

Honest Signals: How they shape our world by Alex Pentland, MIT Press, \$22.95, ISBN 9780262162562



## MORE THAN WORDS CAN EVER SAY

We're often unaware of non-verbal signals, but a new book shows that they are the most important predictor of behaviour, says **Mark Buchanan**

**S**OMETHING, surely, sets us humans apart. We share 90-odd per cent of our DNA with mice, yet our intelligence is unique. We stand alone as the animal that acts on deliberation and conscious forethought – or so we'd like to believe.

But consider this. A few years ago, Yale University psychologist John Bargh and colleagues asked volunteers to fill out questionnaires designed to “prime” some of them with words linked to the elderly, such as “Florida”, “sentimental” and “wrinkle”. Afterwards, the researchers timed how long it took participants to walk down a hallway, and found that those

who had been primed walked more slowly than those who hadn't.

Psychologists have amassed volumes of data showing that what we do, and how we do it, can be influenced by seemingly irrelevant environmental details. The evidence is so striking that some suggest consciousness may be unnecessary for explaining most human behaviour. That may be going too far, but in *Honest Signals*, computer scientist Alex Pentland of the Massachusetts Institute of Technology presents ample evidence that the idea is more plausible than one might think – and that technology may soon play a revolutionary part in

putting human behavioural science on firmer ground.

If we respond unconsciously to words on paper, as Bargh's study showed, it's hardly surprising that we also respond to gestures or body language. This has been known for decades, but now Pentland and colleagues at the MIT Media Lab have pioneered technology to make the study of such influences more objective. Using small, wearable sensors which monitor people's voice patterns and movements, they have found that they can measure and record specific “social signals” that turn out to predict much of what we do, from the outcome of a job interview to the

### “We interact through a hidden channel of communication”

success of a first date.

In one experiment, Pentland's team had business students take part in lengthy negotiations and then recount what happened. The participants talked in terms of strategy and claimed that the outcome hung on dramatic developments late in the

**New technology is allowing scientists to study group behaviour with unprecedented accuracy.**

negotiations. However, Pentland's group found that by looking at just the first five minutes of sensor data, they could predict with 72 per cent accuracy who would win.

This result came from analysing not what people said, but how they said it – variations in tone and amplitude, for example. The implication of this experiment and many others like it, which the book describes in detail, is that people interact through a hidden channel of communication every bit as important as the verbal one. According to Pentland, this is rooted in the fact that our facility for language evolved on top of a pre-existing neural capacity for non-verbal communications – dominance displays and the like – which we share with other animals.

Some social cues, Pentland suggests, are “honest signals” in that they are difficult to fake and therefore provide “a window into our intentions, goals and values”. For instance, a person's activity within a conversation – not only how much he or she gestures and speaks but also the precise details of amplitude and frequency – gives an honest signal of his or her level of interest. Mimicry – how much one person copies the gestures of another – is an honest signal of empathy. Bringing honest signals into the spotlight should help researchers understand group behaviour much more clearly.

Technology now appears set to alter our understanding of why we do what we do, by exposing a hugely influential channel of communication that has long remained hidden. That may be a little disturbing. But if it is not deliberation and forethought that make us unique, perhaps it is our unquenchable thirst for knowledge and understanding. ●

**Mark Buchanan is the author of *The Social Atom* (Bloomsbury, 2007)**



**Will the simple bicycle be the preferred mode of transportation in 10,000 years?**

year attempting to cross the Mediterranean in what Hanlon suggests may be “the greatest disaster the world has ever seen”.

However, Hanlon’s discussion of the imminent future of Africa and Asia, home to 80 per cent of the planet’s people, fills only a dozen pages. Here is where the book falters: there is no depth to the analysis. Everything is sketched and hazy; nothing is concrete or argued with any vigour or rigour. Instead, Hanlon pads the book with science fiction. Many passages are (very) short stories: an alien visitation, for example, and a baffling piece about a future solar eclipse.

In each of these cases, Hanlon chooses to flesh out the details of an arbitrary future scenario rather than face up to the more difficult task of arguing how and why such a scenario might arise. Take, for example, what is possibly the most interesting suggestion in the entire book: 10,000 years into the future, he says, we will all still use bicycles. No Segways or flying cars — for Hanlon, the bicycle is “the purest and most beautifully efficient machine ever invented”.

It is a lovely idea, but would bear some development. In 10,000 years, will there still be roads to ride these bikes on? And what is so beautifully efficient about the bike? What other aspects of today’s technology are similarly future-proof, and why?

Hanlon brushes through the future of machines, minds, bodies, the earth and the solar system in a similar vein. It is superficially interesting, but the lack of synthesis or argument makes it difficult to know what to make of his speculations. A discussion of our next billion years should be more thrilling and informative than this. *Eternity*, it turns out, is something of a disappointment. ●

**Michael Brooks is the author of *13 Things that Don’t Make Sense* (Profile Books,**

## HEADLINE HERE TWO LINES

What will the world be like a billion years from now? A new book ventures some guesses, but **Michael Brooks** isn’t ready to wager any bets just yet

### **Eternity: Our next billion years**

by Michael Hanlon, Palgrave MacMillan, £15.99, ISBN 9780230219311

THE MAIN problem with writing about the future is that it hasn’t happened yet. As a popular science genre, it is necessarily speculative and, for an author, can be dangerous ground. Say too much and your vision is dismissed as improbable. Say too little and you will be accused of having no more of a clue about the future than anyone else.

British science writer Michael Hanlon is the latest to venture bravely into this territory, and *Eternity: Our next billion years* has some thought-provoking

moments. For instance, linguists believe humanity may speak only a couple of languages by the end of the 24th century. The death of thousands of minority tongues will hit us hard, Hanlon says: with every one, humanity loses a mode of thinking.

### “Quotes on this page. Two lines across two columns. Three lines

Then there is Africa. By 2100, African meltdown in the face of explosive population growth could lead to a billion people starving, a continent mired in misery and 100 million refugees a

## Headlinexxx

### **The Sun and The Moon**

by Matthew Goodman, Basic Books, \$26/£15.99, ISBN 9780465002573  
Reviewed by Paul Collins



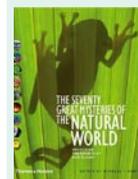
IN 1835 there was life on the Moon. Or so we thought: hoaxed by the New York newspaper the *Sun* on “recent

discoveries” by astronomer Sir John Herschel, Americans eagerly imagined lunar herds of miniature zebra, blue unicorns, and man-bats cavorting by sapphire temples. Goodman ably strips away the invention (and self-invention) of journalist Richard Adams Locke to fully reveal what showman P.T. Barnum hailed as his era’s “most stupendous scientific imposition upon the public.” Sensationalism, new technology, and theological debates over extraterrestrial life,

## Headlinexxx

### **The Seventy Great Mysteries of the Natural World**

edited by Michael J. Benton, Thames & Hudson, £24.95, ISBN 9780500251430  
Reviewed by Douglas Palmer



THIS set of wonderfully illustrated short essays by a galaxy of scientists investigate 70 mysteries of our

planet, from ‘How did the Earth form?’ to ‘Human behaviour and saving the planet’. Some essays are better than others at ‘unlocking the secrets of our planet’, as promised by the book’s subtitle. But with a good mixture of the profound, such as the origin of multi-celled organisms, and pub-quiz facts — there is enough gold in the Earth’s core to form a 0.5 metre deep layer over the whole surface — there is an enjoyable