

## MOZART FOR A MODERN WORLD

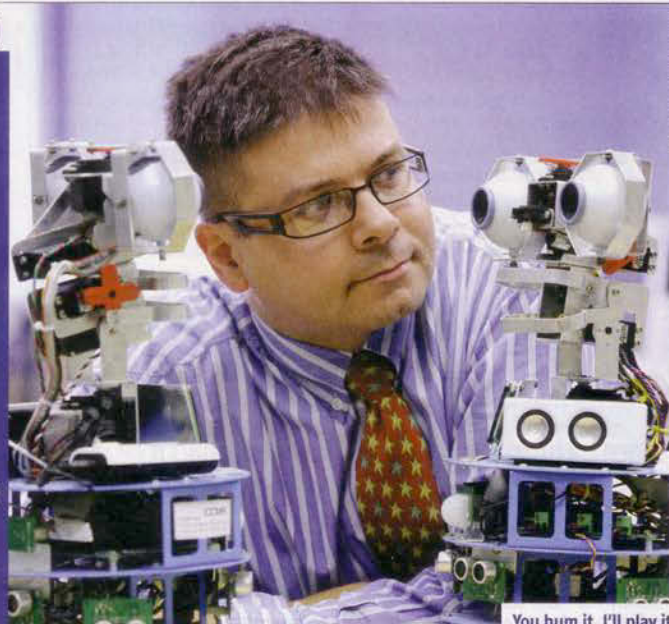
Eduardo Miranda shuts the door of his study, leaving two "warbling" robots to their own devices. He has programmed them to blurt out sequences of random notes, and two weeks later, he returns to find that the robots are still cooing in their eerily human voices, but they have now "evolved" to sing a repertoire of 20 sounds together.

Miranda, a composer and computer scientist at the University of Plymouth in the UK, hopes that such collaborations between singing robots will one day help him to compose music that no human would ever come up with. "The robots develop their own musical culture. There are no pre-programmed musical rules."

Miranda equips each robot with software that mimics the human voice, and gives each a microphone that acts

as its ears and a camera for its eyes. One robot starts by babbling a random sequence of about six notes. When the second robot hears this, it responds with a babble of its own. The first robot then compares the two strings of notes. If it deems them to be similar, it nods. The second robot detects this and "memorises" the settings that created the sequence. If the noises are dissimilar, the first robot shakes its head, causing its partner to discard, or "forget", that sequence.

Since only those sounds that both robots know about are recorded, gradually their memories fill up with similar sounds (*Journal of Experimental and Theoretical Artificial Intelligence*, DOI: 10.1080/095281307016664640). Miranda likens this to the emergence of a very simplistic, shared culture.



You hum it, I'll play it

## Sound smooths out jerky pictures

AN EFFECT used since the early days of cinema to make the action appear smoother could improve our perception of poor video footage sent to cellphones.

Salvador Soto Faraco at the University of Barcelona, Spain, and colleagues showed 15 people films of flashing discs of light that increased or decreased in size. When the discs flashed rapidly, they appeared to move forwards or recede. At lower flash rates, they only appeared to move when accompanied with beeps that increased or decreased in volume.

This parallels the way fast music helped to create an illusion of motion in early movies. It shows that sounds can fool the brain into seeing motion even without visual cues, a trick that could make low-frame-rate video footage transmitted over a low bandwidth seem less jumpy, the team say.

**1000**  
miles per hour. The speed a UK team hopes to reach with the Bloodhound SSC. The car will be powered by a jet engine and a rocket

## One less excuse to play video games

DOES playing computer games boost your brainpower? Not necessarily, seems to be the answer.

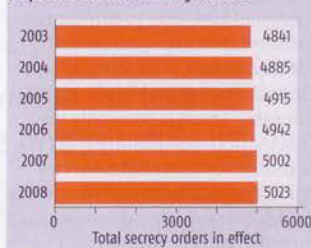
Walter Boot and colleagues at the University of Illinois, Urbana-Champaign, found that non-gamers showed no improvement in memory skills or the ability to multitask after spending more than 20 hours on one of three video games.

This appears to contradict previous studies which detected superior mental aptitudes among habitual gamers.

The researchers suggest that, while a few hours playing an action game could improve your concentration, that's not enough for other cognitive skills. "Perhaps individuals with superior abilities are more likely to choose video gaming as an activity in the first place," Boot adds (*Acta Psychologica*, DOI: 10.1016/j.actpsy.2008.09.005).

### INVENTIONS UNDER WRAPS

Ever more secrecy orders are in force on US patents deemed militarily sensitive



SOURCE: US PATENT AND TRADEMARK OFFICE

### GIZMO

Divers normally control their buoyancy manually, by adding to or releasing air from an inflatable jacket. If they get this wrong, they risk descending to a depth that can cause too much nitrogen to accumulate in their tissues, or rising so rapidly that potentially fatal nitrogen bubbles form in their blood. To help divers avoid this danger, researchers at the University of Auckland, New Zealand, have created an electronic gadget which attaches to the jacket and automatically adjusts its buoyancy.

A pair of goggles with a camera is set to become the latest tool for botanists in the field. Developed at Columbia University, New York, the headset's software analyses a photograph of a leaf and displays the closest-matching species. The Smithsonian Institution in Washington DC hopes to use the device to speed up plant censuses.



## "I was divorced, without a word of warning. That made me angry"

The reaction of a Japanese woman who found her virtual persona (avatar) in the interactive game Maple Life – which was married to another player's avatar – had been divorced. She was arrested on suspicion of hacking after allegedly using that player's login details to kill off his avatar (AP, 23 October)