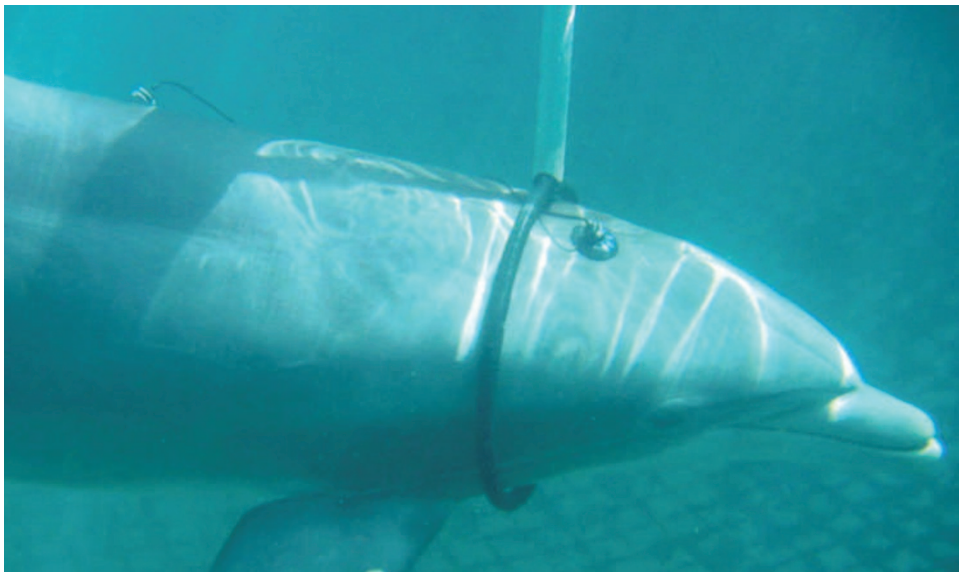
RESEARCH HIGHLIGHTS

Deafening dolphins

Biol. Lett. doi:10.1098/rsbl.2009.0099 (2009)
Mid-frequency sonar — such as that deployed on military ships — can induce temporary hearing loss in Atlantic bottlenose dolphins (*Tursiops truncatus*), which some people fear can cause them to lose their way and end up stranded on beaches.

Aran Mooney and his colleagues at the University of Hawaii in Kaneohe exposed a trained, captive dolphin to intensive sonar pings to a level of 214 decibels, which induced hearing loss and behavioural changes. Hearing function was measured using an electrode placed atop the head (pictured) to detect auditory evoked potentials in the brainstem. Tests showed that repeated exposures are required to produce the hearing loss.



T. A. MOONEY

NEUROSCIENCE

The thief within

Biol. Psychiatry **65,** 600–606 (2009)
A drug that quiets cravings for alcohol may also soothe the urge to steal in kleptomaniacs.

The drug naltrexone acts by blocking the effects of opioids in the brain. Jon Grant and his colleagues at the University of Minnesota School of Medicine in Minneapolis conducted a double-blind study of the drug's effects on a group of kleptomaniacs who ordinarily steal at least once a week.

Within 8 weeks, the 11 volunteers receiving the drug reported a significant reduction in their compulsion to steal compared with the placebo group. The results are preliminary, but support a link between the symptoms of kleptomania and the body's opioid system.

ASTRONOMY

Twinkle twinkle, lots of stars

Astrophys. J. **695,** 561–573 (2009)
Starbursts, periods of intense star formation in galaxies, have long been thought to be short and frenetic, lasting just several million years or so. But it turns out those episodes were just isolated 'flickers', say Kristen McQuinn of the University of Minnesota in Minneapolis and her colleagues, who measured starbursts in three nearby dwarf galaxies.

They found the flickers to be interconnected parts of longer starbursts, spread out across each galaxy, and sustained for 200 million–400 million years. These larger, longer starbursts could be responsible for galactic superwinds, which are suspected of being responsible for carrying chemically enriched compounds into intergalactic space.

ANIMAL BEHAVIOUR

Regarding jackdaws

Curr. Biol. doi:10.1016/j.cub.2009.02.062 (2009)
Curious as to whether jackdaws — members of the crow family — could follow human eyes, Auguste von Bayern and Nathan Emery, then at the University of Cambridge, UK, offered food to hand-raised jackdaws. The birds took longer to nab a proffered nibble if the food was the subject of a stranger's stare, and they seemed to be watching the eyes rather than the direction of the head (see variations of head and eye attitudes, pictured below). In a separate experiment, the birds needed moving, rather than static, eye signals from a familiar person to understand communication about the location of hidden food.

The researchers speculate that jackdaws evolved this eye-following ability to interact with one another. However, they add that the birds followed by the study have spent their whole lives with humans.

ELSEVIER

DNA

Acid–base boogie

Nature Nanotech. doi:10.1038/nnano.2009.83 (2009)
A tiny machine made from DNA can measure the acidity of living cells from the inside.

Yamuna Krishnan and her colleagues at the Tata Institute of Fundamental Research in Bangalore, India, designed three short pieces of DNA that spontaneously assemble into the nanoscale device when they are in close proximity. The device changes shape when in an acidic environment, thanks to changes in how cytosine binds. Fluorescent tags change colour to reflect the shape change — green for neutral, red for acidic. The sensor could be used to study changes in cell pH that accompany viral invasion.

BIOSENSING

Merry-go-round sensing

Optics Express **17,** 6230–6238 (2009)
Detecting nanometre-sized entities in solution is complicated by the fact that they must first slowly diffuse to the sensor.

Stephen Arnold of the Polytechnic Institute of New York University in Brooklyn and his co-workers have found a way to speed things up. By shining a laser on silica microspheres, they produce 'whispering gallery modes' (WGMs) — light trapped inside the microsphere by reflection that circles endlessly. This causes