

Valley views

From Andrew Hawkins

I wonder if the “uncanny valley”, the discomfort experienced when confronted by a human-like android (12 January, p 35), could be related to the idea that our brains organise things into specific categories, such as dogs and fish under animals (5 January, p 10)?

A robot that looks human but we know is a machine could be creating an anomaly in the brain’s filing system as it attempts to slot it into conflicting categories.

Peaslake, Surrey, UK

From Charles Rainey

Few could disagree that empathy plays a key role in the “uncanny valley” phenomenon, as proposed by Karl MacDorman. However, I would suggest an additional factor to do with the detection of lying. Humans rely on facial micro-expressions to determine trustworthiness and I believe that an android face that tries but fails to perfectly mimic human emotion is unconsciously

interpreted by the viewer as attempting to suppress these. This is perceived to be an attempt to deceive and is therefore taken as menacing.

The concept isn’t limited to visual cues. In the film *2001: A Space Odyssey*, director Stanley Kubrick allowed computer HAL 9000’s over-controlled, emotionless diction to alert viewers to its untrustworthy nature before it became deceptive and murderous.

Newtownabbey, County Antrim, UK

It grows on trees?

From Ben Haller

Your look at the ecology of mistletoe was a fascinating read (22/29 December 2012, p 70), but it got me thinking about economics. Trees hang onto the large majority of resources in a woodland and don’t share them with others, and that stifles diversity. In a sense this echoes the accumulation of resources by the super rich,



or 1 per cent, in our societies.

Mistletoe is like Robin Hood; it steals from the rich (the trees it grows on) and gives to the poor (other species present). In so doing, it apparently acts as a “keystone resource” promoting diversity.

To what extent do ecology and economics occupy common ground? Could economic experiments be conducted in experimental forest plots? Can models in ecology be extrapolated to human economies? Has this been studied, and if so, what does it tell us about inequality, redistribution, economic productivity and health? Montreal, Quebec, Canada

Not so elementary

From Paul Waring

As an avid fan and one who uses the stories of Sherlock Holmes to demonstrate inference, I really enjoyed your book reviews on the great detective and his science (5 January, p 40). In them you mention his use of deductive reasoning, which in its strictest definition means that based on the assumption of true reasons the answer is guaranteed true.

However, author Arthur Conan Doyle probably assumed the more common meaning of “deduction” as a process leading to a conclusion so that an audience not necessarily skilled in either science or logic could understand.

Holmes of course uses that form of reasoning which gave 18th century philosopher David Hume

so many problems and which produces new knowledge with a high probability of truth – inductive reasoning.

Canberra, ACT, Australia

Natural barriers

From Edward Webber

Mark Pagel’s hypothesis about the distribution of languages, with the widest diversity found in the tropics, is interesting but I suspect it has more to do with topography than climate (8 December 2012, p 38). The New Guinea islands are geologically young and in the early stages of erosion, with high mountains and steeply incised valleys in the highlands. Each valley is home to a different tribe with a distinct culture and language, often out of touch with the rest of the world.

Buderim, Queensland, Australia

Editorial input

From Michael Berkson

You report that Wikipedia is rated harder to read than *Encyclopaedia Britannica* (15 December 2012, p 27). Information scientists Adam Jatowt and Katsumi Tanaka attribute this to Wikipedia articles often being written by experts, who tend to sacrifice readability for accuracy.

I always understood that *Encyclopaedia Britannica* contributors were also experts. There is surely a simpler explanation: the *Britannica* entries are edited by professionals before publication, unlike those in Wikipedia.

Great Shelford, Cambridge, UK

Gainless condition

From David Fee

You report that finger skin wrinkling as a result of soaking in water could be a beneficial adaptation as it gives better grip in wet conditions (12 January, p 15).

Enigma Number 1733

Astronomer royal

ADRIAN SOMERFIELD

I was talking to my granddaughter about the solar system and how planets and comets move in ellipses with the sun at one focus. I told her how you could draw an ellipse by sticking two pins in a sheet of paper both equidistant from and in line with the central point, placing a loop of string around them, and then by putting a pencil in the loop and keeping it tight, go right round. The

pencil would thus draw the ellipse, each pin being at a focus.

I then asked her to draw the biggest ellipse she could on a sheet of paper 50 centimetres long and 30 cm wide, and then to find the area of the rectangle she could inscribe in her ellipse whose longest side was equal in length to that of the shorter side of the original sheet.

How far apart must she place the pins? How long was the string?

What was the area of the inscribed rectangle?

WIN £15 will be awarded to the sender of the first correct answer opened on Wednesday 20 February. The Editor’s decision is final. Please send entries to Enigma 1733, New Scientist, Lacon House, 84 Theobald’s Road, London WC1X 8NS, or to enigma@newscientist.com (please include your postal address).

Answer to 1727 Common factors: The consecutive numbers are 17, 18 and 19

The winner Ivan Simmons of Edinburgh, UK