

Points of Interest

Memory Training Can Make You Smarter

For years, researchers thought that intelligence quotient (IQ), or fluid intelligence – the ability to solve new problems and reason well – could not be changed. You had the smarts you were born with, period. No one believed that a few brain exercises, if done often enough, could boost native intelligence. A study published in *Proceedings of the National Academies of Sciences* shatters that dogma.

Researchers ran participants through a series of training sessions with a computerized test. They found that intelligence levels began improving after 12 days and were markedly better after 17 days. They are planning longitudinal studies to measure long-term effects.

Jane Bosveld *Discover* December 11, 2008 <http://discovermagazine.com/2009/jan/056>

“Flying Car” Goes to Market

A Boston-area company plans to begin flight tests this year of a two-seater airplane that moonlights as a car. The aptly named Transition takes a stab at bridging the gap between automobiles and airplanes. Some people call it a flying car. The company designing and selling the vehicle prefers the term “roadable aircraft.”



Either way, it boils down to this: You sit down behind the steering wheel, drive to the runway, unfold two wings and take off. You can fly 800 kilometres (500 miles) on a tank of gas – regular unleaded – and when you land, you simply fold up the wings and drive where you want to go. At the end of the day, you fly back, drive home and park inside your garage.

Irene Klotz *Discovery News* January 22, 2009 <http://dsc.discovery.com/news/2009/01/22/flying-car.html>

Needle-Free Vaccines

Needlephobes, rejoice: vaccines may soon be a lot less painful. A needle-free vaccination method is being developed by Intercell USA with help from design giant Ideo. The new vaccination system, which uses a patch, is known in scientist-speak as transcutaneous immunization, and its secret is the Langerhans cell, part of the immune system that's in the skin. Intercell discovered how to trigger an immune response from the Langerhans cells, then asked Ideo to help design a product for vaccine delivery.

Tim McKeough *Fast Company* October 30, 2008 <http://www.fastcompany.com/magazine/130/intercell.html>

Reinventing the Wheel? Blue Room. Defusing a Bomb? Red Room.

Trying to improve your performance at work or write that novel? Maybe it's time to consider the colour of your walls or your computer screen. If a new study is any guide, the colour red can make people's work more accurate, and blue can make people more creative.

In the study, published on the website of the journal *Science*, researchers at the University of British Columbia conducted tests with 600 people to determine whether cognitive performance varied when people saw red or blue. Participants performed tasks with words or images displayed against red, blue or neutral backgrounds on computer screens.

Red groups did better on tests of recall and attention to detail, such as remembering words or checking spelling and punctuation. Blue groups did better on tests requiring imagination, such as inventing creative uses for a brick or creating toys from shapes.

Pam Belluck *The New York Times* February 5, 2009 http://www.nytimes.com/2009/02/06/science/06color.html?_r=1

Finding Control in Chaos

Even the most laid back among us crave a sense of control, and when we feel helpless, we scour our surroundings for anything that will restore predictability. New research shows that when we lack control, we don't simply wait for order to return: we impose it, if only in our own minds, by imagining patterns and trends where none exist.

In six experiments, psychologists Jennifer Whitson of the University of Texas at Austin and Adam Galinsky of Northwestern University manipulated subjects' sense of control. In some trials, they gave participants either random feedback or no feedback at all on a tricky experimental task; in others, they asked participants to recall a situation in which they lacked control or one in which they had full control. Results showed that not having control caused participants to mistakenly see an image in a field of static, to smell conspiracy in other people's benign behaviour, to embrace superstitious beliefs and to perceive nonexistent stock-market trends. Such illusory perceptions evaporated when participants were first denied control but then given an opportunity to write about their most deeply held values, an activity that bolsters psychological security and quells feelings of helplessness.

Siri Carpenter *Scientific American Mind* February 2009 <http://www.siam.com/article.cfm?id=finding-control-in-chaos>

Rapid Thinking Makes People Happy

Lousy day? Don't try to think happy thoughts – just think fast. A new study shows that accelerated thinking can improve your mood. In six experiments, researchers at Princeton and Harvard universities made research participants think quickly by having them generate as many problem-solving ideas (even bad ones) as possible in 10 minutes, read a series of ideas on a computer screen at a brisk pace or watch an *I Love Lucy* video clip on fast-forward. Other partici-

pants performed similar tasks at a relaxed speed.

Results suggested that thinking fast made participants feel more elated, creative and, to a lesser degree, energetic and powerful. Activities that promote fast thinking, then, such as whipping through an easy crossword puzzle or brain-storming quickly about an idea, can boost energy and mood, says psychologist Emily Pronin, the study's lead author.
Siri Carpenter *Scientific American Mind* February 2009 <http://www.sciam.com/article.cfm?id=rapid-thinking-makes-people-happy>

Google to Offer "People Tracking" Technology

With an upgrade to its mobile maps, Google Inc. hopes to prove it can track people on the go as effectively as it searches for information on the Internet. The new software will enable people with mobile phones and other wireless devices to automatically share their whereabouts with family and friends. The software plots a user's location – marked by a personal picture on Google's map – by relying on cell phone towers, global positioning systems or a Wi-Fi connection to deduce the person's location. The system can follow people's travels in the United States and 26 other countries.

Michael Liedtke *The Toronto Star* February 4, 2009 <http://www.thestar.com/Business/article/582118>



Automated Anesthesia

In May, researchers at the McGill University Health Centre in Montreal announced the creation of what they call the world's first fully automated anesthesia system, which has been used in 40 operations so far. Known as

McSleepy (a play on the nicknames of the characters McSteamy and McDreamy from the television medical drama *Grey's Anatomy*),

the system administers drugs, monitors their effects and makes adjustments accordingly, all by itself. Before a procedure, a surgery team simply enters into a computer the patient's weight and age, the level of anesthesia desired, the type of surgery to be performed and the medication to be given. With only minimal oversight, McSleepy takes care of the rest. "The system actually controls the effect of the drugs it gives – and controls it every minute," says one of its creators, Thomas M. Hemmerling of McGill University.

Jeffery Delviscio *The New York Times* December 12, 2008 <http://www.nytimes.com/2008/12/14/magazine/14ideas-section01-t-002.html>

Gut Bacteria Affect Almost Everything You Do

The human body contains 10 times more bacteria than human cells, with 50 trillion microbes living in the average digestive tract alone. The study of these internal bacteria is in its infancy: the Human Microbiome Project, launched to catalogue our bodies' bacterial inhabitants, started last October.

All these microbes are not just along for the ride, say scientists, but have co-evolved with human beings, providing important biochemical services in exchange for their home. Imbalances in gut bacteria have already been linked to obesity, cancer, asthma and a host of autoimmune diseases.

In a comparison of blood from germ-free and regular mice, researchers found large differences in molecules that affect just about everything involved in living. "I expected to find a couple of differences," said study co-author Bill Wikoff, a Scripps Research Institute biophysicist. "When we came back with hundreds of changes, it was a big surprise."

Brandon Keim *Wired Science* Blog February 9, 2009 <http://blog.wired.com/wiredscience/2009/02/bacteriablood.html>

Canadian Scientists Read Minds with Infrared Scan

Researchers at Canada's largest children's rehabilitation hospital have developed a technique that uses infrared light brain imaging to decode preference – with the goal of ultimately opening the world of

choice to children who can't speak or move. In a study published in *The Journal of Neural Engineering*, Bloorview Kids Rehab scientists demonstrated the ability to decode a person's preference for one of two drinks with 80% accuracy by measuring the intensity of near-infrared light absorbed in brain tissue.

"This is the first system that decodes preference naturally from spontaneous thoughts," says Sheena Luu, the University of Toronto PhD student in biomedical engineering who led the study under the supervision of Tom Chau, Canada research chair in pediatric rehab engineering.

CNW Group February 10, 2009 <http://www.newswire.ca/en/releases/archive/February2009/10/c6910.html>

