

islanders' appearance on Rapa Nui. They claim that deforestation was mainly caused by the rats that came with them. Having found some palm nuts bearing gnawmarks, they attribute the extinction of the island's big palm to rat predation, although they say little about other tree species. The statues, they posit, were moved upright for many miles by swivelling, which required little timber. And despite the deforestation, they say, the islanders continued to grow sufficient food and remain free of quarrels until Europeans brought violence, germs and eventual devastation.

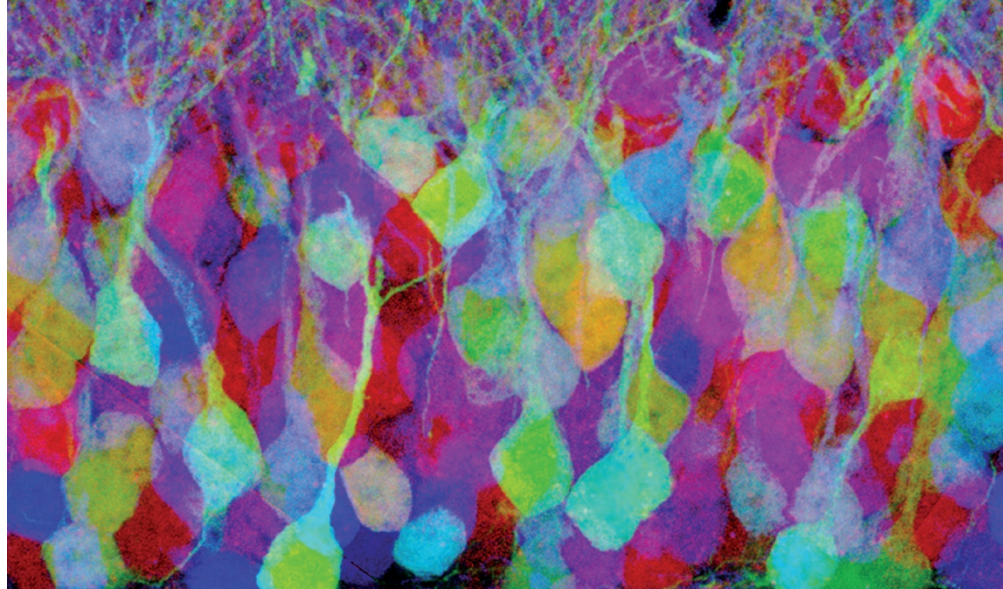
The authors' new scenario does support the consensus view that the island was only colonized once, by Polynesians — and not, contrary to the theory of Norwegian adventurer Thor Heyerdahl, by Amerindians from the New World. The book contains good passages on the carving and transportation of the statues — which we know from oral testimony to be ancestor figures that were venerated by the islanders — including an account of the pioneering excavations of the statue roads by US geologist Charlie Love. The practice of lithic mulching, in which millions of stones are spread over the soil to retain moisture for crops, is described in detail.

But coverage of work by others is incomplete. For instance, the authors mention only their own survey of the statues and not the decades-long (and ongoing) cataloguing by US archaeologist Jo Anne Van Tilburg. Nor do they note some recent published evidence that, in my view, refutes the book's basic tenets.

For example, a variety of evidence contradicts their claim of rat predation: numerous palm fruits not gnawed by rats, palm stumps burned and cut, continued germination of palms despite the rats' presence, and the disappearance of other plant species that coexist with rats elsewhere. Hunt and Lipo's claim that human skeletal remains show little evidence of lethal trauma is refuted by quotes from anthropologist Douglas Owsley, the author of a 1994 paper that they reference. After examining more than 600 Easter Island skeletons, Owsley stated in a 2003 BBC documentary that the extreme frequency of injuries proved that these were people at war: "They're slugging it out, there's no doubt about it."

Hunt and Lipo present some of the island's many features entertainingly, but the history of Rapa Nui is more complex than they allow. ■

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The Brainbow technique colours individual neurons, here in a slice of mouse hippocampus.

## NEUROSCIENCE

# Picturing the soul

**Alison Abbott** revels in a stellar mix of brain imageries.

Generating beautiful images has never been the exclusive preserve of art: scientific representations of the brain have aesthetic value too, as portrayed in an exhibition at the German Hygiene Museum in Dresden, co-curated with the Moravian Gallery in Brno, Czech Republic. *Images of the Mind* presents more than 200 artistic and scientific works depicting the mind from medieval times to the present day. It also illustrates how the evolving imagery of artists has always been firmly rooted in contemporary scientific knowledge.

Star names among the artists exhibited include Rembrandt, Leonardo da Vinci, Lucas Cranach the Elder and Albrecht Dürer, as well as luminaries Caspar David Friedrich and Edvard Munch, and contemporary artists Bill Viola and Antony Gormley. Unusually, works by relatively unknown artists from central Europe are also on show: Bohumil Kubišta's 1911 *Epileptic Woman* is a masterly portrayal of emotional torment.

No less of a draw is the historical scientific imagery. Sketches by 1906 Nobel prize-winners Camillo Golgi and Santiago Ramón y Cajal are paired to illustrate a legendary scientific dispute. When they examined brain tissue under a microscope, each saw — and drew — a different structure. Golgi sketched a continuous web of cells; Cajal correctly depicted individual cells, or neurons.

Also on view are newly discovered drawings by neuroanatomist Korbinian Brodmann, who mapped the human cerebral cortex in 1908, and stunning images created using Jeff Lichtman's and Joshua Sanes's Brainbow technique. Developed at Harvard University in 2007, the method uses different colours to pick out individual neurons

**Images of the Mind**  
German Hygiene  
Museum, Dresden.  
Until 30 October.

in a brain slice.

The curators match the quality of the gathered objects with a fascinating narration of the history of mind imagery. The earliest exhibits are eleventh-century manuscripts depicting the Aristotelian understanding of cognitive processes. In the Renaissance, anatomists dissected corpses and drew, beautifully, what they saw, providing templates for artists to paint more realistically. Portraitists quickly attempted to go further, to capture the soul of their subjects as well as their external proportions. Rembrandt's series of tiny, detailed self-portraits in different emotional states encapsulates this perfectly.

Depictions of the mind changed again in the twentieth century, when Sigmund Freud divided the psyche into the conscious and unconscious. Artists such as Kubišta began to explore the fractured mind more abstractly — by then, photography was in any case capturing the realism to which they had formerly striven.

During the past few decades, scientists have described the brain in ever greater electrical, molecular and anatomical detail. Artists have responded, often questioning whether the wet, electrical mass of the physical brain could alone host the mind. Perhaps they are anticipating new neuroscientific understanding of the powerful ways in which environment shapes the brain. For both artists and scientists, the exhibition is a reminder that the mind remains a mysterious moving target. ■

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J. LICHTMAN/HARVARD UNIV.