Red in the head

Seeing Red: A Study in Consciousness

by Nicholas Humphrey
Belknap Press: 2006. 160 pp.
\$19.95, £12.95, €18.50

Josh Weisberg

As a graduate student at the University of Cambridge in the late 1960s, psychologist Nicholas Humphrey discovered that a monkey named Helen, whose visual cortex had been surgically removed, could nonetheless interact visually with her environment. Helen's condition — later termed 'blindsight' by Humphrey's research supervisor Lawrence Weiskrantz when it was found in humans — became one of the most widely discussed bits of empirical data in the burgeoning field of consciousness studies. Blindsight subjects guess at well above chance about the shape, orientation and even colour of stimuli that they insist they cannot see. The syndrome presents a kind of vision without conscious qualitative 'feel' — a provocative dissociation between the function of vision and its first-person appearance.

Since then, Humphrey has written extensively and insightfully about consciousness. His most recent work, a slim and elegant volume entitled *Seeing Red*, provides a charming, if brief, summary of his current views, blending themes culled from psychology, philosophy, and even art and poetry. It also offers intriguing speculations on the evolutionary function of consciousness. According to Humphrey, consciousness evolved to appear inexplicable, creating the impression that we are more than mere physical machines. Its mystery is its evolutionary *raison d'être*.

Humphrey holds that blindsight demonstrates the dissociability of sensation (the feel of experience) and perception (our awareness of the world). He adopts the bold suggestion that sensation is not part of the causal chain leading to perception. Instead, he argues, sensation makes up a separate, more primitive system that plays no direct role in our perception of the world. Sensation is a self-contained evaluative activity — in Humphrey's terms, someone seeing red engages in the activity of 'redding'. Humphrey models this activity on bodily expressions such as smiles: when I'm happy, I smile; when red light tickles my eyes, I respond by redding. However, sensory activity isn't connected to outward expression. Instead, it loops inwards and privately informs the person of the activation of the sense organs. This prompts affective responses, but not perceptions of the world.

In stressing the analogy with expressive activity, Humphrey hopes to mould conscious experience into a form amenable to identification in terms of brain processes. And it is plausible that certain features of expression are shared with sensation. Both smiles and

Red rag to a bull? Nicholas Humphrey boldly argues for a separation of sensation and perception.

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sensations of red are 'owned' by the subject — for example, only you can smile your smile. And both smiles and sensations occur in association with specific body organs. However, we are aware of our sensations with an immediacy that is lacking in the case of smiles. This is part of what it is for those sensations to be conscious. Failing to explain this immediacy leaves us in the dark about why a sensation is conscious. Even if sensation is identified with re-entrant feedback loops in the brain, as Humphrey suggests, we still need to know how these loops make us immediately aware of our sensations.

Although this crucial question is left unresolved, Humphrey's reflections on the evolutionary function of consciousness present an intriguing suggestion: our sense of the inexplicability of consciousness may expose its function. The apparent mystery of conscious-

ness prompts us to see ourselves as more than mere biological machines, and so to strive all the more to preserve our existence. However, a simpler explanation of this sense of mystery might be the lack of direct access to the underlying mechanisms of consciousness. But it is in the nature of such 'just so' speculations that they are extremely difficult to confirm.

In the final analysis, the strength of Humphrey's book lies in its skilful blending of ideas from varied sources to stimulate new ways of thinking about consciousness. In effectively doing so, while presenting a fascinating window on the thought of a distinguished consciousness researcher, *Seeing Red* is a wonderful success.

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Energy with meaning

Dictionary of Energy

edited by Cutler J. Cleveland & Christopher Morris
Elsevier: 2005. 512 pp. \$85, £50, €75

Ehsan Masood

Where to go for a definition of peak oil? What is an environmental Kuznets curve, and why was OPEC established? The expanding field of energy studies at last has its own encyclopaedic dictionary. Elsevier's *Dictionary of Energy* is all you could want in a book of this kind. Comprehensive and readable, it is a treat for fact-checkers and casual browsers alike.

The dictionary's coverage includes the science of energy, economics, sociology, policy

and energy in world history. The list of entries is peppered with more than 100 commissioned short essays on an array of topics and concepts. Many of these have been written by some of the leading names in the business.

The essay on the theory that oil production is close to peaking, for example, carries the name of the theory's main proponent, Colin Campbell. Robert Costanza, one of the leaders of the field of ecological economics, has provided a short essay on natural capital. The late Charles Keeling contributed an essay on the Mauna Loa curve, which describes the rate of change of atmospheric carbon dioxide over time; Keeling's measurements from the Mauna Loa observatory in Hawaii were one

of the first signals of climate change.

There are also short biographies of individuals who have made a lasting contribution, such as Vladimir Zworykin, the Russian-born physicist who patented the use of magnetic fields to guide cathode rays to produce fluorescent images on a screen.

The dictionary lacks a table of contents,

which means that the page after Zworykin's entry is both a surprise and a real delight: it is a collection of energy-related quotations (both funny and serious) from the past two centuries. Winston Churchill, Homer Simpson and Zaki Yamani, Saudi Arabia's former oil minister, all make an appearance here. So too does Golda Meir, Israel's formidable prime

minister in the early 1970s. "Let me tell you something we Israelis have against Moses," she is quoted as saying. "He took us 40 years through the desert in order to bring us to the one spot in the Middle East that has no oil." ■ Ehsan Masood is a freelance journalist and editor (with Daniel Schaffer) of *Dry: Life Without Water* (Harvard University Press, 2006).

Artists on a mission

An exhibition in London reflects on the dangers of climate change.

Colin Martin

The more the media bombard us with news of climate change, and the warmer the planet becomes, the greater is our nostalgia for the colder, whiter winters of the past. Peter Høeg's characterization of types of snowfall in his novel *Miss Smilla's Feeling for Snow* (Harvill, 1993), for example, captivated contemporary readers.

But the bigger picture — the social and global implications of accelerating climate change — has higher stakes. This is reflected in the output of the Cape Farewell project, in an exhibition called *The Ship: The Art of Climate Change*, which opens this Saturday (3 June) at the Natural History Museum in London. It runs until

3 September, after which some of the artworks can be seen at the Liverpool Biennial until November.

Over the past five years, Cape Farewell has organized three Arctic expeditions on the schooner *Noorderlicht*, bringing groups of artists, architects and writers, together with scientists and educators, to the Svalbard archipelago at 79° north. The objective is to raise public awareness of climate change by generating art installations and creative writing to complement and enliven the coldly objective data and dry scientific vocabulary of polar scientists and meteorologists.

"We intend to communicate through artworks our understanding of the changing climate on a human scale, so our individual lives can have meaning in what is a global problem," says David Buckland, artist and project director. Writer and participant Ian McEwan, a former Booker prize winner, has coined a memorable phrase, "the hot breath of our civilization", which pinpoints the problem as effectively as reams of scientific data and may stimulate more thought and action by individuals to try to halt climate change.

Some of the artists' responses to their Cape Farewell experiences were previously

Ice Towers by Peter Clegg and Antony Gormley could be seen in *The Ice Garden* in Oxford last December.

exhibited in *The Ice Garden*, an installation staged during four cold nights last December in the Clarendon quad next to the Bodleian Library in Oxford. Illuminated by a huge Moon, the setting evoked a seventeenth-century frost fair, like those held on the frozen Thames in London. Scrolling text by McEwan, projected onto an upper storey of the library, highlighted our man-made problem in lucid prose. Among other works were the sentinel-like *Ice Towers*, constructed by architect Peter Clegg and artist Antony Gormley. Each 0.54-cubic metre block of ice used in the piece represents the volume occupied by a kilogram of carbon dioxide at atmospheric pressure.

Soundscape, recorded by Max Eastley on land and under the sea at Spitsbergen, resonated eerily throughout the quad, providing an aural context for the visual works. Heather Ackroyd and Dan Harvey recreated their *Ice Lens* sculpture, concentrating artificial light through it to create a hot spot, recorded by thermal imaging. Their earlier attempt in the Arctic to scorch a sheet of paper by directing the

Sun's rays through a prototype had failed because the autumn rays were too weak.

Ice does not last long in urban summers, so in London Ackroyd and Harvey will exhibit a six-metre-long sculpture created from a Minke whale skeleton encrusted with alum crystals. Buckland will exhibit his photographs of text projected on to glacial ice, *Burning Ice*, *Sadness Melts* and *The Cold Library of Ice*. The Cape Farewell message remains the same, even though the artworks shown in London will not use ice as a physical medium.

The Cape Farewell project is a call for action, as well as a wake-up call. Coinciding with the London exhibition is a four-day conference over 11–14 July, Student Summit 2006: Climate Change, which aims to increase awareness and inspire advocacy among young adults, acknowledging that they represent our best chance of reducing carbon use. "On our side we have our rationality, which finds its highest expression and formalization in good science," says McEwan. "And we have a talent for working together — when it suits us."

Colin Martin is a writer based in London.