

The last word

Monkey business

Lies, damned lies... and data



WHEN A LEADING RESEARCHER IS FOUND GUILTY OF SCIENTIFIC MISCONDUCT, A CAREER IS IN RUINS AND THE FIELD OF NEUROSCIENCE IS IN DAMAGE CONTROL, BUT WHAT'S REALLY AT STAKE IS THE WHOLE PROCESS THAT UNDERPINS OUR TRUST IN SCIENCE.

STEVE HOLDEN EXPLAINS.

'No dean wants to see a member of the faculty found responsible for scientific misconduct, for such misconduct strikes at the core of our academic values. Thus, it is with great sadness that I confirm that Professor Marc Hauser was found solely responsible, after a thorough investigation by a faculty investigating committee, for eight instances of scientific misconduct.'

So wrote Michael Smith, dean of Harvard University's Faculty of Arts and Sciences, in a memo to faculty members in August. The memo was subsequently published by the *Chronicle of Higher Education*.

Hauser's research investigates the evolution of language and cognition through studies of infant humans, and of rhesus monkeys and cotton-top tamarins – a bit like the ewoks in *Return of the Jedi*. As it turns out, though, Hauser has got his data and his conclusions back to front, a bit like Yoda: evolved as much as Hauser would have us believe cotton-top tamarins have not. They certainly don't speak Ewokese.

In essence, Hauser, Professor of Psychology, Director of Harvard's Cognitive Evolution Laboratory and adjunct Professor in the Harvard Graduate School of Education, was found guilty of monkey business – using

bogus data to support his conclusion that monkeys recognise sound patterns. As Tom Bartlett in the *Chronicle of Higher Education* explained, 'Researchers played a series of three tones (in a pattern like A-B-A) over a sound system. After establishing the pattern, they would vary it (for instance, A-B-B) and see whether the monkeys were aware of the change. If a monkey looked at the speaker, this was taken as an indication that a difference was noticed.'

Trouble brewed when Hauser and a research assistant independently coded video of the experiment. According to Hauser's coding, the monkeys noticed the change in pattern; according to the research assistant's coding, they didn't. A second research assistant, whose role was to analyse the coding, took the discrepancy to a graduate student for advice. Independently, they watched the video again, and found the behaviour of the monkeys on the video and Hauser's coding had nothing in common. That led to an investigation by Harvard's Faculty of Arts and Sciences in 2007 that was completed this year, news of which was broken by the *Boston Globe's* Carolyn Johnson in August.

As Smith explained in his faculty memo, Harvard 'considers confidential' the spe-

cific sanctions meted out to Hauser, but observed that the sanctions available to him include involuntary leave, the imposition of additional oversight on Hauser's research lab and restrictions on his ability to apply for research grants, admit graduate students or supervise undergraduate research.

The 2002 article, 'Rule learning by cotton-top tamarins,' in *Cognition*, co-authored with Daniel Weiss from the University of Rochester and Gary Marcus from New York University, has been retracted. According to the *Cognition* retraction, 'An internal examination at Harvard University found that the data do not support the reported findings. We therefore are retracting this article. (Marc Hauser) accepts responsibility for the error.'

A correction was published for the 2007 paper, 'Rhesus monkeys correctly read the goal-relevant gestures of a human agent,' in *Proceedings of the Royal Society*, co-authored with Harvard University's David Glynn and the University of Southern California's Justin Wood.

There's also a third publication, 'The perception of rational, goal-directed action in nonhuman primates,' in *Science*, one of the world's most prestigious scientific journals, co-authored with Glynn, Wood and Brenda Phillips from Boston University. 'The authors continue to work with the (*Science*) editors,' Smith explained.

So a science researcher cooked his data a little. Does it matter?

Well, yes.

As Michael Tomasello, Co-Director of the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany, explained to Johnson in an email in August, 'If scientists can't trust published papers, the whole process breaks down.' ■

By the editor of Teacher, Steve Holden, this month's Last Word written was Highly commended in the best columnist category of the Quill Awards for the Last Word last year by the Melbourne Press Club winner he was.