

# SEED

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## Revolutionary Minds

18 Icons and Iconoclasts who are Redefining Science

### Article

**Neuroscientist Mark Lythgoe Plays with your Senses**

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COURTESY OF ALEXIS ROCKMAN

## Alexis Rockman Forecasts the Year 5004

[NEW YORK] “Manifest Destiny,” Alexis Rockman’s massive new mural for the Brooklyn Museum of Art, issues an environmental wake-up call by depicting Brooklyn 3,000 years from now after global warming has caused it to flood. Not unlike his previous anthropological (and apocalyptic) portraits, “Manifest Destiny” is a painting with something important to say. As for each of his works, Rockman conducted vast amounts of research, consulting with climatologists, biologists,

paleontologists, and other experts. His love for scientific detail, which originated in childhood when his mother became assistant to the late anthropologist Margaret Mead, is today one of the defining features of his work. Often described as rigorously detailed, content-driven, and highly illustrative, his paintings count legions of scientists as fans, and effectively communicate powerful scientific messages to nonscientists as well. —Adeline Goss

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# NEUROSCIENTIST MARK LYTHGOE PLAYS WITH YOUR SENSES

[LONDON] Ten years ago, neurophysiologist Mark Lythgoe discovered art as a way to communicate his excitement about science, especially the science of brain imaging. Today, while as passionately engaged with the science as ever, he also uses art to highlight its limitations.

Lythgoe, now 41, has collaborated with a wide array of artists—photographers, animators, filmmakers, sculptors, and, most recently, playwrights. His fascination with perception and reality, each subjects of both neuroscience and art, has convinced him that scientists and artists see the world in different but complementary ways—and he is working to understand what underlies these differences.

Insight into this question may come from Tommy McHugh, a British builder who began a new life as a compulsive painter and sculptor three years ago. Once McHugh begins to make art, he finds it almost impossible to stop. The trigger for this newly born artistic drive? A stroke. At his lab in London’s Institute of Child Health, Lythgoe is collaborat-

ing with McHugh, a team of psychologists, and the Institute’s own artist-in-residence to study the relationship between McHugh’s brain damage and his newfound creative urge.

The most recent of Lythgoe’s own artistic work, “Topologies of the Mind,” with sculptor Angela Palmer, involved engraving MRI scans onto translucent sheets, encasing them in glass, and illuminating them to reveal the contours of the MRI image. The works speak directly to Lythgoe’s multiple interests: They are striking representations of thought in action, and they provoke interest in the underlying science. But the artworks also point out the limitations of the scientific approach. Do we actually understand how thoughts are generated when we see them “imaged” this way? Clearly not.

Having long recognized these limitations, Lythgoe sought to use art to inform science in his 2002 project *Mapping Perception*. An interactive film, it engages and disengages the viewers’ five senses, simulating the perceptual experiences of 12-year-old Eden Kötting, who suffers from a condition that impairs her speech, motor control, eye movement, and breathing. By influencing their physical experiences through art, *Mapping Perception* provides viewers with an idea of what it feels like to have Eden’s disability.

In addition to these collaborations, Lythgoe’s unquenchable enthusiasm has

fueled his recent entry into television, with an ambitious, eight-part BBC series last summer on the science of love and attraction. Another hour-long special, this time on the neurobiology of genius, will be screened on the U.K.’s Channel Four to mark 2005 as the Einstein Year. Beyond that, Lythgoe anticipates that a recent stint working with director Katie Mitchell during the London International Festival of Theatre will lead to more work on stage, and he has begun talking to the highly regarded British dramatist Caryl Churchill about possible writing projects. He also has a new experimental film under development about illusion and ambiguity, funded by a research grant from the Wellcome Trust—and one gets the sense that he would also love to make a film about McHugh himself.

Lythgoe came to neuroscience only after a hair-raising career as, variously, an attack-dog trainer, a researcher with the Australian flying-doctor service, and a climber. Perhaps his late start accounts for his compulsion to explore every aspect of his science. And if the joys of art have undermined his conviction that the scientific method has all the answers, the benefits have been more than personal. Looking at science more realistically “has only allowed me to expand my horizons,” Lythgoe says. Thankfully, through all of his artistic collaborations, he is expanding the horizons for others as well.

—Jon Turney