astronomy & Astrophysics and a co-author of the paper. "That's why the Voorwerp is such an intriguing -- and potentially critical -- case study for understanding the end of black hole growth in quasars."

Although the galaxy no longer shines brightly in X-ray light as a quasar, it is still radiating at radio wavelengths. Whether this radio jet played a role in shutting down the central black hole is just one of several possibilities Schawinski and the team will investigate next.

"We've solved the mystery of the Voorwerp," he said. "But this discovery has raised a whole bunch of new questions."

Other authors of the paper include Shanil Virani, Priyamvada Natarajan, Paolo Coppi (all of Yale University); Daniel Evans (Massachusetts Institute of Technology, Harvard-Smithsonian Center for Astrophysics and Elon University); William Keel and Anna Manning (University of Alabama and Kitt Peak National Observatory); Chris Lintott (University of Oxford and Adler Planetarium); Sugata Kaviraj (University of Oxford and Imperial College London); Steven Bamford (University of Nottingham); Gyula Józsa (Netherlands Institute for Radio Astronomy and Argelander-Institut für Astronomie); Michael Garrett (Netherlands Institute for Radio Astronomy, Leiden Observatory and Swinburne University of Technology); Hanny van Arkel (Netherlands Institute for Radio Astronomy); Pamela Gay (Southern Illinois University Edwardsville); and Lucy Fortson (University of Minnesota).

Story Source:

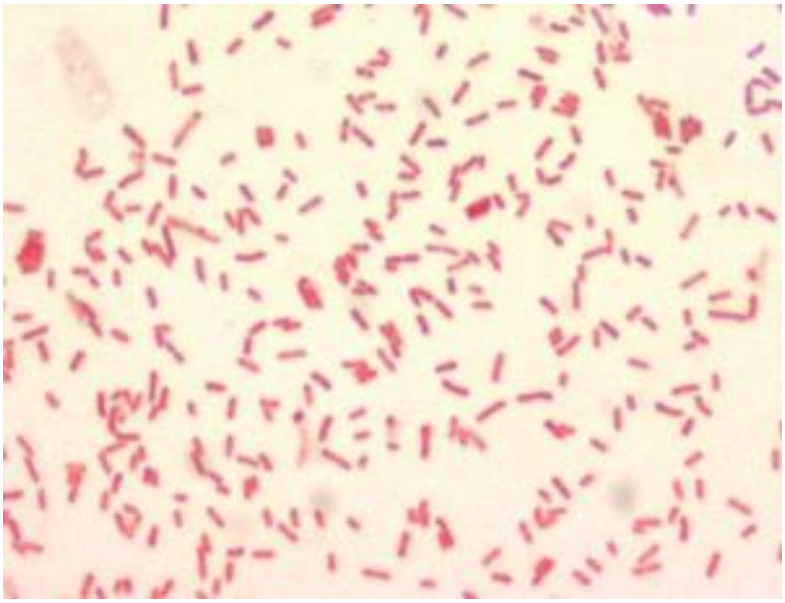
The above story is reprinted (with editorial adaptations by Science*Daily* staff) from materials provided by **Yale University**.

Journal Reference:

1. Kevin Schawinski, Daniel A. Evans, Shanil Virani, C. Megan Urry, William C. Keel, Priyamvada Natarajan, Chris J. Lintott, Anna Manning, Paolo Coppi, Sugata Kaviraj, Steven P. Bamford, Gyula I. G. Józsa, Michael Garrett, Hanny van Arkel, Pamela Gay, Lucy Fortson. **The Sudden Death of the Nearest Quasar**. *The Astrophysical Journal*, 2010; 724 (1): L30 DOI: 10.1088/2041-8205/724/1/L30

http://www.sciencedaily.com/releases/2010/11/101103171638.htm

DNA Fingerprinting Traces Global Path of Plague



Yersinia pestis, bacterium responsible for the Black Plague. (Credit: CDC)

ScienceDaily (Nov. 6, 2010) — An international team of scientists has traced major plague pandemics such as the Black Death back to their roots using DNA fingerprinting analysis.

Researchers from Ireland, China, France, Germany and the United States, including Northern Arizona University's Paul Keim and David Wagner, have turned back the clock to examine the past 10,000 years of global plague disease events. Their findings regarding the plague pathogen, *Yersinia pestis*, will be published in an upcoming issue of the journal, *Nature Genetics*.

Keim, director of NAU's Center for Microbial Genetics and Genomics and division director of Translational Genomics Research Institute, said that while the plague is less of a threat to humans than at other periods in history, such as the Middle Ages, the current plague research can be applied to ongoing health threats around the world.

This type of DNA fingerprinting can be used to characterize both natural and nefarious plague outbreaks -- which is crucial when a bacterium is used as a biological weapon.

"This work is more of a model for our control of epidemic diseases such as *Salmonella, E. coli* and influenza," Keim said. "Plague took advantage of human commercial traffic on a global scale, just as the flu and food-borne diseases do today. Future epidemiologists can learn from this millennium-scale reconstruction of a devastating disease to prevent or control future infectious disease outbreaks."

Tracking the worldwide spread of plague required identifying mutations in as many strains as possible. But transferring live bacterium across country boundaries is highly regulated and difficult due to its potential danger, presenting a challenge to scientists.

To make this research possible, the team devised an innovative research strategy of decentralized experiments where scientists in worldwide locations worked with one or several of 17 complete plague whole genome sequences. By electronically combining all of the research data, the team identified hundreds of variable sites in the DNA while assembling one of the largest dispersed global collections of plague isolates. That data was used to reconstruct the spread of plague pandemics, calculate the age of different waves of outbreak and was linked to descriptions in the historical record to better explain the current existence of plague.

The results serve as a map of how the plague made its way around the globe.

Their collaborative research determined that the plague pathogen originated in or near China where it has evolved and emerged multiple times to cause global pandemics. The international team also identified unique mutations in country-specific plague lineages.

Tracing its evolution, the plague spread over various historical trade routes as early as the 15th century. Chinese admiral and explorer Zheng He's travels may have taken the plague to central Africa. The Silk Road, which led from China to Western Asia and on to Europe as described by Marco Polo, also may have served as an avenue for disease. The latest plague pandemic of the late 1800s still persists today in wild rodents throughout the western United States.

"The plague found its way to the United States in the late 19th and early 20th century through multiple port cities by infected ship-borne rats," said Wagner, assistant professor of biological sciences at NAU. "Based upon DNA variation detected from these comparisons, we determined that the original plague strains that infected the U.S. had their origin in Asia and likely made their way to California via Hawaii."

While plague pandemics are something of the past, the disease has never fully disappeared. The bacterium remains ecologically established in animal populations around the world, and has resurfaced in Africa and Madagascar.

"This study gives one the exciting feeling that we are able to rewind time," said Elisabeth Carniel, director of the National Reference Laboratory and World Health Organization Collaborating Center for Yersinia at the Institut Pasteur in Paris. "However, this should not lead us to consider plague a disease of the past. We are observing its re-emergence in countries where it has been silent for decades. Therefore, far from being extinct, plague is a re-emerging disease."

***Editor's Note**: This article is not intended to provide medical advice, diagnosis or treatment.*

Story Source:

The above story is reprinted (with editorial adaptations by Science*Daily* staff) from materials provided by **Northern Arizona University**.

Journal Reference:

1. Giovanna Morelli, Yajun Song, Camila J Mazzoni, Mark Eppinger, Philippe Roumagnac, David M Wagner, Mirjam Feldkamp, Barica Kusecek, Amy J Vogler, Yanjun Li, Yujun Cui, Nicholas R Thomson, Thibaut Jombart, Raphael Leblois, Peter Lichtner, Lila Rahalison, Jeannine M Petersen, Francois Balloux, Paul Keim, Thierry Wirth, Jacques Ravel, Ruifu Yang, Elisabeth Carniel, Mark Achtman. **Yersinia pestis genome sequencing identifies patterns of global phylogenetic diversity**. *Nature Genetics*, 2010; DOI: 10.1038/ng.705

http://www.sciencedaily.com/releases/2010/11/101105151012.htm

To Prevent Inbreeding, Flowering Plants Have Evolved Multiple Genes, Research Reveals

A close-up photo of a Petunia flower showing the green pistil surrounded closely by white anthers. (Credit: Ken-ichi Kubo)

ScienceDaily (Nov. 6, 2010) — A research team led by Teh-hui Kao, professor of biochemistry and molecular biology at Penn State University, in collaboration with a team lead by Professor Seiji Takayama at the Nara Institute of Science and Technology in Japan, has discovered a large suite of genes in the petunia plant that acts to prevent it from breeding with itself or with its close relatives, and to promote breeding with unrelated individuals.

In much the same way that human inbreeding sometimes results in genetic disease and inferior health, some inbred plants also experience decreased fitness, and therefore, have developed mechanisms to ensure that their offspring benefit from hybrid vigor -- the mix that results when genetically distinct members of the same species breed. The team's discovery of the multiple inbreeding-prevention genes will be published on 5 November 2010 in the journal *Science*. The identification of these genes comes on the heels of Kao's earlier identification of two additional inbreeding-prevention genes in the same plant.

"Humans have mechanisms to prevent inbreeding that are in part cultural," Kao explained. "But a plant can't just get up and move to the next town to find a suitable, unrelated mate. Some other system must be at work."

Kao began to unravel the mystery of what he calls a "non-self recognition system" in the mid 1980s by studying the genetic sequence of petunias. Petunias and many common garden plants are hermaphroditic, possessing both male and female reproductive organs, and these reproductive organs are located in close proximity in the same flower. This floral anatomy makes it easy for a plant's pollen to land on itself, resulting in self-fertilization and genetically inferior, inbred offspring. To prevent self-fertilization, many flowering plants, including the petunia, have evolved a strategy called self-incompatibility, or the ability to recognize self and non-self components within both the male and female reproductive organs.

Prior Research

Because of the petunia's hermaphroditic nature, Kao and his colleagues assumed that there had to be both male and female genetic strategies to prevent a plant from breeding with itself or with close relatives. In 1994, Kao's team discovered the first piece of the self-incompatibility puzzle. In a paper published in *Nature*, he and his colleagues announced that they had identified a gene called S-RNase (S for self-incompatibility) in Petunia inflata, a wild relative of the garden petunia. The S-RNase gene controls self-incompatibility in the pistil -- the plant's female reproductive organ. Thanks to this gene, the pistil is able to distinguish between self and non-self pollen, which is analogous to sperm cells, and specifically kills self-pollen to prevent inbreeding.
Later, in another paper published in *Nature* in 2004, Kao's team announced the discovery of the male counterpart of S-RNase -- a gene called Type-1 SLF -- that controls self-incompatibility in pollen by distinguishing between self and non-self pistil S-RNase proteins, and specifically detoxifying non-self S-RNase proteins, thereby allowing outcrossing.
That is, the team found that the S-RNase and the Type-1 SLF genes worked in concert to control the way in which the plant accepted or disallowed the introduction of particular pollen into its own reproductive system. In summary, they found that, thanks to the genetic interaction between the male-component and female-component genes, a plant pollinated by its own pollen or by pollen of a similar genotype failed to produce seeds. However, a plant pollinated by pollen of a sufficiently distinct genotype produced seeds and reproduced successfully.
More recently, Kao and his colleagues set out to fill in some important missing pieces in the self-incompatibility puzzle. "During previous research studies, other researchers who had studied the evolutionary histories of Type-1 SLF and S-RNase found no evidence of co-evolution, which was surprising as the male and female genes directly involved in controlling self/non-self recognition during sexual reproduction are expected to have co-evolved." Kao said. "In fact, Type-1 SLF has a much shorter evolutionary history than S-RNase."
Meanwhile, Kao and his team noticed that "Type-1 SLF had a much lower allelic sequence diversity when compared to S-RNase, raising a question as to how, with limited allelic diversity, the allelic variants of Type-1 SLF proteins can recognize a large repertoire of 40 or more highly divergent S-RNase proteins," he said. "We were puzzled by how the Type-1 SLF gene seemed to have such a young evolutionary history, and how the allelic variants of Type-1 SLF protein seemed to have such a low sequence diversity. We knew that the male and female genetic counterparts had to have kept up with each other throughout evolution -- they had to have co-evolved -- so that meant there had to be older and more numerous SLF genes controlling the male side of the equation."

New Discoveries

Now, in the soon-to-be-published *Science* paper, the team will announce its identification of five additional types of SLF genes -- named Type-2 to Type-6 SLF genes -- found in the same chromosomal region as the Type-1 SLF gene. Kao and his colleagues found that while the Type-1 SLF gene certainly played an important role in preventing inbreeding, Type-2 and Type-3, and most likely additional types of SLF genes, also controlled self-incompatibility.
"Each Type-1 SLF protein can recognize only a limited number of non-self S-RNase components," Kao said. "Meanwhile, each of the additional types of SLF proteins we've found can recognize different sets of non-self S-RNase proteins, and all of them collectively account for the entire suite of non-self identification. This recent finding has solved the puzzle about the co-evolution between the male and female genes, and how a single type of SLF protein has the capacity to recognize a large number of highly divergent S-RNase proteins."
Kao also explained that self-incompatibility in plants can be likened to the adaptive immune system in vertebrates. "The plant needs to distinguish between non-self and self to know which plants it should breed with and which it should reject as too similar," Kao explained. "In the same way, our bodies distinguish between non-self and self to know what to attack and what to leave alone."
Kao explained that when pathogens enter our bodies, our T-cells recognize them as foreign invaders and battle against them by triggering production of antibodies by B-cells. "When this system goes awry, our bodies misidentify self as non-self and attack it," Kao said. "These attacks on our own tissues are known as auto-immune disorders; arthritis and Lupus are just a couple of examples."

Kao also explained that, just as we have evolved many different types of T-cell receptors to collectively recognize the many foreign antigens we might encounter in our environment, plants have evolved many versions of self-incompatibility genes that produce multiple types of SLF proteins in pollen to collectively recognize a large suite of possible non-self elements -- S-RNase proteins.
In addition to Kao, other members of the research team include Ken-ichi Kubo, Tetsuyuki Entani, Akie Takara, Mamiko Toyoda, Shin-ichi Kawashima, Akira Isogai, and Seiji Takayama from Japan's Nara Institute of Science and Technology; Ning Wang, Allison M. Fields, and Zhihua Hua from Penn State; and Toshio Ando from Japan's Chiba University. The research conducted at Penn State was funded by the National Science Foundation.

Story Source:
The above story is reprinted (with editorial adaptations by Science*Daily* staff) from materials provided by **Penn State**.

Journal Reference:

1. Ken-ichi Kubo, Tetsuyuki Entani, Akie Takara, Ning Wang, Allison M. Fields, Zhihua Hua, Mamiko Toyoda, Shin-ichi Kawashima, Toshio Ando, Akira Isogai, Teh-hui Kao, and Seiji Takayama. **Collaborative Non-Self Recognition System in S-RNase–Based Self-Incompatibility**. *Science*, 2010; 330 (6005): 796-799 DOI: 10.1126/science.1195243

http://www.sciencedaily.com/releases/2010/11/101104154224.htm

New Statistical Model Moves Human Evolution Back Three Million Years

A new statistical model suggests that evolutionary divergence of humans from chimpanzees likely occurred some 8 million years ago, rather than the 5 million year estimate widely accepted by scientists. (Credit: iStockphoto/Eric Gevaert)

ScienceDaily (Nov. 5, 2010) — Evolutionary divergence of humans and chimpanzees likely occurred some 8 million years ago rather than the 5 million year estimate widely accepted by scientists, a new statistical model suggests.

The revised estimate of when the human species parted ways from its closest primate relatives should enable scientists to better interpret the history of human evolution, said Robert D. Martin, curator of biological anthropology at the Field Museum, and a co-author of the new study appearing in the journal *Systematic Biology.*

Working with mathematicians, anthropologists and molecular biologists, Martin has long sought to integrate evolutionary information derived from genetic material in various species with the fossil record to get a more complete picture.

Comparing DNA among related animals can provide a clear picture of how their shared genes evolved over time, giving rise to new and separate species, Martin said. But such molecular information doesn't yield a timetable showing when the genetic divergence occurred.

Fossil evidence is the only direct source of information about long-extinct species and their evolution, Martin and his colleagues said, but large gaps in the fossil record can make such information difficult to interpret. For a generation, paleontologists have estimated human origins at 5 million to 6 million years ago.

But that estimate rests on a thin fossil record. By looking at all of today's primate species, all of the known fossil primates and using DNA evidence, computer models suggest a longer evolutionary timetable. The new analysis described in the Systematic Biology paper takes into account gaps in the fossil record and fills in those gaps statistically.

Such modeling techniques, which are widely used in science and commerce, take into account more overall information than earlier processes used to estimate evolutionary history using just a few individual fossil dates, Martin said. It can give scientists a broader perspective for interpreting data.

One example is a skull fossil discovered in Chad (central Africa) earlier in this decade. The fossil, named Sahelanthropus tchadensis and nicknamed Toumaï (which means "hope of life" in the local Goran language), raised great interest because it has many human characteristics. But consensus on how to classify the discovery has been elusive particularly because the fossil is about 7 million years old, well beyond the accepted time frame for human evolution.

Under the new estimate, Toumaï would fall within the period after the human lineage split from chimpanzees, Martin said.

The new approach to dating evolutionary history builds on earlier work by Martin and colleagues. In 2002, they published a paper in Nature that argues the last common ancestor of today's primates lived some 85 million years ago.

This implies that for 20 million years before dinosaurs became extinct, early versions of primates also lived and evolved. It challenged the accepted theory that primates and other mammals didn't really thrive on the planet until dinosaurs were gone.
After that paper was published, Martin said he expected someone would apply the new statistical techniques to the question of human evolution, but when no one did, "We decided to do it ourselves."

Story Source:
The above story is reprinted (with editorial adaptations by Science*Daily* staff) from materials provided by **Field Museum**, via EurekAlert!, a service of AAAS.

Journal Reference:

1. R. D. Wilkinson, M. E. Steiper, C. Soligo, R. D. Martin, Z. Yang, S. Tavare. **Dating Primate Divergences through an Integrated Analysis of Palaeontological and Molecular Data**. *Systematic Biology*, 2010; DOI: 10.1093/sysbio/syq054

http://www.sciencedaily.com/releases/2010/11/101105124241.htm

New Player in Innate Immunity? Class of Biomolecules Triggered in Response to Respiratory Virus Infection

ScienceDaily (Oct. 25, 2010) — For the first time, scientists have discovered that a poorly understood class of RNA produced in a mammal's cells during a respiratory virus attack may affect the outcome of the infection. Their findings are reported in *mBio*, a journal of the American Society for Microbiology.

RNA (ribonucleic acid) contains information transcribed from the cell's instruction manual, its DNA. The best known of these RNAs translate sections of DNA code into building blocks for proteins.

Most studies of how animals' cells respond to virus infection typically look at protein-coding genes, which produce germ-fighting or inflammation-producing substances. However, mammalian cells also transcribe thousands of other RNAs that don't code for proteins.

"The role of most of these non-protein-coding RNAs remains an enigma," noted lead author of the study Dr. Xinxia Peng, a computational research scientist in the Department of Microbiology, University of Washington (UW) School of Medicine in Seattle. Dr. Michael Katze, UW professor of microbiology, directed the project. Katze heads the Center for Systems and Translational Research on Infectious Disease (STRIDE).

"Some attention," Katze said, "has been given to small RNAs, like microRNAs, in host-virus interactions, but now it's becoming apparent that many long-non-protein coding RNAs -- bigger than 200 nucleotides -- are also biologically important."

Researchers are learning that long non-protein-coding RNAs have a wide variety of functions. A few examples are modifying chromosomes, regulating genes, influencing cell structure, and serving as precursors for small RNAs and microRNAs, which are involved in virus-host interactions.

The library of RNA transcripts inside of a cell is called its transcriptome, and is a reflection of gene activity. Many different RNAs can be read from a single gene. That is why a transcriptome contains much more complex instructions than seems possible from the DNA code. Unlike the genome, the transcriptome varies in different types of cells in the body and in accordance with ever-changing conditions inside and outside the cell. Peng recalled, "There were intensive discussions about what value the new whole-transcriptome analysis would add to our understanding of viral pathogenesis. After several exploratory analyses, we realized that many long non-protein coding RNAs also responded to SARS virus infection. We were so excited. The response had just been overlooked by people."

"People have not seriously looked at these long-non-protein coding RNAs during viral infection," Peng noted, "because so little is known about these RNAs in general and this type of RNA can't be monitored easily with typical technologies." Katze and his research team were able to use highly advanced technologies, namely next generation sequencing, to perform a whole-transcriptome analysis of the host response to severe acute respiratory syndrome coronavirus (SARS-CoV) infection. The study was conducted in four strains of mice, some more susceptible to this virus or to the flu virus than others.

Through a comprehensive computational analysis of the data, the researchers observed that virus infection triggered about 500 long non-protein coding RNAs transcribed from known locations on the genome and about 1,000 from previously unspecified genomic regions.

"Using this approach," Katze noted, "we demonstrated that virus infection alters the expression of numerous long non-protein coding RNAs. These findings suggest that these RNAs may be a new class of regulatory molecules that play a role in determining the outcome of infection." The long non-protein coding RNAs may be helping to manage the infected animal's response to the virus, including the basic, first-line defense against infection -- the animal's innate, or inborn, immunity.

Another important finding was that the strains of more susceptible mice had a common profile showing distinct rates of genetic activity. This profile contained unique "signatures" of non-protein coding RNA activity. These signatures were associated with lethal infection. Test-tube studies show that more that 40 percent of the long non-coding RNAs and genomic regions activated in a SARS infection were also activated in response to both influenza virus infection and interferon treatment.

This finding further pointed to a signature profile associated with pathogenicity -- the power of a virus-host interaction to cause disease.

"The relevance of long-non-protein coding RNAs to viral infections has not been systematically studied," said Dr. Paulene Quigley, program manager of the STRIDE center. " But now, with our ability to do whole-

transcriptome analysis using next generation sequencing, we can systematically catalog and compare these long non-protein coding RNA in response to infection. What we are finding is very promising for infectious disease research."

These results, to the best of the scientists' knowledge, are the first to clearly demonstrate the widespread production and activation of long non-coding RNAs in response to virus infection. Their success opens new avenues for investigating the roles of long-non-protein coding RNAs in innate immunity to infection.

Exactly how the long-non-protein coding RNAs perform these functions is not yet known. It's possible that they might interact with protein complexes that modify gene expression during a viral infection. They might also modulate the host's response by regulating neighboring protein-coding genes.

"The functions of non-protein coding RNAs remain largely unexplored, but we now have the tools to study them," Katze said. "Such studies are critical, because non-protein coding RNAs may represent a whole new class of innate immunity signaling molecules, interferon-dependent regulators, or modulators of the host response during viral infection. They could also be a new class of biomarkers for infectious disease and for diagnostics development. Identifying similar profiles in response to lethal respiratory infections may even provide clues into the 'high-path' viral infection, one of the holy grails of virology. That's a big deal any way you slice it."

Highly pathogenic viruses causing life-threatening illnesses, like SARS or West Nile or pandemic flu, continue to emerge. Looking forward, a detailed knowledge of non-protein coding RNA regulation and function likely will be necessary for a full understanding of how viruses cause disease and how the body defends against or succumbs to viruses.

In addition to Peng and Katze, other researchers on the study are Lisa Gralinski, Department of Epidemiology, University of North Carolina, Chapel Hill; Christopher S. Armour, Matthew C. Biery, and Christopher K. Raymond, all of NuGEN Technologies; Martin T. Ferris, Department of Genetics, University of North Carolina, Chapel Hill; Matthew J. Thomas, Sean Proll, Birgit G. Bradel-Tretheway, Marcus J. Korth, all of the UW Department of Microbiology; John C. Castle, Institute for Translational Oncology and Immunology, Mainz, Germany; Heather K. Bouzek, UW Department of Microbiology, David. R. Haynor, UW Department of Radiology; Matthew B. Frieman, Department of Microbiology and Immunology, University of Maryland, Baltimore; Mark Heise, Department of Genetics, University of North Carolina, Chapel Hill; and Ralph S. Baric, Department of Epidemiology and Department of Microbiology and Immunology, University of North Carolina, Chapel Hill.

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Editor's Note: *This article is not intended to provide medical advice, diagnosis or treatment.*

Story Source:

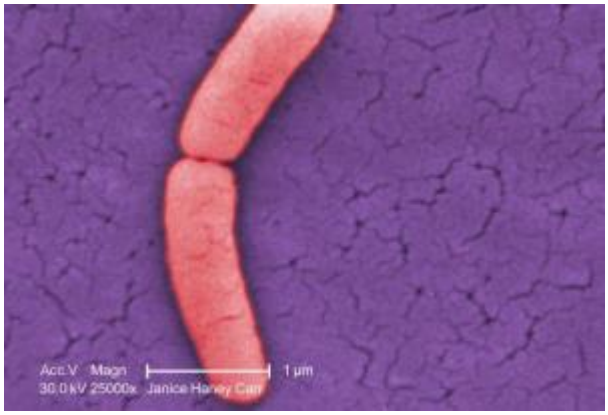
The above story is reprinted (with editorial adaptations by Science*Daily* staff) from materials provided by **University of Washington**.

Journal Reference:

1. X. Peng, L. Gralinski, C. D. Armour, M. T. Ferris, M. J. Thomas, S. Proll, B. G. Bradel-Tretheway, M. J. Korth, J. C. Castle, M. C. Biery, H. K. Bouzek, D. R. Haynor, M. B. Frieman, M. Heise, C. K. Raymond, R. S. Baric, M. G. Katze. **Unique Signatures of Long Noncoding RNA Expression in Response to Virus Infection and Altered Innate Immune Signaling**. *mBio*, 2010; 1 (5): e00206-10 DOI: 10.1128/mBio.00206-10

http://www.sciencedaily.com/releases/2010/10/101026111813.htm

Unexpectedly Small Effects of Mutations in Bacteria Bring New Perspectives



Under a very high magnification of 25000X, this colorized scanning electron micrograph (SEM) revealed the presence of a single Gram-negative Salmonella typhimurium bacterium, which was imaged right at the point where it was undergoing the process of cell division, resulting in the formation of two separate organisms. (Credit: CDC/Janice Haney Carr)

ScienceDaily (Nov. 7, 2010) — Most mutations in the genes of the *Salmonella* bacterium have a surprisingly small negative impact on bacterial fitness. And this is the case regardless whether they lead to changes in the bacterial proteins or not. This is shown by Uppsala University scientists in an article being published November 5 in the journal *Science*. The researchers have examined the impact of mutations on the rate of growth of the *Salmonella* bacterium and show that most mutations have generally very small effects. Moreover the negative effects are of the similar magnitude for changes that lead to substitution of amino acids in proteins (so-called non-synonymous mutations) as for mutations that do not change the protein sequence (so-called synonymous mutations).

"The findings open an entirely new chapter for experimental studies of mutations and show that we need to change our view of how mutations lead to negative effects," says Professor Dan Andersson, lead author of the study.

A central question in evolutionary biology, medical genetics, species-conservation biology, and animal breeding is how and why mutations affect an organism's capacity to survive. Usually these questions are studied in DNA sequence analyses from which conclusions have been drawn about what mutations are most common and have become established in the DNA of the organism.

The Uppsala scientists have used another -- experimental -- method whereby they can use various genetic tricks to introduce random individual mutations into any chosen gene, a method that has previously been used primarily in viruses. Two genes that code for proteins that are included in ribosomes were mutated, and using extremely sensitive growth measurements, doctoral candidate Peter Lind showed that most mutations reduced the rate of growth of bacteria by only 0.500 percent. No mutations completely disabled the function of the proteins, and very few had no impact at all.

Even more surprising was the fact that mutations that do not change the protein sequence had negative effects similar to those of mutations that led to substitution of amino acids. A possible explanation is that most mutations may have their negative effect by altering mRNA structure, not proteins, as is commonly assumed.

Story Source:

The above story is reprinted (with editorial adaptations by Science*Daily* staff) from materials provided by **Uppsala University**.

Journal Reference:

1. P. A. Lind, O. G. Berg, D. I. Andersson. **Mutational Robustness of Ribosomal Protein Genes**. *Science*, 2010; 330 (6005): 825 DOI: 10.1126/science.1194617

http://www.sciencedaily.com/releases/2010/11/101105124235.htm

Controlling Bone Formation to Prevent Osteoporosis

ScienceDaily (Nov. 7, 2010) — Recent data have suggested that the imbalance between bone formation and bone destruction that causes osteoporosis is a result of a decrease in formation of bone forming osteoblast cells from mesenchymal cells upon aging. New research in mice provides insight into this decrease and might provide new avenues of research for those developing approaches to treat age-related osteoporosis.

Aging disrupts the balance between bone formation and bone destruction, resulting in osteoporosis, which is characterized by reduced bone mass and increased risk of fracture. Recent data have suggested that this imbalance is a result of a decrease in formation of bone forming osteoblast cells from mesenchymal cells upon aging. Instead, these cells form more fat cells. Insight into this age-related switch in cell type generation has now been provided by a team of researchers, led by Hiroshi Takayanagi, at Tokyo Medical and Dental University, Japan, working in mice.

The data generated might provide new avenues of research for those developing approaches to treat age-related osteoporosis.

In the study, the gene regulatory protein Maf was found to promote mesenchymal cell generation of osteoblasts and suppress their generation of fat cells. Consistent with this, mice lacking Maf showed delayed bone formation. Furthermore, Maf levels were found to decrease in mouse mesenchymal cells upon aging and to be reduced by increased oxidative stress, something that occurs upon aging. Both the authors and, in an accompanying commentary, Laurie McCauley, at University of Michigan, Ann Arbor, believe these data could lead to new approaches to treat age-related osteoporosis.

***Editor's Note**: This article is not intended to provide medical advice, diagnosis or treatment.*

Story Source:

The above story is reprinted (with editorial adaptations by Science*Daily* staff) from materials provided by **Journal of Clinical Investigation**, via EurekAlert!, a service of AAAS.

Journal Reference:

1. Keizo Nishikawa, Tomoki Nakashima, Shu Takeda, Masashi Isogai, Michito Hamada, Ayako Kimura, Tatsuhiko Kodama, Akira Yamaguchi, Michael J. Owen, Satoru Takahashi, Hiroshi Takayanagi. **Maf promotes osteoblast differentiation in mice by mediating the age-related switch in mesenchymal cell differentiation**. *Journal of Clinical Investigation*, 2010; DOI: 10.1172/JCI42528

http://www.sciencedaily.com/releases/2010/09/100927122215.htm

Any Athlete Suspected of Having Concussion Should Be Removed from Play, Neurologists Say

High school football. The American Academy of Neurology (AAN) is calling for any athlete who is suspected of having a concussion to be removed from play until the athlete is evaluated by a physician with training in the evaluation and management of sports concussion. (Credit: iStockphoto/Nicholas Moore)

ScienceDaily (Nov. 1, 2010) — The American Academy of Neurology (AAN) is calling for any athlete who is suspected of having a concussion to be removed from play until the athlete is evaluated by a physician with training in the evaluation and management of sports concussion.

The request is one of five recommendations from a new position statement approved by the AAN's Board of Directors that targets policymakers with authority over determining the policy procedures for when an athlete suffers from concussion while participating in a sporting activity.

"While the majority of concussions are self-limited injuries, catastrophic results can occur and we do not yet know the long-term effects of multiple concussions," said Jeffrey Kutcher, MD, MPH, chair of the AAN's Sports Neurology Section, which drafted the position statement. "We owe it to athletes to advocate for policy measures that promote high quality, safe care for those participating in contact sports."

Members of the AAN specialize in treating disorders of the brain and nervous system. Some AAN members have extensive experience caring for athletes and are best qualified to develop and disseminate guidelines for managing athletes with sports concussion.

According to the new AAN position statement, no athlete should be allowed to participate in sports if he or she is still experiencing symptoms from a concussion, and a neurologist or physician with proper training should be consulted prior to clearing the athlete for return to participation.

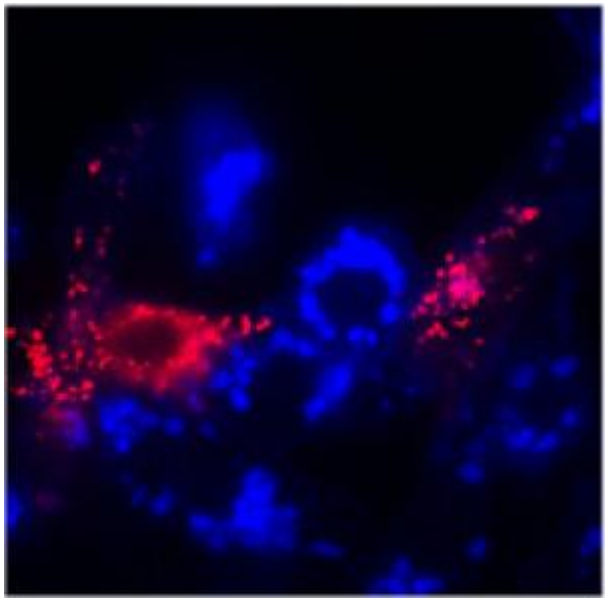
In addition, the AAN recommends a certified athletic trainer be present at all sporting events, including practices, where athletes are at risk for concussion. Education efforts should also be maximized to improving the understanding of sports concussion by all athletes, parents and coaches. "We need to make sure coaches, trainers, and even parents, are properly educated on this issue, and that the right steps have been taken before

an athlete returns to the field," said Kutcher, who is also director of the University of Michigan's Neurosport program.
In 1997, the AAN published a guideline on the management of sports concussion that defines concussion grade levels and provides recommendations. The guideline is currently being updated.
According to the Centers for Disease Control, sports-related concussions occur in the United States three million times per year, and among people ages 15 to 24 are now second only to motor vehicle accidents as a leading cause of traumatic brain injury.
***Editor's Note**: This article is not intended to provide medical advice, diagnosis or treatment.*

Story Source:
The above story is reprinted (with editorial adaptations by Science*Daily* staff) from materials provided by **American Academy of Neurology**.

http://www.sciencedaily.com/releases/2010/11/101101125947.htm

Simple Blood Test May Diagnose Deadly Niemann-Pick Type C Disease



Cellular pockets known as lysosomes that have the NPC1 protein appear orange in this photo. Lysosomes that lack the protein, which is mutated in the fatal inherited disorder known as Niemann-Pick type C, are blue because they are full of cholesterol. (Credit: Image courtesy of Washington University School of Medicine)

ScienceDaily (Nov. 3, 2010) — A fatal genetic disorder that frequently takes years to diagnose may soon be detectable with a simple blood test, researchers at Washington University School of Medicine in St. Louis and the National Institutes of Health report in *Science Translational Medicine*.

For patients with Niemann-Pick type C (NPC) disease, the test will make it possible to begin treatment earlier, when it is more likely to improve quality of life and to further extend lives.

For patients with Niemann-Pick type C (NPC) disease, the test will make it possible to begin treatment earlier, when it is more likely to improve quality of life and to further extend lives.

"NPC is a horrible disease that is easy in its early stages to mistake for other conditions, both because it's so rare and because it has so many different manifestations," says senior author Daniel S. Ory, MD, professor of medicine and of cell biology and physiology at Washington University School of Medicine in St. Louis. "This is an important step forward both in terms of making a definitive diagnosis much easier and in terms of providing us with a way to quickly assess the effectiveness of experimental treatments."

There is no U.S.-approved treatment for NPC, which is estimated to affect approximately 1 in 100,000 people worldwide. Miglustat, an inhibitor of complex lipid synthesis, is approved for NPC treatment in Europe, Canada, Russia, Brazil and Taiwan.

Insights from the study may also help scientists better understand health problems in people who are carriers of the disorder, which may include 3 million to 6 million in the United States alone. Having a single mutated copy of the NPC 1 or 2 genes does not cause NPC, but the study's results have led scientists to speculate that it may contribute to heart disease, diabetes and other common illnesses.

"What we learn from studying rare diseases often can be very helpful not only for patients with those rare disorders, but also for efforts to treat much more common conditions," Ory says.

Ory is co-director of the new Diabetic Cardiovascular Disease Center at Washington University. The interdisciplinary center, which explores the links between diabetes and cardiovascular disease, was established through BioMed 21, a Washington University initiative dedicated to speeding the development of laboratory insights into advances in clinical diagnosis and treatment.

NPC typically manifests in childhood with a variety of symptoms including problems walking, slurring of speech and difficulty swallowing. In later stages, it immobilizes patients, causing seizures, dementia and death.

NPC belongs to a class of inherited diseases known as lysosomal storage disorders. The disorder breaks down the cell's normal patterns for handling cholesterol, leading it to accumulate in lysosomes, pockets in the cell that act as garbage disposals. Ory and his colleagues had earlier shown in an NPC mouse model that this causes a buildup in cells of cholesterol that has undergone a chemical change known as oxidation. This change makes the cholesterol more chemically reactive and dangerous to the cells.

To test if these oxidized forms of cholesterol could be used as markers for NPC, Ory collaborated with first author Denny Porter, MD, PhD, an NIH researcher who has assembled one of the largest NPC observational

studies. Porter conducts regular health assessments of more than 50 patients with NPC and has amassed a collection of tissue specimens from these patients for purposes of developing new disease markers.
Scientists tested tissue samples in the metabolomics facility of the Diabetic Cardiovascular Disease Center. In NPC patients, two oxidized forms of cholesterol were present at levels nine to 10 times higher than normal. The same markers were not elevated in healthy children and adults or in persons with elevated cholesterol levels, heart disease, diabetes or other forms of lysosomal storage disorders.
"These markers have all the characteristics we wanted for a clinical test, and we're now working to develop it into a clinical assay," Ory says. "We want to make the possibility of testing for NPC much easier for physicians to consider if they see the slightest hints that it might be present."
Given the potential advantages that presymptomatic treatment of NPC may offer, including improved quality of life and extended lifespan, Ory also hopes to get people thinking about the possibility of adding NPC to the recommended neonatal screenings.
"We're not sure we fully appreciate the impact of this disease, which may be more common than we think," he explains. "It could be very helpful to get a better handle on that via neonatal screening."
Although no group that scientists screened had levels of the two key markers as high as the NPC patients, the markers were significantly increased in parents and siblings of NPC patients. Many of these family members have one mutated NPC gene and are carriers of the disease.
"These markers are indicative of an increased level of stress in cells, and this same kind of stress is seen in many other disorders, including heart disease, diabetes and neurodegenerative disorders such as Alzheimer's disease," Ory says. "We need further research to confirm this, but it's possible that some of the same damaging mechanisms that take place in NPC patients may be occurring to a lesser degree in persons who only have one mutated copy of an NPC gene and are putting them at increased risk of other disorders."
If carriers of the disease do have an increased risk of other conditions as a result, new treatments for NPC may also help them, according to Ory.
Porter FD, Scherrer DE, Lanier MH, Langmade SJ, Molugu V, Gale SE, Olzeski D, Sidhu R, Dietzen DJ, Fu R, Wassif CA, Yanjanin NM, Marso SP, House J, Vite C, Schaffer JE, Ory DS. Cholesterol oxidation products are sensitive and specific blood-based biomarkers for Niemann-Pick C1 disease. Science Translational Medicine 2, 56ra81 (2010).
Funding from the Washington University Specialized Centers of Clinically Oriented Research, the Dana's Angels Research Trust, the Ara Parseghian Medical Research Foundation and the National Institutes of Health supported this research.
Editor's Note: *This article is not intended to provide medical advice, diagnosis or treatment.*

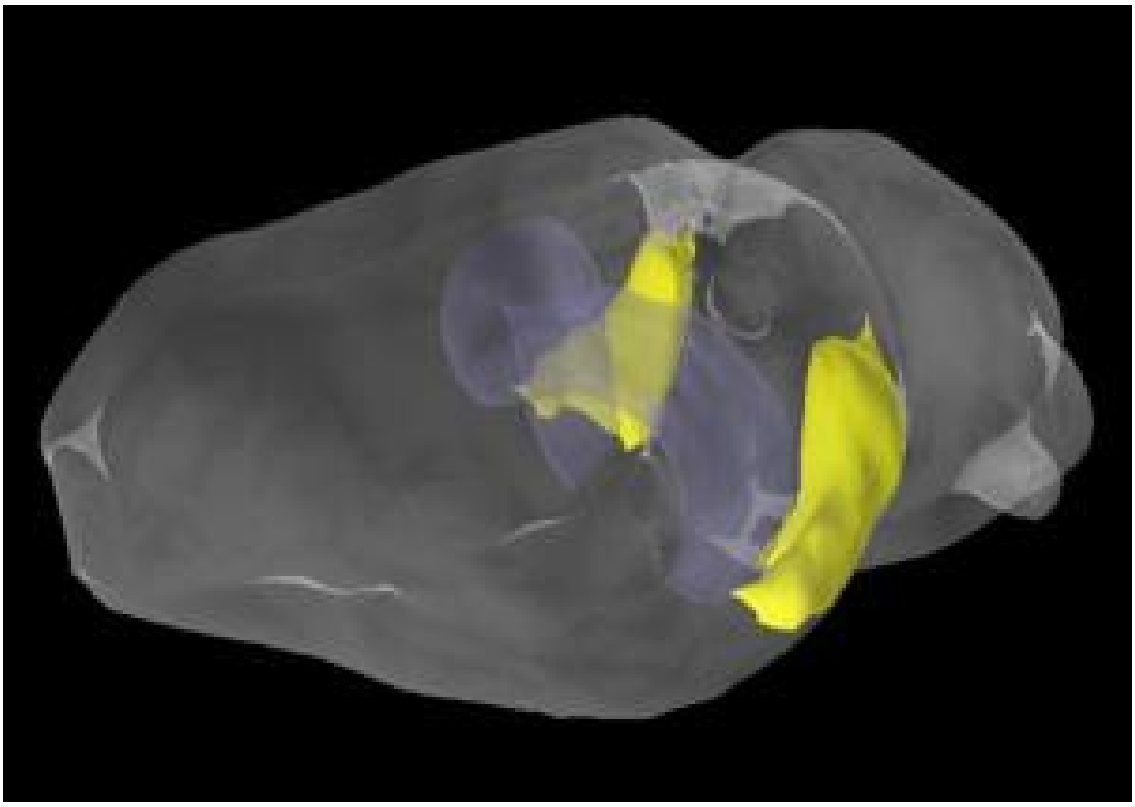
Story Source:
The above story is reprinted (with editorial adaptations by Science*Daily* staff) from materials provided by **Washington University School of Medicine**. The original article was written by Michael C. Purdy.

Journal Reference:

1. Forbes D. Porter, David E. Scherrer, Michael H. Lanier, S. Joshua Langmade, Vasumathi Molugu, Sarah E. Gale, Dana Olzeski, Rohini Sidhu, Dennis J. Dietzen, Rao Fu, Christopher A. Wassif, Nicole M. Yanjanin, Steven P. Marso, John House, Charles Vite, Jean E. Schaffer, Daniel S. Ory. **Cholesterol Oxidation Products Are Sensitive and Specific Blood-Based Biomarkers for Niemann-Pick C1 Disease**. *Science Translational Medicine*, 2010; 2 (56): 56ra81 DOI: 10.1126/scitranslmed.3001417

http://www.sciencedaily.com/releases/2010/11/101103141539.htm

Vulnerable Brain Region May Be Central to Progression of Alzheimer's Disease



3-D image of a mouse brain with the location of the entorhinal cortex (yellow) and hippocampus (purple) highlighted. (Credit: Image courtesy of Gladstone Institute of Neurological Disease)

ScienceDaily (Nov. 7, 2010) — New research is helping to unravel the events that underlie the "spread" of Alzheimer's disease (AD) throughout the brain. The research, published by Cell Press in the November 4th issue of the journal *Neuron*, follows disease progression from a vulnerable brain region that is affected early in the disease to interconnected brain regions that are affected in later stages. The findings may contribute to design of therapeutic interventions as targeting the brain region where AD originates would be simpler than targeting multiple brain areas.

An alteration in brain levels of amyloid β-proteins (Aβ) plays a major pathogenic role in AD, a devastating neurodegenerative disorder that causes progressive cognitive impairment and memory loss. AD is characterized by abnormal accumulation of Aβ in the brain, which leads to the formation of protein aggregates that are toxic to neurons. Aβ peptides are generated when a large protein called amyloid precursor protein (APP) is cut up into smaller pieces.

One of the first brain regions affected in AD is the entorhinal cortex (EC). Communication between the EC and the hippocampus is critical for memory and disruption of this circuit may play a role in memory impairment in the beginning stages of AD. "It is not clear how EC dysfunction contributes to cognitive decline in AD or whether early vulnerability of the EC initiates the spread of dysfunction through interconnected neural networks," explains senior study author, Dr. Lennart Mucke from the Gladstone Institutes and the University of California, San Francisco. "To address these questions, we studied transgenic mice with spatially restricted overexpression of mutant APP primarily in neurons of the EC."

Dr. Mucke and colleagues found that overexpression of mutant APP/Aβ selectively in the EC led to age-dependent deficits in learning and memory along with other behavioral deficits, including hyperactivity and disinhibition. Importantly, these abnormalities are similar to those observed in mouse models of AD with

mutant APP expression throughout the brain. The researchers also observed abnormalities in the hippocampus, including dysfunction of synapses and Aβ deposits in part of the hippocampus that receive input from the EC.
"Our findings directly support the hypothesis that AD-related dysfunction is propagated through networks of neurons, with the EC as an important hub region of early vulnerability," concludes Dr. Mucke. "Although additional studies are needed to better understand how events in the EC are related to AD, it is conceivable that early interference in the EC might be of therapeutic benefit, perhaps halting disease progression."
***Editor's Note**: This article is not intended to provide medical advice, diagnosis or treatment.*

Story Source:
The above story is reprinted (with editorial adaptations by Science*Daily* staff) from materials provided by **Cell Press**, via EurekAlert!, a service of AAAS.

Journal Reference:

1. Julie A. Harris, Nino Devidze, Laure Verret, Kaitlyn Ho, Brian Halabisky, Myo T. Thwin, Daniel Kim, Patricia Hamto, Iris Lo, Gui-Qiu Yu, Jorge J. Palop, Eliezer Masliah, Lennart Mucke. **Transsynaptic Progression of Amyloid-β-Induced Neuronal Dysfunction within the Entorhinal-Hippocampal Network**. *Neuron*, 2010; 68 (3): 428-441 DOI: 10.1016/j.neuron.2010.10.020

http://www.sciencedaily.com/releases/2010/11/101103135239.htm

Precisely Targeted Radiation Controls Sinus Cancer With Fewer Side Effects

ScienceDaily (Nov. 7, 2010) — Treating paranasal sinus cancer with three-dimensional radiation that conforms to the shape of the tumor -- a technique that minimizes side effects such as severe dry mouth and vision problems -- is safe and effective, research at Fox Chase Cancer Center shows. Aruna Turaka, M.D., radiation oncologist at Fox Chase, is presenting the results Nov. 2 at the annual meeting of the American Society for Radiation Oncology.

Located on either side of the nose, the paranasal sinuses are hollow, air-filled chambers lined with mucus-producing cells. Various types of cells in the sinuses can become malignant, and risk factors for the disease include being exposed to dust or certain chemicals in the workplace, smoking cigarettes.

"Due to the location of the sinuses, treating with radiation therapy by standard, conventional techniques is a challenge because it can cause side effects to the eyes and optic apparatus that eventually may lead to long-term complications," says Turaka. "Another concern is dry mouth due to radiation damage to the salivary glands."

Turaka and colleagues wanted to see if treating patients with intensity-modulated radiation therapy (IMRT) -- a method in which multiple beams of varying intensities are used to precisely radiate tumors while minimizing exposure to healthy, adjacent tissues -- is as effective as treating with standard radiation therapy. They studied a group of 31 patients with paranasal sinus cancers treated with IMRT at Fox Chase between May 2001 and June 2008. The patients did not receive additional radiation treatments to the lymph nodes, because paranasal sinus cancer usually does not spread to the lymph nodes.

The researchers found that IMRT controlled paranasal cancer just as well as regular radiation therapy, but with fewer serious side effects.

"In these patients, we did not see detrimental visual complications," Turaka says. "There were only minor side effects, such as dry eyes, which can be managed with tear supplements."

Similarly, patients treated with IMRT did not develop severe dry mouth.

"These results lead us to conclude that IMRT appears to be a safe and effective treatment for paranasal tumors," Turaka says.

In addition to Turaka, the paper's authors are Richard Cattaneo, M.D. of Temple University School of Medicine; Nicos Nicolaou, M.D. of Philadelphia Cancer Treatment Center; Steven Feigenberg, M.D. of the University of Maryland School of Medicine; and Tianyu Li, M.S., Eric Horwitz, M.D., Miriam Lango, M.D., Barbara Burtness, M.D., and John Ridge, M.D., Ph.D., FACS, all of Fox Chase Cancer Center.

Editor's Note: *This article is not intended to provide medical advice, diagnosis or treatment.*

Story Source:

The above story is reprinted (with editorial adaptations by Science*Daily* staff) from materials provided by **Fox Chase Cancer Center**, via EurekAlert!, a service of AAAS.

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Parents' effort key to child's educational performance

Leicester, University of

A new study by researchers at the University of Leicester and University of Leeds has concluded that parents' efforts towards their child's educational achievement is crucial – playing a more significant role than that of the school or child.
This research by Professor Gianni De Fraja and Tania Oliveira, both in the Economics Department at the University of Leicester and Luisa Zanchi, at the Leeds University Business School, has been published in the latest issue of the MIT based Review of Economics and Statistics.
The researchers found that parents' effort is more important for a child's educational attainment than the school's effort, which in turn is more important than the child's own effort.
The study found that the socio-economic background of a family not only affected the child's educational attainment – it also affected the school's effort.
Researcher Professor De Fraja, who is Head of Economics at the University of Leicester, said: "The main channel through which parental socio-economic background affects achievement is via effort.
"Parents from a more advantaged environment exert more effort, and this influences positively the educational attainment of their children.
"By the same token, the parents' background also increases the school's effort, which increases the school achievement. Why schools work harder where parents are from a more privileged background we do not know. It might be because middle class parents are more vocal in demanding that the school works hard."
The findings suggest there is a relationship between children's performance and the effort put in by parents in supporting their education.
Professor De Fraja added: "We found that children work harder whose parents put more effort into their education.
"In general, the efforts exerted by the three groups of agents-parents, school and child - affect one another. On the other hand, the propensity of children to exert effort is not influenced by their social background. Children from better off household do not necessarily try harder than those from less advantaged background.
"Interestingly, there is a trade-off between the number of children and their parents' effort: the number of siblings influences the effort exerted by that child's parents towards that child's education. If a child grows up in a more numerous family, he/she receives less effort from parents."
Professor De Fraja said the results suggest that parents are very important for educational achievement: "In general, what we are saying is that a child whose parents put more effort into his or her education does better at school. Therefore policies that aim at improving parental effort might be effective in strengthening educational attainment. Influencing parental effort is certainly something that is much easier than modifying their social background."
Methodology:
The study is based on the very simple observation that the educational achievement of a student is affected by the effort put in by those participating in the education process: the schools attended by the student, the student's parents, and of course the students themselves. The researchers analysed the effort of these three groups as jointly determined: students respond to the effort exerted by their parents and their schools, and

correspondingly schools also respond to the effort exerted by their students and their parents and parents to the effort exerted by their children and their children's schools.
The researchers estimated their model using the National Child Development Study, which follows the individuals born in a given week in 1958 throughout their lives. Effort is measured using indicators of a student's attitude, for example the answers given by 16-year-olds to questions such as whether they think that school is a "waste of time", and the teacher's views about students' laziness. Other questions regard the parents' interest in their children's education, measured, for example, by whether they read to their children or attend meetings with teachers, and the teacher's perception of this interest. For schools there are variables such as the extent of parental involvement initiated by the school, whether 16-year old students are offered career guidance, and the type of disciplinary methods used.
The authors used statistical techniques to separate the role of effort from individual, family, or school characteristics, such as the student's ability, the parents' social background, income and education, the type of school, whether state or private, the role of peer pressure, and so on.

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88496&CultureCode=en

New research reconstructs past plague pandemics
University College Cork

New research reconstructs past plague pandemics in unprecendented details. The multinational team have found that the disease eveolved in the vicinity of China some 2000 years ago and spread repeatedly to other parts of the world in deadly pandemics. The research is published online in Nature Genetics.
A multinational team of scientists has used genome sequencing (which gives the hereditary information of organisms) to reconstruct past plague pandemics from the time of the Black Death to the most recent pandemic in the late 1800s. Their research is published online today (31/10/10) in *Nature Genetics.*
The plague evolved in the vicinity of China >2000 years ago and spread repeatedly around the world in deadly pandemics. The scientists compared 17 complete plague genome sequences and 933 variable DNA sites on a unique global collection of plague isolates(bacterial strains). This information allowed the team to track the progress of historical pandemics throughout the world, and to calculate the age of different waves. Most of these events could be linked to known major historical events, such as the Black Death. It has been clear since a seminal publication in 2004 that an understanding of the historical sources of plague would require a genomic comparison of isolates from multiple scientific institutions because none of their collections were globally representative. However, a single, comprehensive collection could not be assembled because shipment of the causative bacterium, *Yersinia pestis*, is restricted by stringent governmental regulations in order to prevent bioterrorism. Therefore, decentralized analysis of DNA samples was conducted by an international team of collaborating scientists in Ireland, Germany, France, China, the UK, Madagascar and the United States. The results provide unprecedented detail on the history of pandemic spread of a bacterial disease.
Pandemic infectious diseases have accompanied humans since their origins, and have shaped the form of civilisations. This new work shows that the plague bacillus evolved in or near China, and has been transmitted via multiple epidemics that followed various routes, including transmissions to West Asia via the Silk Road and to Africa between 1409 and 1433 by Chinese voyages led by the explorer Zheng He. From 1347 to 1351, the Black Death swept through Asia , Europe and Africa and may have reduced the world's population from 450 million to 350 million. China lost about half its population, Europe around a third and Africa about an eight of its population to the plague.
The last plague pandemic of 1894 spread to India and radiated to many parts of the globe, including the USA, which was infected by a single radiation still persisting today in wild rodents. Detailed analyses within the USA and Madagascar showed that subsequent country-specific evolution could be tracked by unique mutations that have accumulated in their genomes, which should prove useful to trace future disease outbreaks.

"What I felt was so amazing about the results is that we could link the genetic information so accurately to major historical events," says Professor Achtman, who led the project and assembled the team of collaborators.
Mark Achtman is Professor in the Department of Microbiology and is based in the Environmental Research Institute in University College Cork. He is a principal investigator funded by the Science Foundation of Ireland, who works on the evolutionary biology of multiple pathogenic bacteria, including *Salmonella*, *Helicobacter pylori*, *Listeria monocytogenes* in addition to *Yersinia pestis*. He also delineated the neutral phylogenetic relationships within *Salmonella* Typhi in 2006 (published in Science). This work was initiated while he was a senior group leader at the Max-Planck Institute for infectious biology, Berlin, Germany, where it was supported by funds from the German Army Medical Corps.
http://http:dx.doi.org/10.1038/ng.705

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88481&CultureCode=en

Biodiversity and poverty reduction: Who controls the seeds?

"Farmers' rights are key to global food security," says Regine Andersen (Photo: Karin Totland)

Research Council of Norway, The

In many developing countries the right of farmers to use and exchange farm-saved seed is a form of life insurance. Ensuring that farmers have this right is an important means of alleviating poverty and is crucial to maintaining crop genetic diversity throughout the world.

Two thirds of the 1.2 billion poorest people in the world live in rural areas and are dependent on traditional agriculture. They do not have the financial means to buy commercially available seed or the input factors needed to cultivate them. However, they often have long experience with, and a profound understanding of, local plant diversity within crops such as grains, potatoes, vegetables and fruit. By cultivating and developing these crops they are contributing to the preservation and development of global plant genetic diversity, which constitutes the basis for the world's food production.

Regine Andersen of the Fridtjof Nansen Institute heads a project that analyses what is needed to ensure that the rights of farmers related to crop genetic diversity are implemented. Issues relating to biodiversity and poverty reduction comprise key components of the project.

Studying those who succeed

"Unfortunately regulatory mechanisms often complicate the realisation of the farmers' rights to the seeds they use," explains Dr Andersen.

Farmers' rights are addressed in the International Treaty on Plant Genetic Resources for Food and Agriculture, also known as the Plant Treaty, adopted under the auspices of the Food and Agriculture Organization of the United Nations.

"Our project has been studying successful examples that show what farmers' rights can mean in practice. In addition we are seeking to understand what NGOs and other relevant actors can do to ensure that these rights are realised, based on these examples" she says.

Regulations restrict rights

Dr Andersen explains that existing regulations affecting the management of crop genetic diversity increasingly favour the seed industry with the aim of creating new and higher yielding crop varieties.

"There are patent rights and plant breeders' rights to compensate plant breeders for their efforts and create incentives for innovation in the field of plant breeding, but in many countries these rights make it more difficult for farmers to conserve crop genetic diversity and use it in a sustainable manner," says Andersen.

In a number of countries these rules limit the farmers' legal space to exchange and sell seed among themselves. More and more countries are adopting rules of this type, often as a result of bilateral and regional trade agreements with countries and regions in the North. While traditional practices are still in place in rural communities in most developing countries, even where they have become illegal, it is only a matter of time before governments begin to enforce these rules more strictly.

"There are also regulations relating to the approval of plant types and seed quality. These are designed to safeguard plant health and seed quality in agriculture, but at the same time they prevent farmers in countries

where they are in force from exchanging or selling the great diversity of plant varieties not covered by the regulations."

Rights lead to increased earnings

"Ensuring farmers' rights enhances the ability of poor farmers to support themselves. We are looking at how certain local communities have managed to deal with these challenges, and are trying to identify the factors that were crucial to their success," says Dr Andersen.

The researchers have visited local communities in Nepal, the Philippines and Peru and have via partners also gathered information in Ethiopia, Syria, Zimbabwe and Mali.

"One of the success stories comes from villages in Nepal, where the population has found new ways of developing and making use of the diversity of traditional crop varieties, enabling the farmers to increase their income and improve their livelihoods," Andersen states.

She is currently working on a book that will present the various success stories.

The current research project incorporates studies in a number of countries and identification of best practices and has been underway since 2007. The project has been granted funding under the Norway – A Global Partner (NORGLOBAL) programme at the Research Council of Norway.

The world needs diversity

Protecting and promoting farmers' rights is not only crucial to reducing poverty, but also to maintaining the genetic diversity of agricultural plants and thereby ensuring food security throughout the world.

"Farmers need to exchange seeds among themselves to preserve and develop biodiversity," Andersen asserts. "Gene banks are not enough. The different plant species must be cultivated and continue to live so as not to lose their intrinsic properties. It is also important not to lose the knowledge relating to different plant varieties and their cultivation and use."

Dr Andersen considers it critical to develop the legal system in such a way that the farmers are rewarded for their contribution to preserving crop diversity, as is set out in the Plant Treaty.

"Crop diversity forms the basis of global food security and for all food production throughout the world. Farmers' rights are essential both for the preservation and sustainable use of global crop diversity," Dr Andersen stresses.

Working to change the rules

The researchers' conviction that seed regulations need to be made less stringent to ensure farmers' rights recently received support in Norway.

"As of 30 April this year Norwegian farmers may exchange and sell seeds from heritage varieties of crops, if it is not done commercially," says Dr Andersen. "Elsewhere in Europe this is not permitted, and only crop varieties approved in line with the regulations can be sold from seed shops."

As Dr Andersen explains, none of the Norwegian stakeholders is seeking stringent restrictions in this area, but Norway is obliged to adhere to EU regulations, as this is an area that is encompassed by the EEA Agreement.

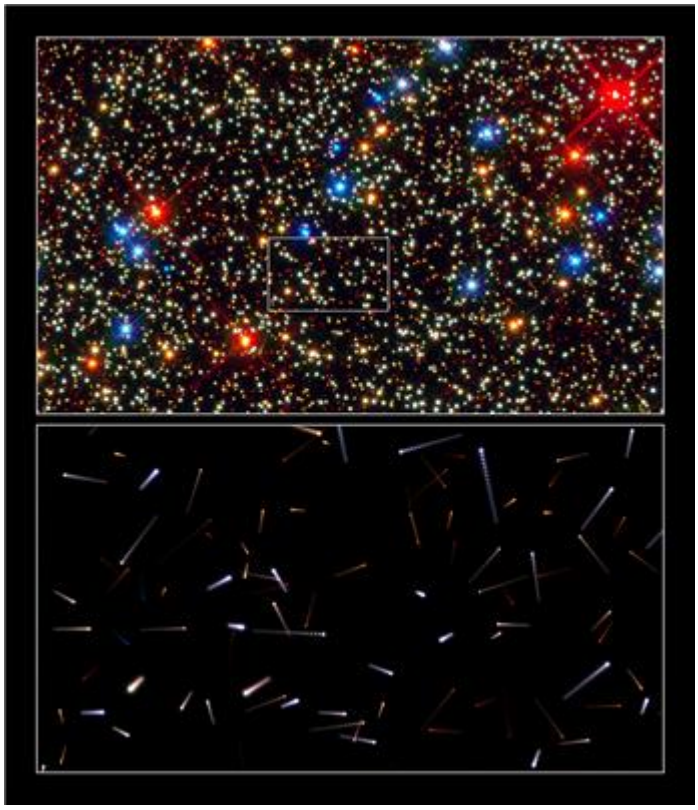
The researchers are also working to ensure that the results of their research form the basis for the designation of policy at all levels. As part of this effort the results of the projects were included in a report on the right to food that was presented by the United Nations Special Rapporteur on the Right to Food at the United Nations General Assembly in autumn 2009.

Regine Andersen is currently organising a three-day conference on farmers' rights in Addis Ababa in November, which will gather together players and interest groups from all over the world. The results will be presented to the Fourth Session of the Governing Body of the Plant Treaty as a basis for further efforts towards the realisation of farmers' rights. Dr Andersen was asked by the Secretariat of the Treaty to organise the conference in light of her work on farmers' rights.

http://www.forskningsradet.no/en/Newsarticle/Who_controls_the_seeds/1253962526146?WT.ac=forside_nyhet

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88475&CultureCode=en

Hubble data used to look 10 000 years into the future



The multi-colour snapshot (top), taken with the Wide Field Camera 3 aboard the NASA/ESA Hubble Space Telescope, captures the central region of the giant globular cluster Omega Centauri. All the stars in the image are moving in random directions, like a swarm of bees. Astronomers used Hubble's exquisite resolving power to measure positions for stars in 2002 and 2006. From these measurements, they can predict the stars' future movement. The lower illustration charts the future positions of the stars highlighted by the white box in the top image. Each streak represents the motion of the stars over the next 600 years. The motion between the dots corresponds to 30 years

European Space Agency

Astronomers are used to looking millions of years into the past. Now scientists have used the NASA/ESA Hubble Space Telescope to look thousands of years into the future. Looking at the heart of Omega Centauri, a globular cluster in the Milky Way, they have calculated how the stars there will move over the next 10 000 years.

The globular star cluster Omega Centauri has caught the attention of sky watchers ever since the early astronomer Ptolemy first catalogued it 2000 years ago. Ptolemy thought Omega Centauri was a single star and probably wouldn't have imagined that his "star" was actually a beehive swarm of nearly 10 million stars, all orbiting a common centre of gravity.

The stars are so tightly crammed together in the cluster that astronomers had to wait for the Hubble Space Telescope before they could look deep into the core of the "beehive" and resolve the individual stars. Hubble's vision is so sharp that it can even measure the motion of many of these stars, and over a relatively short span of time.

A precise measurement of star motions in giant clusters can yield insights into how such stellar groupings formed in the early Universe, and whether an intermediate-mass black hole, one roughly 10 000 times as massive as our Sun, might be lurking among the stars.
Analysing archived images taken over a four-year period by Hubble's Advanced Camera for Surveys, astronomers have made the most accurate measurements yet of the motions of more than 100 000 cluster inhabitants, the largest survey to date to study the movement of stars in any cluster.
"It takes sophisticated computer programs to measure the tiny shifts in the positions of the stars that occur over a period of just four years," says astronomer Jay Anderson of the Space Telescope Science Institute in Baltimore, USA, who conducted the study with fellow Institute astronomer Roeland van der Marel.
"Ultimately, though, it is Hubble's razor-sharp vision that is the key to our ability to measure stellar motions in this cluster."
Van der Marel adds: *"With Hubble, you can wait three or four years and detect the motions of the stars more accurately than if you were using a ground-based telescope and were waiting 50 years."*
The astronomers used the Hubble images, which were taken in 2002 and 2006, to make a movie simulation of the frenzied motion of the cluster's stars. The movie shows the stars' projected migration over the next 10 000 years.
Identified as a globular star cluster in 1867, Omega Centauri is one of roughly 150 such clusters in the Milky Way. The behemoth stellar grouping is the biggest and brightest globular cluster in the Milky Way, and one of the few that can be seen by the unaided eye. Located in the constellation of Centaurus, Omega Centauri can be seen in the southern skies.
http://www.spacetelescope.org/news/heic1017/

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88469&CultureCode=en

Women Still Work Double Shifts

Plataforma SINC

The proportion of the workforce represented by women rose from 20.7% to 41.1% between 1978 and 2002. However, this trend has not resulted in a similar increase in the proportion of men who participate in household tasks. Some 55% of women who are part of a dual earning couple still perform all household tasks. Furthermore, 33% of men do not do anything at home.

"Younger women still carry out a larger amount of unpaid work than men, although in less proportion than older women. The same occurs with education. The lower the level of education, the more likely women are to have more household chores", co-author of the working paper and researcher at the Public University of Navarra (Spain) Salomé Goñi explained to SINC.

In order to obtain the data that the journal Sex Roles publishes this month, the researchers selected 2,877 Spanish male and female workers from the total sample of the Survey of Quality of Life at Work in Spain between 2001 and 2004 who stated they were members of a dual earning couple.

The experts conducted a variable analysis of the division of unpaid work following three models: the role-strain approach, the traditional gender division approach and the resource-bargaining approach. According to the study, all three theoretical models help to explain the unequal division of household labour and can therefore be regarded as complementary.

Only 12 % Share Household Tasks

According to the study, only 12% of the women surveyed share their household responsibilities equally with their partner. The European average, albeit low, stands at 25%.

Without distinguishing by gender, 18.91% of the people surveyed state that they "do nothing" at home, compared to 57% who say they "share the housework" and 23% who "do everything".

If we divide the sample by gender, these figures change drastically. Only 0.64% of women state that they do not do any housework, while 55% take on the entire workload of the household, compared to 1.4% of men. Furthermore, 33% of men in relationships in which both members work say they do not do "any housework".

"If we take the sample as a whole, one might think the situation is balanced, but when we distinguish between men and women, the difference is clearly visible", the researcher added.

Economic Dependence Only Affects Women

The study also analyses couples' level of employment and economic dependence in relation to unpaid work. "What we found was that the variables that explain the participation of women in household tasks are different to those that explain the participation of men", Goñi said.

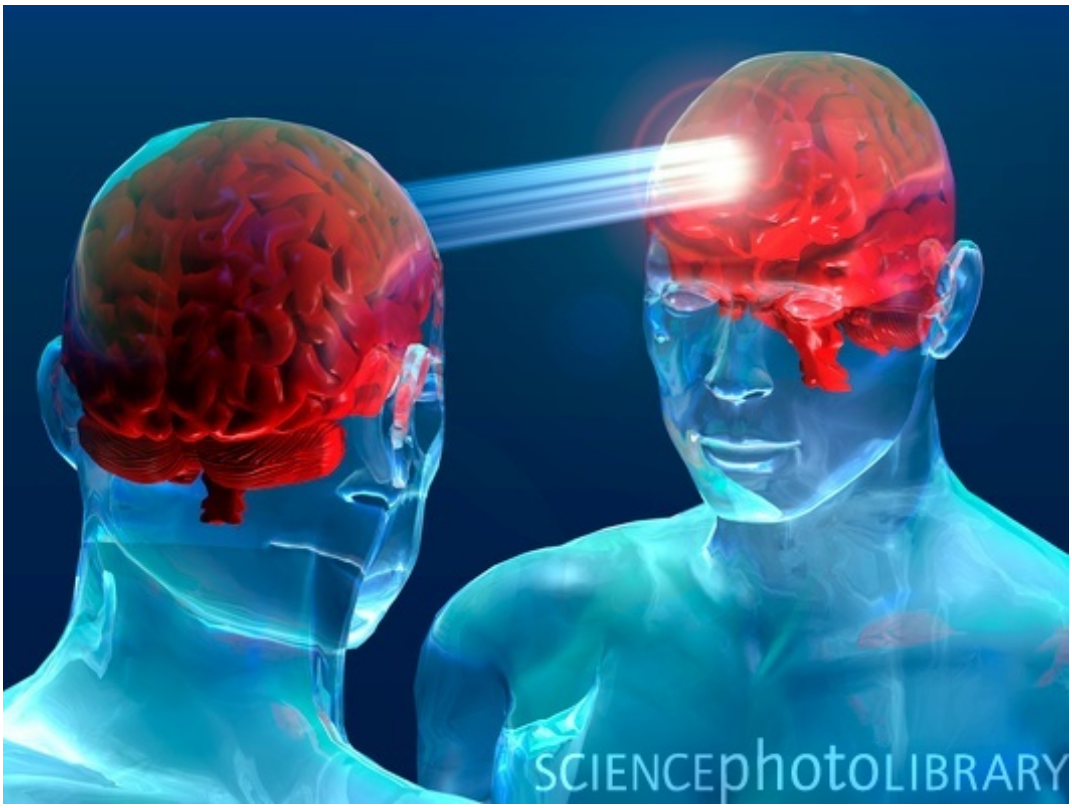
In this sense, economic dependence is important in the case of women, whereas this variable does not affect the involvement of men in unpaid work.

As regards the variables relating to paid work, having a job results in women no longer "doing everything" but "sharing chores". However, if men work more outside their home, women are more likely to do everything.

Similarly, the less women contribute in terms of wages, the more likely they are to take on all the unpaid work. "The opposite occurs in the case of men, who would change from doing nothing to sharing", Goñi concluded.
http://www.plataformasinc.es/esl/Noticias/Las-mujeres-siguen-teniendo-doble-jornada-laboral

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88439&CultureCode=en

Research shows that two people can learn to cooperate intuitively, but larger groups need to communicate



Credit: LAGUNA DESIGN / SCIENCE PHOTO LIBRARY Caption: Communication. Conceptual computer artwork representing communication, showing one person conveying a thought (light) to another. This could also represent telepathy.

Leicester, University of

Two people can learn to cooperate with each other intuitively – without communication or any conscious intention to cooperate. But this process breaks down in groups of three or more.

A study by members of the University of Leicester's School of Psychology and Department of Economics set out to explain how two people learn to cooperate without even knowing that they are interacting with each other. In larger groups, explicit communication is needed to coordinate actions.

Professor Andrew Colman, Dr Briony Pulford, Dr David Omtzigt, and Dr Ali al-Nowaihi carried out the study, due to appear in the journal *Cognitive Psychology*. The research, funded by the British Academy, has helped to explain the mechanisms of intuitive cooperation.

The researchers conducted a series of laboratory experiments with groups of various sizes and developed a mathematical model of the intuitive learning process. Experimental participants received financial gains or losses after pressing one of two buttons on a computer, unaware that the outcome depended not on their own choice but on their neighbour's. It turned out that after many repetitions of the game, gains gradually exceeded losses in groups of two but not in three-person and larger groups.

Professor Colman said: "Here's a simple example that shows the basic idea. Every morning, Alf chooses whether to give his son raisins or cheese sticks to snack on during the day. Similarly, Beth chooses between popcorn or peanuts for her daughter's snack. The children are friends and always share their snacks with each other at school, although their parents know nothing about this. Alf's son is allergic to peanuts and gets ill if

he eats any of his friend's peanuts, and Beth's daughter is allergic to cheese and gets ill if she eats any of her friend's cheese sticks. The upshot is that although each parent's snack choice has no effect whatsoever on his or her own child's wellbeing, in each case one option leaves the other parent's child well and its parent happy, whereas the alternative option makes the other child ill and upsets its parent.

"The choices of Alf and Beth govern each other's fates and, in the game of life, while two people may 'develop an understanding' or work intuitively together – this scenario is easily distorted once a third person becomes involved. Without effective planning and ground rules, even the best of working relationships between two people can become undone once a third is involved.

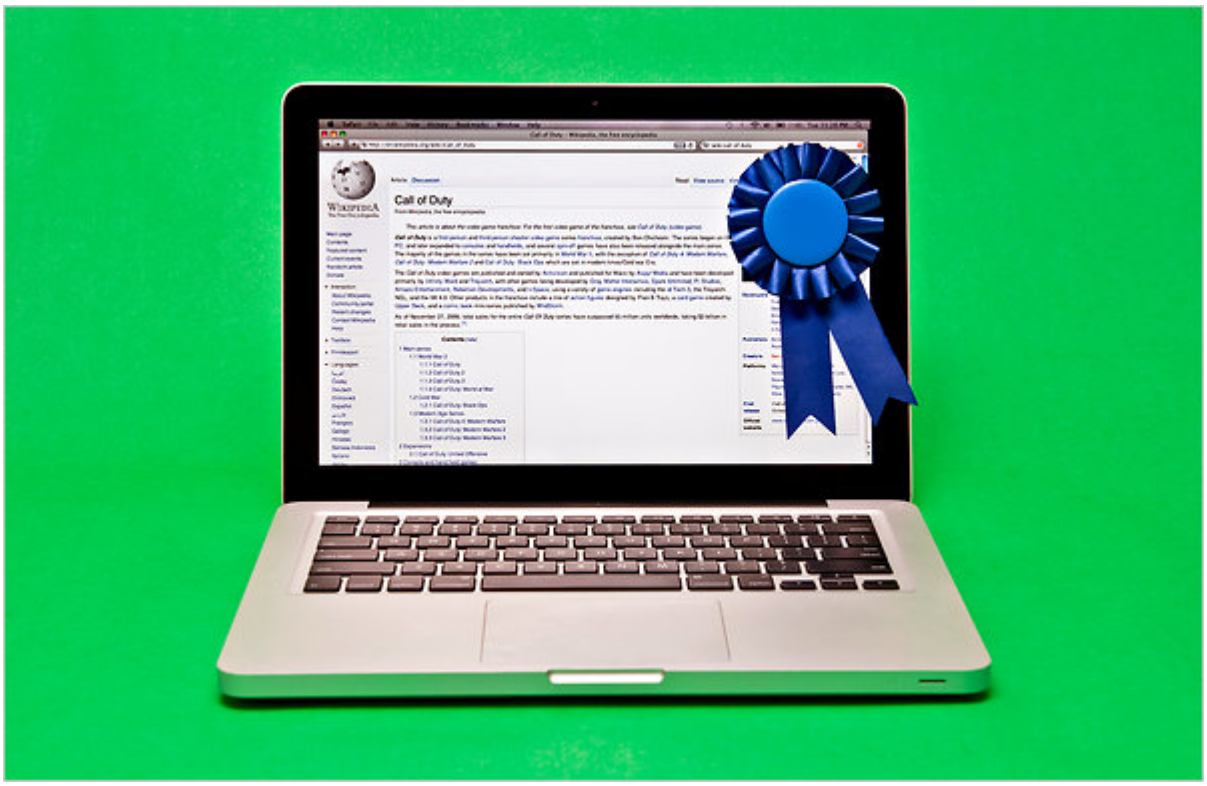
"Married couples or pairs of business partners may be able to rely on this type of intuitive cooperation, to an extent, but larger groups need explicit communication and planning. Mechanisms need to be put in place to facilitate it. Intuitive cooperation is really a case of two's company, but three's a crowd."

Andrew Colman is a Professor of Psychology, Briony Pulford is a Lecturer in Psychology, and Ali al-Nowaihi is a Lecturer in Economics at the University of Leicester. David Omtzigt, formerly a Research Associate at the University of Leicester, is now a Postdoctoral Researcher at Radboud University in Nijmegen, the Netherlands. The research was funded by the British Academy Larger Research Grants Scheme.

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88388&CultureCode=en

Prize Descriptions

By VIRGINIA HEFFERNAN



Kevin Van Aelst for The New York Times

I visit Wikipedia every day. I study the evolving entries for Internet-specific entities like World of Warcraft, Call of Duty, Foursquare and Picasa, often savoring the lucid exposition that Wikipedia brings to technical subjects that might not be expected to inspire poetry and for which no vocabulary has yet been set. Wikipedia is a perfectly serviceable guide to non-Internet life. But as a companion to the stuff that was born on the Internet, Wikipedia — itself an Internet artifact — will never be surpassed.

Every new symbolic order requires a taxonomist to make sense of it. When Renaissance paintings and drawings first became fashionable in the art market in the early 20th century, the primary task of critics like Bernard Berenson was to attribute them, classify them and create a taste for them. Art collectors had to be introduced to the dynamics of the paintings, the names of the painters and the differences among them. Without descriptions, attributions and analysis, Titian's "Salomé With the Head of St. John the Baptist" is just a clump of data.

Wikipedia has become the world's master *catalogue raisonnée* for new clumps of data. Its legion nameless authors are the Audubons, the Magellans, the Berensons of our time. This was made clear to me recently when I unknowingly quoted the work of Randy Dewberry, an anonymous contributor to Wikipedia, in a column on the video game Angry Birds. Dewberry's prose hit a note rare in exposition anywhere: both efficient and impassioned. ("Players take control of a flock of birds that are attempting to retrieve their eggs from a group of evil pigs that have stolen them.")

The passage described Angry Birds so perfectly that I assumed it came from the game's developers. Who else could know the game so well? But as Dewberry subsequently explained to me in an e-mail, that's not what happened. In fact, according to the entry's history, the original description of Angry Birds was such egregious

corporate shilling that Wikipedia planned to drop it. That's when Dewberry, a Wikipedian and devoted gamer, introduced paragraphs so lively they made the pleasure of the game palpable. The entry remained. Like many Wikipedians, Dewberry is modest to the point of self-effacement about his contributions to the site. Because entries are anonymous and collaborative, no author is tempted to showboat and, in the pursuit of literary glory, swerve from the aim of clarity and utility. "No one editor can lay absolute claim to any articles," Dewberry told me. "While editors will acknowledge when a user puts a substantial amount of work into an article, it is not 'their' article."

For more information on the house vibe around credit-claiming, Dewberry proposed I type "WP: OWN" into Wikipedia to read its policy about "ownership" of articles. My jaw dropped. The page is fascinating for anyone who has ever been part of a collaborative effort to create *anything*.

At the strenuously collectivist Wikipedia, it seems, "ownership" of an article — what in legacy media is called "authorship" — is strictly forbidden. But it's more than that: even doing jerky things that Wikipedia calls "ownership behavior" — subtle ways of *acting* proprietary about entries — is prohibited. As an example of the kind of attitude one editor is forbidden to cop toward another, Wikipedia cites this: "I have made some small amendments to your changes. You might notice that my tweaking of your wording has, in effect, reverted the article back to what it was before, but do not feel disheartened. Please feel free to make any other changes to *my* article if you ever think of anything worthwhile. Toodles! :)"

The magazine business could have used some guidelines about this all-too-familiar kind of authorship jockeying decades ago.

Wikipedia is vitally important to the culture. Digital artifacts like video games are our answer to the album covers and romance novels, the saxophone solos and cigarette cases, that previously defined culture. Today an "object" that gives meaning might be an e-book. An MP3. A Flash animation. An HTML5 animation. A video, an e-mail, a text message, a blog. A Tumblr blog. A Foursquare badge. Around these artifacts we now form our identities.

Take another such artifact: the video game Halo. The entry on Wikipedia for Halo: Combat Evolved, which Wikipedia's editors have chosen as a model for the video-game-entry form, keeps its explanations untechnical. Halo, according to the article, is firmly in the tradition of games about shooting things, "focusing on combat in a 3D environment and taking place almost entirely from a character's eye view." But not always: "The game switches to the third-person perspective during vehicle use for pilots and mounted gun operators; passengers maintain a first-person view." At last, Halo: I understand you!

At first blush the work of composing these anonymous descriptions may seem servile. Hundreds of thousands of unnamed Wikipedia editors have made a hobby of perfecting the descriptions of objects whose sales don't enrich them. But their pleasure in the always-evolving master document comes through clearly in Wikipedia itself. The nameless authors tell the digital world what its components are, and thereby create it.

MINE! MINE!

With authorship disputes, **Wikipedia** advises, "stay calm, assume good faith and remain civil." The revolutionary policy outlined on "**Wikipedia: Ownership of Articles**" — search Wikipedia or Google for it — is stunningly thorough.

SINGLE-SHOOTER POETS

For the best-written articles on video games, search Wikipedia for **WP:VG/FA**. These are all featured articles, and as Wikipedia notes, they have "the status which all articles should eventually achieve."

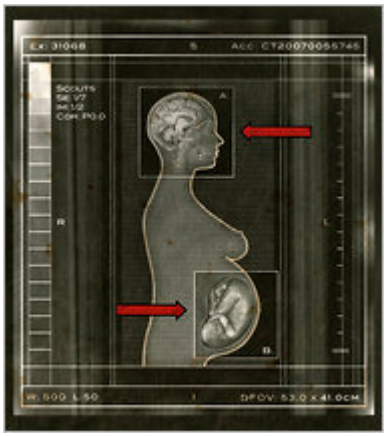
TWO CENTS OF DATA

It's time to **contribute to Wikipedia** — even if you just want to make a small correction to the Calvin Coolidge, "Krapp's Last Tape" or Bettie Serveert entries. Join the project by following links from Wikipedia's homepage, and then read **WP:YFA**, Wikipedia's page on creating your first article.

http://www.nytimes.com/2010/11/07/magazine/07FOB-medium-t.html?_r=1&ref=magazine

The Headache That Wouldn't Go Away

By LISA SANDERS, M.D.



"My arm — something is biting my arm!" The 26-year-old woman struggled to sit up in bed. What's wrong? her husband asked, alarmed and suddenly wide awake. His wife didn't seem to hear him. Suddenly, her whole body began to jerk. Although he had never seen a seizure, the young man knew immediately that this was one. After a long and terrifying minute the jerking stopped and his wife lay quiet with her eyes closed, as if she were asleep. When he couldn't wake her, he picked up the phone and dialed 911.

In the emergency room, the young woman was sleepy and confused. She didn't remember the seizure. All she knew was that she felt bad earlier that day. Her shoulders ached and she had these strange shooting pains that ran up her neck, into her skull. She had a wicked headache too. Although she had this headache for months, it was much worse that day. At home she took a long hot bath and went to bed. She woke up in the ambulance.

She'd had no fever, she told the E.R. doctor, and hadn't felt sick — just sore. And now she felt fine. Her arm didn't hurt — in fact she couldn't remember that it had ever hurt. She still had the headache, though. She didn't smoke, didn't drink and took no medications. She moved to Boston from Bolivia several years earlier to get married and now had 15-month-old. Other than mild confusion, the patient's physical exam was normal. The E.R. doctor ordered blood tests to look for evidence of infection along with a CT scan of her head to look for a tumor.

Her headache started the year before, when she was pregnant. Before that she had the occasional headache, but back when her daughter was barely a bump, she got one that simply never went away. She told the midwife, who said it wasn't unusual to get headaches during pregnancy. But to the patient, this headache seemed different. It was like a vise on her head, just over her eyes. The pressure wasn't excruciating, just unrelenting. She took Tylenol, and that sometimes helped, but the headache always came back. Sometimes it even woke her up in the middle of the night. Finally the midwife sent her to her primary-care doctor.

Her doctor, a young internist in her first year of training (who asked that her name not be used), was worried about this headache. It had persisted for weeks and woke her patient up from sleep — that was unusual. The doctor recalled how happy the patient was when she called her with the news of her positive pregnancy test. And now barely showing at five months, she looked like the picture of expectant health. Had she had any weakness or numbness? Was there any loss of hearing or blurry vision? No, no and no. Well, she did have blurry vision, but that's only because she hated wearing her glasses.

The doctor focused her exam to look for any hint that this headache might be because of some kind of brain injury. She looked into the patient's eyes with the ophthalmoscope, scanning the retina for any signs of increased pressure inside the brain. She checked the patient's strength, coordination and reflexes. Nothing. Her exam was completely normal.

Headaches are common, accounting for some 18 million doctor visits a year. Most are completely benign, but up to 3 percent of patients with a headache severe enough to send them to the emergency room will have something worth worrying about. Doctors are taught to look for three types of potentially dangerous headaches: the first, the worst and the cursed. The first headache in someone who doesn't have headaches; the worst headache ever in someone who does; or a headache "cursed" by symptoms like weakness or numbness. A CT scan should be considered for these possibly life-threatening headaches. This headache fit into none of these informal categories.

This patient was woken up from sleep by her headaches — that's unusual, but the doctor knew that it was not one of the recommended reasons for getting a CT scan. And she was pregnant. A CT scan of the head requires a relatively high dose of radiation. Was the doctor's concern great enough to risk exposing the fetus based only on this somewhat unusual symptom? Not yet. Especially since there was another possible cause of the persistent headache — eyestrain. The patient was no longer wearing her glasses; she didn't even own a pair, she confessed. She should get new glasses, the doctor suggested, and see if wearing them helped her headache. If not, she should come back. Perhaps they would get a CT scan at that point.

It was more than a year later when the patient next came to see the doctor. She had gotten glasses, and though the headaches hadn't stopped, they seemed a bit better. It was no longer a constant pain. She had one maybe three to four times a week, and it lasted for a few hours and went away with a little ibuprofen. Besides, she was really too busy with the baby and her job to worry too much about them.

Then, six months after that last visit, she had this middle of the night seizure. In the E.R., the blood tests were all normal. Not so the CT scan. On the right side of the patient's brain, just over the eye, there was a bright circle of white, the size of a dime. Not a brain tumor. No, the radiologist said, this was a tiny worm, a larvae, the young offspring of a tapeworm. The parasite, known as Taenia solium, is transmitted through undercooked pork contaminated by tapeworm eggs. Once in the body, the eggs hatch and then attach themselves to the intestinal wall and within a few months can grow to up to 15 feet or more. A mature tapeworm will then release hundreds of eggs into the gut every day. If any of these are ingested, they can hatch, enter the bloodstream and, once there, can lodge almost anywhere in the body, although they usually end up in muscle and in the brain.

Although unusual in the United States, pork tapeworm is common in the developing world. And having these larvae in the brain, a condition known as neurocysticercosis, is the most common cause of adult epilepsy in South and Central America. The patient was probably infected with this tapeworm years earlier when she lived in Bolivia. This kind of infection can be asymptomatic for years. Once the doctors saw the CT scan, the patient was treated with an antiparasite medication for 30 days and started on antiseizure medications.

When her primary-care doctor heard that her patient had been diagnosed with neurocysticercosis, she scoured the patient's hospital chart and then her own notes. How had she missed that? What should she have done differently? She discussed the case with several of her teachers, who assured her that she had done everything properly. One of the frustrating truths in medicine is that it is possible to do everything right and still be wrong and miss the diagnosis.

The young doctor called the patient to see how she was doing and to schedule a follow-up visit. She was disappointed, though not completely surprised, when the patient chose to see a different doctor at the clinic.

In thinking about this case, the doctor's greatest regret is that she didn't get the chance to follow up on her patient and find out that her headaches didn't go away by just wearing glasses. When patients don't come back, the temptation is to assume they've gotten better. That is often not the case. Sometimes they've just given up. Now when she has a patient she is worried about, the doctor doesn't tell them to call her if they *don't* get better. Instead she has them make an appointment to come back in a couple of weeks. "If they are all better," the doctor told me, "they can cancel the appointment. But just in case they aren't — the way this woman wasn't — they can come back, and I can have another shot at the whole thing."

Lisa Sanders is the author of "Every Patient Tells a Story: Medical Mysteries and the Art of Diagnosis."

If you have a solved case to share with Dr. Sanders, you can e-mail her at lisa.sandersmd@gmail.com. She is unable to respond to all e-mail messages.

http://www.nytimes.com/2010/11/07/magazine/07FOB-Diagnosist-t.html?ref=magazine

The Rise of the Tao

By IAN JOHNSON

Su Sheng for The New York Times
Abbess Yin Xinhui in the Hall of the Jade Emperor on Mount Mao, built at a cost of $1.5 million

YIN XINHUI reached the peak of Mount Yi and surveyed the chaos. The 47-year-old Taoist abbess was on a sacred mission: to consecrate a newly rebuilt temple to one of her religion's most important deities, the Jade Emperor. But there were as yet no stairs, just a muddy path up to the pavilion, which sat on a rock outcropping 3,400 feet above a valley. A team of workers was busy laying stone steps, while others planted sod, trees and flowers. Inside the temple, a breeze blew through windows that were still without glass, while red paint flecked the stone floor.

"Tomorrow," she said slowly, calculating the logistics. "They don't have much ready. . . ." Fortunately, a dozen of her nuns had followed her up the path. Dressed in white tunics and black trousers, their hair in topknots, the nuns enthusiastically began unpacking everything they would need for the next day's ceremony: 15 sacred scriptures, three golden crowns, three bells, two cordless microphones, two lutes, a zither, a drum, a cymbal and a sword. Soon the nuns were plucking and strumming with the confidence of veteran performers. Others set up the altar and hung their temple's banner outside, announcing that for the next few days, Abbess Yin's exacting religious standards would hold sway on this mountain.

The temple she was to consecrate was born of more worldly concerns. Mount Yi is in a poor part of China, and Communist Party officials had hit upon tourism as a way to move forward. They fenced in the main mountain, built a road to the summit and declared it a scenic park. But few tourists were willing to pay for a chance to hike up a rocky mountain. Enter religion. China is in the midst of a religious revival, and people will pay to visit holy sites. So the local government set out to rebuild the temple, which was wrecked by Red Guards during the Cultural Revolution, modestly rebuilt then torn down when the park was first constructed. Officials commissioned a 30-foot statue of the Jade Emperor, had it hauled to the peak and encased in the brilliant red pavilion. They then built a bell and a drum tower, as well as another set of halls devoted to minor deities.

All that was missing was a soul. For that, the temple had to be properly consecrated. The officials got in touch with Abbess Yin, widely regarded as a leading expert in Taoist ritual, and soon she was driving the 350 miles from her nunnery to Mount Yi.

As her rehearsals drew to a close, the abbess went over the next day's schedule with a local official. All was in good shape, he said, except for one detail. Government officials were due to give speeches at 10:30 a.m. She would have to be finished by then, he said.

"No," she replied. "Then it won't be authentic. It takes four hours." Could she start earlier and wrap up by then? No, the sun won't be in the right position, she replied. The official peered up from the schedule and took a good look at her — who was this?

Abbess Yin smiled good-naturedly. At a little over five feet tall, she was solidly built, with a full, smooth face tanned from spending much of her life outdoors in the mountains. Her dress was always the same plain blue robe, and she did not wear jewelry or display other signs of wealth. She shunned electronics; her temple did not have a phone or Internet access. But over the past 20 years she had accomplished a remarkable feat, rebuilding her own nunnery on one of Taoism's most important mountains. Unlike the temple here on Mount Yi — and hundreds of others across China — she had rejected tourism as a way to pay for the reconstruction of her nunnery, relying instead on donors who were drawn to her aura of earnest religiosity. She knew the real value of an authentic consecration ceremony and wasn't about to back down.

The official tried again, emphasizing the government's own rituals: "But they have planned to be here at 10:30. The speeches last 45 minutes, and then they have lunch. It is a banquet. It cannot be changed."

She smiled again and nodded her head: no. An hour later the official returned with a proposal: the four-hour ceremony was long and tiring; what if the abbess took a break at 10:30 and let the officials give their speeches? They would cut ribbons for the photographers and leave for lunch, but the real ceremony wouldn't end until Abbess Yin said so. She thought for a moment and then nodded: yes.

RELIGION HAS LONG played a central role in Chinese life, but for much of the 20th century, reformers and revolutionaries saw it as a hindrance holding the country back and a key reason for China's "century of humiliation." Now, with three decades of prosperity under their belt — the first significant period of relative stability in more than a century — the Chinese are in the midst of a great awakening of religious belief. In cities, yuppies are turning to Christianity. Buddhism attracts the middle class, while Taoism has rebounded in small towns and the countryside. Islam is also on the rise, not only in troubled minority areas but also among tens of millions elsewhere in China.

It is impossible to miss the religious building boom, with churches, temples and mosques dotting areas where none existed a few years ago. How many Chinese reject the state's official atheism is hard to quantify, but numbers suggest a return to widespread religious belief. In contrast to earlier surveys that showed just 100 million believers, or less than 10 percent of the population, a new survey shows that an estimated 300 million people claim a faith. A broader question in another poll showed that 85 percent of the population believes in religion or the supernatural.

Officially, religious life is closely regulated. The country has five recognized religions: Buddhism, Islam, Taoism and Christianity, which in China is treated as two faiths, Catholicism and Protestantism. Each of the five has a central organization headquartered in Beijing and staffed with officials loyal to the Communist Party. All report to the State Administration for Religious Affairs, which in turn is under the central

government's State Council, or cabinet. This sort of religious control has a long history in China. For hundreds of years, emperors sought to define orthodox belief and appointed many senior religious leaders. Beneath this veneer of order lies a more freewheeling and sometimes chaotic reality. In recent months, the country has been scandalized by a Taoist priest who performed staged miracles — even though he was a top leader in the government-run China Taoist Association. His loose interpretation of the religion was hardly a secret: on his Web site he used to boast that he could stay underwater for two hours without breathing.
Meanwhile, the government has made a conscious effort to open up. When technocratic Communists took control of China in the late 1970s, they allowed temples, churches and mosques to reopen after decades of forced closures, but Communist suspicion about religion persisted. That has slowly been replaced by a more laissez-faire attitude as authorities realize that most religious activity does not threaten Communist Party rule and may in fact be something of a buttress. In 2007, President Hu Jintao endorsed religious charities and their usefulness in solving social problems. The central government has also recently sponsored international conferences on Buddhism and Taoism. And local governments have welcomed temples — like the one on Mount Yi — as ways to raise money from tourism.
This does not mean that crackdowns do not take place. In 1999, the quasi-religious sect Falun Gong was banned after it staged a 10,000-person sit-down strike in front of the compound housing the government's leadership in Beijing. That set off a year of protests that ended in scores of Falun Gong practitioners dying in police custody and the introduction of an overseas protest movement that continues today. In addition, where religion and ethnicity mix, like Tibet and Xinjiang, control is tight. Unsupervised churches continue to be closed. And for all the building and rebuilding, there are still far fewer places of worship than when the Communists took power in 1949 and the country had less than half the population, according to Yang Fenggang, a Purdue University professor who studies Chinese religion. "The ratio is still radically imbalanced," Yang says. "But there's now a large social space that makes it possible to believe in religion. There's less problem believing."
Taoism has closely reflected this history of decline and rebirth. The religion is loosely based on the writings of a mythical person named Laotzu and calls for returning to the Dao, or Tao, the mystical way that unites all of creation. Like many religions, it encompasses a broad swath of practice, from Laotzu's high philosophy to a riotous pantheon of deities: emperors, officials, thunder gods, wealth gods and terrifying demons that punish the wicked in ways that make Dante seem unimaginative. Although scholars once distinguished between "philosophical Taoism" and "religious Taoism," today most see the two strains as closely related. Taoist worshipers will often go to services on important holy days; they might also go to a temple, or hire a clergy member to come to their home, to find help for a specific problem: illness and death or even school exams and business meetings. Usually the supplicant will pray to a deity, and the priest or nun will stage ceremonies to summon the god's assistance. Many Taoists also engage in physical cultivation aimed at wellness and contemplation, like qigong breathing exercises or tai chi shadowboxing.
As China's only indigenous religion, Taoism's influence is found in everything from calligraphy and politics to medicine and poetry. In the sixth century, for example, Abbess Yin's temple was home to Tao Hongjing, one of the founders of traditional Chinese medicine. For much of the past two millenniums, Taoism's opposite has been Confucianism, the ideology of China's ruling elite and the closest China has to a second homegrown religion. Where Confucianism emphasizes moderation, harmony and social structure, Taoism offers a refuge from society and the trap of material success. Some rulers have tried to govern according to Taoism's principle of *wuwei*, or nonaction, but by and large it is not strongly political and today exhibits none of the nationalism found among, say, India's Hindu fundamentalists.
During China's decline in the 19th and 20th centuries, Taoism also weakened. Bombarded by foreign ideas, Chinese began to look askance at Taoism's unstructured beliefs. Unlike other major world religions, it lacks a Ten Commandments, Nicene Creed or Shahada, the Muslim statement of faith. There is no narrative comparable to Buddhism's story of a prince who discovered that desire is suffering and sets out an eightfold path to enlightenment. And while religions like Christianity acquired cachet for their association with lands that became rich, Taoism was pegged as a relic of China's backward past.
But like other elements of traditional Chinese culture, Taoism has been making a comeback, especially in the countryside, where its roots are deepest and Western influence is weaker. The number of temples has risen

significantly: there are 5,000 today, up from 1,500 in 1997, according to government officials. Beijing, which had just one functioning Taoist temple in 2000, now has 10. The revival is not entirely an expression of piety; as on Mount Yi, the government is much more likely to tolerate temples that also fulfill a commercial role. For Taoists like Abbess Yin, the temptation is to turn their temples into adjuncts of the local tourism bureau. And private donors who have helped make the revival possible may also face a difficult choice: support religion or support the state.

Zhengzhou is one of China's grittiest cities. An urban sprawl of 4.5 million, it owes its existence to the intersection of two railway lines and is now one of the country's most important transport hubs. The south side is given over to furniture warehouses and markets for home furnishings and construction materials. One of the biggest markets is the five-story Phoenix City, with more than four million square feet of showrooms featuring real and knockoff Italian marble countertops, German faucets and American lawn furniture. Living in splendor on the roof of this mall like a hermit atop a mountain is one of China's most dynamic and reclusive Taoist patrons, Zhu Tieyu.

Zhu is a short, wiry man of 50 who says he once threw a man off a bridge for the equivalent of five cents. "He owed me the money," he recalled during a nighttime walk on the roof of Phoenix City. "And I did anything for money: bought anything, sold anything, dared to do anything." But as he got older, he began to think more about growing up in the countryside and the rules that people lived by there. His mother, he said, deeply influenced him. She was uneducated but tried to follow Taoist precepts. "Taoist culture is noncompetitive and nonhurting of other people," he says. "It teaches following the rules of nature."

Once he started to pattern his life on Taoism, he says, he began to rise quickly in the business world. He says that by following his instincts and not forcing things — by knowing how to be patient and bide his time — he was able to excel. Besides Phoenix City, he now owns large tracts of land where he is developing office towers and apartment blocks. Although he is reticent to discuss his wealth or business operations, local news media say his company is worth more than $100 million and have crowned him "the king of building materials." Articles almost invariably emphasize another aspect of Zhu: his eccentric behavior.

That comes from how he chooses to spend his wealth. Instead of buying imported German luxury cars or rare French wines, he has spent a large chunk of his fortune on Taoism. The roof of Phoenix City is now a 200,000-square-foot Taoist retreat, a complex of pine wood cabins, potted fruit trees and vine-covered trellises. It boasts a library, guesthouses and offices for a dozen full-time scholars, researchers and staff. His Henan Xinshan Taoist Culture Propagation Company has organized forums to discuss Taoism and backed efforts at rebuilding the religion's philosophical side. He says he has spent $30 million on Taoist causes, a number that is hard to verify but plausible given the scope of his projects, including an office in Beijing and sponsorship of international conferences. His goal, he says, is to bring the philosophical grounding of his rural childhood into modern-day China.

Last year, Zhu invited several dozen European and North American scholars of Chinese religion on an all-expenses-paid trip to participate in a conference in Beijing. The group stayed in the luxurious China World Hotel and were bused to Henan province to visit Taoist sites. Demonstrating his political and financial muscle, Zhu arranged for the conference's opening session to be held in Beijing's Great Hall of the People, the Stalinesque conference center on Tiananmen Square. It is usually reserved for state events, but with the right connections and for the right price, it can be rented for private galas. In a taped address to participants, Zhu boasted that "I'll spend any amount of money" on Taoism.

Zhu's chief adviser, Li Jinkang, says the goal is to keep Taoism vital in an era when indigenous Chinese ideas are on the defensive. "Churches are everywhere. But traditional things are less so. So Chairman Zhu said: 'What about our Taoism? Our Taoism is a really deep thing. If we don't protect it, then what?' "

Balancing this desire with the imperatives of China's political system is tricky. While the Communist Party has allowed religious groups to rebuild temples and proselytize, its own members are supposed to be good Marxists and shun religion. Like many big-business people, Zhu is also a party member. Two years ago, he became one of the first private business owners to set up a party branch in his company, earning him praise in the pages of the Communist Party's official organ, People's Daily. He has also established a party "school" — an indoctrination center for employees. His company's Web site has a section extolling his party-building efforts and has a meeting room with a picture of Mao Zedong looking down from the wall. Although it might

seem like an odd way to mix religion and politics, Taoism often deifies famous people; at least three Taoist temples in one part of China are dedicated to Chairman Mao.
Until recently, Zhu mostly ignored the contradiction, but he has become more cautious, emphasizing how he loved Taoist philosophy and playing down the religion. Still, Zhu continues to support conventional Taoism. His staff takes courses in a Taoist form of meditation called *neigong,* and he has sent staff members to document religious sites, like the supposed birthplace of Laotzu, who is worshiped as a god in Taoism. He also has close relations with folk-religious figures and plans to establish a "Taoist base" in the countryside to propagate Taoism. "The ancients were amazing," Zhu says. "Taoism can save the world."

WHEN ABBESS YIN started to rebuild her nunnery in 1991, she faced serious challenges. Her temple was located on Mount Mao, among low mountains and hills outside the eastern metropolis of Nanjing. It had been a center of Taoism from the fourth century until 1938, when Japanese troops burned some of the temple complex. As on Mount Yi, communist zealots completed the destruction in the 1960s. Her temple was so badly damaged that the forest reclaimed the land and only a few stones from the foundation could be found in the underbrush.
Unlike Mount Yi, Mount Mao is an extensive complex: six large temples with, altogether, about 100 priests and nuns. Just a 45-minute drive from Nanjing and two hours from Shanghai, it is a popular destination for day-trippers wanting to get out of the city. Even 20 years ago, when Abbess Yin arrived, tourism-fueled reconstruction was in full swing on Mount Mao. Two temples had escaped complete destruction, and priests began repairing them in the 1980s. The local government started charging admission, taking half the gate receipts. But the Taoists still got their share and plowed money back into reconstruction. More buildings meant higher ticket prices and more construction, a cycle typical of many religious sites. Although pilgrims began to avoid the temples because of the overt commercialism, tourists started to arrive in droves, bused in by tour companies that also got a cut of gate receipts. Last year, ticket sales topped $2.7 million.
Abbess Yin opted for another model. Trained in Taoist music, she set up a Taoist music troupe that toured the Yangtze River delta in a rickety old bus, stopping at communities that hired them to perform religious rituals. When I first met her in 1998, she used the money to rebuild one prayer hall on Mount Mao but refused to charge admission. Word of her seriousness began to spread around the region and abroad. Soon, her band of nuns were performing in Singapore, Hong Kong and Taiwan.
More nuns began to join. In the Quanzhen school of Taoism, which Abbess Yi follows, Taoist clergy members live celibate lives in monasteries and nunneries, often in the mountains. (In the other school, known as Zhengyi, they may marry and tend to live at home, making house calls to perform ceremonies.) For Abbess Yin's young nuns, her temple provided security and calm in a world that is increasingly complicated. "Here, I can participate in something profound," said one nun who asked to be identified only as Taoist Huang. "The outside world has nothing like this." For Abbess Yin, the young people are a chance to mold Taoists in the image of her master. "The only people who are worth having are older than 80 or younger than 20."
Even now, Abbess Yin's temple is low-key. There are no tourist attractions like cable cars, gift shops, teahouses or floodlit caves — and, unlike at most temples, still no admission fee. The atmosphere is also different. While in some temples, priests seem to spend most of their time hawking incense sticks or offering to tell people's fortunes, her nuns are quiet and demure. Maybe this is why even in the 1990s, when her temple was reachable only by a dirt road, locals said it was *ling* — that it had spirit and was effective. In 1998, I saw a group of Taiwanese visitors abandon their bus and walk two miles to the temple so they could pray. "This is authentic," one told me. "The nuns are real nuns, and it's not just for show."
With a growing reputation came donations. One reason that city people often underestimate Taoism is that its temples are mostly in the mountains, and its supporters rarely want to discuss their gifts. But one way to gauge its support is to look at the lists of benefactors, which are carved on stone tablets and set up in the back of the temple. In Abbess Yin's temple, some tablets record 100,000 yuan ($15,000) donations, while others show 10,000 yuan gifts. But even those making just 100 yuan contributions get their names in stone. With the donations came the current plan to build the $1.5 million Jade Emperor Hall halfway up the mountain, making

the Mount Mao complex visible for miles around. It is due to open on this weekend, with Taoists from Southeast Asia and across China expected to participate.
Abbess Yin's success led the China Taoist Association to invite her to Beijing for training. She learned accounting, modern management methods and the government's religious policy. Earlier this year she was placed on one of the association's senior leadership councils. She has also begun speaking out on abuses on the religious scene, urging greater strictness inside Taoist temples and less emphasis on commerce. Many Taoists, she wrote in an essay reprinted in an influential volume, have become obsessed with making money and aren't performing real religious services but just selling incense. Too many traveled around China, using temples as youth hostels instead of as places to study the Tao or to worship.
"Taoism is a great tradition, but our problem is we've had very fast growth, and the quality of priests is too low," she told me. "Some people don't even know the basics of Taoism but treat it like a business. This isn't good in the long-term."

THE DAY AFTER Abbess Yin's standoff with the official, the big event on Mount Yi was due to start. She arrived early, making sure her nuns were ready at 7. The muddy path was now covered with stones that farmers had just hosed down, making them glisten in the early-morning sun. Workers scraped paint off the floor, inflated balloons and hung banners, while a television crew set up its equipment to film the politicians. Inside the Jade Emperor Pavilion, the nuns milled around, checking one another's clothes and hair. All, including the abbess, were wearing their white tunics and black knee breeches. They pulled on fresh blue robes and pink capes, while the abbess donned a brilliant red gown with a blue and white dragon embroidered on the back. She and her top two lieutenants affixed small golden crowns to their topknots. She was now transformed into a *fashi*, or ritual master. Something was about to happen.
Abbess Yin walked over to a drum about two feet in diameter and picked up two wooden sticks lying on top. She began pounding in alternating rhythms. The nuns knew their roles by heart and lined up in two rows, flanking the statue of the Jade Emperor, golden and beautiful, the god's eyes beatific slits and his mouth slightly parted as if speaking to the people below. Still, for now the statue was just a block of wood. The ceremony would change that. It is called *kai guang* or "opening the eyes" — literally, opening brightness. Abbess Yin could open them, but it would take time.
Five minutes passed and sweat glistened on her forehead. Then, six of the nuns quietly took their places and started to play their instruments. A young woman plucked the zither, while another strummed the Chinese lute, or *pipa*. Another picked up small chimes that she began tinkling, while a nun next to her wielded a cymbal that she would use to punctuate the ceremony with crashes and hisses. Abbess Yin stopped drumming and began to sing in a high-pitched voice that sounded like something out of Peking Opera. Later during the ceremony she read and sang, sometimes alone and at other times with the nuns backing her. Always she was in motion: kneeling, standing, moving backward, turning and twirling, the dragon on her back seeming to come alive. It was physically grueling, requiring stamina and concentration. During the occasional lull, a young nun would hand her a cup of tea that she delicately shielded behind the sleeve of her robe and drank quickly. Gradually, people began to pay attention. The wives of several officials stood next to the altar and gawked, first in astonishment and then with growing respect for the intensity of the performance. When a police officer suggested they move back, they said: "No, no, we won't be a bother. Please, we have to see it." Workers, their jobs finished, sat at the back. Within an hour, about 50 onlookers had filled the prayer hall.
On cue, at 10:30, she stopped. A group of local leaders had assembled outside the hall. They announced the importance of the project and how they were promoting traditional culture. A ribbon was cut, applause sounded and television cameras whirred. Then the group piled into minibuses and rolled down to the valley for the hotel lunch.
The speeches were barely over when Abbess Yin picked up again. As the ceremony reached its climax, more and more people began to appear, seemingly out of nowhere, on the barren mountain face. Four policemen tried to keep order, linking arms to barricade the door so the nuns would have space for the ceremony. "Back, back, give the nuns room," one officer said as the crowd pressed forward. People peered through windows or waited outside, holding cameras up high to snap pictures. "The Jade Emperor," an old woman said, laying

down a basket of apples as an offering. “Our temple is back.” Abbess Yin moved in front of the statue, praying, singing and kowtowing. This is the essence of the ritual — to create a holy space and summon the gods to the here and now, to this place at this moment.

Shortly after noon, when it seemed she had little strength left, Abbess Yin stopped singing. She held a writing brush in one hand and wrote a talismanic symbol in the air. Then she looked up: the sun was at the right point, slanting down into the prayer room. This was the time. She held out a small square mirror and deflected a sunbeam, which danced on the Jade Emperor’s forehead. The abbess adjusted the mirror slightly and the light hit the god’s eyes. *Kai guang*, opening brightness. The god’s eyes were open to the world below: the abbess, the worshipers and the vast expanse of the North China Plain, with its millions of people racing toward modern China’s elusive goals — prosperity, wealth, happiness.

Ian Johnson is the author of “A Mosque in Munich” and “Wild Grass: Three Stories of Change in Modern China.” He is based in Beijing.

http://www.nytimes.com/2010/11/07/magazine/07religion-t.html?ref=magazine

Miró's Odd Homage to Dutch Masters
By KAREN ROSENBERG

Rijksmuseum, Amsterdam
Sorgh's "Lute Player

Ever the contrarian, the Catalan painter Joan Miró rebelled by turning to the old masters. And not just any old masters: he started with the homely genre scenes of Jan Steen and Hendrick Sorgh, with their stock characters of misbehaving maids, soused guests and impish children. In the Metropolitan Museum's "Miró: The Dutch Interiors," these presences become floating, Surrealist apparitions — unmoored and ambiguous but still mischievous.

This intimate exhibition, which comes to the Met from the Rijksmuseum in Amsterdam, zeros in on a fraught time in Miró's career: 1928. His third solo gallery show in Paris that winter had been a hit, winning him a strong collector base and accolades from André Breton. But Miró, characteristically, was alarmed.

"I understood the dangers of success and felt that, rather than dully exploiting it, I must launch into new ventures," he wrote later that year. "I feel a great desire to put off those who believe in me."

So when his friend the artist Jean Arp (also known as Hans) had an opening in Brussels, Miró took the occasion to visit the Netherlands for the first time. He went to the Mauritshuis, in the Hague, and the Rijksmuseum. There, as he later wrote, he was "seduced by the ability of the Dutch painters to make dots as tiny as grains of dust visible and to concentrate attention on a tiny spark in the middle of obscurity."

Yet he gravitated not to the pearl earrings and pregnant stillnesses of the Vermeers, but to the raucous, disorderly genre scenes of Sorgh and Steen. He particularly admired Sorgh's "Lute Player" and Steen's "Children Teaching a Cat to Dance," and returned home with postcards of both works.

In the Sorgh, a seated man and a woman exchange meaningful glances during a strenuous music-making session. In the Steen, four unruly children stand a yowling cat on its hind legs as a yapping spaniel looks on. (We might interpret the action as animal cruelty, but Steen's contemporaries would have perceived the scene's combination of beasts, pipes and dancing as sexual innuendo.)

Back in Spain, at his family's farm near Barcelona, Miró decided to make his own versions of the Sorgh and Steen ("Dutch Interior I" and "Dutch Interior II"). He also made a third ("Dutch Interior III") that appears to combine elements from several Dutch paintings. All three are on view, along with the old master works that inspired them.

Also in the Met show are some of Miró's small pencil drawings, along with the postcards he had pinned to his easel. From all of these he synthesized a larger, final study, in charcoal and pencil, for each "Dutch Interior."

The drawings show how swiftly and strategically Miró arrived at the large elements of his composition: the Humpty Dumpty-like lute player in the first painting, or the amoebalike child's profile in the second. Some shapes, like the musical instruments, make the transition more or less intact; others undergo an unnerving "mirómorphosis," to borrow the apt term of the Rijksmuseum essayists Panda de Haan and Ludo Van Halem. Miró transposed some of Steen and Sorgh's figures and, perhaps looking out at the farm, introduced new ones: a bat, a spider, a frog, a fish, a swan. (You can compare his versions with the originals in two diagrams, which the museum helpfully provides.)

Each of his paintings has its own personality, one that doesn't have much to do with its source. His "Dutch Interior I" is a giddy fantasia in green and orange, with the lute player as a kind of Pied Piper to various birds and beasts. The woman from Sorgh's painting has vanished, and with her all suggestions of intimacy.

"Dutch Interior II" is a little bit looser; its hovering, genielike blobs show the influence of Miró's friend Arp, and possibly that of Calder, whose "Circus" performances he had recently seen in Paris.

By "Dutch Interior III" Miró was getting too comfortable, and he knew it; in this painting you can see him resisting the temptation to settle into Sorgh and Steen's cozy spaces, which by then he knew intimately. This canvas is significantly larger than the others, with an arresting background of subtly differentiated yellows. The shapes are harder to read too, without the facial expressions and architectural planes that anchor the earlier works.

Miró called this canvas a "résumé" of the other paintings in the series; the Rijksmuseum seems to agree. But the Met show's curator, Gary Tinterow, has a more persuasive interpretation. He's placed "Dutch Interior III" (which the Met owns) in close proximity to another work by Steen, "Woman at Her Toilet," from the Rijksmuseum's collection.

The correspondence is striking. Miró appears to have taken note of the red stockings of Steen's woman (probably a prostitute), as well as the clogs on the carpet and the dog curled up on the bed. The Steen was in a Swiss private collection at the time, but Miró probably saw a reproduction.

Bookending the "Interiors" are four canvases from Miró's 1928 Paris show and two portraits of women that also date from his stay on the farm. Together, they tell you just how much he got out of his weeklong trip to the Netherlands. Suddenly, the artist who had declared painting his mortal enemy was poring over the old masters.

Was it all part of his scheme to "assassinate painting"? If so, this show suggests, then Miró briefly fell in love with his target. Certainly the moral finger wagging of the Dutch scenes wouldn't have been of much interest to a Surrealist. But the connections between the figures, the codes and cues and gestures that could be subtle (in Sorgh) or flagrant (in Steen) left a strong impression. So, one imagines, did the paintings' down-to-earth, everyday subject matter.

Miró being Miró, though, he pulled the trigger after just three paintings.

"When I finish a work, I see in it the starting point for another work," he wrote. "But nothing more than a starting point to go in a diametrically opposite direction."

"Miró: The Dutch Interiors" continues through Jan. 17 at the Metropolitan Museum of Art; (212) 535-7710, metmuseum.org.

http://www.nytimes.com/2010/11/05/arts/design/05miro.html?ref=design

The Rich, Detailed Fullness Found in Empty

By KAREN ROSENBERG

Courtesy of Michael Rosenfeld Gallery, LLC, New York, NY

Charmion von Wiegand's designs in "The Chakras" (1958-68) recall both a Nepalese yantra and the work of Piet Mondrian.

The Buddhist influence on art of the past 50 years is, like much else in the Buddhist worldview, immeasurable. "Grain of Emptiness: Buddhism-Inspired Contemporary Art," at the Rubin Museum of Art, wisely doesn't attempt such a survey. Instead it offers up an eclectic, not-the-usual-suspects group of five artists: Sanford Biggers, Theaster Gates, Atta Kim, Wolfgang Laib and Charmion von Wiegand.

It may be a stretch to call Ms. von Wiegand (1896-1983) a "contemporary" artist, but never mind; her colorful abstract paintings from the 1950s and '60s are revelatory and relevant. And in any case this show takes the long view, interspersing the recent art with Himalayan works that date from the 12th through 19th centuries. None of the five artists consider themselves Buddhists, but they all lean heavily on the religion's symbols, tenets and rituals. As implied by the show's puzzler of a title, the concept of emptiness, or "shunyata" in Sanskrit, is particularly important to them.

That word requires some clarification, because non-Buddhists will be tempted to interpret it as "nothingness." In Buddhism "emptiness" refers to the interdependence of all phenomena. To put it simply, reality as we know it is an illusion because nothing can exist on its own.

It's also important, for this show's purposes, to distance emptiness and the void from some of their formalist associations. With few exceptions, pared-down imagery has little place in the works at the Rubin. The museum's chief curator, Martin Brauen, who organized the show, writes in his catalog essay that "fullness of form, as manifested for example in a mandala, is emptiness, and emptiness is this fullness of form."
Ms. von Wiegand's paintings, for instance, are extravagantly full: of colors, symbols and spiritual directives. This artist, a friend of Piet Mondrian's who shared his interests in theosophy and neoplasticism, came to know Tibetan Buddhism relatively late in life. In the 1960s, while studying with the Tibetan guru Khyongla Rato, she started to incorporate mandalas, chakras and other Buddhist symbols into her abstract compositions.
At the Rubin you can compare the triangular designs in Ms. von Wiegand's "Chakras" (1958-68) with those in a 17th-century bronze Nepalese yantra, a decorative object used to bring focus to the mind. The painting's frenetic channels of multicolored squares, meanwhile, will have you meditating on Mondrian's "Boogie Woogies."
Mr. Biggers also appropriates Buddhist symbolism in "Lotus" (2007), an enormous glass flower that hangs over the museum's spiral staircase. On its petals he has hand-etched rows of paper-doll-like figures, based on diagrams of slave-ship holds. In another place "Lotus" might evoke suffering and transcendence, but the Rubin's plush, decorous setting makes it look benignly ornamental.
In contrast, Mr. Kim's photographs articulate Buddhist thoughts without doing much in the way of art. His long-exposure photographs of hectic urban streets blur foot and car traffic while retaining architecture, an idea that's as old as Daguerre. And his digitally layered "portraits," which collapse hundreds of facial images into archetypal Tibetan men and women, make the idea of selflessness almost too accessible.
The singers shown in close-up in Mr. Gates's video "Breathing" (2010) flow from Japanese mantras into African-American spirituals. All are members of Mr. Gates's Buddhist/gospel chorus, the Black Monks of Mississippi, which he has been directing since 2008. Their cross-cultural chants fill the galleries, adding to, rather than distracting from, the other works. Performance also figures in the sculptures of Mr. Laib, which combine Minimalist forms with Buddhist rituals. "Rice Meals," for instance, involves a row of brass plates holding small mountains of uncooked rice and hazelnut pollen.
During the show's installation Mr. Laib was a monkish presence, sitting shoeless on the gallery floor as he spooned the pollen from a jar. "If you're not careful, the pollen is sliding down like lava from a volcano, and you have to start all over again," he told the museum crew.
The setup of his latest "Milkstone" (2010), a slightly hollowed white marble slab covered with a thin film of milk, was just as exacting. After pouring milk from a small ceramic pitcher onto the center of the stone, Mr. Laib used a moistened fingertip to drag the liquid out to the corners.
The whole process, which will be repeated daily by trained installers, was austere yet sensuous; it brought to mind not only the history of white monochrome paintings, from Malevich to Robert Ryman, but also Vermeer's milkmaid. "If art is really good it can include everything," Mr. Laib says in one of the catalog's many koanlike statements.
That's food for thought. Still, it's probably best to think of "Grain of Emptiness" as an unorthodox sampling of Buddhism in recent art — one that supplements (but doesn't replace) well-known works by John Cage, Yves Klein, Agnes Martin, Brice Marden, Bruce Nauman and many, many others.
"Grain of Emptiness: Buddhism-Inspired Contemporary Art" continues through April 11 at the Rubin Museum of Art, 150 West 17th Street, Chelsea; (212) 620-5000, rmanyc.org.

http://www.nytimes.com/2010/11/05/arts/design/05rubin.html?ref=design

Documenting Accumulation and Its Discontents

By PENELOPE GREEN

Ethan Hill for The New York Times
Corinne May Botz in her apartment in Williamsburg, Brooklyn

WHEN Corinne May Botz was a preteenager in Glen Rock, N.J., she and her two sisters appeared on a segment of "Good Morning America" as the "bad example," she said recently, in a story about children's messy bedrooms. (Asked by the television reporter why she didn't clean her room, she recalled her 11-year-old self replying airily, "I don't have time!")

Since then, Ms. Botz, now a solemn 33-year-old artist, has found herself ineluctably drawn to the power of *stuff*, and the human fascination with it, an interest she has explored in a body of photographic work that reads like a DSM of contemporary American life and the dark side of domesticity.

For her M.F.A. thesis project at Bard in 2006, she chronicled the homes and possessions of agoraphobics, in luminous photographs that depict, for example, the night table of a Pennsylvania woman who hadn't left her house in years and who experienced anxiety if any of the objects sitting beside her bed were moved. In Germany, on an artist's residency a few years ago, Ms. Botz met a woman who claimed to be in love with the Berlin train station, and she made an oddly affecting video about that strange (and unrequited) passion for a public building, in which the woman frets that she has no privacy with her beloved.

Then there is "The Nutshell Studies of Unexplained Death," Ms. Botz's best-known work, a book of photographs of dollhouse dioramas of true crime scenes put together in the 1940s by Frances Glessner Lee, an heiress turned amateur criminologist. The meticulously built miniatures of mayhem — bloodstains on a tiny pillow! — were created as tutorials in crime detection and now live in the Maryland State medical examiner's office in Baltimore, where Ms. Botz spent six years photographing them, amassing 500 images. (Obsession, as The Village Voice pointed out in a review when "The Nutshell Studies" was published in 2004, can be contagious.) Seen through Ms. Botz's lens, the mini-crime scenes are as lush and moody as a Brian De Palma

film, yet homey, too. The book did well for Ms. Botz's publisher, the Monacelli Press, selling out its first print run.

Last month, the Monacelli Press published her second book, "Haunted Houses," photographs of more than 80 such houses around the country — an appropriate topic for someone who appears to have a lifelong appetite for what the architectural history professor Anthony Vidler would call "warped spaces."

Yet Ms. Botz's insight into them might still surprise you. Ghosts, she notes, are the ultimate agoraphobics. "What's really interesting to me is people who have an extreme perception of space, or an extreme attachment to a space," she said. Ghosts, she added, just don't know how to let go.

Ms. Botz, however, is pretty good at it. A few weeks ago, in her small Williamsburg, Brooklyn, apartment, a ground-floor railroad flat that she shares with her boyfriend, Nate Green, a sculptor, she displayed her disciplined approach to decorating: let in as little as possible.

To be sure, there was a taxidermy squirrel on the chimney ledge, and a vintage dollhouse. Over the kitchen table hung some Halloween accouterments, including a paper accordion of cutout bats and a spider web, neither of which was a seasonal item, Ms. Botz said. "They're always there."

She held up a fake rock, bought in a giddy moment at a recent yard sale. "We try so hard *not* to bring stuff in," she said weakly.

But everyone collects something, she added.

These days, Ms. Botz is trying to collect other people's things.

AFTER her "Good Morning America" debut, Ms. Botz began embellishing her room with old cameras, bottles and license plates, among other items. "At some point, I realized it would get out of hand, and I thought I would just collect with photos instead," she said.

This exchange — of the image for the object — circles in and out of her work.

In her agoraphobia photos, there are no people, just spaces: a plastic hamster environment (sans hamster) filled with tchotchkes; a swag of curtain bedecked with bows. Ms. Botz was curious about the things that made their owners feel safe, and wanted to explore the environments they spent so much time in.

But she also made portraits of her subjects, as a way of getting to know them and as something she could leave them in exchange: her prints for their hospitality.

"I felt like they were doing so much in opening their homes to me, I had to give something back," she said.

For agoraphobics, many of whom are women, it's often the gaze of others that is so troubling; the portrait process was agonizing, they said, but also therapeutic. (A feminist will tell you that an agoraphobic is internalizing social ills, meaning her terror contains both the idea of the home as a prison and the notion that public space is inhospitable to women.) One of Ms. Botz's subjects, an ebullient-sounding artist and writer named Robyn Bellospirito, used her own photographs as a way to soothe her fears when she had to leave the house, taking hundreds of pictures along her route.

It's not an uncommon strategy, as Ms. Botz has learned in her most recent project, for treating a different sort of modern malady.

Professional organizers frequently urge clients to photograph objects they have trouble letting go of, as an assist to "dispossession," said Catherine Roster, research director for the National Study Group on Chronic Disorganization. ("Chronic disorganization" being the phrase used to describe the continuum from those mildly addled by clutter to full-blown hoarders.) Ms. Roster is collaborating on Ms. Botz's new investigation, which examines "the accumulation of objects."

As usual, Ms. Botz is thinking about humans and their compulsions toward their spaces and their stuff. A central tension of American life — the desire to acquire and the subsequent inability to dispossess — is the sore spot she would like to probe.

Ms. Roster, surely one of the few Ph.D.'s in marketing interested in the way people get rid of stuff, is enthusiastic. "This stage is much richer than we'd ever thought," she said the other day. "Acquisition, consumption, meaning — it all gets tangled in this last stage."

She continued: "Getting rid of a possession means abdicating all the pleasures and rights of that possession. And that freaks people out. It goes like this: 'I got this from Aunt Maria; I can't get rid of it. I spent a lot of money on this; I can't get rid of it. I wore this a year ago, I might wear it again; I can't get rid of it. If I get rid of it, I've lost all these opportunities.' That's a kind of death."

And you wonder why it's so hard to clean out your closet.
Indirectly inspired by an upstairs neighbor who is a personal organizer and is constantly de-accessioning — on a shelf in a common hall last week was a neat row of spice bottles, her current giveaway — Ms. Botz contacted Ms. Roster's organization to ask its members' clients to send her objects, along with stories about why the objects mattered to them. In return, she promised to send them photographs of the items.
Slowly, like byproducts of a late night on eBay, the objects began to arrive: a wedding dress, a mandolin, an old sherry bottle. These are just a few of the objects that have leaked into Ms. Botz's tiny space, threatening to overtake the few possessions she and Mr. Green have allowed themselves.
"Like every New Yorker, I'm petrified of bedbugs," she said. "Luckily, everything came from out of state." (Although she did find a dead beetle in the wrapping of a doll sent by a friend.)
Ms. Botz had arrayed the incoming items on a small, low table in her bedroom. There was a red folding umbrella, a notepad from a pharmaceutical company, an ancient portable television, a yellow dress with puffy, capped sleeves.
One itched to throw them out. But their stories were heartbreaking: A professor of medicine wrote about how depression had made it impossible to keep the job she loved, and the pharmaceutical pad she had sent — she had saved four boxes of them, she wrote — was a relic of that long-ago life. An umbrella had been owned by a young woman hit by a car on a rainy day; the umbrella broke, but the woman survived, and she saved it, as she wrote in her note, as a kind of memento mori.
Ms. Botz hasn't settled on a photographic treatment of the objects yet, she said. Maybe she'll rent a storage unit, set it up with all the stuff, so that it looks like a storefront, and photograph the scene.
"But then I'd need a lot more objects," she said. "And I don't know where I'd put them."

http://www.nytimes.com/2010/11/04/garden/04botz.html?ref=design

A Draftsman Who Turned More and More to Dynamism

By KEN JOHNSON

Morgan Library & Museum

"Degas: Drawings and Sketchbooks": "Self-Portrait in a Brown Vest" (1856), part of the exhibition at the Morgan Library & Museum.

Degas was an end and a beginning, a bridge between the neo-classicism of his teacher's teacher, Ingres, and the painting of modern life by that scruffy band of outsiders known as the Impressionists. He was a draftsman of preternatural gifts, the last major artist in a line going back to Giotto to make exacting delineation of the real world a central drive. But in his acute attention to empirical experience, stripped bare of the academic apparatus of myth, historicism and moralizing, he also was a quintessentially modern man.

Degas's suave blend of old and new is beautifully sampled in a small show of just 20 choice drawings and two sketchbooks at the Morgan Library & Museum. Organized by Jennifer Tonkovich, a drawings curator at the museum, "Degas: Drawings and Sketchbooks" offers a nicely abridged summary of the artist's world.

At the start of the show a male nude deftly limned in black chalk on blue paper in 1856 exemplifies the kind of stodgy academicism he would soon escape. But in two small self-portraits from the same year you start to see the restrained soulfulness that would characterize his mature work. A page on which he modeled his own head in black chalk — at about the size of a pocket watch — along with near-miniature studies of one eye and of one of his hands, is a touching, poetic riff on the old masters. The other, "Self-Portrait in a Brown Vest," painted in oil on a paperback-size sheet of paper, has a luminous, Vermeer-like quality. With his wispy beard and slightly melancholic expression, he seems truly a young man of his time.

Drawn in a pale, sharp pencil line, a portrait of Paul and Marguerite-Claire Valpinçon from 1861 could almost be mistaken for one of the myriad graphite portraits that Ingres cranked out. The picture is an impressive display of realist skill, but it is stiff and formal compared with a wash portrait of Degas's 53-year-old aunt, Rosa Adelaide Aurora Degas, from around 1858.

Standing in a long, simple dress with a white apron, arms crossed at her waist and her straight hair pulled back, she strikes a formidable figure. But her thin-lipped, opened-eyed countenance suggests a spirit of sweet-tempered forbearance. In the loving application of black, gray and pink washes over pencil lines, you can sense the affection Degas must have felt for his subject, his father's eldest sister.

That kind of empathy is less evident in Degas's studies of ballerinas, which seem clinical by comparison. Yet drawings like "Dancer With Arms Outstretched" (around 1878) are among the most telling of his works. Notice how she joins the index finger and thumb of her left hand just so. Her face remains a blur, but the gesture of her arm and hand, highlighted by white gouache, is acutely captured. These are not models posing

in drawing class. They are professional performers executing movements that require years of training and practice to get right, so that they seem to occur naturally and effortlessly.

In other words, rather than objectify the dancers, Degas seems to identify with them, for his kind of art was analogous to theirs. It involved training the mind and body to perform moves that few ordinary human beings are capable of — and to make them seem easy. That is so for another of his favorite subjects: race horses, equine athletes that were bred and raised for speed. As in a charcoal drawing of the front of a horse from 1878 it is not just anatomy that interested Degas. It is the energy contained in the animal's body, the way it moves on its slender, tensile legs. That energy is mirrored in the execution of the drawing, which is animated by Zen-like attention not to detail but to the dynamic animal.

The most compelling of Degas's drawings remain those of particular people. Yet these too focus on characters who have dedicated themselves to one or another kind of refined performance. The balding, bearded double-bass player seen from over his shoulder as he concentrates on his music is drawn in pencil with a crisp, Mozart-like economy. (The work is from 1869.) The bearded flâneur in his bowler hat and perfectly cut suit, rendered in thinned, brown oil paint around 1870, nonchalantly enacts his own carefully scripted theater.

Deep human drama was not Degas's thing generally, but there is a notable exception: "Interior" (1868 or 1869), a painting in the Philadelphia Museum of Art (not in this show), picturing a man and a woman in a small bedroom after a possibly violent interaction.

In the Morgan show there is a study in thinned brown and white oils for the woman seated in the painting. Hunched over and turned away from the viewer, her face in shadow and her white nightdress falling off her shoulder, she embodies aching desolation. Degas's stature among luminaries of late-19th-century French painting may be debated, but none of his rivals had a more empathic sensitivity to the living grammar of the human body.

"Degas: Drawings and Sketchbooks" is on view through Jan. 23 at the Morgan Library & Museum, 225 Madison Avenue, at 36th Street; (212) 685-0008, themorgan.org.

http://www.nytimes.com/2010/11/05/arts/design/05degas.html?ref=design

Aerotropolis

The rise of a vibrant new kind of city – and how Massachusetts missed a chance to have one
By Peter Canellos, Globe Staff | October 31, 2010
CHANTILLY, VA. — Forty years ago, the road to the still-new Dulles Airport cut through miles of loamy forest, darkening the view of the few cars that made their way along it. Then, in a sudden glade, appeared the swooping roof of the Eero Saarinen-designed terminal, gleaming as if poised for takeoff. But there were only a few flights per hour, each announced on a loudspeaker in the accented voice of a "Masterpiece Theater" host. Known more for its architecture than its functionality, Dulles was called the white elephant, the rarest and loneliest of species.
Today, the access road from the Beltway to Dulles is a city unto itself, packed with tens of thousands of homes, plus malls, arts centers, and area attractions. Mostly, there are hundreds of office buildings emblazoned with the most dazzling names in global high tech: UNISYS, IBM, Oracle, ITT. If Dulles were a city, it would be among the hundred most populated in the country. And among the richest: The Northern Virginia boom has sparked changes in the Washington-area economy. Once purely a government town, it now glistens with commerce.
Dulles is no longer an airport but an aerotropolis, a term coined by a University of North Carolina business professor. An aerotropolis is a city of the 21st century, built around a runway in roughly the same way that historic cities grew up around water or rail lines, with a close-in network of businesses, an outer loop of service industries, and suburbs full of homes.
Aerotropolises have emerged in places like the former no man's zone between Dallas and Fort Worth, in suburban Atlanta, and around Schiphol Airport in the Netherlands, near Amsterdam, Rotterdam, and The Hague. They provide what John D. Kasarda, the UNC professor, calls "connectivity" to the global marketplace. International companies want to locate where their executives can step out their doors and be on another continent eight hours later. Firms producing the highest-value goods want to ship them to markets around the world. ("The Web won't move a box," Kasarda declares. "High-end products move by air.") And businesses with tentacles around the globe want a place where all their people can fly in easily for meetings. Such firms are, of course, precisely the type that draw on the innovations created in Boston, but then often move elsewhere. Their major operations — executive offices, high-end manufacturing — get established outside New England. Northern Virginia is one such place, whose growth in high-tech industries has paralleled the Boston area's decline.
Massachusetts does not have an aerotropolis. When confronted with the opportunity to lay the groundwork for a second major airport, 20 years ago, the state passed it up. It was, in the eyes of some economists, a big mistake, the kind that separates the truly global metropolises from the boutique cities.
The reasons were, to a large extent, the usual ones in Massachusetts. Hubris — the sense among many policy makers that economic growth was inevitable, a force to be channeled and, if necessary, limited, rather than given any special encouragement. Local resistance — the belief that any change would harm the quality of life rather than enhance it. And short-sightedness — a sense that transportation was meant to serve those already living here, rather than to be a magnet to attract more.
But there was also a change that few, if anyone, could see.
Corporations that once thought of themselves as rooted in one place began to think of themselves as being everywhere, and wanting a base of operations that was as monolithic, generic, and peripatetic as they were. They wanted to be at an airport. And while Massachusetts has a fine one, its extremely limited environs are too dense, too crowded, to serve the needs of the most expansive corporations.
Boston was in the midst of the greatest boom in recent history when members of the Massachusetts Aeronautical Commission began planning for a second major airport — a Bay State version of Dulles, suitable for handling international traffic. Passengers commuting to the city center would keep using Logan Airport, much the way Reagan National Airport serves the capital.
In the five years between 1983 and 1988, the "Massachusetts miracle" had produced 400,000 new jobs, many of them of the high-wage, high-tech variety that elevates a region to wealth and importance. When computer

visionaries considered the most technology-friendly areas of the country, first was Silicon Valley, near San Francisco, and second was the Route 128 belt around Boston. Everywhere else was far behind.
Logan was under increasing strain. It wasn't just the aging facilities and rows of angry protesters who appeared like clockwork whenever expansion was mentioned: Even with a third harbor tunnel and significant upgrading of facilities, Logan was deemed to be too crowded to meet the future needs of a major economic center.
These conclusions were spelled out in the aeronautics commission's initial report, released in 1990. In light of what's happened over the succeeding two decades, it's clearly a document from another era. The expansionist impulse reflected in its projections is as much a part of Boston's past as the Revolutionary War. It cited studies envisioning an annual increase in air traffic of up to 4 percent. "They all point to the fact that by the year 2010, the existing New England airport system will not be able to handle all the passengers who wish to travel," the report declared.
The commission examined sites that could be held in a land bank while plans were drawn for an airport that would serve between 5 million and 7 million passengers in 2010 and grow to a whopping 30 million in 2020. This would be in addition to Logan's growth, and that of other New England airports. The New England Council, a business policy group, insisted that without a second major airport the Massachusetts economy would be squeezed. In the go-go '80s, Massachusetts was marching to a different beat.
But not entirely. Even as the commission was completing its work, inspecting 182 sites before recommending the surplus Army base at Fort Devens as the likeliest spot, local opposition began to arise, as communities throughout the Boston area rallied in fear of noise, traffic, and disruption. It soon became apparent that political will was lacking as well. Interviews with many who were involved in the project suggest that while some senior officials of both the Dukakis and Weld administrations were intrigued by a second airport, the governors themselves were not.
Dukakis felt that adding high-speed rail to New York would relieve enough air traffic to obviate the need for another airport. He also believed that the blossoming of high-tech industries would be the key to reviving old mill cities outside Boston; new manufacturing plants would spring up on the old bones of Worcester, Lawrence, and Haverhill, just as Wang computers had helped revitalize Lowell. A new airport, he reasoned, might pull jobs from the cities, creating sprawl and congestion.
Weld, for his part, spent part of the 1990 campaign addressing audiences in the high-income towns west of Boston who were convinced a new airport would have planes bearing down on their roofs. Their fears were overblown but understandable. For years, East Boston neighbors had claimed that class bias had deafened policy makers to the airport noise that plagued their communities. The new airport, many believed, would be a form of justice, afflicting suburbanites in the same way that people in Eastie had suffered.
Weld promised to reexamine the projections, ordering a new study by the consulting firm of Arthur D. Little. By 1991, the Massachusetts economy had been battered by recession, and those fast-growth assumptions were off the mark, the Little report concluded. Betty Desrosiers, the chief aviation planner for Massport who had been project manager for the second-airport siting study, recalls that a fresh examination of the winds swirling around Logan turned up the surprising fact that the existing airport could increase its capacity substantially with a new runway to handle takeoffs of commuter aircraft.
It seemed a perfect solution. Communities around Fort Devens and other proposed sites were relieved. Desrosiers remembers having sat at angry community meetings where protesters carried signs with pictures of Dulles Airport and a caricature of a white elephant. There would be no big, new airport on the open fields beyond Route 128. Close-in Logan, with more traffic on a footprint of its size than any airport on the planet, would have to bear the load.
The two succeeding decades have proven either the prescience of the second-airport opponents, or their utter folly. Growth has been sluggish.
Massachusetts' position at the vanguard of the high-tech revolution has diminished. From 2001 to 2009, according to the Bureau of Labor Statistics, high-tech employment shrunk by 14.7 percent. Virginia now has more high-tech workers per capita than Massachusetts.
Between 2000 and 2009, the number of flights at the refurbished Logan actually dropped, though passenger traffic held steady. In the late '80s, the air-travel passenger demand for booming Boston had been 12th

highest in the world; now, it's no longer in the top 50. Logan is the world's 43d busiest airport, but many other cities split their traffic between multiple airports, pushing Boston further down the list of busiest cities. Massachusetts business leaders can only wonder whether this decline was inevitable, or if having a second major airport would have changed the face of the state economy. One who believes a second airport would have created a whole new economic engine is the private equity investor Steve Pagliuca of Boston's Bain Capital. "Airports are the highways of the 21st century," he says, noting that two decades ago, few firms thought primarily in terms of the global market; now, almost all do.

Indeed, the two factors that fueled the explosive growth around Dulles, Dallas-Fort Worth International Airport, and Chicago-O'Hare were the new global focus of many industries combined with the availability of land on which big expansions are possible.

When DFW airport opened, in 1973, it was as isolated as Dulles, laid down on a slice of Texas prairie with nothing but fast-food joints for company; now, it's the world's eighth-busiest airport and its once-tiny host community of Las Colinas is home to the headquarters of four Fortune 500 companies. The factor that initially turned locals against it — they found it too far away from downtown, and many preferred the convenience of Dallas's close-in Love Field — was what fueled the boom: There was ample land for economic development.

Companies that locate near airports don't follow a single script. Some are there for the proximity to air freight, the value of which has grown exponentially. (Over the 30 years between 1976 and 2006, national GDP swelled by 154 percent while exports by air expanded by 1,395 percent.) Others are there for access to regional transportation; large airports outside major cities tend to have ribbons of highway heading in all directions, making them ideal distribution centers. Still other companies are there for the ease of bringing in executives from distant branches around the world.

In most of these factors, Logan doesn't even compete — it simply doesn't have the space to be an airport city. Even with the improved access of the Ted Williams Tunnel, it is too crowded to attract manufacturers looking to build major facilities. There's relatively little room for trucks to fan out and distribute goods throughout New England. And the old, historic neighborhoods surrounding the airport have their own charms and appeals, but aren't right for companies building global headquarters.

What's noticeable around Dulles is the international character of the buildings — the Euro and Asian texture of the designs. (Only the strip malls and housing developments adhere to the faux-Williamsburg look of Northern Virginia.) These offices could be anywhere, from Frankfurt to Osaka. And it's easy to believe that their global functionality appeals to people from outside the United States — or, for that matter, those within the United States who want to expand globally. Their aspirations are written in their architecture, and in their location, next to an airport.

To serve their needs, planners in Bangkok, Beijing, and Dubai have laid out entire pre-fab cities of hundreds of thousands of people to be built around giant new airports. The $35 billion airport city being built outside Incheon, South Korea — the largest private development in the world — will be precisely the size of downtown Boston.

The spaces around American airports have grown up organically, without the rampant planning of Asian and Middle Eastern governments. But their growth has been just as impressive. Given what's happened over the past 20 years at Dulles, DFW, and Chicago-O'Hare, there's no reason to believe a second major airport in New England wouldn't have become a global hub, a bright new face for the region.

In retrospect, the Massachusetts Aeronautics Commission did its job only too well. The former Fort Devens is directly on Route 495, amid huge swaths of open land between economically needy Worcester and Lawrence — a nearly perfect setting for an aerotropolis. It connects easily to Route 128 and is a direct shot up Route 2 from Cambridge.

The long, empty expanse of roadway ending at a beltway is almost eerily similar to the landscape encountered by those planning Dulles. Instead of building an airport, though, Massachusetts chose to make Devens a special economic development district — an aerotropolis without the airport. It hasn't taken off, despite some sporadic successes. Some high-tech and pharma firms, led by Bristol-Myers Squibb, have built new facilities there.

But even after 20 years, Devens promises more than it delivers. Vast expanses still look like a surplus military base, with cracked pavement and abandoned low-rise buildings. Other sections have that empty "Truman Show" quality of a planned community that hasn't quite gelled — flags planted where buildings should be, a sleepy quiet interrupted only by recorded announcements from the Rapid Refill gas station/mini-mart: "Arizona Tea water, two for two dollars."

Almost everywhere are signs attesting to a disappointing reality: "Office/lab space to rent," "Office space for lease," "Build to Suit." And there are political signs for candidates who decry the state of the economy. Some promise tax cuts. Others propose casinos. But like the voters in the struggling towns nearby, most of the candidates seem blissfully unaware of what could have been — and almost certainly should have been — built there.

Peter Canellos is the editorial page editor of The Boston Globe. ■

http://www.boston.com/bostonglobe/ideas/articles/2010/10/31/aerotropolis/

The case against evidence

From fingerprints to high-tech CSI, forensic science plays a much smaller role than you would think

By Keith O'Brien | November 7, 2010

At criminal trials, there is always talk about doubt, reasonable doubt. But in recent years, with the rise of DNA technology and other forensic evidence techniques, many Americans have a growing sense of confidence, if not certainty, that we're locking up the guilty and freeing the innocent. The backbone of modern justice, it seems, is not a judge in a long, black robe, presiding over a courtroom, but a forensic analyst in a crisp, white coat, laboring over a microscope. In science we trust.

A 2006 survey of more than 1,000 Michigan jurors found that nearly half of the jurors expected to see some sort of scientific evidence in every criminal trial. Nearly 75 percent expected to see scientific evidence presented in murder trials. And still another study, published just this year, found that people trusted such evidence almost blindly. In this study, a random sample of 1,201 potential jurors in California said they considered scientific evidence, like DNA and fingerprints, to be far more reliable than the testimony of police officers, eyewitnesses, or even the victims themselves.

Prosecutors call it the CSI effect, suggesting that fictional television shows, like the long-running "CSI," helped convince science-wary Americans to believe in the power of forensics. But the facts haven't hurt, either. At trial, when possible, prosecutors are always keen on
calling forensic experts to testify — even when no forensic evidence has been found. Failure to do so, prosecutors say, would almost surely sink their chances of winning a conviction.

But does forensic evidence really matter as much as we believe? New research suggests no, arguing that we have overrated the role that it plays in the arrest and prosecution of American criminals.
A study, reviewing 400 murder cases in five jurisdictions, found that the presence of forensic evidence had very little impact on whether an arrest would be made, charges would be filed, or a conviction would be handed down in court.
A mere 13.5 percent of the murder cases reviewed actually had physical evidence that linked the suspect to the crime scene or victim. The conviction rate in those cases was only slightly higher than the rate among all other cases in the sample. And for the most part, the hard, scientific evidence celebrated by crime dramas simply did not surface. According to the research, investigators found some kind of biological evidence 38 percent of the time, latent fingerprints 28 percent of the time, and DNA in just 4.5 percent of homicides.
"Forensics had no bearing on the outcome at all," said Ira Sommers, professor of criminal justice at California State University, Los Angeles, who coauthored the research with colleague and fellow professor Deborah Baskin. "It was not a significant predictor of the district attorney charging the case and had no relation to actually getting a conviction. That's a pretty stunning finding considering all the hype around forensic evidence."
And according to Baskin and Sommers, there's reason to believe that the findings aren't limited to murder cases alone. In research yet to be published, the California professors say they have made similar conclusions regarding the small role that forensic evidence plays in solving other crimes as well. In assault, robbery, and burglary cases, investigators collect forensic evidence less than a third of the time, the researchers have found, and only a small fraction of that evidence ever gets submitted to a lab for study, making it essentially "a nonfactor," Sommers said, "a rare phenomenon."
The new research, to be published in the Journal of Criminal Justice, comes at a time when forensic science is already under siege, with some questioning whether certain forensic practices are even that scientific. The National Academy of Sciences authored a report last year questioning the reliability of many forensic methods, deploring the lack of standardization and certification within the trade, and calling for sweeping reforms. The report, which gave voice to concerns that many forensic scientists had been whispering for years, reached the White House, where President Obama directed a subcommittee on forensic science to study the suddenly prickly matter.
That committee is expected to report its findings and make policy suggestions in the coming weeks. Meanwhile, twice in the last 18 months, the Senate Judiciary Committee has held hearings generally bemoaning the state of American forensic science — and perhaps with good reason.
Hundreds of crime labs across the country are unaccredited; laws in most states don't require them to be. And even those with accreditation have had problems. In 2008, the city of Detroit shuttered its crime lab after an audit found a 10 percent error rate in ballistic evidence. Last year, New York's inspector general chastised the state police there for overlooking evidence that a crime lab analyst was fabricating data. Just last spring, San Francisco was forced to shutter its drug analysis unit after allegations that an analyst was skimming seized drugs for personal use. And Massachusetts hasn't been immune to problems. In 2007, the state Executive Office of Public Safety commissioned a report that documented a backlog of untested DNA from 16,000 cases, including homicides and sexual assaults — a discovery that the report labeled "a crisis."
Meanwhile, across the country, a backlog of DNA evidence continues to fester and grow despite the $330 million dedicated since 2004 to attack the mountain of untested evidence. The problem, according to a special report published in June by the National Institute of Justice, is that crime labs' capacity for the work has not kept pace with increased demand for testing. The scientific samples just keep coming in, queuing up to be analyzed.
"I think the district attorney is just like us, just like everybody," said Sergeant Paul McLaughlin, supervisor of one of the homicide squads at the Boston Police Department. "The more the better. The more of this stuff you can get, the more they like it."
Police investigators first began using forensics — specifically, fingerprint identification — near the turn of the 20th century. And as late as the 1960s, such information — as valuable as it was — was stored on rudimentary cards, recalled Frank Jordan, San Francisco's former chief of police, forcing police officers seeking an identification to wade into a sea of paper.

"You had reams and reams of files — file cards with fingerprints — and you had to check them, by hand, in our crime lab," recalled Jordan, a 33-year veteran of the force before his retirement in 1990. "It could easily take a couple of weeks to do that. And if you were going further, and sending it on to the national lab, it would take another three to four weeks again."

Computerization began altering that in the 1980s, Jordan said. And soon thereafter, DNA changed the entire ballgame. In 1990, a federal report determined that DNA evidence was "both reliable and valid." Police and prosecutors quickly began seeking out such evidence, given its power to link a suspect to a crime scene — or exclude a suspect from a crime scene — through a genetic footprint.

Since 1989, according to the Innocence Project, a legal clinic dedicated to exonerating the wrongfully convicted, 261 people have been exonerated and freed from prison due to DNA evidence. And every day, in courtrooms across the country, prosecutors use such evidence to lock up the guilty.

"I can name, off the top of my head, a dozen cases that were practically solved exclusively through forensic evidence," said Patrick Haggan, chief trial counsel for the Suffolk County district attorney's office. "It was the main — if not the only — evidence presented to the jury."

Undeniably, Haggan is right. Across the country, there are many examples where the discovery of DNA, or other scientific evidence, cracked a case that had long gone cold. Just last month in Suffolk Superior Court, prosecutors won a murder conviction in a case that had gone unsolved for 26 years, thanks to DNA that finally linked a career criminal to the rape and murder of an 18-year-old woman.

But Baskin and Sommers say that forensic evidence, while compelling, isn't nearly as important to a murder case as other factors. Analyzing 400 murder cases committed in 2003 in California's Los Angeles County, Indianapolis, and three smaller Indiana cities, the researchers found that cases were more likely to end up in court if witnesses came forward or if the victim and the suspect knew each other. Such factors made cases easier to solve and, apparently, easier to prosecute, according to the research, while, on the other hand, forensic evidence was "not a significant factor."

"I think it's pretty clear that forensic evidence has at best a limited impact on criminal case outcomes — at best," Baskin said. "Really, it's not determinant in the vast majority of cases. It does not significantly impact the conviction of cases. And I think the other point is, few cases actually have forensic evidence."

Perhaps not surprisingly, these findings have not been met with universal applause among investigators, prosecutors, and the people actually doing the work: forensic analysts.

"You're telling me that it doesn't have anything to do with the prosecution?" said Pete M. Marone, who oversees Virginia's four state crime labs and who served on the National Academy of Sciences panel that authored last year's report on the state of American forensics. "If it's insignificant or inconsequential, then why do my people always have to go testify why they didn't find DNA?"

Haggan went a step further, saying the new research seemed "completely inaccurate." He suggested that a broad overview of cases misses the subtleties within a trial and cannot account for how the mere presence of forensic evidence forces the defense to change its tactics. Take, for example, he said, the 2005 murder of cab driver Heureur Previlon in Brighton, in which police linked two suspects to the crime scene through blood found on their clothes. "By placing them at the scene," Haggan said, "they could no longer claim they didn't do it. They had to go with self-defense."

However, both police and prosecutors acknowledge that there is some truth in the new findings. DNA evidence in homicide cases can be hard to come by, they acknowledge, especially in gang-related incidents, drive-by shootings, and cases where victims were randomly targeted. In Fresno, Calif., this year, police have investigated 38 murders, but found DNA in just four, according to Captain Dennis Bridges, commander of the Fresno Police Department's violent crime bureau. And even if they had DNA evidence in more cases, Bridges added, detectives wouldn't know that for days, maybe weeks, after the crime. What matters in the immediate aftermath of a murder, he said, is finding eyewitnesses — just as the new research concludes.

Eyewitness testimony has its own flaws; recent studies have documented deficiencies in our ability to accurately identify our attackers. But police and prosecutors agree that jurors want to hear from real people just like them, who happened to see something horrifying.

"Every case is different. But in the vast majority of extremely serious cases, you need a mix of percipient witnesses and corroboration through forensic evidence," said Middlesex District Attorney Gerard T. Leone.

"If all you have is forensic evidence — even if it's ultra-definitive on its face; DNA matching the defendant and it's in a critical place — jurors still want to hear from people."

Given that reality — and the new findings — Baskin and Sommers say the lesson is clear: Police should spend more time out in the community before a homicide happens, making connections with everyday people, especially in high-crime neighborhoods, so that when a dead body turns up on a street corner, investigators have a better chance of getting witnesses to come forward.

But there's also a secondary lesson, they say, about American society at large and the paradoxical nature of what we say we expect and what we really want. Potential jurors may say in surveys that they want scientific evidence in a criminal trial or that they find DNA evidence more reliable than the testimony of others. "But when push comes to shove," Baskin said, "they're still convinced by someone else testifying that they saw it."

In this way, perhaps very little has changed about criminal trials. Perhaps modern justice isn't so modern after all. Despite all our scientific know-how, jurors weighing life and death decisions still crave what Leone calls the "human element:" the act of watching another person testify and deciding if they're telling the truth.

As these witnesses enter the courtroom, a hush often falls on the gallery. Jurors — bored by days of dry testimony given by well-rehearsed experts — lean forward in their seats, pens at the ready to take notes about what the eyewitness has to say. They have seen this moment on television, too, and it's usually really, really interesting.

Freelance writer Keith O'Brien, winner of the Casey Medal for Meritorious Journalism, is a former staff writer for the Globe. E-mail him at keith@keithob.com. ■

http://www.boston.com/bostonglobe/ideas/articles/2010/11/07/the_case_against_evidence/

Mark Twain, editor's nightmare

Recent highlights from the Ideas blog
By Joshua Rothman | November 7, 2010
The newly released "Autobiography of Mark Twain, Vol. 1" is a bona fide literary event. It's also a triumph for the crack team of editors who've been tunneling out from under a mountain of his manuscripts for six years.
That is how long, according to a great article in California's East Bay Express, it took a team of 12 editors working in the University of California Berkeley's "heavily guarded, multimillion-dollar climate-controlled" Mark Twain vault to put the "Autobiography" together. The team used custom computer software to compare and collate the nearly half-million pages of typed and handwritten material associated with the book; the computer analysis revealed which pages were part of the "master" copy and which were revisions or drafts.
The sheer volume of material was only part of the challenge, however. Twain, whose real name was Samuel Clemens, was not exactly a cooperative subject. His adventurous, perhaps even "postmodern" writing style sometimes flummoxed the editors. Writing in Granta, one of them, Benjamin Griffin, describes a particular section of the "Autobiography" as "one of the most intractable editing tasks I ever came across." In that section, called "Private History of a Manuscript That Came to Grief," Twain includes the emendations of a fictional editor, and his corrections of those emendations. "We had to edit Clemens's editing of the editor's editing," Griffin recalls. "I can feel the wind of the wing of madness tousling my hair, just remembering it."
Jurassic church
Buildings have stories to tell — but so do the materials from which they're made. The Cathedral of St. Ambrose in Vigaveno, Italy, was built in 1612, on a spot where there's been a church since before the year 1000. Yet the stone out of which it's constructed is even older: So old, in fact, that a fossil, almost certainly a dinosaur skull, was recently discovered embedded in the altar.
According to Andrea Tintori, the paleontologist who discovered the fossil, the rock is called Broccatello, and comes from a quarry in Arzo, Switzerland. "We know," he says, "that this type of rock dates geologically to the Lower Jurassic, about 190 million years ago."
This particular kind of rock has been widely used in church construction for hundreds of years, in churches across Europe. The masons who built the Vigaveno cathedral took one chunk of rock and cut it into thin slabs — and there appear to be two cross-sections of the skull, one in another slab of rock used nearby. Paleontologists hope to combine the two cross-sections and produce a 3-D image of the fossil. So the cathedral, already a historic building, turns out to house an even deeper history. Just the sort of thing Tennyson had in mind when he wrote about the dinosaurs in his poem "In Memoriam":
From scarped cliff and quarried stone
She cries, "A thousand types are gone:
I care for nothing, all shall go...."
Joshua Rothman is a graduate student and teaching fellow in the Harvard English department, and an instructor in public policy at the Harvard Kennedy School of Government. He teaches novels and political writing. ■

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What King James wrought

How the Bible still shapes the language
By Jan Freeman | November 7, 2010
In the past week or so, anyone following the news might have read that Jon Stewart is "a thorn in the side of politicians"; that Senator Harry Reid of Nevada won reelection "by the skin of his teeth"; and that people in the newspaper industry "see the writing on the wall."
That well-informed reader wouldn't have been especially surprised to hear that these phrases all come from the same source, the Bible. It has long been an article of faith among speakers of English that biblical language — especially that of the Authorized, or King James, version, published in 1611 — has been immensely influential. The KJV, wrote linguist David Crystal in 2004, "has contributed far more to English in the way of idiomatic or quasi-proverbial expressions than any other literary source."
But just how much was that "far more"? Not even Crystal knew, and with the KJV about to celebrate its 400th year, he set out to explore and tabulate its contributions to everyday language. Now, in "Begat: The King James Bible and the English Language," he has some answers. The short one is "257" — that's the number of familiar idioms, from "be fruitful and multiply" (Genesis) to the whore of Babylon (Revelation), that he credits to the stature and popularity of the King James Bible.
This doesn't sound like a lot, given some past claims that thousands of phrases are Bible-derived. But Crystal is counting only idioms — the expressions we use and modify freely with no reference to their origins. He excludes what he labels "quotations," like "the meek shall inherit the earth" — Bible words that are rarely borrowed for reuse in nonreligious contexts. And even that 257 beats Shakespeare, who has fewer than 100 original phrases to his credit.
But Shakespeare was an innovator, notes Crystal, and a prolific coiner of words, if not of phrases. The translators who produced the KJV were conservative, dedicated to continuing a language tradition. Their mandate was to improve on the earlier English Bibles — "to make...out of many good ones, one principall good one." And in fact, only a handful of our 257 familiar idioms — "how the mighty are fallen," "to every thing there is a season" — appear only in the KJV.
Crystal displays these variants clearly in a tabular appendix, showing which idioms were preserved from earlier Bibles and which were rewritten. Only the KJV, for instance, has "a thorn in the flesh"; earlier versions had "a prick" or "a sting" or "unquietness," none as sharp as that thorn. The KJV asks if a leopard can "change its spots," but the committee might have gone with "a pard may change his diversities," from the Wycliffe Bible. "Cast thy bread upon the waters" is mysterious, but we manage to use it anyway; "lay thy bread upon wet faces" would not have been so versatile.
Other Bible-based idioms have evolved with use so they no longer reflect any one text. "From the cradle to the grave" was once "womb to the grave"; "pride goes before a fall" condenses four much wordier alternatives; our shorthand "fly in the ointment" no longer spells out the stink of the fly-fouled ointment.
But if you think this is dull, sober scholarship, think again. In Crystal's definition, an idiom is an adaptable expression, and his 257 phrases have been adapted, twisted, and punned on to a fare-thee-well. "Signs of the times" begets "whine of the times" (on an advice column) and "shine of the times" (for a hair product). "Love of money is the root of all evil" becomes "Money is the root of all baseball" (and so on) and even "Monet is the root of all evil."
Headline punsters, read this book with caution: When you see what your tribe hath wrought, you may have to conclude that when it comes to biblical wordplay, there's nothing new under the sun.
HELLO, DARKNESS: When even the calendar publishers can't get it right, we don't need to lose any sleep over today's biannual usage problem. But just for the record, today's time shift marked the end of this year's Daylight Saving Time. Not *savings*; just *saving*.
There's no denying that the "savings" version is common — Bryan Garner, in Garner's Modern American Usage, says it's the spelling in about one-fourth of print appearances — but why? Garner blames it on a "miscue" — a momentary confusion over the parsing of the phrase.

"Daylight Saving" is meant as a compound adjective, as in *space-saving* containers, *money-saving* tips, *labor-saving* technologies. But the verbal noun *savings* ("an amount saved") is also widespread, notes Garner, so "using savings as the adjective — as in *savings account* or *savings bond* — makes perfect sense."
The US government contributes to the problem by styling Daylight Saving Time without a hyphen, probably to keep it (superficially) consistent with Central Standard and the other zone designations. But that (along with the capital letters) is a preference, not a rule. Feel free to lower-case, and to add that clarifying hyphen, as we take our leave of *daylight-saving* time.
Jan Freeman's e-mail address is mailtheword@gmail.com, she blogs about language at Throw Grammar from the Train (throwgrammarfromthetrain.blogspot.com). ■

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The Honorable Senator's buddies
Surprising insights from the social sciences

By Kevin Lewis | November 7, 2010
These days, party affiliation seems to be the best predictor of whether a politician supports or opposes a particular policy. However, special interests still manage to drive a lot of votes, and one special interest — the politician's own social network — has a measurable effect. Researchers at Harvard Business School found that members of Congress are significantly influenced by colleagues who happen to be alumni from the same school, especially if a vote is close and less important to home-state business interests. For votes that are important to home-state business interests, having more executives who went to the same school as the politician makes it more likely that the politician will vote in their favor. The importance of social networks even plays out on the Senate floor: How a senator votes is influenced by those senators who are seated nearby, above and beyond the influence of party and state.
Cohen, L. & Malloy, C., "Friends in High Places," National Bureau of Economic Research (October 2010).
Just don't make a single mistake
Women have slowly but surely advanced into traditionally male-dominated occupations, and some men have ventured into traditionally female-dominated roles. Yet, according to a new study, both women and men are in a precarious position in these domains. When people were asked to rate the competence of a male president of a women's college or a female police chief — roles that don't fit stereotypes — they were much less forgiving when he or she made a mistake. The same reaction occurred in the case of a female CEO of an aerospace engineering firm and a female chief judge.
Brescoll, V. et al., "Hard Won and Easily Lost: The Fragile Status of Leaders in Gender-Stereotype-Incongruent Occupations," Psychological Science (forthcoming).
Go easy, he only hurt 10,000 people
Our legal system is grounded in notions of due process and reasonableness. Unfortunately, new research suggests a disturbing paradox: People tend to assign less punishment for harm to more people. When asked to judge fraud, people reacted more harshly to the offender if he had defrauded three people than if he had defrauded 30 people. Likewise, when asked to judge the culpability of executives of a food processing company who had knowingly shipped tainted food, people reacted more harshly if there were two victims than if there were 20 victims. People were also more willing to go along with a coverup if there were more victims. These effects were attenuated — though not reversed — if one of the victims was specifically identified. Nevertheless, an analysis of US jury verdicts in toxic liability cases revealed the same pattern: a significant negative correlation between the number of plaintiffs and punitive damages.
Nordgren, L. & McDonnell, M.-H., "The Scope-Severity Paradox: Why Doing More Harm Is Judged to Be Less Harmful," Social Psychological and Personality Science (forthcoming).
The look of a lawyer
Maybe you shouldn't judge a book by its cover, but you'd be smart to judge a lawyer from his yearbook photo. Ratings of "facial dominance" and "maturity" of the managing partners of top US law firms from both their college yearbooks and current professional photos were associated with the profitability of their firms. It's not clear whether faces just happen to reflect a personality already destined to be successful, or whether the faces themselves, in fitting a certain stereotype of success, help open doors.
Rule, N. & Ambady, N., "Judgments of Power from College Yearbook Photos and Later Career Success," Social Psychological and Personality Science (forthcoming). Boys, girls, and competition
Males are seen as more competitive, especially in areas like sports, business, and technology, and this competitive attitude is often credited for their relative success. But does this supposed competitive advantage actually exist? Several economists ran an experiment with elementary school students to find the answer. Each student was matched against another student to see who would get the most questions right on a timed math quiz. Students were re-matched and re-quizzed several times in the course of an hour. Boys did significantly better on the first quiz, but then their competitive advantage petered out. They did no better than the girls on subsequent quizzes. In fact, boys' superior performance on the first quiz couldn't even be reproduced in another trial two weeks later. So while the boys seemed to experience an initial jolt of

competitive juices, the spur of competition doesn't appear to be a durable explanation for the gender gap. Still, as the authors note, if boys seek out competitive situations more than girls do — even if boys aren't inherently better competitors — that may be enough to give them an edge.
Cotton, C. et al., "The Gender Gap Cracks Under Pressure: A Detailed Look at Male and Female Performance Differences during Competitions," National Bureau of Economic Research (October 2010).
Kevin Lewis is an Ideas columnist. He can be reached at kevin.lewis.ideas@gmail.com. ■

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The party of antihistory

Harvard historian Jill Lepore lays a charge at the Tea Party: abuse of history
By Craig Fehrman | October 31, 2010
The Tea Party movement is too diverse (and too rowdy) to be easily stereotyped. In fact, the one thing holding it together may be its commitment to history — and to the idea that America has deviated from its constitutional course.
This notion that the Tea Party represents a return to original American values is lodged deep in the movement's DNA. "If you read our Founding Fathers," cable commentator Rick Santelli said during the 2009 CNBC segment that first raised the idea of a Tea Party protest, "people like Benjamin Franklin and Jefferson — what we're doing in this country now is making them roll in their graves." Since then, Tea Partiers have expressed their devotion to history through tricorn hats, Revolutionary era flags, and historically driven puns ("Give me liberty, not debt!"). On Fox News, Sean Hannity has told viewers the story of Boston's Liberty Tree and offered a stirring graphic of a second Liberty Tree, with "We the People" emblazoned on its trunk and the apples of "Industry" and "Commerce" dangling from its boughs.
Commentators and opponents have poked fun at this — Stephen Colbert wondered if Hannity's apples were going to be "fermented into stimulus cider" — but the Tea Party's focus on history is something to take seriously. The Tea Partiers certainly do, crafting historical narratives that wrap neatly around their candidates' political goals and drafting the Founding Fathers into the debates over stimulus funding and President Obama's health care plan.
But is that really the right way to think about American history? This question has occupied Harvard historian Jill Lepore for the past year. Lepore is an influential specialist in early American history, and her previous book, "New York Burning," was a Pulitzer Prize finalist in 2006. In her new book, "The Whites of Their Eyes: The Tea Party's Revolution and the Battle over American History," she examines what the Tea Partiers claim about American history — and, more broadly, at how they pursue and value history itself.
Academic historians rarely mix it up with modern political movements. They even more rarely do so by walking into Boston bars, notebook in hand, and interviewing local Tea Partiers. But that's what Lepore did — first for a long story in The New Yorker, where she is also a staff writer, and now in "The Whites of Their Eyes." What she found, and what she dedicates much of her book to arguing, is that the "Tea Party's Revolution...wasn't just kooky history; it was *anti*history."
Lepore admits that the Tea Party movement belongs to a long tradition of squabbling over the Revolution's meaning, a tradition that began before the Revolution had even ended and continued through the Civil War, the Civil Rights debate, and up to today. But the Tea Party has outdone its predecessors on both the left and the right, Lepore suggests, in fashioning a nostalgic and inflexible version of that history. The Tea Party simplifies the Founding Fathers — it turns them into an orderly (and angelic) choir when, in fact, they were a confusing and contradictory group. And Lepore sees this as an error not just of historical fact, but also of historical method. "The study of history requires investigation, imagination, empathy, and respect," she writes. "Reverence just doesn't enter into it."
Over the past few years, Lepore has come at the study of history from several angles, even co-writing a historical novel. She's also pushed her fellow historians to reenter the public conversation — to counter abuses of history. Patrick Maney, who teaches history at Boston College, acknowledges that, outside of Lepore, "There isn't anybody writing like this — who's both informed by today's historical scholarship and aiming at the general public. Right now, she's in a league of her own."
"At first, I didn't want to write about the Tea Party," Lepore admits, sitting in her Cambridge office, which has been overrun by stacks of books, piles of paper, and a few FedEx boxes half-full of fact-checking materials for The New Yorker. "I thought it was being over-reported."
In the spring of 2009, however, Lepore was teaching a course on the American Revolution when Santelli inadvertently launched the Tea Party. Lepore says she and her students started bumping into Tea Partiers on field trips and tracking the analogies their leaders drew between Colonial America and the current moment. When she taught the course again in the fall, the analogies kept cropping up: during the first 9/12 rallies, when people turned out in their best Colonial garb, and again during the rise of Tea Party hero Scott Brown. At that

point, Lepore decided she had to attend some Tea Party events herself — and to start to TiVo some Glenn Beck.

Like many observers interested in the Tea Party — though unlike many Harvard historians — Lepore sat in on meetings; attended rallies, including Sarah Palin's visit to Boston; observed how local elementary teachers taught the Revolution; and explored the historical tourism industry, especially the Boston Tea Party Ship, a replica currently sitting in Gloucester and in serious disrepair. What the Tea Party was marshaling, she found, wasn't patriotic spirit, and it certainly wasn't history. It was, in her term, "antihistory."

Two things separate antihistory from its prefix-less sibling. First, and most obvious, antihistory gets stuff wrong. In our interview, Lepore cites the example of Nevada Senate candidate Sharron Angle, who, in defending herself to The New York Times, claimed that "those words, 'too conservative,' is fairly relative. I'm sure that they probably said that about Thomas Jefferson and George Washington and Benjamin Franklin." The idea of Franklin and Jefferson as social conservatives would certainly surprise their contemporaries, who knew Jefferson for his religious skepticism and Franklin for his public abolitionism.

The second — and, for Lepore, more serious — problem with antihistory is that it hijacks history's raw materials. It takes a messy tumble of personalities and events and quotations and molds them into a static picture, a picture that happens to line up with current policy goals. "In antihistory, time is an illusion," Lepore writes. Antihistory is "more literal than an analogy. It wasn't 'our struggle is like theirs.' It was 'we are there' or 'they are here.' "

These twinned ideas, Lepore writes, add up to a form of "historical fundamentalism, which is to history what astrology is to astronomy, what alchemy is to chemistry." And that's what makes antihistory more troubling than a simple partisan interpretation of history, which is something we've been indulging in for a long time.

"The Whites of Their Eyes" also traces the American tendency to refashion the Revolution for political ends, and Lepore unearths some fascinating examples. In the 1940s, advocates for universal health care invoked John Adams as a guiding spirit. In the 1960s, both sides in Boston's busing debate tried claiming the Founding Fathers. In the 1970s, the "Tea" in "Tea Party" stood not for Taxed Enough Already, as it does today, but for the progressive group Tax Equity for Americans.

Lepore finds the roots of the Tea Party movement's historical impulse not in the Revolution itself, but in the 1970s and the American bicentennial. This was a time of national celebration, especially in Boston. (The new Boston Tea Party ship came over during this period.) But it was also a time of national anxiety. And the competing versions of history that resulted from this split — one from groups like Tax Equity for Americans, the other from their conservative counterparts — remind Lepore of our current moment. "The Tea Party's history reminded me of the story I learned as a school child," says Lepore, who grew up outside Worcester. "I was in the fourth grade, and we came into Boston for the Red Sox and for the bicentennial."

The bicentennial's Revolution, like the Tea Party's, seemed closer to folklore than to history. Lepore says this parallel makes sense. "In both the 1970s and right now, the country's in a bad place. People needed to find something to celebrate in the American past that is somehow unambiguous. I understand that need. But I don't want to found our politics on it."

Lepore first introduced these ideas in her New Yorker article on the Tea Party, which ran in May and contained a number of interviews with Boston-area Tea Partiers. "They're good, sweet people," Lepore says. "They really are interested in the Revolution."

But Lepore's article did not sit well with its subjects. I called Christen Varley, the president of the Greater Boston Tea Party, and she told me that "as a *former* subscriber" — her emphasis — "I never expected the article to be fair." Varley believes Lepore arrived with an agenda, one that reveals itself in her meticulous descriptions of the Tea Party's meeting place, the historic Green Dragon Tavern near Faneuil Hall. "She placed so much more importance on the location than we ever did," Varley says. "I never in a million years would have known this place existed — I'm old and married and don't live in the city." (The Greater Boston Tea Party can no longer meet at the Green Dragon, Varley told me, because someone who was unaffiliated with the group got into one political argument too many.)

Varley and Austin Hess, another Tea Partier interviewed by Lepore, dispute her description not only of their meetings, but also of their ideas. They aren't claiming to be historians and say they shouldn't be held to that standard: Their focus is on political change. When they deploy the Founding Fathers, Varley says, they do so

because "it's a tool we can use — personalizing the ideas about the way government should be. I admit it's a little contrived, but it's no different than campaigning for a candidate or marketing a movie star."
But Lepore believes history should be held to a higher standard. "If Christen says it's window dressing, we don't disagree about that," Lepore says. "But I am not convinced it operates in that way for everyone else."
One way to read the Tea Party is to say that it isn't simply indulging in alternate history, but seeking historical alternatives. The Tea Party gets both in something like Glenn Beck's online (and for-profit) Beck University, where you can enroll in Faith 102 and learn that the Founding Fathers had little interest in separating church and state. Lepore has no problem digging up the details to dispute this sort of thing, showing in "The Whites of Their Eyes" that the Bill of Rights not only prohibited the introduction of an official religion, but did so "at a time when all but three states still had an official religion."
But Lepore also believes that her fellow historians share some of the blame for the Tea Party — or at least for a world in which the Founding Fathers can serve as window dressing. Academic history, according to Lepore, has largely pulled away from with the public sphere. She also traces this to the bicentennial, which contemporary historians dismissed as patriotic schlock and thus forfeited as an opportunity to tell a better, truer story to a country excited about Revolutionary America.
Things have slipped further. In the 1980s, Lepore says, the political right began trying to rescue the Founding Fathers from lefty historians, who increasingly emphasized history's social side over its sweeping narratives and individual achievements. At the same time, the historians abdicated any kind of a public role, which created a space for pop historians — call it the David McCullough school — to start churning out heroic, best-selling biographies. "This saturated the culture with a journalistic perspective on the past," Lepore says, also referencing the rise of the historian as TV talking head. "That way of reaching a reader is to say, 'It was just like now. You could sit down and have a beer with George Washington.' ... I don't hold these people accountable," she says, adding that she admires some of McCullough's books. "But they're all bound up together."
Lepore's next book will be a biography of Franklin and his sister, Jane Mecom, and she hopes it can combine her academic passions with an attention-grabbing narrative. "We can watch him run away, and into history," she says of Ben, "and we can watch what happens to her, left behind."
That's one way historians can have it both ways. "The contribution historians can make to public conversation is to provide the long view," Lepore says. And that means employing not only a historian's facts, but also a historian's methods — not to shut down debate over the meaning of the Revolution, but to keep it going.
The question that remains, of course, is who will listen. In what may be the Tea Party movement's greatest trick, it has managed simultaneously to invoke history and to dismiss historians. Lepore would like to see the media push the Tea Party harder on its historical rhetoric. But she would also like to see historians make themselves, and their knowledge, more available. "The response of many of them is to refuse to participate," Lepore says of her professorial colleagues. "But people will still do it — they just won't be people who know much about history."
Craig Fehrman is working on book about presidents and their books. ■

http://www.boston.com/bostonglobe/ideas/articles/2010/10/31/the_party_of_antihistory/

There's nothing on the first floor

Recent highlights from the Ideas blog
By Joshua Rothman | October 31, 2010
In Boston, apartments have roof decks; in Singapore, they have "void decks." Imagine a building raised on pillars, so that there's a large, empty space underneath. That space is the void deck. Most apartment buildings in Singapore have one.
What's the void deck good for? Everything, apparently. There is this explanation in The Straits Times of Singapore: "Like blank canvasses on which Singapore's ethnic rainbow is painted, void decks host everything from weddings and funerals to romantic trysts and day-long [checkers] sessions that draw retirees from all ethnic groups."
In Singapore it's perfectly normal to host a wedding for hundreds of guests in your building's void deck, or to drop off your kids at a child-care center set up each day in the open space under your building. Singaporeans make good use of the empty space. (The beautiful weather helps, of course.)
Yet the void deck is no accident of design. More than 80 percent of Singapore's population lives in public housing, in buildings designed to government specifications. And Singapore's government ensures that every apartment building mirrors the country's ethnic mix, with Chinese, Malays, and Indians living as neighbors in proportion to their share of the population (77 percent, 14 percent, and 8 percent respectively). The void deck ensures that everyone gets to know each other, and each other's cultures. As the Times puts it, its pleasures are actually "part of Singapore's strictly enforced social policies aimed at ensuring harmony among the races in a region often torn by religious and ethnic strife."
That void deck might look empty, but there's a policy hidden in there. It's another example from architecture of the power of empty space.
Nerdology
Remember when men were men, women were women, and nerds were nerds? Unfortunately, things aren't so simple nowadays. The novelist (and nerd) Benjamin Hale has created a "nerd graph" which he says identifies the "four distinct subspecies of nerds" — geeks, dorks, creeps, and losers. The graph uses two axes — intelligence and sociability — to create four quadrants. Geeks are both social and intelligent (think Bill Clinton) and so are in the upper left; creeps are smart, but asocial (think the Unabomber) and so live on the upper right. As for dorks and losers...take a guess.
Hale's article, "A Taxonomy of the Nerd," published on the media criticism website This Recording, has been leisurely making the academic rounds, for the obvious reason that professors are nerds. The article is slightly mean-spirited, and plainly biased in favor of the geek subspecies, but infighting is an inescapable part of the nerd universe. But Hale's analysis is also surprisingly useful, and even moving. Who hasn't wondered about that high school friend who's drifted inexorably from geekdom to loserdom, or marveled at another's Gatsby-like transformation from creep to geek?
Perhaps Hale's best insight: If you display even "remote interest" in his chart, then you are almost certainly a nerd.
Foreign policy is a journey... no it's a destination... no it's a box of chocolates!
The presidential historian Robert Dallek has an article in the November issue of Foreign Policy that captures perfectly the weird way we talk about war in America. In "The Tyranny of Metaphor," Dallek argues that there are "three historical myths that have led American presidents astray" over the past century: universalism, appeasement, and militarized containment. Presidents and voters resort to these metaphors to make sense of a complicated world, and get confused in the process.
Dallek uses the word "metaphor" in a loose but illuminating way. In language, a metaphor happens when two unlike things are connected with one another, so that their commonality is exposed or asserted. For example, if I say that "life is a journey," I mean that these two unlike things have some qualities in common (a beginning, an ending, a duration, companions, and so on) — but I also imply that life has some journey-like qualities that it might not actually have, like a purpose.
Dallek's idea is that we think metaphorically, and therefore irrationally, about our foreign policy. For example, just as we might think of life in terms of a journey, we keep thinking of every foreign war in terms

of the American story of immigration and inclusion: We have a universalist belief that "inside every foreigner [is] an American waiting to emerge." Similarly, we approach every confrontation in terms of the story of appeasement, and tell ourselves that avoiding unnecessary war is "a return to the failed passivity of the 1930s." And we respond to acts of aggression by reaching back to the metaphor of containment — the idea that aggression must be "contained" by equal and opposite force.

The problem isn't just that these metaphors are seductive in themselves — it's that they are now the stock-in-trade of political and policy argument. It's not enough for one person (President Obama, for instance) to see through these metaphors; the whole political system has to become disenchanted with them, too. Dallek is one of the select group of historians who have been invited to dinner with the president — but there will have to be many more dinner-table conversations across the country if, to use Dallek's own metaphor, the tyranny of metaphor is going to be overthrown.

Joshua Rothman is a graduate student and teaching fellow in the Harvard English department, and an instructor in public policy at the Harvard Kennedy School of Government. He teaches novels and political writing. ■

http://www.boston.com/bostonglobe/ideas/articles/2010/10/31/theres_nothing_on_the_first_floor/

Monitoring your car for a safer driving
06 November 2010 Eureka

Quite apart from the human costs of having an accident, the European Road Safety Observatory (ERSO), which coordinates all activities of the European Community in the field of road accident and injury data collection and analysis, estimates that road accidents are a significant indirect cost of transport, amounting to some 8% of gross domestic product.

Sensors for safety

The Dutch, Spanish and Turkish partners of MEDEA+ project CARING CARS set out to make driving safer by developing an innovative, in-car network of sensors capable of running applications that monitor a driver's vital signs and then responding accordingly. Sensors integrated within specially developed conductive textiles are located in the car steering wheel and, through contact or near-contact with the driver's hands, monitor the driver's heart rate, while wearable sensors provide a range of additional data such as alertness and emotional state. Should a driver fall asleep, a buzzer or a vibration in the steering wheel or accelerator pedal will give the alert and wake him.

The sensor network is coupled with an open-standards control and communications infrastructure which gathers data and acts as a communications gateway to external points of contact, such as the emergency services and eCall, the European automated emergency alert system for summoning help to an automobile accident.

"In the event of a crash, the CARING CARS technology, which incorporates an on-board camera, can assess the severity of the situation and the level of emergency response required," explains Keith Baker, Director of Partnerships of

Philips Applied Technologies, the project's Dutch lead partner. "Data on the location and condition of the passengers can be transmitted to rescue personnel and healthcare professionals and help to identify any potential risks. When emergency teams are on site, information can be communicated to hospitals, increasing

the efficiency of the response and potentially reducing the impact of injuries in the critical first hour or so after an accident.

Spin-off applications

Sensors and technologies developed by the CARING CARS project members have applications for other controllable environments such as offices, homes and hospitals. One line of research into monitoring a baby's temperature with a camera while in a car seat evolved into an application for monitoring people asleep in bed. According to Baker: "A sensor can detect an increase in temperature from the change in colour on a person's face caused by an effect on the blood vessels and aid in monitoring the sleeping patterns of people suffering from chronic obstructive pulmonary lung diseases (COPD), such as bronchitis or emphysema, either in hospital or their homes. COPD is a rising problem for the greying population. It's useful to be able to monitor a COPD patient's sleeping pattern to check whether it's comfortable, or whether they have a problem with an infection or the oxygen level in their blood, and wake them if necessary to use a respirator."

Keeping an eye on novice motorists

According to ERSO, 16-25 year old drivers are two to three times more likely to have an accident than more experienced drivers, while recent road casualty statistics from the UK's Department for Transport show that a third of men who are killed or seriously injured on Britain's roads are under 25. For each young driver killed, 1.3 others also die, either passengers or other road users.

Some insurance companies won't insure young drivers, while others charge prohibitively expensive premiums; according to the UK's Automobile Association, the average cost of insuring 17-22 year olds has rocketed by 51% in the last year alone. Some companies are showing an interest in the CARING CARS technology as a way of monitoring the on-road behaviour of young drivers. The system would enable them to offer younger motorists with a record of safe driving more affordable premiums or, as an ultimate sanction, withdraw cover from reckless drivers. The project's Dutch partner NXP, a leading manufacturer of semiconductors, is currently developing 4,000 modules with an insurance company for trials in Assen, which is known as 'Sensor City' for its major sensor network.

High market potential

The project partners are also collaborating individually with telecoms providers and vehicle manufacturers to develop and test specific applications. The market potential for such applications is high, and includes a wide range of commercial driving applications such as taxicabs, commercial vehicle fleets and hire cars. Spanish aerospace partner Deimos is currently developing applications for eCall in Spain, and Turkish partner Tofaş, which makes light commercial vehicles for the European market, is developing a computer module for Fiat and PSA Peugeot Citroën.

All the services developed rely on the use of an on-board control unit and gateway capable of linking to a range of wireless networks. "We envisage vehicle manufacturers installing the on-board unit into top-end cars as standard one day," says Baker, "enabling its facilities to be marketed as a range of additional vehicle options either by the manufacturers or third party service suppliers. By 2018, all new cars could be fitted with such on-board units, offering the same potentially life-saving facilities as those demonstrated by CARING CARS."

http://www.eurekanetwork.org/showsuccessstory?p_r_p_564233524_articleId=595114&p_r_p_564233524_groupId=10137

http://www.alphagalileo.org/ViewItem.aspx?ItemId=89099&CultureCode=en

Investigating possible link between 'Periods' and ovarian cancer

02 November 2010 Association for International Cancer Research

SCIENTISTS in London are investigating a possible link between women's menstrual periods and ovarian cancer.
Often called: “The silent killer,” the disease has few symptoms in the early stages, meaning that many cases are diagnosed when the cancer is too advanced to be cured. Worldwide, an estimated 125,000 women die of ovarian cancer each year but its causes are still unknown.
A current theory suggests that the constant injury and repair caused by ovulation may play an important role in causing cancer of the ovaries.
During ovulation an egg is released from the ovary, which involves a 'wound' in the layer of tissue overlying the egg. It is thought that in some women this repeated injury and healing eventually causes the cells in the tissue which lines the ovarian surface to change and become cancerous.
Further evidence that supports this hypothesis is the fact that reducing the number of ovulations a woman has during her lifetime, for example through the use of oral contraceptives, decreases their risk of ovarian cancer.
Dr Tanya Shaw and her team at St George's, University of London, are using funding from the Association for International Cancer Research (AICR) to investigate the damage caused to ovarian tissue when an egg is released and how it is then repaired.
Said Dr. Shaw: "By looking at pre-cancerous lesions and ovarian tumours, we hope to improve our understanding of the relationship between the injury, the healing process and ovarian cancer".
Dr Mark Matfield of AICR said: “Often, its only by backing research into new theories about cancer that we will really change our understanding of how different types of cancer are caused – and how we can treat or prevent them.”

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88838&CultureCode=en

Teens of Epileptic Moms Display Poor School Performance

02 November 2010 Wiley - Blackwell

- **Under embargo until 04 November 2010 04:01 GMT**

Strictly Embargoed Until Thursday, November 4, 2010 at 4:01 AM GMT

A large population-based study revealed that multiple antiepileptic drugs (AEDs) used by pregnant women to control seizures may cause poor school performance in their teenagers. The research team from Karolinska University Hospital and the University of Lund in Sweden confirmed that exposure to AEDs in utero may have a negative effect on neurodevelopment. Their findings now appear online in Epilepsia, a journal published by Wiley-Blackwell on behalf of the International League Against Epilepsy.

Prior studies suggest that exposure to AEDs in utero may cause permanent damage to exposed children. Cognitive and behavioral issues, malformations, psychomotor delay, and lower intelligence quotient (IQ) have all been reported in research of standard therapies for epilepsy. Medical evidence also points out that polytherapy—when multiple AEDs are used—is more harmful than monotherapy (single AED therapy).

The Swedish research team used the Medical Birth Register, Patient Register, and a local study to identify women with epilepsy who gave birth between 1973 and 1986, and their anticonvulsant use during pregnancy. Children's performance in school was obtained from the School Mark Registry, which provides grades for all students leaving compulsory school (age 16 in Sweden). Researchers then linked the data from all registers and identified 1,235 children born to epileptic mothers using AEDs, comparing their school performance to all other children born in Sweden (1,307,083) during the stated time period.

Results showed 641 children were exposed to monotherapy, 429 to polytherapy, and 165 to no known AED treatments in the womb. Those children exposed to two or more AEDs had an increased risk of not receiving a final grade upon completion of schooling, while those exposed to a single anticonvulsant, mainly carbamazepine (CBZ) or phenytoin, did not.

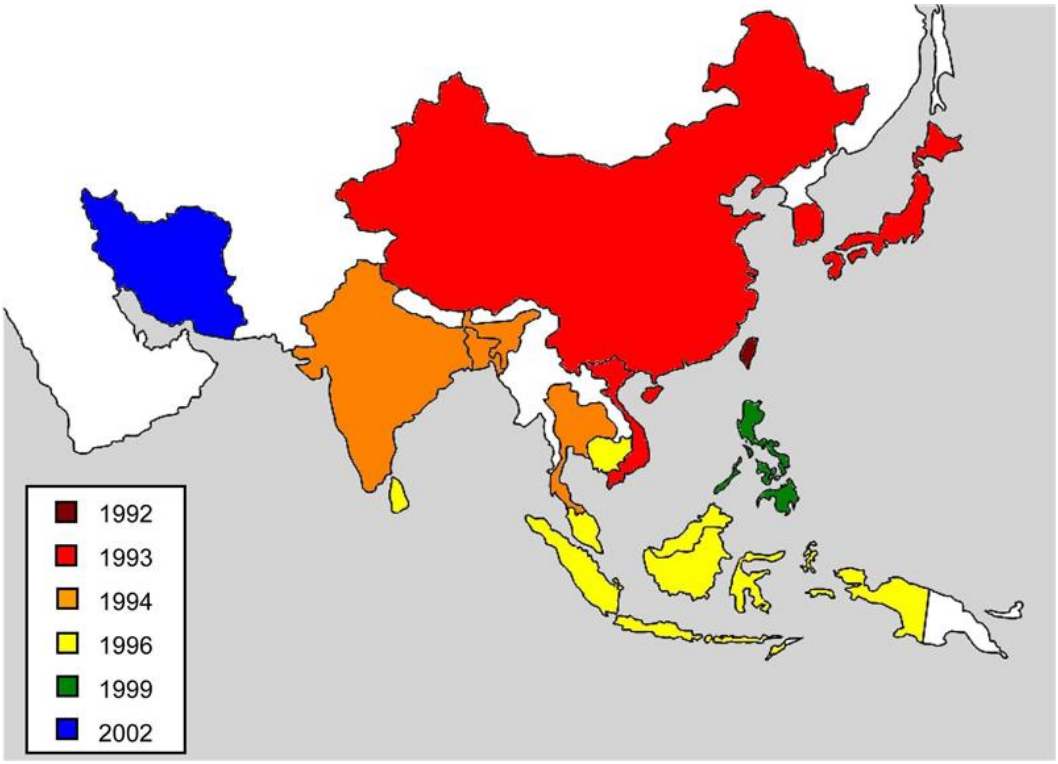
In finding that children exposed to a single AED had no increased risk of completing school without a final grade, the authors confirmed previous medical evidence that failed to show negative effects on nervous system development after exposure to monotherapy. However, the current study did show these children had a reduced chance of earning a "pass with excellence" grade, indicating that single AED use may impair higher cognitive function.

"Our results suggest exposure to several AEDs in the womb may have a negative effect on the child's neurodevelopment," said lead study author Lisa Forsberg, M.D. The findings support current recommendations based upon a study by Harden et al., that if adequate seizure control can be obtained, polytherapy should be replaced by monotherapy during pregnancy to reduce the risk of poor cognitive outcomes. "If possible pregnant women should avoid using multiple anticonvulsants to treat their seizures," concluded Dr. Forsberg.

- **Full bibliographic information**"School Performance at Age 16 in Children Exposed to Antiepileptic Drugs in Utero: A Population-Based Study." Lisa Forsberg, Katarina Wide, and Bengt Källén. Epilepsia; Published Online: November 4, 2010 (DOI: 10.1111/j.1528-1167.2010.02778.x).

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88829&CultureCode=en

Scientists find explanation for global advance of shrimp virus



02 November 2010 Wageningen University and Research Centre
White spot syndrome virus (WSSV) has a devastating impact on shrimp farming throughout the world. What makes the situation even more serious is that the virus seems to become more aggressive as the epidemic spreads, contrary to other viruses, such as flu virus, that gradually die out. Scientists from Wageningen University, part of Wageningen UR, reconstructed the genetic and geographical trajectory of the shrimp virus from the putative ancestral source, and discovered that the fitness of the virus increases over time and the genome shrinks, in a pattern similar to theoretical predictions from evolutionary biology. These remarkable findings have just been published in the online edition of the journal *PLoS One*.

Global shrimp production tripled over the past decade from 750,000 tonnes in the 1990s to more than three billion tonnes over the past five years, severely affecting coastal ecosystems and livelihoods. WSSV is a deadly pathogen for shrimp, and a major threat to shrimp farming for the last two decades. Over time the virus manifested itself more severely. Documented outbreaks in 1992 (China) and 1999 (Ecuador) showed a 70% reduction in local shrimp production in the years after the outbreak. The virus has since spread globally and has even been found in wild crustaceans in Europe.

Wageningen University scientists analyzed samples of the virus in shrimps from five Asian countries, then compared them to each other and published literature on WSSV from Taiwan, China, Vietnam and Thailand. This allowed the authors to clarify which genetic and fitness changes have occurred in the various virus populations since the virus was first discovered.

Deletions

The large genome of the WSSV virus has regions that vary among isolates, which mainly distinguish themselves by missing DNA fragments, or so-called deletions. By lining up a time series of virus samples, the scientists found a remarkable pattern: that the majority of these variable regions disappeared from the genome initially, but that the deletion rate decreased over time in a process that could be mathematically described. Tests with shrimp showed that the virulence of the virus increased accordingly.

Both changes appear to be evolutionary adaptations of the virus to the shrimp farming practices. Additionally the virus seems to have spread over long distances in a short timeframe, which points to transportation of infected shrimps as the major factor. Preventing the virus from spreading is a major area of improvement in combating future virus outbreaks in shrimp production systems. Understanding the epidemiology of WSSV at different temporal and spatial scales should lead to further control and containment of the disease.
http://www.wageningenuniversity.nl/UK/newsagenda/news/P056e.htm

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88817&CultureCode=en

Lactate in the brain reveals aging process

02 November 2010 Karolinska Institutet

Researchers at Karolinska Institutet have shown that they may be able to monitor the aging process in the brain, by using MRI technique to measure the brain lactic acid levels. Their findings suggest that the lactate levels increase in advance of other aging symptoms, and therefore could be used as an indicator of aging and age-related diseases of the CNS.

"It's exciting to think that we are one step closer to understanding what happens as the brain ages, and how a change of brain metabolism may be important during the onset of age-related changes and diseases", says Professor Lars Olson, who lead the study.

The research group used both prematurely and normally aging mice to investigate the relationship between damage to mitochondria — the organelle responsible for energy production in the cell — and changes in metabolism during the aging process. Previous studies have shown a link between mitochondrial dysfunction and age-related neurodegenerative disorders, such as Parkinson's and Alzheimer´s disease.

In the current study, which is published in the *Proceedings of the National Academy of Sciences*, the researchers show that the damage to the mitochondria slowly increases with age in brains of mice and causes altered expression in certain genes that are responsible for the formation of lactate. They also show that brain lactate levels may increase in advance of other indices of aging, and can be detected using non-invasive magnetic resonance imaging techniques.

"Our study was conducted in mice, but the same technique can be used in humans", says Lars Olson. "So there is hope that one day physicians might be able to give your brain a check-up and help determine its age by using MRI."

In addition to Lars Olson's research group at Karolinska Institutet, scientists from the US, Germany and the UK took part in the study. The group will now continue its search for new knowledge, trying to understand the role of high lactate in the brain.

Publication: 'High brain lactate is a hallmark of aging and caused by a shift in the lactate dehydrogenase A/B ratio', Jaime M. Ross, Johanna Öberg, Stefan Brené, Giuseppe Coppotelli, Mugen Terzioglu, Karin Pernold, Michel Goiny, Rouslan Sitnikov, Jan Kehr, Aleksandra Trifunovic, Nils-Göran Larsson, Barry J. Hoffer & Lars Olson, *Proceedings of the National Academy of Sciences* (PNAS), Online Early Edition 1-5 November 2010.

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http://www.alphagalileo.org/ViewItem.aspx?ItemId=88814&CultureCode=en

Ears tuned to water: For a bat's echolocation system all smooth, horizontal surfaces are water – even when they look, smell and feel differently

02 November 2010 Max Planck Institute for Ornithology

PLEASE NOTICE, CHANGE IN EMBARGO TIME! EMBARGOED UNTIL 4pm , 2nd of November 2010

For bats any smooth, horizontal surface is water. Even so if vision, olfaction or touch tells them it is actually a metal, plastic or wooden plate. Bats therefore rely more on their ears than on any other sensory system. This is due to how smooth surfaces reflect the echolocation calls of bats: they act just like mirrors. In nature there are no other extended, smooth surfaces, so these mirror properties prove to be a reliable feature for recognition of water surfaces. Scientists from the Max Planck Institute for Ornithology in Seewiesen investigated this phenomenon in 15 different species from three big bat families and found that all tried to drink from smooth plates. In addition they found that this acoustic recognition of water is innate. (Published in Nature Communications November, 2nd 2010).

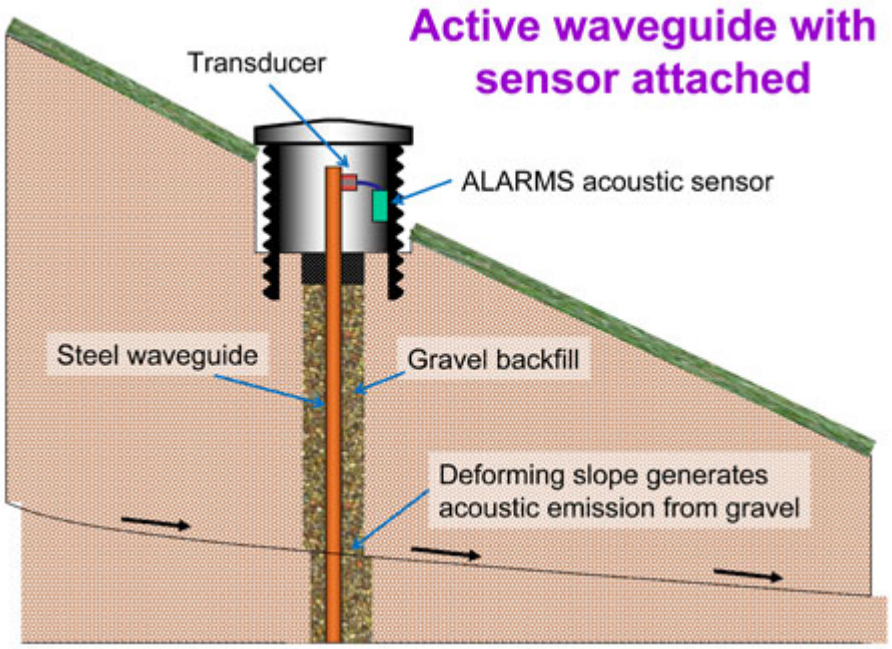
Water is important for bats to get a drink. But many species also use rivers, lakes or ponds for foraging as water insects are soft and easily digestible. In addition prey is easily detectable with echolocation as the water surface acts like a mirror, reflecting the calls almost completely away. Only if there is an insect on the surface, it reflects back an echo.

In their study Stefan Greif and Björn Siemers from the Max Planck Institute for Ornithology simulated water surfaces in a large flight room and offered the bats a smooth and a structured plate each from either metal, wood or plastic. In weak red illumination the researchers observed whether the bats would fall for this trick and try to drink from the smooth plate. They hardly couldn't believe what they saw: "The Schreiber's bat for example tried to drink up to a hundred times in ten minutes from the smooth plate", says Stefan Greif. Three different species, the greater mouse-eared bat, the Daubenton's bat and the greater horseshoe bat showed the same results on all three materials. Only from the wooden plates some bats tried to drink a bit less. To test

how widespread this behaviour is, the scientists tested 11 additional species with one individual each on the metal plate – likewise with a positive result. At least with the insect eating bats this behaviour thus seems to be widely spread.
The researchers were astonished that the animals did not learn that these artificial, acoustic mirrors are no water surfaces. They observed bats that accidentally landed on the smooth plate, took off again and after a few rounds flying resumed their drinking attempts. Even when the scientists placed the plate on a garden table, the bats flew partly underneath the table and then tried to drink, although this certainly is not a natural situation for a pond.
Echolocation dominates other sensory systems
The association of a smooth, horizontal surface with water seems to be very hardwired in a bat's brain. But how do they process the contradictory information coming from other sensory systems? Only in the world of echolocation the metal plate corresponds to water, other sensory systems like vision, olfaction and touch surely tell the bat otherwise. The researchers repeated their experiment in darkness, thereby eliminating the input of vision. The result: the number of drinking attempts increased from 100 to 160 in ten minutes. "So it seems like the bats integrate and weigh up their sensory information, but echolocation dominates all the others", explains Stefan Greif.
Finally the scientists wanted to know if the acoustic information on water is fixed already in the animals' genes. They repeated the experiment with juveniles who had never seen a lake or a river before. Flightless juveniles were captured in a cave together with their mothers and were raised until they were able to fly. These young bats likewise tried to drink on first contact in their life with a smooth surface. The behaviour therefore seems to be not learned but innate.
In nature all smooth, horizontal surfaces might be bodies of water, but what about all those man-made smooth surfaces like skylights, car roofs or winter gardens? If bats so persistently take horizontal mirrors for water, do they also try to drink from these artificial surfaces until exhausted? This question remains unanswered so far. "We think that bats in nature have other possibilities. They show high site fidelity and probably have their established water surfaces. Maybe they try new surfaces, but eventually they will move on", speculates Stefan Greif. But future studies are needed to evaluate the occurrence, extent and potential ecological consequences of such a scenario.

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88808&CultureCode=en

The sound of the underground! New acoustic early warning system for landslide prediction
01 November 2010 Loughborough, University of



Working in conjunction with The British Geological Survey, researchers at Loughborough University have developed a new type of sound sensor system to predict the likelihood of a landslide.
Thought to be the first system of its kind in the world, it works by measuring and analysing the acoustic behaviour of soil to establish when a landslide is imminent so preventative action can be taken.
Noise created by movement under the surface builds to a crescendo as the slope becomes unstable and so gauging the increased rate of generated sound enables accurate prediction of a catastrophic soil collapse.
The technique has been developed through two projects funded by the Engineering and Physical Sciences Research Council (EPSRC).
The detection system consists of a network of sensors buried across the hillside or embankment that presents a risk of collapse. The sensors, acting as microphones in the subsoil, record the acoustic activity of the soil across the slope and each transmits a signal to a central computer for analysis.
Noise rates, created by inter-particle friction, are proportional to rates of soil movement and so increased acoustic emissions mean a slope is closer to failure. Once a certain noise rate is recorded, the system can send a warning, via a text message, to the authorities responsible for safety in the area. An early warning allows them to evacuate an area, close transport routes that cross the slope or carry out works to stabilise the soil.
Neil Dixon, professor of geotechnical engineering at Loughborough University and principal investigator on the project, explains how the system works.
“In just the same way as bending a stick creates cracking noises that build up until it snaps, so the movement of soil before a landslide creates increasing rates of noise,” said Professor Dixon.
“This has been known since the 1960s, but what we have been able to do that is new is capture and process this information so as to quantify the link between noise and soil displacement rates as it happens, in real time – and hence provide an early warning,” he added.
The system is now being developed further to produce low cost, self-contained sensors that do not require a central computer. This work, which is being carried out under the second project funded by EPSRC, is focused on manufacture of very low cost sensors with integrated visual and/or audible alarms, for use in

developing countries. Ongoing work includes field trials, market research and planning commercial exploitation of the technology.

"The development of low cost independent acoustic slope sensors has only become possible in very recent times due to the availability of microprocessors that are fast, small and cheap enough for this task," says Professor Dixon.

As well as the life-saving implications for countries prone to disastrous landslides, the technique can also be used in monitoring the condition of potentially unstable slopes built to support transport infrastructure, such as rail and road embankments, in developed countries such as the UK.

Current development work is being funded through Loughborough University's knowledge transfer account, a fund supplied by EPSRC to help commercial exploitation of inventions arising from its research projects. A commercially available Alarms sensor is expected to be launched in the next two years.

http://www.lboro.ac.uk/service/publicity/news-releases/2010/164_ALARMS.html

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88796&CultureCode=en

Arthritis drugs could help prevent memory loss after surgery, study suggests

01 November 2010 Imperial College London

- **Under embargo until 01 November 2010 19:00 GMT**

Credit: STEVE PERCIVAL / SCIENCE PHOTO LIBRARY Caption: Anti-inflammatory tablets. Blister pack of Decadron tablets, which are used to reduce inflammation and relieve symptoms in a variety of disorders, including rheumatoid arthritis and severe asthma. Decadron is a trade name for dexamethasone, which belongs to the corticosteroid famliy. Corticosteroids inhibit the production of prostaglandins, the chemicals that cause inflammation and assist in the sending of pain signals to the brain. Decadron is made by Merck.

Anti-inflammatory drugs currently used to treat diseases such as rheumatoid arthritis may also help prevent cognitive problems after surgery, according to a new study by researchers at Imperial College London and University of California, San Francisco (UCSF).

The research also reveals for the first time that a specific inflammatory response in the brain may explain why many patients experience memory loss or other forms of cognitive dysfunction after surgery or critical illness. The findings, from research in mouse models, could lead to human clinical trials within a year, the authors say. Their work is published today in the journal Proceedings of the National Academy of Sciences.

For years, anesthesiologists and neurologists have struggled to explain why some patients, especially the elderly, experience confusion, learning disorders and memory loss after surgery – a condition clinicians call post-operative cognitive decline. While typically short-term, this delirium occurs widely in intensive care units, affecting between 28 and 92 per cent of hospitalized patients, depending on their age, health status and type of surgery. It also has been linked to poorer surgical outcomes, as well as an increased risk of mortality, inability to cope and possible permanent dementia.

Until now, researchers have not clearly understood what causes the disorder or how to treat it. The new research suggests that it is caused by cell-to-cell signalling molecules called cytokines released by cells of the immune system. There are drugs already in use that target the activity of cytokines so it is possible that these drugs could be effective against cognitive decline.

The senior author of the study is Mervyn Maze, MB ChB, Professor and Chair of the Department of Anesthesiology and Perioperative Care at UCSF and a Visiting Professor in the Department of Surgery and Cancer at Imperial College London.

"Antibody therapies already are widely used against cytokines to prevent or treat inflammation, so we know that these are effective in humans," said Professor Maze, who began the research at Imperial before moving to UCSF. "This study suggests that one day we also might be able to use these therapies as a single, pre-surgical dose to prevent cognitive decline in susceptible patients."

Previous studies have linked post-operative cognitive decline with the rise in blood levels of a cytokine called interleukin-1 beta (IL-1β), which is involved in inflammation. For this study, Maze and his colleagues studied another cytokine called tumour necrosis factor (TNF-α), which is known to regulate the immune system's inflammatory response before interleukin-1 is produced.

Working with Professor Sir Marc Feldmann – a pioneer in cytokine research in inflammatory disorders and Head of the Kennedy Institute of Rheumatology at Imperial College London – the team gave a single dose of anti-TNF antibody to mice before giving them surgery. They found that the treatment decreased blood levels of IL-1β, limited inflammation in the brain and prevented the mice from showing behavioural signs of cognitive decline.

The research suggests that TNF acts "upstream" of IL-1 and triggers a cascade of immune responses during surgery that provokes the production of IL-1 in the brain, Professor Maze said. That in turn contributes to cognitive decline after surgery or critical illness.

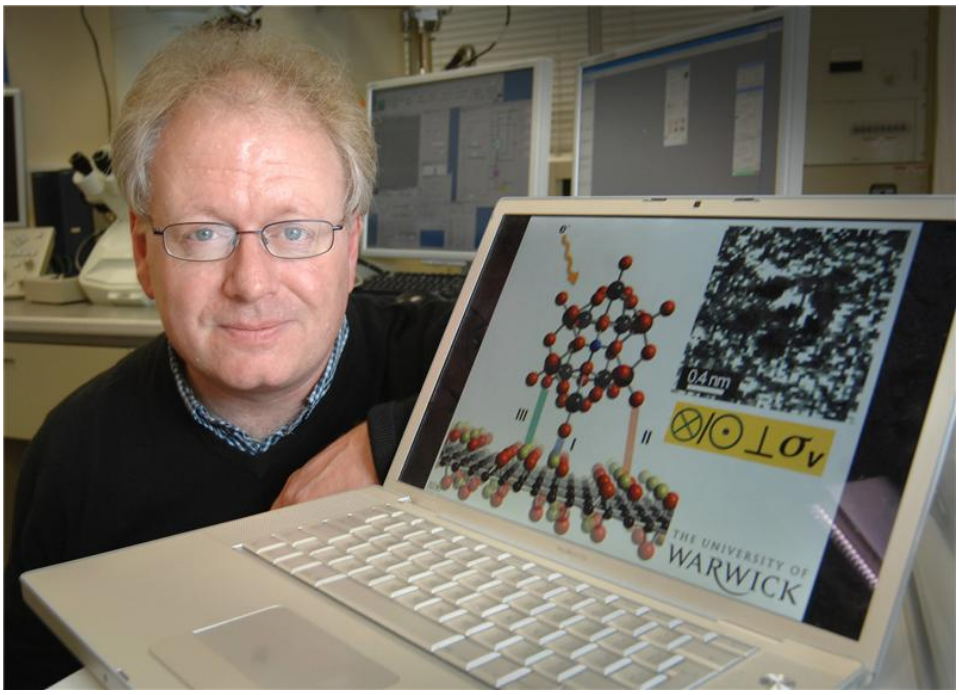
"This is an important observation, as it demonstrates that cytokines are potential therapeutic targets in a wider range of diseases, not just autoimmune disease and cancer for which they are known targets," Professor Feldmann said. "Moreover, effective therapeutics already are available, with a known safety profile and modest cost if used short term."

The study was supported by the Westminster Medical School Research Trust, in London, the Mathilda and Terence Kennedy Institute of Rheumatology Trust, and Arthritis Research UK.

Arthritis Research UK-funded research at its Kennedy Institute of Rheumatology was instrumental in showing the substantial health benefits of anti-TNF therapy in patients with rheumatoid arthritis and has transformed the lives of millions of people worldwide. Medical director of the charity Professor Alan Silman said: "This research shows the potential that these drugs have in other areas of health."

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88778&CultureCode=en

Pivoting Hooks of Graphene's Chemical Cousin could revolutionize work of electron microscopes



Dr Jeremy Sloan, University of Warwick

01 November 2010 Warwick, University of
The single layer material Graphene was the subject of a Nobel prize this year but research led by a team of researchers at the University of Warwick has found molecular hooks on the surface of its close chemical cousin, Graphene Oxide, that will potentially provide massive benefits to researchers using transmission electron microscopes. They could even be used in building molecular scale mechanisms.
The research team, which includes Drs. Jeremy Sloan, Neil Wilson and PhD student Priyanka Pandey from the Department of Physics and Dr. Jon Rourke from the Department of Chemistry together with the groups of Drs. Kazu Suenaga and Zheng Liu from AIST in Japan and Drs. Ian Shannon and Laura Perkins in Birmingham were looking at the possibility of using Graphene as a base to mount single molecules for imaging by transmission electron microscopy. As Graphene forms a sheet just one atom thick that is transparent to electrons it would enable high precision, high contrast imaging of the molecules being studied as well as the study of any interactions they have with the supporting graphene.
While this idea is great in theory, Graphene is actually very difficult to create and manipulate in practice. The researchers therefore turned to Graphene's easier to handle cousin, Graphene Oxide. This choice turned out to be a spectacularly better material as they found extremely useful properties, in the form of ready-made molecular hooks that could make Graphene Oxide the support material of choice for future transmission electron microscopy of any molecule with oxygen on its surface.
Graphene Oxide's name obscures the fact that it is actually a combination of carbon, oxygen and hydrogen. For the most part it still resembles the one atom thin sheet of pure Graphene, but it also has "functional groups" consisting of hydrogen paired with oxygen. These functional groups can bind strongly to molecules with external oxygens making them ideal tethers for researchers wishing to study them by transmission electron microscopy.
This feature alone will probably be enough to persuade many researchers to turn to Graphene Oxide as a support for the analysis of a range of molecules by transmission electron microscopy, but the researchers

found yet another intriguing property of these handy hooks – the molecules attached to them move and pivot around them.
Dr Jeremy Sloan said:
"Under the right conditions the functional groups not only provide molecular tethers that hold molecules in an exact spot they also allow the molecule to be spun in that position. This opens up a range of new opportunities for the analysis of such molecules but could also be a useful mechanism for anyone seeking to create molecular sized "machinery"."
http://www2.warwick.ac.uk/newsandevents/pressreleases/pivoting_hooks_of/

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88769&CultureCode=en

Antibiotics have long-term impacts on gut flora

Credit: JAMES KING-HOLMES / SCIENCE PHOTO LIBRARY Caption: Antibiotic pills. Assortment of antibiotic drugs in tablet and capsule form. Here, examples belonging to the four main groups of antibiotic drugs are represented. From the Tetracycline group are Oxytetracycline 250mg tablets (yellow) and Doxycycline 100mg capsules (green). From the Penicillin group are Amoxycillin 250mg capsules (red/cream). From the Cephalosporin group are Cephalexin 500mg tablets (pink). From the Amino- glycoside group are Erythromycin 500mg tablets (red). There are over 100 types of antibiotic drugs used to treat infections caused by bacteria.

Credit: JAMES KING-HOLMES / SCIENCE PHOTO LIBRARY Caption: Antibiotic pills. Assortment of antibiotic drugs in tablet and capsule form. Here, examples belonging to the four main groups of antibiotic drugs are represented. From the Tetracycline group are Oxytetracycline 250mg tablets (yellow) and Doxycycline 100mg capsules (green). From the Penicillin group are Amoxycillin 250mg capsules (red/cream). From the Cephalosporin group are Cephalexin 500mg tablets (pink). From the Amino- glycoside group are Erythromycin 500mg tablets (red). There are over 100 types of antibiotic drugs used to treat infections caused by bacteria.

01 November 2010 Society for General Microbiology
Short courses of antibiotics can leave normal gut bacteria harbouring antibiotic resistance genes for up to two years after treatment, say scientists writing in the latest issue of Microbiology, published on 3 November.

The researchers believe that this reservoir increases the chances of resistance genes being surrendered to pathogenic bacteria, aiding their survival and suggesting that the long-term effects of antibiotic therapy are

more significant than previously thought.

Antibiotics that are prescribed to treat pathogenic bacteria also have an impact on the normal microbial flora of the human gut. Antibiotics can alter the composition of microbial populations (potentially leading to other illnesses) and allow micro-organisms that are naturally resistant to the antibiotic to flourish.

The impact of antibiotics on the normal gut flora has previously been thought to be short-term, with any disturbances being restored several weeks after treatment. However, the review into the long-term impacts of antibiotic therapy reveals that this is not always the case. Studies have shown that high levels of resistance genes can be detected in gut microbes after just 7 days of antibiotic treatment and that these genes remain present for up to two years even if the individual has taken no further antibiotics.

The consequences of this could be potentially life-threatening explained Dr Cecilia Jernberg from the Swedish Institute for Infectious Disease Control who conducted the review. "The long-term presence of resistance genes in human gut bacteria dramatically increases the probability of them being transferred to and exploited by harmful bacteria that pass through the gut. This could reduce the success of future antibiotic treatments and potentially lead to new strains of antibiotic-resistant bacteria."

The review highlights the necessity of using antibiotics prudently. "Antibiotic resistance is not a new problem and there is a growing battle with multi-drug resistant strains of pathogenic bacteria. The development of new antibiotics is slow and so we must use the effective drugs we have left with care," said Dr Jernberg. "This new information about the long-term impacts of antibiotics is of great importance to allow rational antibiotic administration guidelines to be put in place," she said.

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88772&CultureCode=en

Collecting your thoughts: you can do it in your sleep!

01 November 2010 York, University of

- **Under embargo until 02 November 2010 00:01**

GMT

It is one thing to learn a new piece of information, such as a new phone number or a new word, but quite another to get your brain to file it away so it is available when you need it.
A new study published in the *Journal of Neuroscience* by researchers at the University of York and Harvard Medical School suggests that sleep may help to do both.
The scientists found that sleep helps people to remember a newly learned word and incorporate new vocabulary into their "mental lexicon".
During the study, which was funded by the Economic and Social Research Council, researchers taught volunteers new words in the evening, followed by an immediate test. The volunteers slept overnight in the laboratory while their brain activity was recorded using an electroencephalogram, or EEG. A test the following morning revealed that they could remember more words than they did immediately after learning them, and they could recognise them faster demonstrating that sleep had strengthened the new memories. This did not occur in a control group of volunteers who were trained in the morning and re-tested in the evening, with no sleep in between. An examination of the sleep volunteers' brainwaves showed that deep sleep (slow-wave sleep) rather than rapid eye movement (REM) sleep or light sleep helped in strengthening the new memories.
When the researchers examined whether the new words had been integrated with existing knowledge in the mental lexicon, they discovered the involvement of a different type of activity in the sleeping brain. Sleep

spindles are brief but intense bursts of brain activity that reflect information transfer between different memory stores in the brain -- the hippocampus deep in the brain and the neocortex, the surface of the brain. Memories in the hippocampus are stored separately from other memories, while memories in the neocortex are connected to other knowledge. Volunteers who experienced more sleep spindles overnight were more successful in connecting the new words to the rest of the words in their mental lexicon, suggesting that the new words were communicated from the hippocampus to the neocortex during sleep.

Co-author of the paper, Professor Gareth Gaskell, of the University of York's Department of Psychology, said: "We suspected from previous work that sleep had a role to play in the reorganisation of new memories, but this is the first time we've really been able to observe it in action, and understand the importance of spindle activity in the process."

These results highlight the importance of sleep and the underlying brain processes for expanding vocabulary. But the same principles are likely to apply to other types of learning.

Lead author, Dr Jakke Tamminen, said: "New memories are only really useful if you can connect them to information you already know. Imagine a game of chess, and being told that the rule governing the movement of a specific piece has just changed. That new information is only useful to you once you can modify your game strategy, the knowledge of how the other pieces move, and how to respond to your opponent's moves. Our study identifies the brain activity during sleep that organises new memories and makes those vital connections with existing knowledge."

The paper 'Sleep spindle activity is associated with the integration of new memories and existing knowledge' is published in the *Journal of Neuroscience* at link:
http://www.jneurosci.org/cgi/content/abstract/30/43/14356

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88766&CultureCode=en

Big brothers more likely to bully

01 November 2010 British Psychological Society (BPS)

Credit: MARK CLARKE / SCIENCE PHOTO LIBRARY Caption: MODEL RELEASED. Childhood bullying. Older teenage boy using his fist to hit a younger teenage boy in the face, while also holding him by the neck

Older brothers are more likely to bully siblings than older sisters. This is the finding of research by Dr Menesini from the Universita' degli Studi Di Firenze (Florence, Italy) whose findings were published today, 1st November, in the British Journal of Developmental Psychology.
The study set out to investigate the effects of birth order, gender, personality and family relationship qualities on sibling bullying.
195 children aged 10-12 years old who had siblings that were no more than 4 years older or younger completed questionnaires that gauged their experiences of bullying.
They were asked a range of questions regarding whether they had bullied anyone or been a victim. The results showed that children with older brothers were more likely to report being bullied at home and that boys were more likely to bully if they had a younger sister or brother. This was not the case with older sisters - they were more likely to bully a sibling based on the quality of their relationship rather than their older age.
Dr Menesini said: "It's likely that older sisters are raised to be responsible and protective towards their younger siblings. Older brothers are more likely to be hierarchical and seek to dominate these relationships and maintain this with daily bullying.

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88763&CultureCode=en

Do furnished cages offer better welfare for hens?
01 November 2010 MTT Agrifood Research Finland

In her doctoral dissertation Research Scientist *Eija Valkonen* from MTT Agrifood Research Finland found that hens actively use the nests and perches found in furnished cages. She also found that hens lay as many eggs in furnished cages as in conventional cages.
The study showed that the bone structure of hens kept in furnished cages is stronger than that of hens kept in conventional cages.
"In conventional cages hens lack the opportunity for exercise, which leads to fragile bones, but furnished cages improve bone mineralisation. This supports the hypothesis of improved welfare for the hens. On the other hand, perches were found to increase foot pad lesions and damages to the breastbone," Valkonen says.

Studying animal welfare not straightforward

According to Valkonen the active use of perches and nests suggests that they allow hens to perform certain behaviours identified as being important for them.
"Studying the welfare of animals is never a straightforward matter, and results are invariably ambiguous. They are always open to interpretation, at least as concerns the weighting of different welfare indicators. For example, is it more important to satisfy behavioural needs than it is to avoid the foot pad lesions?" Valkonen ponders.
Despite the room for interpretation, the research scientist believes that furnished cages are better for the hen than conventional cages.

Conventional cages soon history

From the beginning of 2012 the European Union member states will adopt a Directive prohibiting the use of conventional cages for egg-laying hens. Only furnished cages will be allowed, and they must be fitted with perches, nests and litter as well as slightly more space per hen than in conventional cages.
In Valkonen's dissertation study hens were observed in three separate experiments lasting throughout the egg-laying period, i.e. one year. The experiments studied the effects of feed protein content, energy content and limestone supplement on the production and health of hens. A fourth experiment evaluated the effects of perches on feed consumption and behaviour.
The cages under comparison were conventional cages for three hens and furnished cages for eight hens. The floor area of the conventional cages was approximately 1,970 square centimetres and that of the furnished cages 6,000 square centimetres.

Production level stays the same

In her study Valkonen specifically studied the impact of furnished cages on production and feed intake. The cage type has been under development for decades, but very little research has been done on feeding and feed consumption in this production model.
The research results show that hens in furnished cages can reach the same production level as hens in conventional cages. Although minor variation was observed in feed intake, the variation was not significant enough to change current feeding recommendations. "The key indicator in terms of production profitability is feed conversion ratio, or feed intake per one kilogramme of eggs produced. The figure was the same for both of the cage types studied, Valkonen points out.
The doctoral dissertation of M.Sc. (Agriculture & Forestry) Eija Valkonen "Egg production in furnished cages" will be reviewed at the Faculty of Agriculture and Forestry of the University of Helsinki on 12 November 2010. The opponent will be Professor Ragnar Tauson from the Swedish University of Agricultural Sciences (SLU), with Professor Matti Näsi from the University of Helsinki as custodian.
http://www.mtt.fi/english

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88739&CultureCode=en

Morrison Natural History Museum Discovers Baby Sauropod Tracks

Recently discovered baby sauropod hind track from the Late Jurassic Morrison Formation, Morrison, Colorado, USA

01 November 2010 Geological Society of America, The

Tracks of a Running Bipedal Baby Brontosaur?

Staff at the Morrison Natural History Museum have again discovered infant dinosaur footprints in the foothills west of Denver, Colorado, near the town of Morrison. Dating from the Late Jurassic, some 148 million years ago, these tracks were made before the Rocky Mountains rose, when Morrison was a broad savanna full of dinosaurs.

The fossil tracks represent infant sauropods, according to discoverer Matthew Mossbrucker, the museum's director. Sauropods are giant, herbivorous long-necked dinosaurs, sometimes known as "brontosaurs." The sauropod Apatosaurus was first discovered in Morrison in 1877. As long as three school buses parked end to end, and weighing as much as eight Asian elephants combined, Apatosaurus is the largest dinosaur found in the Denver metro area.

Information regarding the new tracks will be presented at the 2010 Geologic Society of America Annual Meeting & Exposition in Denver on Monday, 1 November.

In 1877, Arthur Lakes uncovered the very first apatosaurs - three skeletons of the 30-ton giant that was named Apatosaurus ajax. Later discoveries in Wyoming and Utah proved that sauropods were among the dominant giant herbivores in the Late Jurassic.

Lakes was brilliant - he scrutinized the soft grey-green mudrock and the granite-hard sandstone at the Town of Morrison and recovered great blocks of stone filled with bone. But he did miss some things. He didn't realize that the top of the bone layer was churned by dinosaur feet.
Leading paleontologist Dr. Robert T. Bakker of the Houston Museum of Natural Sciences (who also serves as the Morrison Museum's volunteer curator of paleontology) remarks, "The latest discovery by the Morrison Natural History Museum is a tribute to Director Matt Mossbrucker and his crew of sharp-eyed volunteers. Never before has science given us such an intimate glimpse of baby brontosaurs - a window into Jurassic Family Values."
"Three years ago the Morrison Museum crew detected adult and baby Stegosaurus, hinting that the area had been near a stego nesting ground. The new baby sauropod tracks may well be the very smallest, youngest apatosaurs ever discovered, in the form of bone or trackways. Was Morrison an apatosaur nursery? The evidence is fascinating," muses Bakker.
The tracks are ovular and can be nearly eclipsed by a coffee mug, suggesting that the infant sauropods were about the size of a small dog. While one animal left average walking footprints, another infant dinosaur ran parallel to adult tracks.
The running trackway is unusual. "The distance between each step is two–times wider than what we observe in walking tracks indicating the animal was at a low speed run," remarks Mossbrucker. "I am not aware of any running sauropod tracks anywhere." Nor is Bakker.
Mossbrucker jokes that the diminutive dinosaur was "the world's fastest long-neck." How fast is unknown, but Mossbrucker thinks his brood of four kids wouldn't have a problem catching up to "Speedy the Sauropod."
Surprising to Mossbrucker and colleagues is that the running trackway demonstrates only hindpaw tracks. "Perhaps while the little dinosaur was running the hindpaw eclipsed and crushed the frontpaw track leaving no trace, or perhaps this critter was running only on its hind paws," Mossbrucker states. The walking-gait tracks do show a forepaw track.
Tail drag troughs are absent on both trackways, which is not surprising, because most sauropod trackways do not show a tail drag mark. This evidence, combined with detailed studies of the tail point, lead researchers to believe that sauropod tails were carried off the ground.
"In the end, we might have a baby sauropod that is running like a Basilisk lizard, a modern lizard that is mostly a quadroped, but when spooked it runs on its hindlegs." Studies are underway to understand the biomechanics of Morrison's sauropods and what a running baby sauropod would look like.
Although collected five years ago, these tracks were a part of a backlog of new discoveries made by Museum staff. The continuous stream of discoveries coming from the Morrison Museum lab demonstrates that an energetic small natural history institution can make unique contributions to science and science education.
The tracks are on permanent display at the Morrison Natural History Museum in the recently redesigned "Fossils of the Foothills" exhibition funded by Scientific and Cultural Facility District (SCFD) grants. The Museum is open daily.
http://www.geosociety.org/news/pr/10-63.htm

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88721&CultureCode=en

Scientists seek urgent treatment for fatal sleeping sickness

Professor Colin Suckling

29 October 2010 Strathclyde, University of

Urgently-needed new treatment for a parasitic disease is being investigated in research led at the University of Strathclyde in Glasgow, Scotland.

Human African Trypanosomiasis, also known as sleeping sickness, affects between 50,000 and 70,000 people in Africa and South America. It is transmitted through the bite of the tsetse fly and attacks the nervous system and brain, leading to fever, headaches and disturbed sleep patterns.

Without treatment, the disease is fatal but a new drug to tackle it is being developed in a project led at Strathclyde, with partners from the Universities of Dundee and Glasgow. It has received funding of £648,000 from the Medical Research Council.

Development of the drug is currently at the early pre-clinical stage.

The research is among the technologies which will be on display at Expo ’10, an event showcasing innovative Strathclyde research to business representatives, policy-makers and third sector organisations.

Professor Colin Suckling, of Strathclyde’s Department of Pure and Applied Chemistry, is leading the research. He said: “Sleeping sickness is a threat to the health of millions of people but is extremely difficult to treat. Giving the treatments currently available for it is problematic and these treatments have their own toxicity.

“At the second stage of the disease, when it gets into the brain, the patients have to be treated in hospital and this is often difficult to bring about. We need to develop a treatment which can deal with both forms of sleeping sickness at an early stage- safely, effectively, and, ideally, administered orally.”

Expo ’10 takes place at Glasgow Science Centre on Tuesday, 2 November.

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88703&CultureCode=en

Wartime urologic injuries require different mindset

29 October 2010 Medical College of Georgia

Saving a soldier's life takes precedence over treating traumatic urologic injuries on the battlefield, a Medical College of Georgia researcher says.

Injuries to the bladder, ureters, kidneys and external genitalia often require complex surgical treatment, said Dr. Arthur Smith, an MCG urologist. But during wartime, when those wounds are often combined with other life-threatening injuries, their treatment becomes secondary to lifesaving tactics.

Smith made his comments at a lecture, *Revised Management Strategies for Urologic Injuries During Wartime,* at the Warrior Health Symposium in Canberra, Australia Oct. 30. The symposium is co-sponsored by the Australian Military Medical Association and the Australian Defense Force Joint Health Command.

"Most urological injuries occurring in the civilian setting result from blunt trauma, but they are far fewer in occurrence and their treatment is generally implemented in a straightforward way with an organized and well-supported health care system," he said. "During wartime, though, penetrating injuries are more common and rarely occur in isolation, because victims often receive multiple injuries concurrently. Treatment options must change and be prioritized."

Treating multiple injuries is only part of the problem.

"Other variables," Smith said, "commonly affect surgical intervention: the status of resources, the number of other casualties and, of course, the overall tactical situation."

Advanced weapons such as improvised explosive devices and multiple fragmentation munitions that cause a wide spectrum of injuries also complicate matters, he added. Because treating urologic injuries is a lower priority, complications often arise. In some cases, injuries are discovered later or missed altogether.

"During wartime, casualties are all managed through echelons of care," Smith said. "When someone is injured, he may be treated on the battlefield, at a field hospital, at an evacuation hospital and then transferred to a more permanent location."

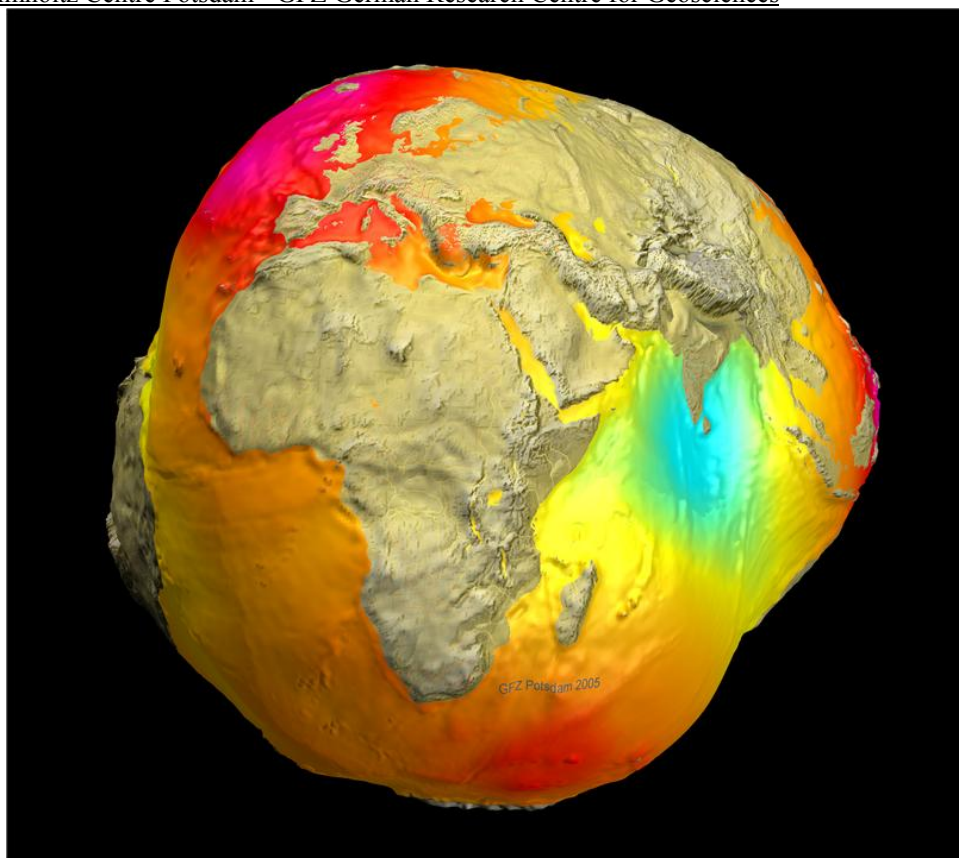
All of those echelons require different treatment strategies, he explained. On the battlefield, treatment is most likely focused on stopping the bleeding; field hospital treatment may include early life-saving amputations; at an evacuation hospital, there may be surgery to repair wounds – and urologic injuries, especially those to the kidneys and internal organs – may not be discovered until then.

"What we have to realize is that it's a very fluid situation often comprised of variable facilities, austere conditions and limited logistics support and evacuation staff. We often have to treat with a damage-control mentality."

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88700&CultureCode=en

Is the ice at the South Pole melting?

29 October 2010 Helmholtz Centre Potsdam - GFZ German Research Centre for Geosciences



The change in the ice mass covering Antarctica is a critical factor in global climate events. Scientists at the GFZ German Research Centre for Geosciences have now found that the year by year mass variations in the western Antarctic are mainly attributable to fluctuations in precipitation, which are controlled significantly by the climate phenomenon El Nino. They examined the GFZ data of the German-American satellite mission GRACE (Gravity Recovery and Climate Experiment). The investigation showed significant regional differences in the western coastal area of the South Pole area.

Two areas in Antarctica are of particular interest because of their potential sensitivity to global climate change: the Antarctic Peninsula, which is currently experiencing a warming exceeding the global mean and the disappearance of large ice shelf areas, and the Amundsen Sector of West Antarctica, where currently the largest flow rates and mass loss of the Antarctic Ice Sheet is occurring. For some glaciers the ice thickness is decreasing rapidly, and glaciers and ice streams are notably retreating back into the interior. With 0.3 millimeters per year, both regions are currently contributing considerably to the global sea level change of about three millimeters per year.

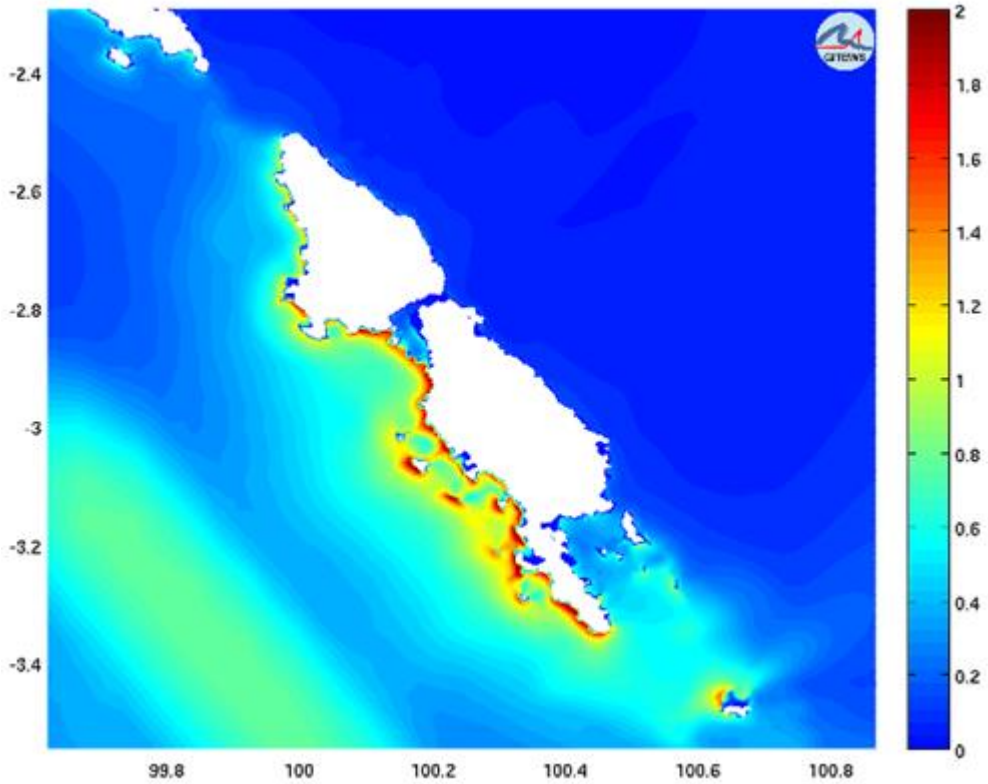
In the study, the mass balance of both regions is reevaluated from gravity data of the satellite mission GRACE. As a result, the estimates were lower than those of conventional mass balance methods. "With the GRACE time series, it was for the first time possible to observe how the large-scale ice mass varies in the two areas due to fluctuations in rainfall from year to year," said the GFZ scientists Ingo Sasgen. It has long been known that the Pacific El Niño climate phenomenon and the snowfall in Antarctica are linked. The complementary piece to the warm phase El Nino, the cold phase known as La Nina, also affects the Antarctic

climate: "The cooler La Nina years lead to a strong low pressure area over the Amundsen Sea, which favors heavy rainfall along the Antarctic Peninsula - the ice mass is increasing there. In contrast, the Amundsen area is dominated by dry air from the interior during this time. El Nino years with their warm phase lead to precisely the opposite pattern: reduced rainfall and mass loss in the Antarctic Peninsula, and an increase in the Amundsen Sectorfield, respectively" explains Professor Maik Thomas, head of the section "Earth System Modelling" at the German Research Centre for Geosciences (Helmholtz Association).
The recording of the entire ice mass of the South Pole and its variations is a central task in climate research and still raises many unanswered questions. In principle, the study could show that the continuous gravity data of the GRACE satellite mission contain another important medium-term climate signal.

Images in printable resolution can be found at:
http://www.gfz-potsdam.de/portal/gfz/Public+Relations/M40-Bildarchiv/Bildergalerie_Satelliten/04+Bildergalerie+GRACE

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88691&CultureCode=en

Information about the Tsunami Alarm in Indonesia from 25/10/2010



29 October 2010 Helmholtz Centre Potsdam - GFZ German Research Centre for Geosciences
On 25/10/2010 at 14:42:21 UTC (= 21:42:21 local time), a strong submarine earthquake with a magnitude of 7.8 occurred about 25 km southwest of the Pagai island in the Sunda Arc off Sumatra (Indonesia). This triggered a tsunami, which devastated in particular the Mentawai Islands, to which which Pagai belongs. The exact number of earthquake and tsunami victims is currently unknown, first estimates are on more than 300 dead.

Already at 14:47:06 UTC (21:47:06 local time, 04 min 46 sec later) the warning system of the Tsunami Warning Centre in Jakarta triggered the tsunami alert. Due to its proximity to the epicenter of the earthquake, the tsunami already arrived around the same time on the island of Pagai, which is probably most affected, many houses here were destroyed by the earthquake and subsequent tsunami.

The tsunami warning was sent from the warning center via satellite to some 400 institutions such as police and local emergency services. The media (TV, radio, internet) also distributed the warning. The main island of the Mentawais received this alert as well.

Contrary to reports stating otherwise, all components of the tsunami early warning system GITEWS (German Indonesian Tsunami early Warning System) worked properly. Reports of broken or even deliberately destroyed system units are entirely unfounded. The detection of the causative earthquake by the seismic network was almost in real time, the corresponding operational image showed relevant warning levels in particular for the western coastline of the Mentawai Islands. The measurement of the tsunami at gauging

stations on the islands and along the coast of Sumatra was accurate, the station at Padang registered the incoming tsunami after 55 minutes correctly with 31 cm wave height. The difference in wave height between the Island of Pagai and the coast of Sumatra is due to the earthquake process itself: most of the energy was radiated in a southwestly direction, to the open sea. The Mentawai Islands also acted as a breakwater in the direction of main island of Sumatra. Therefore, the tsunami alert could lifted after only 56 minutes.

As with the tsunami of Samoa on 30/09/2009 it is shown here that a comprehensive protection against earthquakes and tsunamis is not possible: directly at the source the earthquake and the arrival of the tsunami occur almost simultaneously. The greater the distance to the location of the earthquake, the longer the prewarning time. The risk is very high for the inhabitants of the island chain off Indonesia. The presence of an effective tsunami early warning system should not be reinterpreted in a complete protection from a catastrophe. Counteracting this false sense of security is part of the work of the tsunami early warning system for Indonesia.

Information on the earthquake can be found here:
http://geofon.gfz-potsdam.de/db/eqpage.php?id=gfz2010uxkl

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88685&CultureCode=en

Men, Women, Couples: Decision-making under Risk and the Dynamics of Power Balance

viernes, 29 de octubre de 2010 Max Planck Institute of Economics

A substantial body of research investigates how individuals incorporate risk into their decision process. However, in many day-to-day life contexts of couples, such as financial investments, insurance, retirement plans, or residential location, decisions are (or should be) made jointly. Anthony Ziegelmeyer (Max Planck Institute of Economics), André de Palma and Nathalie Picard (University Cergy-Pontoise, Paris) analyzed how decision-making power is allocated between men and women, and identify the link between risky decisions made by couples and risky decisions. Their most important result: Far from being fixed, the balance of power within the household is not static, but changes over time in a dynamic process.
Couples were presented with tasks involving binary choices between a lottery and a sure payoff. In the first part of the experiment spouses were separated and chose independently. In the second part of the experiment male spouses rejoined their partner and they made joint decisions. The researchers estimated both the spouses and the couples' degrees of risk aversion and they assessed how the risk preferences of the two spouses aggregate when they make risky decisions. In most couples, the man was initially more successful than the woman in influencing couple choices but the woman progressively gained power over the course of decision-making.
This evidence on the dynamics of power balance suggests that actual decision processes within the household are adaptive and depend on the context. Though more research is necessary to validate this finding, recent economic approaches to household decision-making have already allowed for this possibility.
http://www.econ.mpg.de/english

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88676&CultureCode=en

Harassement in hospitals

viernes, 29 de octubre de 2010 The Norwegian University of Science and Technology (NTNU)
It's not just school children who bully and harass each other: a new study co-authored by a researcher at the Norwegian University of Science and Technology shows that doctors are subject to regular harassment and bullying in a number of European university hospitals.
Bullying and harassment are daily fare for many hospital doctors, according to a new study co-authored by a researcher from the Norwegian University of Science and Technology (NTNU).
Among doctors at St. Olavs Hospital in Trondheim, Norway, 11 percent reported that they had been subjected to bullying and harassment at work, while 30 per cent said they had witnessed such harassment.
These are among the findings of a research study published in Work: A Journal of Prevention, Assessment and Rehabilitation, which examined the situation in university hospitals in the four European countries of Norway, Sweden, Iceland and Italy.
Bullying worst in Italy
The study shows that the bullying problem is not unique to St. Olavs Hospital. The situation was worst at the Italian hospital in the study, where 20 per cent of the medical staff reported harassment, of which 40 per cent was harassment by colleagues.
Italy is also different in that most of the harassment took place between managers and subordinates. In Sweden and Norway, hospital staff reported as much harassment from their colleagues as between managers and subordinates.
Absenteeism due to sickness a problem
While Norwegian politicians have expressed concern about the high levels of sick leave in the population as a whole, and blame doctors for being too generous in giving patients sick leave, the problem is the opposite in hospital doctors. According to another study, doctors work even if they are sick themselves. In fact, one unrelated study found that nearly 80 per cent of doctors questioned said they went to work even if they were sick.
Most doctors admitted that they had gone to work in a condition that in their patients would have merited sick leave.
Just 4 per cent absenteeism

At St. Olavs Hospital in Trondheim, about 4 per cent of doctors on average are absent from work due to illness, compared to a rate of 9 per cent in nurses and 11 per cent in other health care workers. These figures are the 2009 net sickness absence rates for the Trondheim hospital. For all industries as a whole, the rate was 7.5 per cent absenteeism due to illness, according to Statistics Norway.

An important reason for the low rate of sick leave may be that doctors are in an occupational group with very high workload, and who thrive in high-speed situations and heavy workloads as compared to other professions. Many in the profession take good care of themselves. They exercise, eat right and have a healthy lifestyle in general.

Unintended consequences

"But a part of the explanation for the low level of absenteeism in doctors due to illness is their high rate of coming to work while sick, "says Lise Tevik Lövseth, who is a PhD candidate at the Norwegian University of Science and Technology's Medical Faculty. Løvseth has a background in work and organizational psychology from the university.

She points out that the situation is unfortunate for both doctor and patient. "One issue is that medical doctors can expose their patients to infection," she says. "But there are other consequences: Doctors may perform more poorly than when they are well, they have an increased risk of choosing the wrong treatment, are worse at communicating with patients, have a lower work capacity and increase the risk of exhausting themselves."

"The problem should also be viewed in the context of mental health. Strikingly, many doctors suffer from depression, suicidal ideation and burnout. The problem is universal, but few report it or seek professional help," Lövseth says.

Big drop

The project of which Lövseth's research is a part was established at the initiative of the Karolinska University Hospital and has been ongoing since 2002.

The purpose is to gather information about academic medicine, which requires doctors to combine research, teaching and specialization in addition to ordinary clinical practice. The combination entails challenges in several areas. It places great demands on individual doctors, who must perform as a kind of professional athlete, but also involves challenges in how he or she handles the balance between work and family/leisure.

"Karolinska University Hospital was concerned about the increased rates of sick leave among its doctors, and that it was difficult to retain employees. Particularly worrisome was the situation for female doctors, who were more likely to be on sick leave than their male colleagues. In addition, women doctors are still underrepresented in the job hierarchy despite the fact that the percentage of women in medicine is greater than ever," explains Lövseth.

Preventive measures

"Karolinska saw the need to investigate this in depth in its organization, as well as in the physicians' choice of career in academic medicine. In this context it is interesting to compare data from several European countries. A common factor for all hospitals was the ever-increasing demand for efficiency, along with a need to conduct research and compete for external research funding."

"Work pressures on the individual are increasing, with an associated negative impact on working conditions. In several European countries this development has advanced quite dramatically. Sooner or later, the same trends will reach Norway. The more we can identify in advance, the better equipped we will be to prevent it, "said Lövseth.

Lövseth emphasizes that management cannot handle all of these challenges alone. "Doctors have a responsibility to find the right balance between professional and personal needs. This balance is extremely important for doctors who choose a career in academic medicine. Without real numbers for absenteeism due to sickness in this occupational group, we will not be able to address the problem and find solutions."

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http://www.alphagalileo.org/ViewItem.aspx?ItemId=88634&CultureCode=en

Atlantic Sea Turtle Population Threatened by Egg Infection

viernes, 29 de octubre de 2010 Wiley - Blackwell
An international team of Mycologists and Ecologists studying Atlantic sea turtles at Cape Verde have discovered that the species is under threat from a fungal infection which targets eggs. The research, published in FEMS Microbiology Letters, reveals how the fungus Fusarium solani may have played a key role in the 30-year decline in turtle numbers.

"In the past 30 years we have witnessed an abrupt decline in the number of nesting beaches of sea turtles worldwide," said Drs. Javier Diéguez-Uribeondo and Adolfo Marco from Consejo Superior de Investigaciones Cientificas- CSIC Spain. "While many of the reasons for this are related to the human impact of the costal environment it has been suspected that the decline is also due to pathogenic microorganisms."

Fusarium solani is a complex fungal strain which represents over 45 phylogenetic and biological species. The fungus is distributed through soil and can cause serious plant diseases. The fungus is known to have infected at least 111 plant species spanning 87 genera and has also been shown to cause disease in other animals with immunodeficiency.

During embryonic development turtle eggs spend long periods covered by sand under conditions of high humidity and warm temperatures, which are known to favor the growth of soil-born fungi.

Dr Diéguez-Uribeondo's team focused their study on the loggerhead sea turtle (Caretta caretta) population on Boavista Island, Cape Verde, off the West African coast. While Boavista Island represents one of the most important nesting regions for this species a high hatching failure rate is driving population numbers down.

The team sampled egg shells with early and severe symptoms of infection, as well as diseased embryos from sea turtle nests located in Ervatao, Joao Barrosa and Curral Velho beaches and discovered 25 isolates of F. solani associated with egg mass mortalities.

Although this fungal species has been previously described in association with different infections in animals, its relationship to hatching failure had not been investigated before this study.

The finding that strains of F. solani may act as a primary pathogen in loggerhead sea turtles represents an extremely high risk to the conservation of loggerhead sea turtles across the area.

However, the description of these particular fungal strains causing this infection may help in developing conservation programs based on artificial incubation and may aid the development of preventative methods in the field to reduce or totally erase the presence of F. solani in turtle nests.

“This work reveals that a strain of F. solani is responsible for the symptoms observed on turtle nesting beaches,” concluded Dr Diéguez-Uribeondo. “This shows that the infection represents a serious risk for the survival of this endangered species, while also showing immunologists and conservationists where to focus their research.”
http://onlinelibrary.wiley.com/doi/10.1111/j.1574-6968.2010.02116.x/abstract

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88664&CultureCode=en

A blue Europe: Important shift for marine and maritime research

jueves, 28 de octubre de 2010 Research Council of Norway, The

Norwegian researchers and research administrators played a key role when representatives of the European marine and maritime research community recently hammered out the foundation for setting research priorities for the coming decade.

The principles are laid out in the Ostend Declaration, which was presented to the European Commissioner for Research, Innovation and Science, Máire Geoghegan-Quinn, at the conclusion of the EurOCEAN 2010 conference held on 12-13 October in Ostend, Belgium.

“Ensuring healthy and productive seas and oceans is one of the Grand Challenges we are facing in the 21st century,” stated Lars Horn, chair of the strategic research body Marine Board-ESF and Department Director at the Research Council, as he handed over the document.

Enhancing existing cooperation
Researchers across Europe are already collaborating closely to safeguard the potential of the seas and oceans, which is essential in the context of job creation and human health and well-being. Nevertheless, further intensification of joint activities is needed. In the declaration, a unified European marine and maritime research community describes the conditions and identifies the challenges that individual countries and research at large will be facing in the coming years.

“More large-scale, multinational research programmes will be needed if we are to meet these challenges,” said Mr Horn, citing the Joint Programming Initiative on Healthy and Productive Seas and Oceans (JPI Oceans) as a good example.

Monitoring and knowledge-sharing
Joint infrastructure is also vital to strengthening pan-European cooperation. “The establishment of an improved common system for observing changes and monitoring developments is essential to our work to safeguard the future health of our seas,” asserted Mr Horn. To this end the Ostend Declaration recommends the establishment of an Integrated European Ocean Observing System.

Knowledge building and sharing was high on the conference agenda. “The marine science community needs to share data, information and knowledge not only with its European neighbours,” stressed Mr Horn, “but with the global science community – particularly in the developing world.” He also emphasised that “training the next generation of scientists will be crucial to maintaining the position Europe has in ocean science.”
JPI Oceans in full swing

In 2009, Norway, together with Belgium and Spain, proposed the establishment of a large-scale, joint European initiative on healthy and productive seas and oceans. The JPI Oceans has now been launched and is well underway. Norwegian Kathrine Angell-Hansen is director of the programme secretariat at the Research Council’s Liaison Office in Brussels.

“Tackling challenges while at the same time developing new and traditional marine and maritime industries will require viewing the seas and oceans in an integrated perspective. The programme was established precisely to take such an integrated approach,” explained Deputy Director General Christina Abildgaard of the Norwegian Ministry of Fisheries and Coastal Affairs when she presented the JPI Oceans at the EurOCEAN 2010 conference.

The programme recently launched its own website: www.jpi-oceans.eu.

http://www.forskningsradet.no/en/Newsarticle/A_blue_future_for_Europe/1253962725608?WT.mc_id=alphagalileo

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88637&CultureCode=en

Patriarchal violence or uncontrolled immigration?

jueves, 28 de octubre de 2010 KILDEN - Information Centre for Gender Research in Norway

Is forced marriage an immigration problem or violence against women and children? According to researcher Anja Bredal, the Norwegian authorities have not totally made up their minds.
What is the best way to combat forced marriage? With immigration legislation or a campaign to fight violence against women in general and ethnic minority women in particular? And what kind of problem are we actually facing – patriarchal violence and oppression or out-of-control immigration and the integration problems that follow?
Framing the problem has consequences
Sociologist and researcher Anja Bredal has analyzed how forced marriage is interpreted and described in public documents. Her study is part of the PLUREQ project (Gender equality, cultural diversity, religious pluralism: State policies and feminist interventions), which has been funded by the Research Programme on International Migration and Ethnic Relations (IMER) under the Research Council of Norway.
"The framing of the problem – that is, how it is defined and interpreted – in debates and political documents has an impact on public policy," says Bredal, who points to the "21-year-old rule" as an example.
This draft legislation was circulated for review by the Norwegian Government in 2006. The proposal required both spouses to be at least 21 years old in order for the marriage to give the right to a Norwegian residence permit if one of the parties was living in a country outside the European Economic Area (EEA). The rule was supposed to reduce the number of marriages in which a young ethnic minority person residing – and often raised – in Norway marries a person from his or her parents' home country who has no connection to Norway. The idea was that a minimum age requirement would deter young, immature minority women from being used as a "living visa" and be forced into marriage against their will, while at the same time limiting immigration based on marriage arranged for this purpose.
"The draft legislation was designed to limit immigration as well as to protect vulnerable women, and it assumed that both of these issues could be addressed by the same law without problematizing the relationship between them," Bredal explains.
Forced to marry regardless
Bredal believes that the need to control the national borders and the need to protect women can often conflict with each other, and that the 21-year-old rule is an example of this. One crucial point, which often gets lost in

the debate, is that the proposed rule did not prohibit young people from marrying, but from bringing their foreign spouses to Norway before they turn 21 years old.

"My research on forced marriage indicates that parents who are determined to marry off a young daughter would go through with the marriage even though her spouse could not come to Norway right away. Then the married woman would have to be kept under control either by the spouse abroad or by the family in Norway until the man received a residence permit," Bredal says.

She believes that the adherents of the 21-year-old rule put too much emphasis on migration as the motivation for forced marriage and downplay the need to control women's sexuality.

"Very often the motive is to gain control over a daughter who has been disobedient if, for example, she has had a hidden romance. Then the parents are in a hurry to marry her off, and they would not want to wait until she turns 21 in any case. If forced marriage had been framed mainly as a problem of violence, it would be easier to see that consideration for the women conflicts with immigration policy considerations."

Different from Denmark

In 2002, Denmark introduced a 24-year-old minimum age requirement for marriages involving persons outside the EEA. Bredal compared Norwegian and Danish policy on forced marriage and violence in intimate relationships, and found some interesting differences.

"Norwegian policy has framed the phenomenon of forced marriage in different ways. At first it was viewed primarily as a cultural and generational conflict within the family which was associated with both gender equality and integration. Therefore, responsibility for this area of public policy had always come under the former Ministry of Children and Families and Ministry of Equality. In the period following the murder of Fadime Sahindal, we saw a change in which there was growing support for combating forced marriage with a stricter immigration law. In Denmark, however, the focus has always been on immigration control, and the area remains the responsibility of the Ministry of Refugee, Immigration and Integration Affairs," the researcher explains.

According to Bredal, the Norwegian authorities have moved away from regarding the issue from an immigration perspective in recent years.

"We see that forced marriage is now positioned between two policy fields, namely violence in intimate relationships and integration."

"On the one hand, the Government's most recent action plan defines forced marriage and honour-related violence as violence in intimate relationships. At the same time, responsibility for the most comprehensive measures against forced marriage was given to the Directorate of Integration and Diversity (IMDI), which does not have expertise in the field and otherwise does not work with issues of violence in intimate relationships. This helps to maintain a view of forced marriage and violence against daughters in ethnic minority families as being a problem of integration, not a problem of violence and gender equality on par with violence in families from the ethnic Norwegian population," Bredal says.

She is also critical of the recent decision by the Ministry of Children, Equality and Social Inclusion to shift responsibility for forced marriage from the department that deals with violence and gender equality to the one that works with inclusion.

"It's positive that the Government has consolidated the efforts on gender equality and inclusion under a single ministry, but it's odd that the ministry has chosen to link forced marriage more closely with inclusion policy – in opposition to the objectives set out in its own action plan," she says.

What kind of violence?

"It's often taken for granted that 'violence in intimate relationships' means violence between partners, which is the main problem for ethnic Norwegian women. The fact that other family members can also exercise violence against women in the family is not sufficiently taken into account," she says.

"If we are going to talk about a general or universal agenda against violence, it must also include violence against women in their roles as daughters, sisters, cousins and the like. It is this violence that hides behind the concept of forced marriage."

"Forced marriage must become more 'common'"

"Violence against ethnic minority women has long been regarded as so special and different that the authorities had to call on NGOs to handle the problem. But the most recent action plan states that the

government is responsible for combating the problem – on equal footing with violence and assault in ethnic Norwegian families. This is an important step forward," says the sociologist, adding a bit wryly:
"My motto is that forced marriage must become more 'common' – in the sense that it should be dealt with by the ordinary system of support services and that we speak more normally about it. The public debate on forced marriage is surrounded by far too much panic, where we hear cries of 'nothing is working' because the number of cases brought to the attention of the support services is increasing."
Anja Bredal thinks that more cases of forced marriage are not necessarily a sign of failed policy.
"Greater numbers tell us that more women who are having problems are seeking out and getting help. But it may also indicate a growing opposition to traditions that used to go unquestioned. After all, cases of forced marriage often involve young people who question their parents' norms, behave 'disobediently', and rebel against what they perceive to be too much interference by their parents, such as arranged marriage. The more young people who say no to marriage plans they don't support, the more parents there will be who find themselves in a situation where they could end up using force. Of course, I'm not saying it's a good thing that the number of forced marriage cases is on the rise. My point is that when a young woman or man asks for help to avoid being married against their will, it's not just a matter of infringement of their rights but of rebellion as well," Bredal concludes.
http://eng.kilden.forskningsradet.no/c52778/nyhet/vis.html?tid=73711

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88625&CultureCode=en

A Study Analyses The Relation Between Sleep Disorders And Risk Perception By Drivers Suffering From This Disorder

jueves, 28 de octubre de 2010 University of Granada

Within the framework of a recent research project, University of Granada researchers will analyse how sleep disorders affect risk perception in driving. To such purpose, three last-generation simulators provided by the Faculty of Psychology will be employed.

The purpose of the first study will be to analyse how a specific sleep disorder–obstructive sleep apnea (OSA)–affects risk perception in driving, as well as the efficacy of the therapies in development to treat it.

Concretely, University of Granada researchers will study how different treatments for OSA improve risk perception in simulated driving. To such purpose, they employed the motorcycle simulator Honda Riding Trainer (HRT) using a multidimensional methodology (psychological, physical, behavioural and subjective measurements).

At present, the University of Granada counts on the only research centre in Europe devoted to study the mental mechanisms leading individuals to risky behaviours when riding a motorcycle. This study could be useful in the future to modify and avoid such behaviours. The Faculty of Psychology was provided with three last-generation simulators in 2009 usually employed to study this type of disorders, within the framework of an agreement signed with the company Honda Motor Co. (Europe).

Innovative software

The simulators have an innovative software developed by Honda Motor Co. The research group led by Gualberto Buela Casal (University of Granada Psychophysiology Laboratory), and the Department of Experimental Psychology professor Antonio Cándido, and made up of researchers Leandro L. Di Stasi, Carolina Díaz, Raúl Quevedo Blasco and David Montalbán will analyse how sleep disorders affect risk perception in driving.

A number of studies have proven that there is an unquestionable association between sleep-related breathing disorders and traffic accidents. In addition, many authors point out that individuals with different sleep patterns show different performance, attention and energy, and traffic accidents are 2 or 3 times more recurrent in this type of patients.

http://canalugr.es/social-economic-and-legal-sciences/item/44295

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88619&CultureCode=en

Obese Children Experience Later Mortality Post Liver Transplantation

jueves, 28 de octubre de 2010 Wiley - Blackwell
Lower Survival Rate for Thin Pediatric Patients in First Year after Transplant

A new study from the University of Washington reported obese children are at increased mortality risk in later years following primary liver transplantation (LT). Pediatric patients who are thin or severely thin, experience an early mortality risk—within the first year post-LT. Details of the ten-year survival analysis are published in the November issue of Liver Transplantation, a peer-reviewed journal of the American Association for the Study of Liver Diseases (AASLD).

Childhood obesity is a serious public health concern worldwide. According to the World Health Organization (WHO), the prevalence of obesity has been increasing at an alarming rate, with 22 million children under the age of five worldwide who are overweight. In the U.S., the National Center for Health Statistics estimates that 17% of children between the ages of 2 and 19 years old are overweight or obese.

"Controversies exist regarding the mortality of patients undergoing liver transplantation at the extremes of body mass index (BMI), and in pediatric patients weight is typically the only factor considered in survival analysis," explained lead study author André Dick, M.D., from Seattle Children's Hospital and the University of Washington. "Our study is the largest thus far to report on the impact of pre-transplant BMI on post liver transplant survival in the pediatric population." Prior studies in adult populations have shown there to be a negative impact on post transplantation survival for LT patients with extreme BMIs.

For the present study, researchers reviewed data from the Organ Procurement and Transplantation Network (OPTN) and found that 7,942 patients less than 18 years of age (who had full BMI data) underwent primary liver transplantation between 1987 and 2007. Using the WHO BMI criteria, the authors categorized patients as severely thin, thin, normal weight, overweight, or obese. During the study period 61% of patients were at normal weight.

Results indicate that children who were thin or severely thin had a significantly lower survival (84%) at one year compared to the survival (89%) of children in the normal and overweight groups. Researchers found no significant difference in survival during the first year after transplantation for obese pediatric patients. However, by the twelfth year following LT, those in the obese group had significantly lower survival (72%) than the survival (77%) of normal weight or overweight pediatric patients.

The authors observed that obesity had a significantly negative impact on pediatric patient survival more than five years after LT. They speculate post metabolic syndrome (PTMS) could contribute to the late morbidity and mortality due to the time it takes to develop long-term obesity-related conditions such as diabetes, hypertension, and hyperlipidemia. Moreover, long-term use of immunosuppressive therapy following transplantation, which while improving patient survival, can exacerbate the effects of PTMS. "Further research is needed to determine the optimal immunosuppressive regimen that will lessen the effects of PTMS," concluded Dr. Dick. "Pre- and post-transplant identification of malnourished or obese pediatric patients, along with optimization of their modifiable risk factors will help to best use scarce donor organs and maximize patient survival."

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88613&CultureCode=en

UvA Astronomy students offer new insight into gaseous and dust discs around stars

jueves, 28 de octubre de 2010 Universiteit van Amsterdam (UVA)
Research by two Master's students from the University of Amsterdam's (UvA) Anton Pannekoek Astronomical Institute (IAP), offers new insight into the structure of the gaseous and dust disc around a so-called 'Herbig Be' star. The measurements taken by the students have led to an article in the scientific journal Astrophysical Journal Letters, which was published this week.

Students Rik van Lieshout and Tullio Bagnoli performed measurements at the observatory on La Palma (Canary Islands). They did this for the Observation Project, part of the UvA's Astronomy and Astrophysics Master's study programme, after first submitting an observation proposal. They studied the Herbig Be star MWC 147, a very young, newly formed star in the transitional stage between massive and less massive stars. The mass of this star is approximately six times the mass of the Sun. The question the students wanted to answer is whether stars much heavier than the Sun are able to form planets.

Herbig Be stars are surrounded by a disk with gaseous and solid particles. The measurements, which Van Lieshout and Bagnoli made with the Belgian Mercator telescope, offer new insight into the structure of the gaseous and dust disc near the star, at a spatial scale much smaller than the orbit of Mercury around the Sun. Planets could possibly be formed in the aforementioned disc. Observations on this scale are usually done with the world's largest telescopes. Thanks to a new instrument developed by staff from the K.U. Leuven, Van Lieshout and Bagnoli could make these measurements with a smaller telescope. Thus, they could describe the physical properties of the gaseous and dust disc, including the geometry and surface brightness. There is an inner and outer disk. The inner disc is flat and appears to pass close the star surface, while the outer disk is much thicker and has a conical shape (the shape of a horn). The inner disc consists entirely of gaseous, due to the high temperature as a result of proximity to MWC 147 (too hot for dust particles). The transition between these two parts of the disk is consistent with earlier findings.

The question is whether stars much heavier than the Sun are able to form planets. The formation of rocky planets through the accumulation of dust grains does not seem possible in the inner flat portion of the disk around MWC 147 because no dust grains can exist there. The dimensions of this flat portion of the disc roughly correspond to the distance between the Sun and Mars in our solar system. A better understanding of planet formation may lead to greater understanding of the formation of our solar system. This requires mapping out the structure of the gaseous and dust disc (the protoplanetary disc, where planets may come into being) from other stars.

The students were accompanied by Prof. Rens Waters (Professor of Astronomy at the University of Amsterdam and Scientific Director of SRON Netherlands Institute for Space Research) and Gerrit van der Plas and Daan Meerburg (both PhD students at the UvA's IAP). In addition, researchers from K.U. Leuven's Institute of Astronomy (Belgium) also contributed to the piece in Astrophysical Journal Letters.

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88607&CultureCode=en

Europe puts Norway's power system to the test

Tinnelva hydropower plant (Photo: Ånund Killingtveit

Research Council of Norway, The

On days with little wind, Europe may have to rely on Norwegian reservoirs to keep its wheels running smoothly in the future. On the Continent, the concept of Norway as Europe's green battery has caught on – but is it feasible in practice?

The Centre for Environmental Design of Renewable Energy (CEDREN) – one of Norway's Centres for Environment-friendly Energy Research – is carrying out the HydroPEAK project to study whether Norway could truly provide Europe's balance power.

When electricity production is based on intermittent sources such as the sun and wind, the power delivered to the grid will vary greatly from hour to hour and from day to night. Consumers, however, expect a constant supply of electricity on the grid, whether during periods of peak demand in the morning and afternoon or periods of low demand at night.

Flexible hydropower

The imbalance between the supply of power and consumer demand is becoming more and more of a problem for energy companies and grid operators, as fossil fuel-based power plants are gradually being replaced by wind farms. Norway's main energy source, hydropower, is unique in that production can easily be adjusted by releasing more or less water through the turbines.

Since Norway has Europe's largest hydropower resources, the Continent's energy companies and grid operators are keenly interested in gaining access to Norwegian reservoirs. The question is, will Norway be able to help Europe with its balance power needs?

Demand exceeds supply

A recent study by the German Advisory Council on the Environment reports that Germany's target to produce all of its electricity from renewable sources by 2050 hinges upon access to a whopping 60 000 MW of balance power.

The study identifies Norway as the only country that could supply such a volume. This amount, however, is several times greater than Norway's potential as estimated by the Norwegian Water Resources and Energy Directorate (NVE). According to NVE, Norway's potential for balance power production in 2030 will total some 20 000 MW. By way of comparison, Norway's total installed capacity is currently 29 000 MW.

Rapid changes in the power system

The greatest challenge, however, is not the scale of Europe's balance power needs, but rather the rapid changes that are putting Norway's entire power system under pressure, from changes in the reservoirs' biological environments to voltage fluctuations in the grid.
Reservoir levels can vary by as much as 10 metres in a single day, and voltage fluctuations in the grid can overload consumers' electrical devices. This is where Norwegian researchers enter the picture.
Important basic research
The HydroPEAK project is one of seven main areas of focus at CEDREN.
"In the HydroPEAK project, we are conducting vital basic research to facilitate development of a large-scale European network with a substantial proportion of wind power," says project manager Ånund Killingtveit.
Professor Killingtveit of the Norwegian University of Science and Technology (NTNU) heads a large group of researchers working in eight different fields. Together they seek solutions to the challenges that major, rapid fluctuations in power production pose to Norway's hydropower plants and national grid.
Numerous challenges
The HydroPEAK project addresses eight areas of research:

- scenarios for Europe's balance power needs
- hydrological effects
- models for the power system
- pumped-storage hydroelectric stations
- frequency variations in the grid
- physical effects on hydro tunnels
- physical effects on rivers
- impacts on river ice

The first area listed above provides a basis for all of the HydroPEAK sub-projects. Researchers are drawing up scenarios for how the Norwegian energy sector could satisfy the balance power demands of a European power system that will be increasingly based on renewable energy.
"The scenarios determine how much balance power will be needed, so that the other research areas can be scaled according to the most likely scenarios," explains Professor Killingtveit.
Changes in Norwegian watercourses
Norway has in-depth expertise in the environmentally-responsible operation of hydropower plants. So far, changes have mostly occurred gradually over long periods of time. However, the power system of tomorrow will have to absorb rapid change, which may lead to some unpleasant surprises.
One consequence will be more difficulty in delivering electricity with stable voltage and frequency. Also, hydro tunnels for transporting water from the reservoir to the turbines may be exposed to a higher risk of rockslides and landslides due to greater variation in water pressure in the rock.
"Using the Norwegian power system for balance power will lead to changes in Norway's watercourses. How much are we willing to tolerate?" ask the professor and his colleagues.
http://www.forskningsradet.no/en/Newsarticle/Europe_puts_Norways_power_system_to_the_test/1253962636552?WT.mc_id= alphagalileo

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88601&CultureCode=en

Call for Joined-Up Approach to Tackling Childhood Obesity

Hertfordshire, University of
A united front is needed to tackle childhood obesity effectively, according to researchers at the University of Hertfordshire's Weight and Obesity Research Group.
With this in mind, over 100 health professionals and decision makers will gather to develop a joined-up approach to evaluating programmes to tackle the topic, at a conference at the University of Hertfordshire next week.
Dr Wendy Wills, who leads the University's Weight and Obesity Research Group and who is a key researcher in the field of childhood obesity, will host *Childhood Obesity Interventions: Challenges of Evaluations in Community Settings,* which will take place at College Lane Campus on Wednesday 3 November from 1-4.30pm.
"We organised this conference because we want to bring together professionals from across the National Health Service (NHS) so that we can discuss different ways of evaluating childhood obesity programmes to help decide which ones work best," said Dr Wills.
Conference speakers are: Dr Pinki Sahota, Reader in Childhood Obesity, Leeds Metropolitan, who will discuss the development of effective interventions; Dr Kirsten Rennie, Senior Lecturer in Nutrition & Senior Research Advisor, Centre for Lifespan & Chronic Illness Research, University of Hertfordshire, Stuart King, Senior Health Improvement Specialist for Obesity, NHS Bedfordshire and Dr Laurel Edmunds, child weight management specialist, all of whom will discuss aspects of the challenges of evaluating community based interventions. Jean Hughes, who was Lead Consultant on Obesity for Peterborough Primary Care Trust (PCT), will chair the afternoon's discussions.
The conference will attract children's nurses, health visitors, dieticians, children's centre managers and a representative from the National Obesity Observatory.
"Obesity is a challenging area within public health, and so much money is being invested in different interventions that it is important to have a joined-up approach," said Dr Wills. "Our meeting provides an opportunity for key players to work together to find effective solutions."

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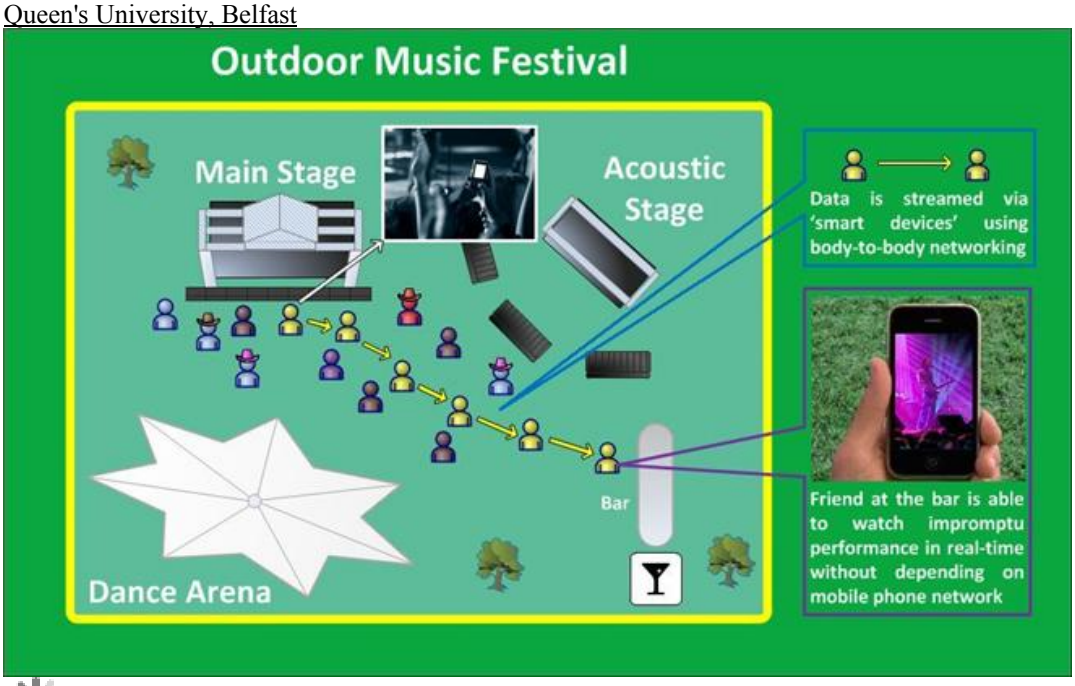
'Wireless' humans could form backbone of new mobile networks

Queen's University, Belfast



Accompanying illustration - BBNs just for fun BBNs have many potential applications from community healthcare and mobile gaming to live streaming of music and sports events. An illustration is available explaining the following example: You are at a music festival and your friend is at the bar queuing for drinks. His favourite artist has just appeared on-stage for an impromptu performance with some other celebrities. You get out your smartphone and using BBN, you "stream" the jam session live to your friend in the drinks queue. The information stream consists of short packets of video data that are passed person to person and routed to your friend's smartphone. The other "bodies" at the concert all contribute a little of their energy and bandwidth to achieve this but this does not require their explicit knowledge - the smartphone software looks after it. The alternative, of course, is to store the video on your phone, upload it to the Internet

Members of the public could form the backbone of powerful new mobile internet networks by carrying wearable sensors.
According to researchers from Queen's University Belfast, the novel sensors could create new ultra high bandwidth mobile internet infrastructures and reduce the density of mobile phone base stations.
The engineers from Queen's renowned Institute of Electronics, Communications and Information Technology (ECIT), are working on a new project based on the rapidly developing science of body centric communications.
Social benefits from the work could include vast improvements in mobile gaming and remote healthcare, along with new precision monitoring of athletes and real-time tactical training in team sports.
The researchers at ECIT are investigating how small sensors carried by members of the public, in items such as next generation smartphones, could communicate with each other to create potentially vast body-to-body networks (BBNs).
The new sensors would interact to transmit data, providing 'anytime, anywhere' mobile network connectivity.
Dr Simon Cotton, from ECIT's wireless communications research group said: "In the past few years a significant amount of research has been undertaken into antennas and systems designed to share information

across the surface of the human body. Until now, however, little work has been done to address the next major challenge which is one of the last frontiers in wireless communication – how that information can be transferred efficiently to an off-body location.

"The availability of body-to-body networks could bring great social benefits, including significant healthcare improvements through the use of bodyworn sensors for the widespread, routine monitoring and treatment of illness away from medical centres. This could greatly reduce the current strain on health budgets and help make the Government's vision of healthcare at home for the elderly a reality.

"If the idea takes off, BBNs could also lead to a reduction in the number of base stations needed to service mobile phone users, particularly in areas of high population density. This could help to alleviate public perceptions of adverse health associated with current networks and be more environmentally friendly due to the much lower power levels required for operation."

Dr Cotton has been awarded a prestigious joint five-year Research Fellowship by the Royal Academy of Engineering and the Engineering and Physical Research Council (EPSRC) to examine how the new technology can be harnessed to become part of everyday life.

He added: "Our work at Queen's involves collaborating with national and international academic, industrial and institutional experts to develop a range of models for wireless channels required for body centric communications. These will provide a basis for the development of the antennas, wireless devices and networking standards required to make BBNs a reality.

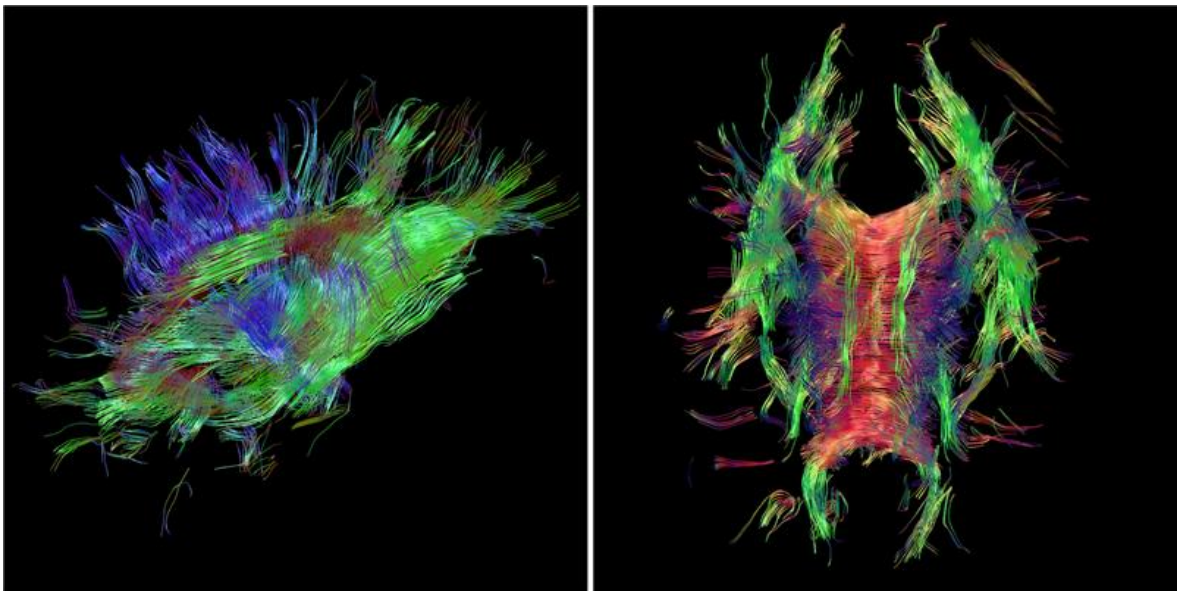
"Success in this field will not only bring major social benefits it could also bring significant commercial rewards for those involved. Even though the market for wearable wireless sensors is still in its infancy, it is expected to grow to more than 400 million devices annually by 2014."

Further information on the work of ECIT's Wireless Communications Research Group can be found online at www.ee.qub.ac.uk/wireless/

http://www.ee.qub.ac.uk/wireless/

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88586&CultureCode=en

Three-dimensional maps of brain wiring



Eindhoven University of Technology
A team of researchers at the Eindhoven University of Technology has developed a software tool that physicians can use to easily study the wiring of the brains of their patients. The tool converts MRI scans using special techniques to three-dimensional images. This now makes it possible to view a total picture of the winding roads and their contacts without having to operate. Researcher Vesna Prčkovska defended her PhD thesis on this subject last week.

To know accurately where the main nerve bundles in the brain are located is of immense importance for neurosurgeons, explains Bart ter Haar Romenij (professor of Biomedical Image Analysis, at the Department of Biomedical Engineering). As an example he cites 'deep brain stimulation', with which vibration seizures in patients with Parkinson's disease can be suppressed. "With this new tool, you can determine exactly where to place the stimulation electrode in the brain. The guiding map has been improved: because we now see the roads on the map, we know better where to stick the needle." The technique may also yield many new insights into neurological and psychiatric disorders. And it is important for brain surgeons to know in advance where the critical nerve bundles are, to avoid damaging them.

The accuracy of the tool is a great step forward. Especially intersections of nerve bundles were difficult to identify till now. Ter Haar Romenij: "You can now see for the first time the spaghetti-like structures and their connections." We are far from seeing all brain connections; there are many more smaller compounds in the brains, who are not seen by the new tool. A microscope observed them. "But you cannot, of course, dissect a live patient into slices for under a microscope," the professor smiles.

The tool was developed by TU/e researcher Anna Vilanova, with her PhD students Vesna Prčkovska, Tim Peeters and Paulo Rodrigues. A demonstration of the package can be found on YouTube (see link below). The tool is based on a recently developed technology called HARDI (High Angular Resolution Diffusion Imaging). The MRI measuring technique for HARDI was already there, the research team took care of the processing, interpretation and interactive visualization of these very complex data, so that doctors can get to work.

Bart ter Haar Romenij expects that the tool can be ready at relatively short notice for use in the hospital within a few years. "We need to validate the package. We now need to prove that the images match reality." Also, there is still work to do on the speed of the corresponding MRI scan. For a detailed view, a patient needs to be one hour in the scanner, which is too long. Moreover, the tool is already widely in use by other scientists, says the professor.

The research was supported by NWO (Dutch Organization for Scientific Research). The thesis of Vesna Prčkovska is titled: High Angular Resolution Diffusion Imaging, Processing & Visualization. She graduated last Wednesday, October 20, 2010.
http://www.youtube.com/watch?v=z5cFprX8w0A

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88559&CultureCode=en

McGill

1000 Genomes Project publishes analysis of completed pilot phase

Produces tool for research into genetic contributors to human disease

Small genetic differences between individuals help explain why some people have a higher risk than others for developing illnesses such as diabetes or cancer. Today in the journal Nature, the 1000 Genomes Project, an international public-private consortium, published the most comprehensive map of these genetic differences, called variations, estimated to contain approximately 95 percent of the genetic variation of any person on Earth.

Researchers produced the map using next-generation DNA sequencing technologies to systematically characterize human genetic variation in 180 people in three pilot studies. Moreover, the full scale-up from the pilots is already under way, with data already collected from more than 1,000 people.

"The pilot studies of the 1000 Genomes Project laid a critical foundation for studying human genetic variation," said Richard Durbin, Ph.D., of the Wellcome Trust Sanger Institute and co-chair of the consortium. "These proof-of-principle studies are enabling consortium scientists to create a comprehensive, publicly available map of genetic variation that will ultimately collect sequence from 2,500 people from multiple populations worldwide and underpin future genetics research."

Genetic variation between people refers to differences in the order of the chemical units – called bases – that make up DNA in the human genome. These differences can be as small as a single base being replaced by a different one – which is called a single nucleotide polymorphism (abbreviated SNP) – or is as large as whole sections of a chromosome being duplicated or relocated to another place in the genome. Some of these variations are common in the population and some are rare. By comparing many individuals to one another and by comparing one population to other populations, researchers can create a map of all types of genetic variation.

The 1000 Genomes Project's aim is to provide a comprehensive public resource that supports researchers aiming to study all types of genetic variation that might cause human disease. The project's approach goes beyond previous efforts in capturing and integrating data on all types of variation, and by studying samples from numerous human populations with informed consent allowing free data release without restriction on use. Already, these data have been used in studies of the genetic basis for disease.

"By making data from the project freely available to the research community, it is already impacting research for both rare and common diseases," said David Altshuler, M.D., Ph.D., Deputy Director of the Broad Institute of Harvard and MIT, and a co-chair of the project. "Biotech companies have developed genotyping products to test common variants from the project for a role in disease. Every published study using next-generation sequencing to find rare disease mutations, and those in cancer, used project data to filter out variants that might obscure their results."

The project has studied populations with European, West African and East Asian ancestry. Using the newest technologies for sequencing DNA, the project's nine centers sequenced the whole genome of 179 people and the protein-coding genes of 697 people. Each region was sequenced several times, so that more than 4.5 terabases (4.5 million million base letters) of DNA sequence were collected. A consortium involving

academic centers on multiple continents and technology companies that developed and sell the sequencing equipment carried out the work.

The improved map produced some surprises. For example, the researchers discovered that on average, each person carries between 250 and 300 genetic changes that would cause a gene to stop working normally, and that each person also carried between 50 and 100 genetic variations that had previously been associated with an inherited disease. No human carries a perfect set of genes. Fortunately, because each person carries at least two copies of every gene, individuals likely remain healthy, even while carrying these defective genes, if the second copy works normally.

"McGill is very proud to have played a leadership role in the Sampling and ELSI (Ethical, Legal, and Social Issues) Committee," said Bartha Maria Knoppers, O.C., Ph.D., of the McGill University Centre of Genomics and Policy, and co-chair of the committee. "We played a unique role, putting the sampling design people with the ethics people – selecting populations and criteria and ensuring consistency across the ethical framework with people in the field. Our involvement will continue as we move into full-scale studies." 2,500 samples from 27 populations will be studied over the next two years. Data from the pilot studies and the full-scale project are freely available on the project web site, www.1000genomes.org.

Organizations that committed major support to the project include: 454 Life Sciences, a Roche company, Branford, Conn.; Life Technologies Corporation, Carlsbad, Calif.; BGI-Shenzhen, Shenzhen, China; Illumina Inc., San Diego; the Max Planck Institute for Molecular Genetics, Berlin, Germany; the Wellcome Trust Sanger Institute, Hinxton, Cambridge, UK; and the National Human Genome Research Institute, which supports the work being done by Baylor College of Medicine, Houston, Texas; the Broad Institute, Cambridge, Mass.; and Washington University, St. Louis, Missouri. Researchers at many other institutions are also participating in the project including groups in Barbados, Canada, China, Colombia, Finland, the Gambia, India, Malawi, Pakistan, Peru, Puerto Rico, Spain, the UK, the US, and Vietnam.
http://www.nature.com/nature/journal/v467/n7319/full/nature09534.html

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88538&CultureCode=en

Addiction Index Updated

The new version of the Addiction Severity Index (ASI) gives health professionals the opportunity to design an integral and personalised plan of assistance for patients suffering disorders due to substance abuse.

Developed by the University of Pennsylvania (USA) in the 1980s, the ASI is the most used tool for studying disorders due to substance abuse. After more than 25 years of use, current trends have led ASI creators to update their index and adapt it to the present day reality. The new ASI-6 includes significant structure and content changes in regard to the previous version.

However, as Eva María Díaz-Mesa, a researcher at the Centro de Investigación Biomédica en Red de Salud Mental (CIBERSAM) and author of the study explained to SINC "any assessment test must involve mathematical procedures that determine whether or not it is a valid indicator of a particular psychological conduct."

This study examines the version of the method translated and adapted into Spanish. The study was carried out at 13 centres in Spain, where a total of 258 patients participated, and compiles four periodic assessments that determine the evolution of patients and the ability of the tool to detect changes.

The results, published recently in the journal Psicothema, reveal that the ASI-6 performed well in psychometric terms, that is, "when applied, the tool gives stable measurements (reliability) and actually measures what it intends to (validity)," Díaz Mesa continued. Furthermore, it is worth highlighting the inclusion of smoking and gambling in the assessment, together with caring for children.

The ASI is an interview designed to measure the state of a patient in regard to seven functional domains:

alcohol and drug abuse, physical and mental health, employment/resources, family relationships and illegal activity. The scores obtained in the different areas provide information about the severity of the addition (the higher the score the more severe).

Addiction to Legal and Illegal Substances

Although there is widespread social belief that people who consume illegal substances suffer more negative effects, consumption-related health problems are actually primarily due to legal substances.

The World Health Organization (WHO) expected tobacco to explain 16.8% of mortality in Spain, alcohol 3% and illegal drugs 0.6%. However, in regard to the burden of disease, tobacco accounted for 12.3%, alcohol 7.6% and illegal drugs 3.9%.

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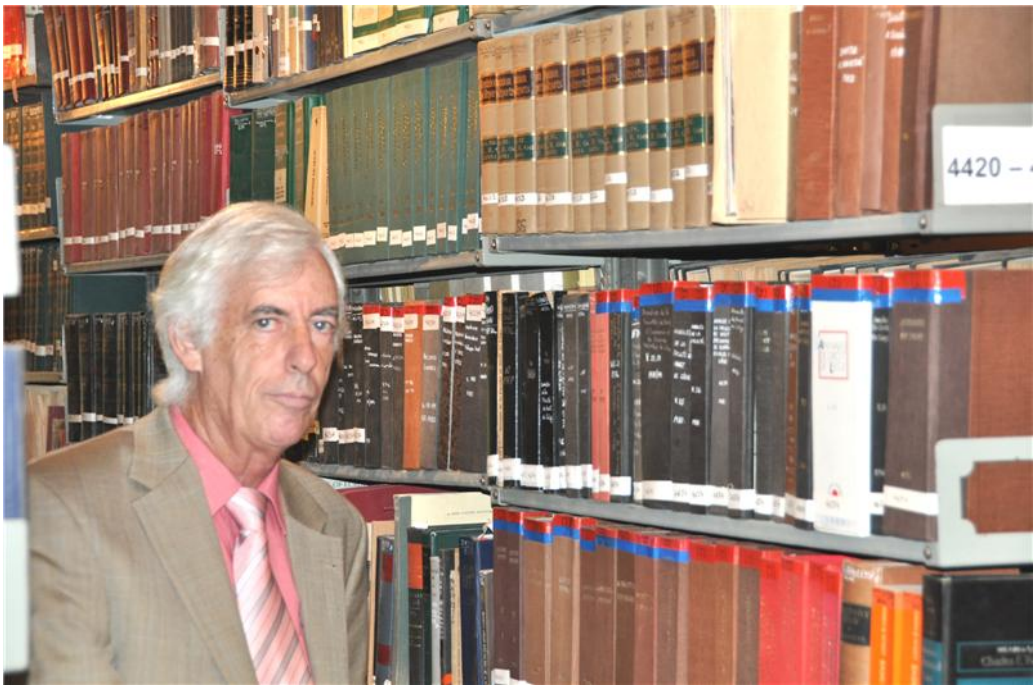
Historians' report disputes German Foreign Ministry pose as opponent of Hitler's murderous policies



Prof. Moshe Zimmermann of the Hebrew University of Jerusalem (photo by Libi Oz)

Hebrew University of Jerusalem

A new research report rejects the postwar image that the German Foreign Ministry tried to project that it was a center for opposition to Hitler and his policies and that it tried to preserve a semblance of decency. The report was compiled by a four-member international research committee that included Prof. Moshe Zimmermann of the Hebrew University of Jerusalem.

The report reveals for the first time the extent to which officials in the Foreign Ministry, at all levels, were active and full participants in planning and carrying out the "Final Solution" for destroying European Jewry. Even before the war, the report notes, the ministry proposed radical solutions for what it referred to as a "German problem" or a "trans-European problem."

The research report traces the fate of those of the Foreign Ministry who were involved in the Nazi war crimes and reveals how after the war the pursuit of those officials was sporadic and scant.

The 900-page report, in book form, will be presented by members of the research committee on Oct. 28 to German Foreign Minister Guido Westerwelle in Berlin. Making the presentation will be Prof. Norbert Frei and Prof. Eckart Conze of Germany, Prof. Peter Hayes of Chicago, and Prof. Zimmermann.

The committee was established as the result of a request by former German Foreign Minister Joschka Fischer, who, in 2005, noted that in the official magazine of the Foreign Ministry there were obituaries for former ministry officials who were Nazis and who had died. Fischer decided then that there should be an international committee of historians who would look into the involvement of the ministry in the crimes committed during the Third Reich and also its attitude after the war towards its own past record.

"For years the German Foreign Ministry strove to create an image among the German public that it served as a reasonable influence in everything concerned with the Jewish issue and crimes against humanity during the Second World War," said Prof. Zimmermann, who heads the Richard Minerva Koebner Center for German History at the Hebrew University. However, the work done by the research committee shows that ministry officials at all levels were involved in carrying out this policy, and that German diplomats of the period not

only defended the Nazi antisemitic policy in the world, but that they also felt that it was the obligation of the ministry to help disseminate that policy, said Zimmermann.

"The diplomats who were stationed throughout Europe and even in East Asia were organizers, partners and activists in carrying out the antisemitic plan to destroy the Jews," stated Zimmermann.

Among other things, the report reveals the involvement of the secretary of state in the Foreign Ministry at the time, Ernst von Weizsacker, the father of former German President Richard von Weizsacker. In contradiction to the name that was attributed to him as an active opponent of Hitler, the senior von Weizsacker cooperated in helping to carry out the policy of destroying the Jews. The report includes documents he signed authorizing the expulsion of Jews from France to Auschwitz.

The report also shows that the ministry included "experts on Jewish issues' whose ideas preceded even those of German security officials in dealing with the Jews. One of these expert's ideas, formulated in January 1939, even before Hitler's famous speech on the destruction of Jews, presented a program for persecution of the Jews on an international basis. Another "Jewish expert" at the ministry was the first to prepare a plan for shipping the Jews of Europe to Madagascar and participated actively afterwards in the murder of the Jews of Yugoslavia.

"The Germans are learning with time that there is no sector in Germany that was not involved with the destruction of the Jews – including those who purportedly were considered 'fair,' such as those in the Foreign Ministry, and are now shown to have been involved as active elements in carrying out the 'Final Solution,'" said Zimmermann.

The report also reveals that many of the people involved in carrying out the crimes of the Third Reich continued in their diplomatic careers when the German Foreign ministry was re-established in 1951. Although the foreign minister himself and other senior officials, including von Weizsacker, were tried at Nuremberg after the war, the report shows that many others who were involved in crimes against humanity and against the Jews were not brought to trial or even singled out as identified with those crimes -- and continued later to serve Germany in their diplomatic careers.

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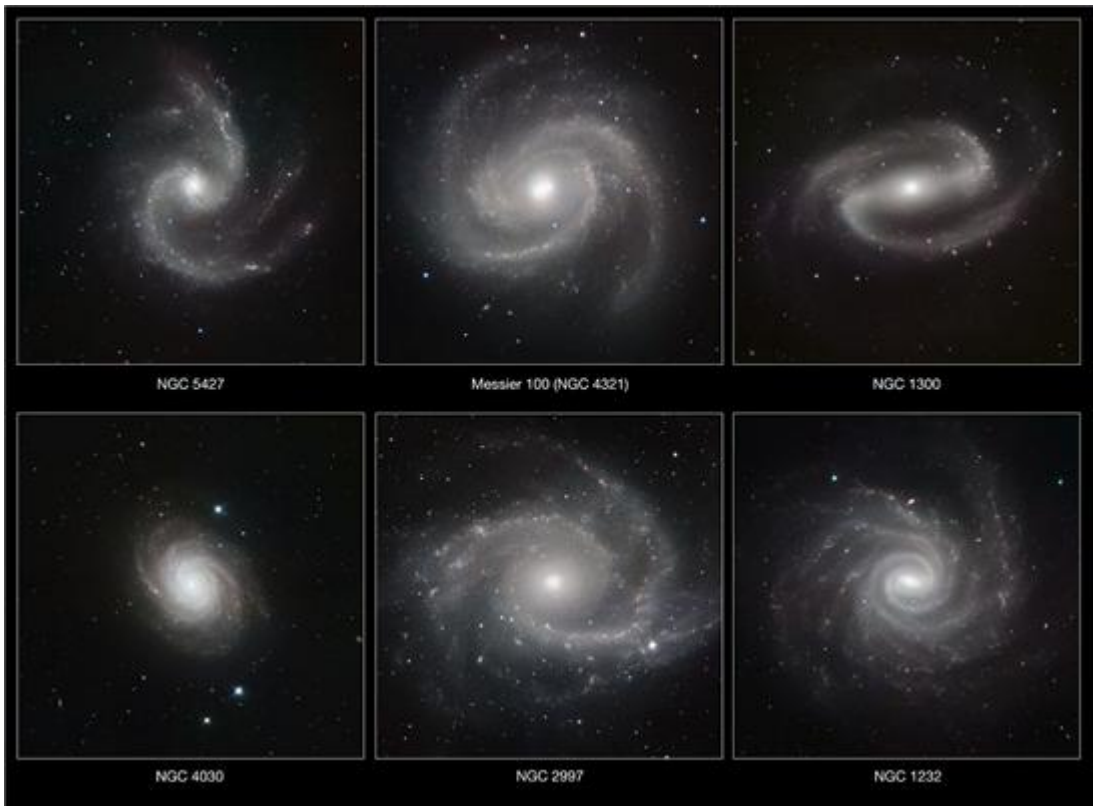
Spiral Galaxies Stripped Bare



Six spectacular spiral galaxies are seen in a clear new light in pictures from ESO's Very Large Telescope (VLT) at the Paranal Observatory in Chile. The pictures were taken in infrared light, using the impressive power of the HAWK-I camera to help astronomers understand how the remarkable spiral patterns in galaxies form and evolve. From left to right the galaxies are NGC 5427, Messier 100 (NGC 4321), NGC 1300, NGC 4030, NGC 2997 and NGC 1232. Credit: ESO/P. Grosbøl

miércoles, 27 de octubre de 2010 European Southern Observatory - ESO

Six spectacular spiral galaxies are seen in a clear new light in images from ESO's Very Large Telescope (VLT) at the Paranal Observatory in Chile. The pictures were taken in infrared light, using the impressive power of the HAWK-I camera, and will help astronomers understand how the remarkable spiral patterns in galaxies form and evolve.

HAWK-I [1] is one of the newest and most powerful cameras on ESO's Very Large Telescope (VLT). It is sensitive to infrared light, which means that much of the obscuring dust in the galaxies' spiral arms becomes transparent to its detectors. Compared to the earlier, and still much-used, VLT infrared camera ISAAC, HAWK-I has sixteen times as many pixels to cover a much larger area of sky in one shot and, by using newer technology than ISAAC, it has a greater sensitivity to faint infrared radiation [2]. Because HAWK-I can study galaxies stripped bare of the confusing effects of dust and glowing gas it is ideal for studying the vast numbers of stars that make up spiral arms.

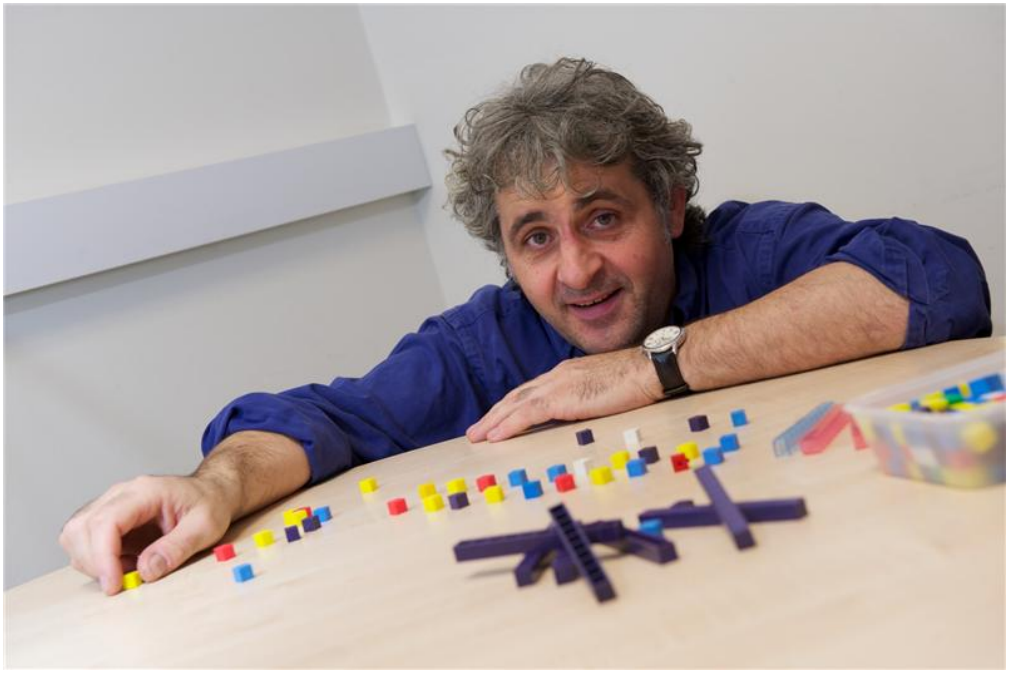
The six galaxies are part of a study of spiral structure led by Preben Grosbøl at ESO. These data were acquired to help understand the complex and subtle ways in which the stars in these systems form into such perfect spiral patterns.

The first image shows NGC 5247, a spiral galaxy dominated by two huge arms, located 60–70 million light-years away. The galaxy lies face-on towards Earth, thus providing an excellent view of its pinwheel structure. It lies in the zodiacal constellation of Virgo (the Maiden).

The galaxy in the second image is Messier 100, also known as NGC 4321, which was discovered in the 18th century. It is a fine example of a "grand design" spiral galaxy — a class of galaxies with very prominent and well-defined spiral arms. About 55 million light-years from Earth, Messier 100 is part of the Virgo Cluster of galaxies and lies in the constellation of Coma Berenices (Berenice's Hair, named after the ancient Egyptian queen Berenice II).
The third image is of NGC 1300, a spiral galaxy with arms extending from the ends of a spectacularly prominent central bar. It is considered a prototypical example of barred spiral galaxies and lies at a distance of about 65 million light-years, in the constellation of Eridanus (the River).
The spiral galaxy in the fourth image, NGC 4030, lies about 75 million light-years from Earth, in the constellation of Virgo. In 2007 Takao Doi, a Japanese astronaut who doubles as an amateur astronomer, spotted a supernova — a stellar explosion that is briefly almost as bright as its host galaxy — going off in this galaxy.
The fifth image, NGC 2997, is a spiral galaxy roughly 30 million light-years away in the constellation of Antlia (the Air Pump). NGC 2997 is the brightest member of a group of galaxies of the same name in the Local Supercluster of galaxies. Our own Local Group, of which the Milky Way is a member, is itself also part of the Local Supercluster.
Last but not least, NGC 1232 is a beautiful galaxy some 65 million light-years away in the constellation of Eridanus (the River). The galaxy is classified as an intermediate spiral galaxy — somewhere between a barred and an unbarred spiral galaxy. An image of this galaxy and its small companion galaxy NGC 1232A in visible light was one of the first produced by the VLT (eso9845). HAWK-I has now returned to NGC 1232 to show a different view of it at near-infrared wavelengths.
As this galactic gallery makes clear, HAWK-I lets us see the spiral structures in these six bright galaxies in exquisite detail and with a clarity that is only made possible by observing in the infrared.
http://www.eso.org/public/news/eso1042/

http://www.alphagalileo.org/ViewItem.aspx?ItemId=88487&CultureCode=en

Children find their own way to solve arithmetic problems



Dr Lio Moscardini, Faculty of Humanities & Social Sciences, University of Strathclyde
Strathclyde, University of

Children with learning difficulties can benefit from being encouraged to find their own way to solve arithmetic problems, according to new research from the University of Strathclyde in Glasgow, Scotland. A study by Dr Lio Moscardini, in Strathclyde's Faculty of Humanities & Social Sciences, found that children deal better with arithmetical problems if they can use their own intuitive strategies such as using number blocks, drawings or breaking an equation up into smaller, simpler parts- rather than being instructed in arithmetical facts and procedures.

All the teachers taking part in the study underwent professional development in children's mathematical thinking before introducing these ideas into their classrooms. Nearly all felt that their pupils had benefited from learning in this way- and several said they had previously underestimated the children's ability and potential.

Dr Moscardini, a specialist in additional support needs, said: "We found that pupils with learning difficulties were able to develop an understanding of arithmetic through engaging in these activities, without explicit prior instruction.

"When teachers have an insight into children's mathematical thinking they can use this knowledge to inform their teaching. The study also supported the view that maths learning isn't just about acquiring a series of skills but is about making sense of problems and building understanding."

The children's solutions, which they had not been taught in advance, included:

- Answering a question about how many children are on a bus after a group gets on by representing two sets of children with cubes, drawings or fingers and joining the sets together

- Splitting up the sum 48 + 25 by adding 40 to 20, then adding eight and five separately for the total of 73
- Using context and language and modifying the way a problem is phrased. In one question, a boy having 14 stickers and giving six away was changed to him giving away "six of his stickers," allowing a pupil to follow the language of the problem to make sense of it

Some children were able to help out their fellow pupils and became increasingly able to recognise similarities between certain types of problem, enabling them to apply the same solutions.

The children were found to follow the same path in understanding adding, subtraction, multiplication and division as those who did not have the same difficulties.

http://www.strath.ac.uk/press/newsreleases/headline_343295_en.html

http://www.alphagalileo.org/ViewItem.aspx?ItemId=89258&CultureCode=en

Potential drug therapy for diabetic retinopathy under study

Medical College of Georgia

One drug's startling ability to restore retinal health in the eyes of diabetic mice has researchers wanting to learn more about how it works and whether it might do the same for people.

"We want to know if this drug has the potential to block the visual devastation that can occur with diabetes," said Dr. Sylvia Smith, retinal cell biologist and co-director of the Vision Discovery Institute at the Medical College of Georgia. "That means we need to know more about how and when it is effective."

Diabetic retinopathy, the leading cause of blindness in working-age Americans, results from the destruction of the retina, a thin layer at the back of the eyeball that converts lights to signals that the brain can interpret as images. The retina, which deals with daily assaults from the sun and other external forces, is slowly injured by the high glucose levels of diabetes then further injured when it grows more blood vessels in an attempt to get more blood and oxygen to dying cells.

At least in the early stage of diabetes in mice, MCG researchers appear to have interrupted the first wave of cell destruction with the drug (+)- pentazocine – known for its pain-relieving power – by reducing cell stress. A new $1.5 million grant from the National Eye Institute will enable scientists to test their cell stress theory and fill in missing pieces about how and when the drug works.

Smith and her colleagues have evidence that oxidative stress, believed to be a key player in the cell damage resulting from diabetes, increases the binding of sigma receptors to BiP, a stress protein. Sigma receptors are believed to help cells cope with stress.

While some results of the union are unclear, it is clear that in the mice, (+)- pentazocine reduces binding between the two to a more usual, non-stressed level and restores the typically well-stratified retina to a more healthy state. Smith termed the result "phenomenal" when it was published in *Investigative Ophthalmology & Visual Science* in 2008. In fact, subsequent research has shown, (+)- pentazocine improves the look of the multi-layer retina in a healthy mouse.

"We know (+)- pentazocine binds to sigma receptors, but one of the things we don't know is if the binding blocks or promotes sigma receptor action," Smith said. Working with Dr. Eric Zorilla at The Scripps Research Institute in California, Smith now has mice with sigma receptors deleted that will help her better determine their role and how (+)- pentazocine intervenes.

Dr. Alan Saul, MCG electrophysiologist skilled in measuring the response of the retina to light, is helping her objectively measure the impact on mouse vision. Much like an EEG measures the electrical activity of the brain, Saul, a faculty member in the MCG Department of Ophthalmology, helps measure the electrical response of the retina – which is part of the brain – to light as an objective vision test to accompany the more common vision chart.

Without a mouse vision chart, it's hard to be certain that a better-looking retina translates to better vision, Smith said. In fact, Saul has seen it go both ways in patients: an eye exam indicates good vision while the retinal test shows differently, and vice versa. "You are surprised a lot of the time," Saul said. In fact, they are beginning to find some surprises in mice with a related problem. Diabetes essentially doubles the glaucoma risk and as their mice with glaucoma reach the equivalent of their 20s and 30s in human years. Saul's electrical exams show early changes in their optic nerves – which extend from the retina to the brain – even though they look normal on microscopic exam.

To help fill in the knowledge gaps, the scientists are inducing diabetes in the mice missing sigma receptors, comparing them to healthy mice and applying non-diabetic stressors to the sigma receptor knockouts. They suspect that other stressors, including age, also cause retinal damage.
Goals include determining if retinal appearance improves as a result of the interaction between the sigma receptors and (+)- pentazocine and consequent reduction of cell stress. To help explore the therapeutic potential, they also want to see whether the drug is effective if given later in the disease process. In their earlier studies, the drug was given immediately after mice became diabetic, an unlikely stage of diagnosis for most human diabetics.
"If we can get answers to these questions we'll know better whether (+)- pentazocine has the potential to help patients, which is our ultimate goal," Smith said.
To help prevent progression of diabetic retinopathy, patients are encouraged to control glucose and cholesterol levels as well as blood pressure. Laser treatment can help destroy excessive blood vessels that hinder vision and reduce swelling often associated with the condition.

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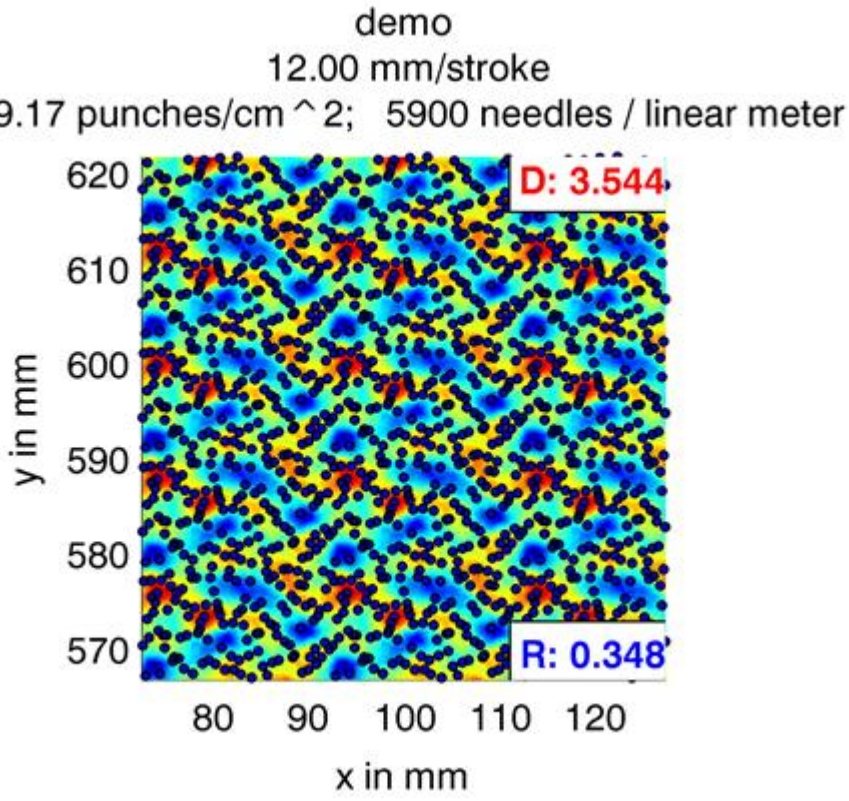
Perfectly needled nonwoven

08 November 2010 Fraunhofer-Gesellschaft



Hardly any other textile is as versatile as nonwoven: it keeps babies' bottoms dry and protects plants from the sun. In the Gulf of Mexico, special nonwovens soaked up the oil washed up on beaches like blotting paper. A new piece of simulation software now makes it possible to produce high-quality, stripe-free nonwoven fabrics.

What do diapers, wiping cloths, wall paneling, sticking plasters and Ultrasuede covers for upholstered furniture have in common? All these products are made of nonwovens. There is hardly any other fabric that is as versatile. Last summer the operators of the Zugspitze railroad even used sheets of nonwovens to prevent the snow melting away on Germany's highest mountain. The quality of this textile, however, varies considerably. It is generally true to say that the firmer, the smoother and the freer of marks the nonwoven is, the higher the quality. In the search for the perfect nonwoven, the Austrian needling machine manufacturer Oerlikon Neumag Austria asked the Fraunhofer Institute for Industrial Mathematics ITWM in Kaiserslautern for help.

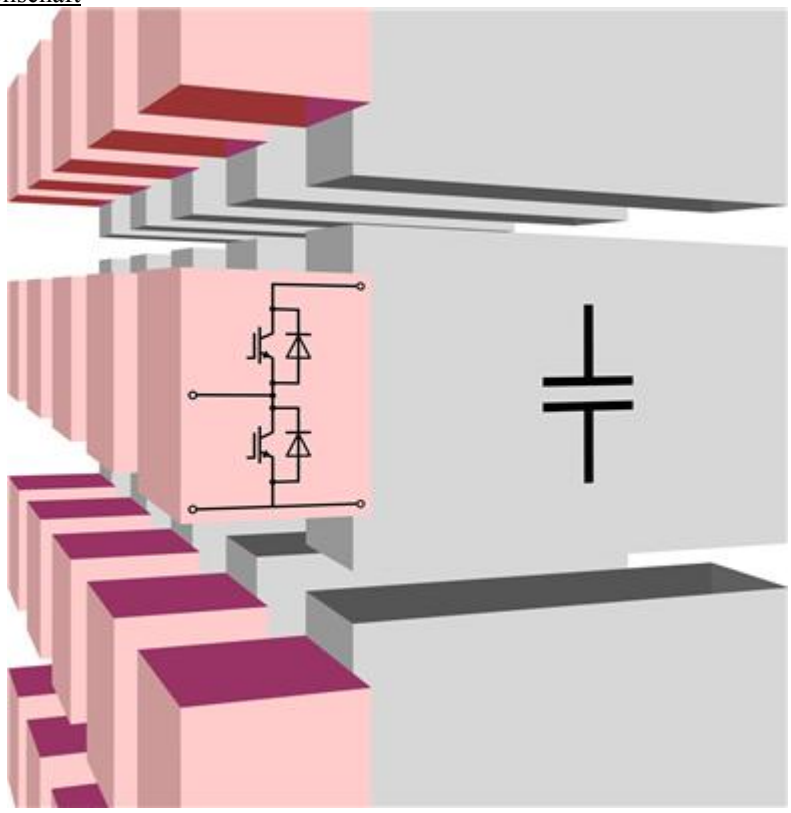
Needling machines are essential in the production of nonwoven fabrics: "Nonwovens are bonded mechanically by needling. The needles punch vertically in and out of the material. The machine then transports the material and the needles come down again. This process locks the fibers together," explains Dr. Simone Gramsch, a scientist at the ITWM. "The needle penetrations have to be completely even, otherwise unwanted marks such as longitudinal, diagonal or transverse stripes occur, and the material is less tear-resistant," says Gramsch. Oerlikon Neumag Austria used to conduct the needling process without computer simulations. The needles were arranged manually based on past experience, and the needle boards constructed and tested by trial and error an approach that took several months and cost a lot of money. The research scientist and her team have managed to cut the time needed for this process significantly. There will no longer

be a need for practical tests: Using software tools they themselves developed, the scientists have been able to simulate the needle penetration geometry, allowing them to optimize the needle patterns.
The strength and stretch characteristics of the nonwoven fabric are affected not only by the arrangement of the needles but also by their penetration density. The draft and the feed per stroke have to be coordinated as well. "Our software takes all these factors into account. We simulate and assess the penetration pattern according to the parameters entered. This enables the design engineer to determine where the needles are best placed on the needle board," says the scientist. Thanks to the new program, objective quality criteria now replace subjective assessment by the human eye. What's more, the experts have also programmed a design engineering tool. The user enters the feeds per stroke and the drafts for which he wants to construct a needle board. He specifies how wide he wants the board to be and what type of needles to use. The software then automatically comes up with a suitable needle board design.
But the development of the software posed some problems for the researchers. For example, a needle board has to be able to handle various feeds, because textile manufacturers do not produce the same nonwovens with the same feeds every day. Each needle rearrangement leads to several hours of lost production, and no manufacturer can afford that. For this reason the ITWM program has to be able to design a needle board that delivers equally well needled nonwovens for several feeds per stroke. "We managed that too," beams Gramsch. Oerlikon Neumag Austria has now used the results of the software to build numerous new needle boards.
http://www.fraunhofer.de/en/press/research-news/2010/11/perfectly-needled-nonwoven.jsp

http://www.alphagalileo.org/ViewItem.aspx?ItemId=89225&CultureCode=en

Power grid of the future saves energy

08 November 2010 Fraunhofer-Gesellschaft



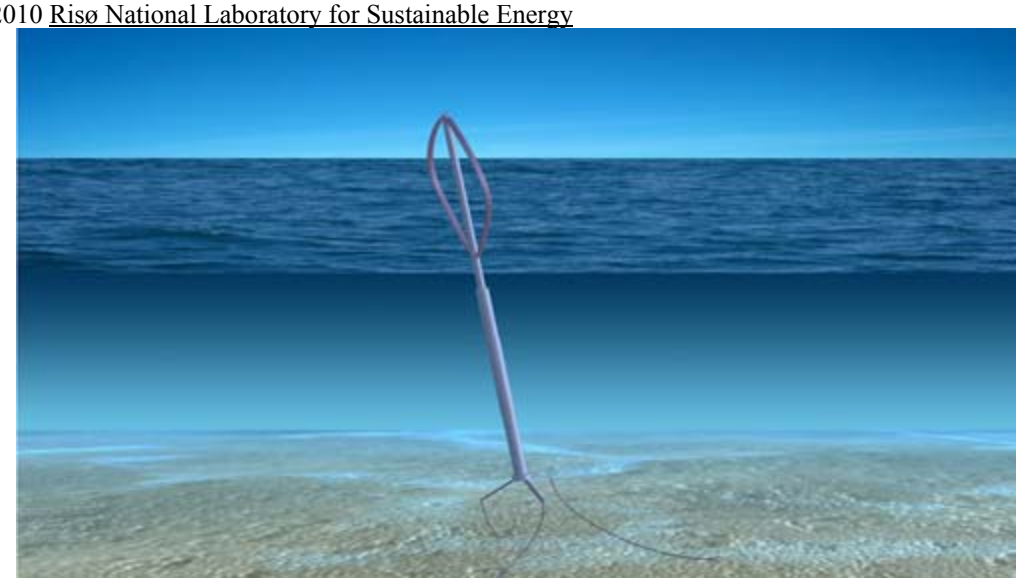
Green energy too comes out of the electricity socket, but to get there it has to travel a long journey – from wind turbines in the North Sea or regional solar, wind and biogas power plants. On the way to the consumer lots of energy is lost. New electronic components will change things in future.
Cars and trucks race down the highway, turn off into town, wait at traffic lights and move slowly through side streets. Electricity flows in a similar way – from the power plant via high voltage lines to transformer substations. The flow is controlled as if by traffic lights. Cables then take the electricity into the city centre. Numerous switching points reduce the voltage, so that equipment can tap into the electricity at low voltage. Thanks to this highly complex infrastructure, the electricity customer can use all kinds of electrical devices just by switching them on. "A reliable power supply is the key to all this, and major changes will take place in the coming years to safeguard this reliability. The transport and power networks will grow together more strongly as a result of electromobility, because electric vehicles will not only tank up on electricity but will also make their batteries available to the power grid as storage devices. Renewable energy sources will become available on a wider scale, with individual households also contributing electricity they have generated," says Professor Lothar Frey, Director of the Fraunhofer Institute for Integrated Systems and Device Technology IISB in Erlangen. In major projects such as Desertec, solar thermal power plants in sun-rich regions of North Africa and the Middle East will in the future produce electricity for Europe. The energy will then flow to the consumer via long high-voltage power lines or undersea cables. The existing cables, systems and components need to be adapted to the future energy mix now, so that the electricity will get to the consumer as reliably and with as few losses as possible. The power electronics experts at the IISB are working on technological solutions, and are developing components for the efficient conversion of electrical energy.

For energy transmission over distances of more than 500 kilometers or for undersea cables direct current is being increasingly used. This possesses a constant voltage and only loses up to seven percent of its energy over long distances. By comparison, the loss rate for alternating current can reach 40 percent. Additional converter stations are, however, required to convert the high voltage of the direct current into the alternating current needed by the consumer.
"In cooperation with Siemens Energy we are developing high-power switches. These are necessary for transmitting the direct voltage in the power grid and are crucial for projects like Desertec. The switches have to be more reliable, more scaleable and more versatile than previous solutions in order to meet the requirements of future energy supply networks," says Dipl.-Ing. Markus Billmann from the IISB. To this end, the research scientists are using low-cost semiconductor cells which with previous switching techniques could not be used for high-voltage direct-current transmission (HVDCT). "At each end of a HVDCT system there is a converter station," explains the research scientist. "For the converters we use interruptible devices which can be operated at higher switching frequencies, resulting in smaller systems that are easier to control." A major challenge is to protect the cells from damage. Each converter station will contain about 5,000 modules, connected in series, and if more than a few of them failed at the same time and affected their neighboring modules a chain reaction could be triggered which would destroy the entire station. "We have now solved this problem. With our cooperation partners we are working on tailor-made materials and components so that in future the equipment will need less energy," says Billmann.
http://www.fraunhofer.de/en/press/research-news/2010/11/power-grid-of-the-future-saves-energy.jsp

http://www.alphagalileo.org/ViewItem.aspx?ItemId=89216&CultureCode=en

Future wind turbines go offshore – deep and floating

08 November 2010 Risø National Laboratory for Sustainable Energy



Floating wind turbines producing at least 20 MW each: this is the vision that is to be explored in an exciting new collaboration between DTU and international partners from both industry and the research community. The 4-year project called DeepWind has a €3m grant under the European FP7 programme for future emerging technologies.
DeepWind was launched October 1st 2010, and Risø DTU is coordinating the consortium of 12 international members.

"Our objective is to develop more cost-effective MW wind turbines through dedicated technology rather than advancing existing concepts that are based on onshore technology being transported to the sea environment. Offshore wind energy today is twice as expensive as onshore technologies. That means that there is plenty of room for improvement," says DeepWind Project Manager Uwe Schmidt Paulsen, Risø DTU.

Studies show that for sea depths exceeding 30-60m, floating structures are economically more feasible than present offshore technology based on piled, jack-up or gravity foundations. The cost of material and logistics used in these constructions is simply too high. Furthermore, floating wind turbines will open up the possibility of placing offshore wind turbine plants with excellent wind potential near large cities with a deep-water coastline in e.g. Europe, Asia and North America.

Wind turbines in deep water
DeepWind is the acronym for this new power generation concept and project. As explained by the Risø DTU scientists behind the concept, it combines a vertical-axis wind turbine, new blade technology, full power transmission and control system, combined with a rotating and floating offshore substructure (see picture).

The basis for the vertical-axis wind turbine is the well-explored Darrieus design. This provides a very simple MW turbine, but also contains challenges not least because of the long sub-sea support structure needed. The concept also includes a direct drive MW generator with its electronic control system at the bottom of the sub-sea shaft, together with the electrical power transmission cables. Combining the relevant technologies and designing the components properly, will positively re-address the issues of distribution of cost and the competitiveness of the concept compared to existing technology.

"The technology behind the proposed concept gives significant challenges and requires technological breakthroughs. We need explicit research in a wide area of different technology fields and materials. For example we foresee research in the dynamics of the system, pultruded blades with adequate material properties, sub-sea power generators and converters, turbine control and safety systems, wave and current loading on the rotating and floating shaft, and also the mooring and torque absorption system," explains Uwe Schmidt Paulsen.

One of the definite outcomes of this futuristic project will be the demonstration of a kW-sized wind turbine to be placed in open waters of Roskilde Fjord next to Risø DTU. In this phase, dedicated experiments will be carried out and simulation tools will be developed for design purposes. These will be used to design a 5 MW concept and evaluate the prospects of an up-scaled, future 20 MW turbine.

Collaboration between industry and research
Offshore wind energy has been identified by the European Union as a key power generation technology for renewable energy in the future, and Europe should lead the world technologically.

"DeepWind is a challenging and sound project. This project goes beyond a technology transfer from onshore vertical wind turbine generation and constitutes a radical upgrade of existing technologies and would constitute a real breakthrough in the energy sector", explains Risø DTU Director Henrik Bindslev.

DeepWind combines several research fields, in particular wind energy, the offshore environment and materials technology. In DeepWind these technologies are combined with recent deep sea offshore technologies and with advanced large-scale blade pultrusion technology in order to establish a new field of development. In this new field researchers and industry work in an international partnership between research institutions, industrial small and medium sized enterprises (SMEs), non-SME and end-users.
DeepWind
Funding 3 million Euro from EU FP7 Cooperation Work Programme: Energy, Topic ENERGY.2010.10.2-1: Future Emerging Technologies for Energy Applications (FET).

Partners
The consortium consists of: Risø DTU (Project Manager), DTU Mekanik (DK), TUDelft (NL), Institut for Energiteknik/Aalborg Universitet (DK), DHI (DK), MARINTEK (NO), SINTEF Energy Research (NO), Nenuphar SA (FR), Statoil (NO), Universita Degli Studi di Trento (IT), MARIN (NL), National Renewable Energy Laboratory (NREL) (US), and a major Danish wind turbine manufacturer.

Web site: http://www.DeepWind.eu
http://www.risoe.dtu.dk/News_archives/News/2010/1115_DeepWind.aspx?sc_lang=en

http://www.alphagalileo.org/ViewItem.aspx?ItemId=89204&CultureCode=en

23% of young people get into fights when they go out at night

08 November 2010 Plataforma SINC

Night-time violence among young Spaniards is becoming ever more common, according to a research study carried out by the European Institute of Studies on Prevention. The study shows that 5.2% of young people carry weapons when they go out at night, 11.6% have been attacked or threatened, and 23% have got into a fight at some time.

"Reports about young people being attacked or injured in fights when they go out at night are becoming increasingly common", Amador Calafat, lead author of the study and a researcher at the European Institute of Studies on Prevention (IREFREA), which is at the forefront of studies into problems of childhood and adolescence and drug abuse, tells SINC.

The research, published in the latest issue of the Journal Psicothema, analyses the phenomenon of violence among young Spaniards (under the age of 25), in particular in terms of factors related to the night-time leisure context, among a selected sample of 440 participants in the Balearic Islands, Galicia and Valencia who regularly go out at night and consume alcohol or other substances.

Of this sample, 11.6% had been attacked or threatened at some time. This percentage rose to 23% for fights. The research goes further, finding that 5.2% of the young people studied carry weapons when they go out at night. "Having been threatened or hurt with a weapon was associated with having frequent arguments related to the use of alcohol and drugs", Calafat explains.

The authors state that adolescence is a risk factor itself, since young people are more prone and vulnerable to this kind of behaviour. Some important aspects for preventing night-time violence relate to the way in which environmental conditions are managed. These include preventing crowds from building up, using soft music when bars and clubs close and bright lights when it is time to leave.

"In order to prevent night-time violence, alcohol consumption among young people should be controlled by offering water and soft drinks at affordable prices, steering away from 'happy hour'-type alcohol offers, and strictly ensuring that alcohol is not sold to underage drinkers", the researcher concludes.

Violence among young tourists

Tourist destinations in southern Europe attract young people because of the good times and night-time action they promise. In another study, financed by the European Commission Daphne programme, the same research group studied the behaviour of young British and German tourists who chose to spend their 2009 holidays in Portugal, Spain, Italy, Greece and Cyprus.

The figures were impressive. Almost one-quarter of the study's participants (24%) visited bars and clubs every night during their holidays, and 95% consumed alcohol during their stay. More than two-thirds of the young respondents got drunk, and more than one in 10 took illegal drugs.

The 6,000 young tourists surveyed reported significant problems during their holidays. Almost 9% were sexually abused (7% of males and 10% of females), 6% suffered injuries and 4% were involved in cases of physical violence. More than half of the violent incidents (51%) took place in bars or nightclubs, while the rest (36%) took place on the street.

http://www.alphagalileo.org/ViewItem.aspx?ItemId=89201&CultureCode=en

Crowd-sourcing at university: 200 students plan marketing for new games company

08 November 2010 Abertay Dundee, University of
Over 200 undergraduate Marketing students at the University of Abertay Dundee are helping to develop marketing ideas for a new computer games company, gaining crucial work experience as part of their course.

Play2Improve is launching a free online service to train people how to be competitive gamers. The project has been incubated in Abertay University, which is renowned for launching the world's first computer games technology degree, and will launch at the NEoN digital arts festival on Thursday 11th November.

FPS Trainer is a free-to-use online game which develops players' skills for hugely popular first-person shooter (FPS) games like Call of Duty, Halo and Quake by simulating live action and using learning tools based on psychological research. The tool has been developed with world champion gamer Paul McGarrity, and will make money through selling personal tuition and premium features.

Jason Turner, a Lecturer in Marketing at Abertay University, said: "Gaining real-world experience has never been more important. By letting our students work directly with a real company and offer real advice, they are learning exactly what's involved in assessing a company's needs, their marketplace and how to be successful.

"We ran a pilot of this scheme last year, and it went so well that now every undergraduate Marketing student is getting the chance to work with these real, 'live' challenges as their coursework. FPS Trainer is a hugely enjoyable service with great market potential – and our students are helping decide how to launch it and grow a profitable user base."

The BA (Hons) Marketing & Business students are working in teams to develop and pitch marketing ideas, which will be incorporated into the business. Following a successful test last year, where the students' ideas

were a direct influence on business strategy, all undergraduate Marketing students are now working on this exciting 'live' case study.

Matt Seeney, Play2Improve Chief Executive, added: "Being based in Abertay University has been a great help while we develop and put the finishing touches to FPS Trainer. As well as the great facilities and easy access to computer games experts, having more than 200 students prepare marketing ideas for us is incredible!

"First-person shooters are incredibly popular games, but are fiercely competitive online. It can be very disheartening for inexperienced gamers to jump straight into a game like Quake Live and play online against very experienced gamers, some of whom might even be full-time professionals. By providing interactive training, FPS Trainer is much, much more sophisticated than the basic tutorial levels in games.

"Using computer gaming technology, psychological research and the skills of a world champion gamer, we've developed a truly unique service that will help gamers improve their skills, and enjoy their gaming even more. We might even help create a new world champion!"

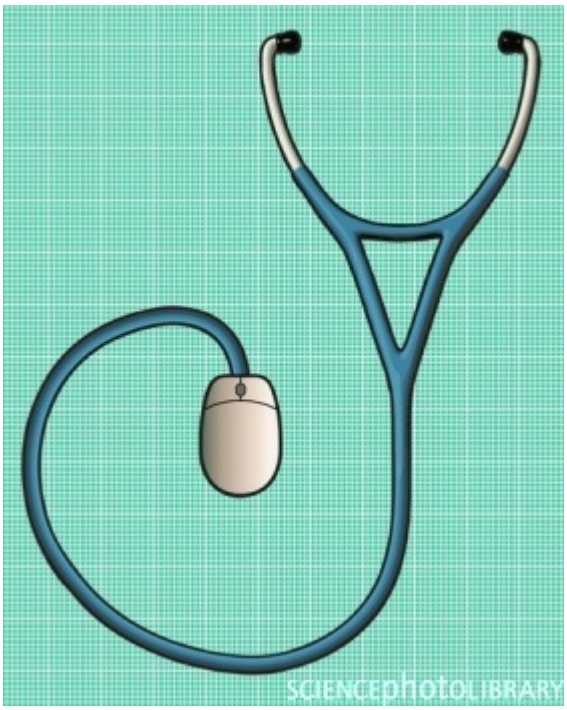
FPS Trainer is now available to play at http://www.fpstrainer.com/ for gamers who register for free online.

It will be available for the public to play at a special preview event as part of the NEoN digital arts festival at Abertay University on Thursday 11th and Friday 12th November.

Using 'live' case studies for student assessment is now a permanent feature of the BA (Hons) Marketing & Business. There are also plans to develop the model – which has been used successfully before in Abertay's computer games courses – for other business courses.
http://www.abertay.ac.uk/about/news/newsarchive/2010/name,6969,en.html

http://www.alphagalileo.org/ViewItem.aspx?ItemId=89207&CultureCode=en

Dortmund Monitoring for Medical Coverage - The German HealthNewsReview Goes Online!



08 November 2010 Technische Universitaet Dortmund
On Monday November 8th 2010 a unique monitoring project observing medical coverage in German media starts: A team of respected medical and science journalists regularly evaluates selected articles from newspapers, magazines, TV, radio and the internet. The evaluations, comments and further recommendation are published on the website www.medien-doktor.de Each evaluation is based on an internationally approved catalogue of quality criteria which was extended and refined at the Chair for Science Journalism at Dortmund University (TU Dortmund) in cooperation with the reviewers of the project. Details about the project are presented at a press conference during one of the biggest meetings of science journalists in Europe , the"WissensWerte"in the Congress Center Bremen on November 8th 2010 (5 p.m.). The German project was inspired by similar projects in Australia, Canada and the US (e.g., www.healthnewsreview.org)
Besides outstanding contributions, the media also present doubtful articles and programs regarding medical questions almost every day: The benefits of a therapy are exaggerated, side effects are not mentioned, the critical evaluation of another expert is missing, a single press release is the only source. "This way, journalists regularly make themselves – deliberately or not – the speaking trumpet of physicians and drug industry instead of being a critical observer", states Marcus Anhäuser, editor in chief of medien-doktor.de. "A vast number of people have raised false hope or became anxious because of bad medical coverage".
The media-doctor wants to sensitize journalists of all media and departments for standards of better coverage of medical topics. The common feature of the used evaluation criteria is that they are strongly oriented to what readers and viewers, patients and their relatives need to know to connect the dots. This includes that the benefit of a therapy or diagnostic method is not exaggerated, that side effects, costs and alternatives are mentioned, that there is an evaluation of how innovative a medical approach really is and that it is made clear when a medicine is available and how good the validity of a study is.
The media-doctor extents such criteria for medical reporting by also using further criteria from journalism in general. They focus more on the daily editorial routine of journalists. Compared to previous projects in

Canada and the US, factors like up-to-dateness, relevance, correct facts, intelligibility and journalistic realization have a stronger influence on the evaluation. "The media-doctor deliberately focuses also on what journalists themselves define as quality", explains Professor Holger Wormer, managing director of medien-doktor.de, Chair for Science Journalism at the Dortmund School and Institute of Journalism.
However, the project is not about finding as much bad examples as possible. It is even more important to find examples of best practice in medical coverage to serve as role models for other media and journalists.
The consortium of the "Initiative Wissenschaftsjournalismus"– Robert Bosch Foundation, Stifterverband fuer die deutsche Wissenschaft and the BASF company – who support medien-doktor.de with a start-up funding, hope that this project will help to further improve the quality of science coverage in Germany. Leading associations of science journalists like the Organization of German Science Journalists (Wissenschaftspressekonferenz - WPK) and the Association of German Medical Reporters (Verband der Medizinjournalisten -VDMJ) support the project.
http://www.medien-doktor.de

http://www.alphagalileo.org/ViewItem.aspx?ItemId=89195&CultureCode=en

Is Chronic Fatigue Syndrome A Personality Disorder?
08 November 2010 Journal of Psychotherapy and Psychosomatics

Credit: ED YOUNG / SCIENCE PHOTO LIBRARY Caption: MODEL RELEASED. Split personality. Composite image depicting a man with a split or multiple personality. The top of the man's head has swung open to reveal separate images of him looking sad, angry, & happy. People who suffer from this disorder have two or more separate personalities, each of which dominates their behaviour at different times. The personalities are often very different from each other. Multiple personality disorder should not be confused with schizophrenia, a condition which leads to a split between thought and emotion.

This study suggests that chronic fatigue syndrome is associated with an increased prevalence of maladaptive personality features and personality disorders. This might be associated with being noncompliant with treatment suggestions, displaying unhealthy behavioral strategies and lacking a stable social environment.
In the current issue of Psychotherapy and Psychosomatics a study addresses the relationship between chronic fatigue syndrome and personality factors. Chronic fatigue syndrome (CFS) presents unique diagnostic and management challenges. Personality may be a risk factor for CFS and may contribute to the maintenance of the illness.
In this study, 501 study participants were identified from the general population of Georgia: 113 people with CFS, 264 with unexplained unwellness but not CFS (insufficient fatigue, ISF) and 124 well controls.
The investigators used the Personality Diagnostic Questionnaire, 4th edition, to evaluate DSM-IV personality disorders and the NEO Five-Factor Inventory, to assess personality features (neuroticism, extraversion, openness, agreeableness and conscientiousness). The Multidimensional Fatigue Inventory measured 5 dimensions of fatigue, and the Medical Outcomes Survey Short Form 36 measured 8 dimensions of functional impairment. Twenty-nine percent of the CFS cases had at least 1 personality disorder, compared to 28% of the ISF cases and 7% of the well controls. The prevalence of paranoid, schizoid, avoidant, obsessive-compulsive and depressive personality disorders were significantly higher in CFS and ISF compared to the well controls.

The CFS cases had significantly higher scores on neuroticism, and significantly lower scores on extraversion than those with ISF or the well controls. Personality features were correlated with selected composite characteristics of fatigue.
The results of this study suggest that CFS is associated with an increased prevalence of maladaptive personality features and personality disorders. This might be associated with being noncompliant with treatment suggestions, displaying unhealthy behavioral strategies and lacking a stable social environment. Since maladaptive personality is not specific to CFS, it might be associated with illness per se rather than with a specific condition.

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Is Inability To Express Emotions Linked To Mortality In Hemodialysis?

08 November 2010 Journal of Psychotherapy and Psychosomatics

Credit: BSIP LAURENT / H. AMERICAIN / SCIENCE PHOTO LIBRARY Caption: MODEL RELEASED. Haemodialysis. Female patient lying on a bed next to a kidney machine during kidney dialysis (haemodialysis). She has two haemodialysis tubes attached to blood vessels in her arm by cannulas. One tube passes blood into an artificial kidney machine (at right) that removes waste products and excess water. The cleansed blood is then returned to the patient through the other tube. Haemodialysis is used when the kidneys fail to remove waste, toxins and excess water from the blood. The patient may also receive a transplant of healthy kidneys. -

A study published in the current issue of Psychotherapy and Psychosomatics demonstrates that alexithymia (the inability to express emotions) is a strong independent risk factor for all-cause mortality in hemodialysis patients.

Depression increases the risk of mortality in hemodialysis patients. Alexithymia, a disorder of affect regulation, has also been reported to be associated with mortality risk in the general population.

A group of investigators conducted a prospective study to estimate the independent impact of depression and alexithymia on long-term mortality. A total of 230 hemodialysis outpatients, with a mean age of 56.3 ± 9.6 years, completed a batch of self-report measures including the Beck Depression Inventory-II (BDI-II), the 20-item Toronto Alexithymia Scale (TAS-20) and the 36-item Short Form Health Survey (SF-36). Survival status was confirmed every 6 months for up to 5 years. The presence of depression and alexithymia was defined by a BDI-II score of ≥14 and a TAS-20 score of ≥61, respectively.

During the follow-up period, 27 deaths were confirmed. Both depression and alexithymia were associated with an increased risk for all-cause mortality; the age- and sex-adjusted hazard ratio for depression was 2.36 (95% CI: 1.08–5.15; $p = 0.03$) and that for alexithymia was 4.29 (95% CI: 1.95–9.42; $p < 0.001$). Depression lost its statistical significance after controlling for alexithymia, whereas alexithymia remained significant even after adjusting for the baseline depression, health status (the summary scores of the SF-36), marital status and clinical covariates (multivariate adjusted hazard ratio = 3.62; 95% CI: 1.32–9.93; $p = 0.01$).

The investigators concluded that alexithymia is a strong independent risk factor for all-cause mortality in hemodialysis patients.

http://www.alphagalileo.org/ViewItem.aspx?ItemId=89180&CultureCode=en