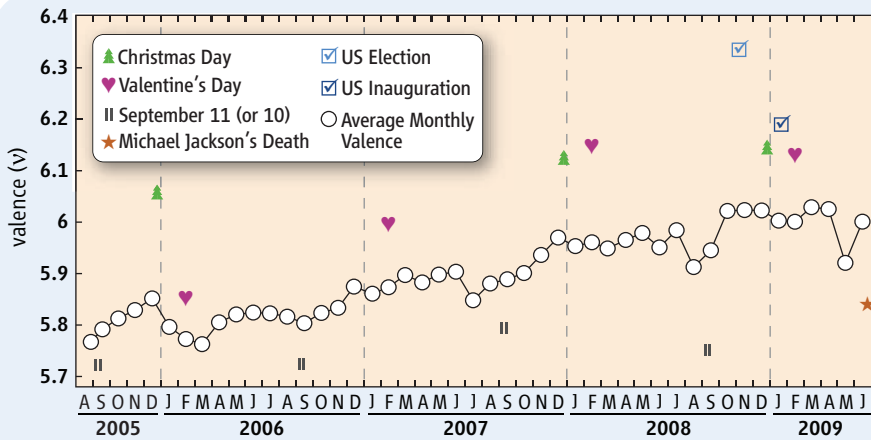


BLOGS: HAPPINESS BAROMETERS?



Day in, day out, bloggers pour their feelings onto the Web. Now researchers are mining those outpourings to track society's mood swings.

Peter Dodds and Christopher Danforth, applied mathematicians at the University of Vermont, Burlington, automatically searched 2.4 million blogs, via the Web site www.wefeelfine.org, for phrases containing the words "I feel." Their computers then scanned those phrases for 1034 emotionally charged words that a 1999 psychology study had ranked on a happiness scale from 1 (miserable) to 9 (ecstatic). From the words' frequency and scores, an algorithm calculated a net feel-good factor for each day and month.

For the past 4 years, happiness has steadily increased in the blogosphere, Dodds and Danforth reported online recently in the *Journal of Happiness Studies*. Spirits spike on Christmas and Valentine's Day but dip on 11 September. The happiest day since 2005 was 4 November 2008, the day of the U.S. presidential election. In contrast, Michael Jackson's death in June triggered a 3-day trough.

The Vermont scientists are now studying Twitter feeds. James Fowler, a social scientist at the University of California, San Diego, says the new method will enable scientists "to take the pulse of the whole world, assessing the mood of human society."

Easy as 1, 2, 3

New Caledonian crows, known for clever tool-making in the wild and in the lab (*Science*, 9 August 2002, p. 981), have added another first to their list of talents: using three tools in the correct order to bag a treat. Such sequential tool use has never been observed in any other untrained nonhuman animal, behavioral ecologist Joanna Wimpenny and others in Alex Kacelnik's lab at the University of Oxford in the United Kingdom report this week in *PLoS ONE*.

In the wild, the crows (*Corvus moneduloides*) regularly fashion barbs and hooks from leaves and twigs to extract grubs from holes and crevices. And in Kacelnik's lab, a wild-caught crow called Betty was famous for inventing tools. In the new experiment, Kacelnik's team gave each of seven crows a test tube stuffed with a tasty piece of meat that could be pried out only with a particular stick. To get at the meat, the birds had to do three things in the right order: pick up a short stick, available on the cage floor, and use it to pull a longer stick out of a second test tube; use that stick to extract an

even longer stick from a third test tube; and then use this longest stick to get the prize.

Four crows took home the bacon. "Clearly, they were not selecting the sticks at random," Kacelnik says, because the birds usually swapped sticks for longer ones. Frans de Waal, a primatologist at Emory University in Atlanta, applauds the study as "absolutely essential to understand better what these crows are doing," although he suspects that they're solving the task via a trial-and-error process "closer to that of a capuchin monkey than an ape."

Life Tags Along

Could martian life have come from Earth or vice versa? The transpermia hypothesis suggests that life hopped planets on debris kicked up by asteroid impacts. Now researchers are gearing up to test whether that was possible.



The Living Interplanetary Flight Experiment (LIFE), designed and sponsored by the Planetary Society in Pasadena, California, will hitch a ride on a Russian sample-return mission to Mars's moon Phobos to see whether Earth life without special protection can survive a 34-month space voyage. "We view this as a simulated meteoroid," says Bruce Betts, the society's director of projects.

The scientists will fill a hockey puck-sized capsule with 10 different organisms, including *Bacillus subtilis* bacteria and the seeds of the mouse-eared cress plant (*Arabidopsis thaliana*). The tiny disk will launch in October aboard the Russian probe, nicknamed Phobos-Grunt. Phobos-Grunt will collect rocks and dirt from Phobos and return them and the LIFE capsule to Earth in 2012. Biologists will then examine how the tiny spacefarers fared.

How Sweet It Is

People whose early ancestors lived in Europe have the keenest biological sensitivity to sweet tastes, geneticists report.

Other Communication Disorders (NICDD) in Bethesda, Maryland, asked 144 people from various ethnic backgrounds to rank the sweetness of nine solutions ranging from 0% to 4% sugar. The volunteers' sucrose sensitivity turned out to be strongly associated with two variants of a gene called *TAS1R3*, which plays a major role in encoding the main carbohydrate sweet taste receptor.

Consulting a reference collection of DNA from 1050 people from around the world held by CEPH, the French gene database, the scientists found that most Europeans have both of the sweetness-sensing variants. The variants are less widespread in people from Asia and the Middle East and are least prevalent in Africans, they report in the 11 August issue of *Current Biology*.

"People who study diet and evolution have pointed out most of the high sugar-containing plants like sugarcane are tropical plants," says NICDD geneticist Dennis Drayna, a co-author of the study. "So in northerly latitudes, you have to be more sensitive to sugar to find calories." Molecular biologist Stephen Wooding of the University of Texas Southwestern Medical Center at Dallas says the reasons for such differences among populations aren't yet clear. "One possibility is that the mutations are adaptive," he says. "Figuring out whether this is the case will require some work."



CREDITS (TOP TO BOTTOM): COURTESY OF P. DODDS AND C. DANFORTH; THE PLANETARY SOCIETY; PHOTOS.COM

Downloaded from www.sciencemag.org on August 7, 2009