

litmus paper

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TODAY'S HIGHLIGHTS



Spongebob Squarepants
Bubble Trouble

2-3 pm/Town Hall

David Nutt and Barbara
Sahakian
High School?

4-5 pm/Town Hall

Andrew Fitzgibbon and
Andrew Daffy
Screen Magic

6-7 pm/Town Hall

FameLab Final
7-9 pm/Town Hall

Alice's food for thought

Helen Jopling

Breakfast eaters are more able to concentrate on tasks, remember information and deal with stress. You may therefore find it surprising that Dr Alice Roberts chooses to start the day with only a cup of black coffee.

Following on from her recent TV series, Roberts, an anatomist, took the audience of *Don't Die Young* on a whistle-stop tour around the body and its requirements with the help of nutritionist, Sue Baic.

The heart, like any other organ, relies on a good blood supply to function properly. If there are too many saturated fats in your diet, they can be deposited in the lining of the coronary artery preventing blood flow and resulting in a heart attack. Whilst heart disease is the biggest killer in the western world, Eskimos suffer very little from it, which can be explained by the large amount of omega-3 rich fish they consume.

Humans have brains seven times



the size they should be. The millions of complex neural networks need careful looking after and large amounts of oxygen and carbohydrates to function correctly. Baic went on to explain that during a night's sleep your brain is essentially running a marathon and needs refuelling in the morning. No Atkins diets here; she is a great advocate of a carb-rich breakfast.

Roberts finally moved on to the eye, highlighting the importance of antioxidants from fruit and veg-

etables for maintaining our vision. The need for five portions of fruit and vegetables a day is now considered by the World Health Organization to be as important to our health as giving up smoking. It is unfortunate, then, that only one in six adults in the UK manage to reach this target.

The focus of the journey was to understand how the body works and is assembled in order to look after it better. The conclusion? There is no substitute for a healthy diet.

Life's a risky business... or is it?

Helen Williams

There are plenty of ways to assess risk in terms of science, but facts and paranoia are rarely separated in a society that has gone mad for risk management. These days, we spend way too much time worrying and applying red tape rather than embracing life and being realistic about potential danger. Furthermore, our perception of risk relating to global issues is often distorted, badly. This was the bleak picture presented at yesterday's talk – or rather rant – about humans' inability to tolerate risk.

Cranfield University's Bill Durodie was fuming as he argued that our disengagement with politics

and our social isolation has led to a crisis of distrust in government. People don't feel safe and so risk aversion is out of control. Pfizer's David Slavin largely agreed with Durodie and was equally concerned that the weight we give to risk is socially constructed rather than backed by science.

Durodie and Slavin had plenty of examples. Remember "mad cow disease"? "It was bad news – for cows," said Durodie. Just 150 people died rather than the hundreds of thousands feared.

So, if all this talk of scaredy-cat culture makes you want to take "crazy" risks, forget the extreme sports, try horse riding and rugby.

Probing deep brain stimulation

Mimi Mo

When Mark Robins pressed a small button on what looked like a remote control, the audience gasped with amazement. His whole body started to shake. He had switched off the brain pacemaker, which was implanted during deep brain stimulation (DBS) surgery, in order to demonstrate the severity of his Parkinsons.

Martin Westall told stories about how DBS changed his wife's and daughter's lives, both of whom were diagnosed with early-onset generalised dystonia. He spoke of seeing his 17 year old daughter standing upright for the first time after surgery and realising how tall



Amy Westall, freed by DBS

she had grown.

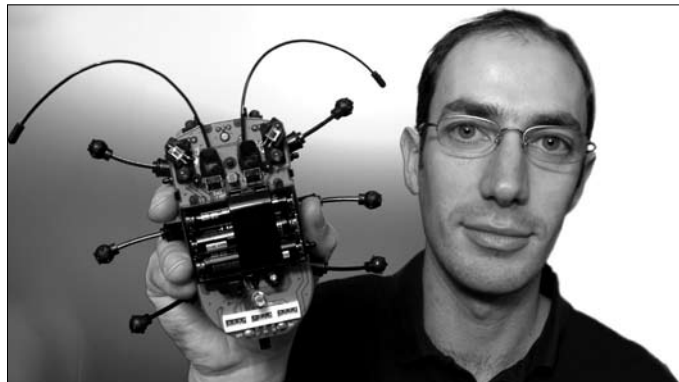
The real stars of this event were people who once thought their burden would be with them forever, whose lives have now been turned around by this revolutionary treatment. This talk proved that the impact of DBS on lives speaks louder than words.

Sorry Dave, I can't do that

Andrew Mountford

Will we have robotic friends in our lifetimes, and if so how will we treat them? Judging from the results on show from Peter Bentley and Lola Cañamero, it's not going to be a major concern any time soon. An amusing dialogue with MegaHAL set the scene. MegaHAL, apparently one of the most advanced conversational artificial intelligences around, couldn't come up with anything more coherent than "Hello how are you an idiot," thus singularly failing the famous Turing test without even the excuse of a few beers under its silicon belt. So much for the traditional symbolic processing approaches to AI.

More modern techniques, based upon neural networks and genetic algorithms, attempt to evolve intellectual function and even emotional response, much in the way nature is thought to. These software systems encode neuron-like processing units and the messaging interactions between them in



such a way that the overall system response – and apparent behaviours – can be modified via, for example, external stimuli. So what happens when you put two neural net-driven robots in an environment with limited essential resources? Well, what a surprise – they end up fighting. I think (via my very own neural network) that I could have predicted that. The core problem appears to be the key representational elements within these systems, suggesting that there is some way to

go before we understand enough about ourselves to facilitate production of viable electronic models of our capabilities.

So, MegaHAL was funny, and those with anthropomorphic leanings may well have found the robots endearing. But to worry about the ethics of how to treat true artificial intelligences – should they ever arrive – is probably a little premature at this juncture. I, robot? I don't think so. Give me natural unintelligence any day.

Mind ablutions

Catherine Jopling

What links scientologists to the 9/11 bombers? They have all had what most of us would consider unreasonable beliefs implanted in their minds by brainwashing. In an interesting talk, Kathleen Taylor explained some of the methods used to indoctrinate people.

Brainwashing is not magic, but relies on the flexibility of our brains. Beliefs are formed by developing connections between neuronal networks and become stronger the more these networks are used. The successful brainwasher uses isolation and uncertainty to eliminate old beliefs, at the same time establishing new ones by control and repetition, associating them with positive emotions.

Taylor offered some advice on how to avoid brainwashing. She compared the brain to a cultivated garden, which would be a less likely target for unscrupulous builders than an untouched meadow. We need to fertilise our minds by exposing them to new experiences and challenging our beliefs; a festival is perfect for that.

Space, man!

Kate Gardner

"I saw Jupiter the other night for the first time in well over a decade and I fell over backwards." That sums up what Alex James, of Blur fame, was doing at a science festival – his enthusiasm for all things "space" has prompted him to use his celebrity to sell the science brand.

James is not the most articulate public speaker but his love of the subject, plus running gags, kept it interesting. He was famously involved in the Beagle mission to Mars but it turns out astronomy has been part of his life for much longer – during Blur's heyday, he carried a copy of *Foundations of Astronomy* around with him. He apparently found it "soporific", to the audience's amusement. A far cry from "the crazy world of rock and roll" indeed. As he so neatly put it, as a rock star "the sky was the limit and that was apparently limitless too."



"Take me to the Groucho" by Gemma Hastilow (gemmahastilow.com)

THE DROID

Testing festival facilities to the limit, a handful of animal rights protesters came to the box office to claim their tickets yesterday and politely asked, "Do you have anywhere we can put our placards?" The Droid can only guess at the response.

The Droid would like it to be known that MegaHAL was doing the crossword in the VIP room yesterday – he's not as stupid as he sounds

After attending the *Brainwashing* event yesterday, the Droid would like to say how really, really, really good it was.