

non-profit Environmental Leadership Program before joining the history faculty at Yale University in New Haven, Connecticut. And he acknowledges that there are other explanations for the divide in thinking on US environmental policy: the shift of the Democratic and Republican parties to more ideologically consistent blocs, business-led backlashes against environmental regulation, and the success of conservative think tanks in staking out positions in public-policy debates on these issues. But he

“Ultimately, the bet is used to explain the whole messy evolution of US environmental politics.”

wants to convince the reader that the clash is not played out only in the corridors of power. The wager, he asserts, “stands for much, much more — our collective gamble on the future of humanity and the planet”.

Sabin uses the bet as a synecdoche — a narrative device in which a part stands for a whole, in this case environmental politics. In the end, this is simplistic and blurs cause and effect, explanation and interpretation. Sabin bemoans the polarization that is the very structure of a wager, as if it were an important cause of the larger divide. But bets can be useful — they can clarify what is at stake and, by doing so, help us to frame thinking about the future of the planet.

On a personal level, this is a sad tale of two very smart men who talked past each other for years, until in one telling moment they put their convictions on the line. After their wager was decided, they descended into ad hominem attacks. It is depressing to think that Sabin might be partly justified in making this a metaphor for the environmental politics of our age.

On the other hand, there is the story of John Holdren, a secondary character in *The Bet*. A physicist who co-authored several books with Ehrlich and joined his wager against Simon, Holdren is now US President Barack Obama’s senior science adviser. How does Holdren’s boss bet on the future? “I can’t predict what will happen over the next 40 years,” Obama once replied when asked to wager his own bet. But, he continued, “I am — and always will be — full of hope about what the future holds.” ■

Jon Christensen is an adjunct assistant professor in the Institute of the Environment and Sustainability and the Department of History at the University of California, Los Angeles.
e-mail: jonchristensen@ioes.ucla.edu



Perpetual Disunity, a photo by Mark Kessell from his *Perfect Specimens* series.

Q&A Mark Kessell

Life-cycle imager

Medic-turned-artist Mark Kessell creates prints evoking evolution and human development using the early photographic form of the daguerreotype. As his latest show opens in New York, he talks about shooting portraits of primates, forceps, the nearly dead and the newly born.



What is *Perfect Specimens*?

It’s a photographic life cycle of *Homo sapiens*. I tried to make images that anyone could recognize as distinctly human, showing conception, fetal development, birth, senescence and death. I want the photographs to raise questions about what it means, from a biological perspective, to be human.

Can you tell me about the fetal specimens?

There is a bizarre little human skeleton from around 1890, with enlarged eye sockets and no brain. The way it is mounted in a bottle, grinning upwards and perched on a little spike, seems to mock the tragedy for baby and mother. There is also a perfectly normal four-month-old fetus that is uncurled and standing upright and looks like a little alien. You can see the blood vessels under its translucent skin; the top of the skull

has not yet fused. In another bottle there are tiny identical triplets, spontaneously aborted. These little guys once shared the same blood, but now they are forever alone.

How do you capture birth and death?

For birth, you find a brave woman with a generous partner, and as the baby comes out you stand between her legs with a camera. It’s unforgettable and inspiring, but also disturbing as that huge head emerges through such a small aperture. For death, I get permission from relatives to document the final moments of their loved one. One photo shows the lips of a woman who has spoken her last words. Many avoid the subject, but death is a biological process, so why pretend?

What part does your medical training play?

I didn’t take pictures until I was 39, when, on a road trip around Australia, my girlfriend handed me a disposable plastic camera. Within a year, I’d given up medicine and was attending art school in Manhattan. At first, I imagined shooting remote landscapes for *National Geographic*, but then I thought,

Mark Kessell:
Perfect Specimens
Last Rites Gallery,
Manhattan, New
York. 17 August–21
September.

‘Why fight my past?’ I thought back to Egbert, the cadaver I dissected in medical school. He was sliced lengthwise so you could see the brain inside the skull. How vulnerable this source of our humanness seemed. And when we had to dissect a human arm, I was awestruck by the perfection of the hand, built with a sophistication far beyond technological ingenuity.

Are you questioning whether we are unique? Most behaviours that were considered uniquely human until Darwin’s time exist in other species. Crows have a sense of play, form social alliances and consider the future in their behaviour. In my series *Unmet Friends*, I explore our capacity to understand other creatures by showing primates, birds and reptiles in poses that appear to express human emotions. In *Specimen Box*, a thousand photos of animal specimens are pinned to the walls, floor and ceiling of a small room. Everything in the room is dead except for the human observers, whose curious faces are captured by hidden cameras.

What other subjects have you covered?

For *Florilegium*, I photographed surgical instruments, such as facelift forceps and urethral dilators, to make them look alive. These are the most menacing of my images. (One was used as the poster for a 2005 horror movie, *Hostel*, which I am not brave enough to see.) I’m not sure I realized how disturbing they were while shooting. These instruments are designed to rend human flesh and alter the body that largely defines our identity.

Does your work overturn assumptions?

I want people to examine their assumptions the way a scientist does. So in every series there is something that isn’t what it seems. Many viewers perceive the instruments in *Florilegium* as botanical specimens. In *Unmet Friends*, animal faces may be misconstrued as human and vice versa. In *Perfect Specimens*, it can be hard to tell dead bodies from living ones. I want people to ask, ‘Why is the artist showing me this?’

Why use the daguerreotype process?

It’s an incredibly beautiful process, but very hard to control. The result depends on how the silver plate is polished, and on the intensity of the chemicals and light. Areas of over-exposure turn an exquisite shade of blue. As a doctor, I was taught to control and standardize. But a daguerreotype can’t be precisely replicated. Because it is a pure silver plate, it is also a mirror. You’ll see your own face reflected. I’ll see mine. ■

INTERVIEW BY JASCHA HOFFMAN

Books in brief



What Makes a Hero? The Surprising Science of Selflessness

Elizabeth Svoboda CURRENT (2013)

Science writer Elizabeth Svoboda examines the super-altruism we call heroism, drawing on current research to unravel its biological and environmental roots. Bioengineer Karl Deisseroth, for instance, uses light-sensitive algal proteins to pinpoint the brain circuits that control nurturing impulses in mice. And psychologist Philip Zimbardo isolates efficient problem-solving in tight spots as central to heroic acts. Weaving in gripping case studies — such as Christoph von Toggenburg’s lifelong fund-raising for the vulnerable — Svoboda concludes that heroes are made, not born.



How Things Shape the Mind: A Theory of Material Engagement

Lambros Malafouris MIT PRESS (2013)

Is the mind imprisoned in the brain? In this mix of neuroscience and philosophy, Lambros Malafouris suggests that mind and materiality are allied in ways that defy reductive world views. He argues that the act of making objects such as knapped tools in prehistory shaped neural processes; and furthermore, that this is a two-way street in which “human intelligence ‘spreads out’ beyond the skin into culture”. Engrossing, from his analysis of how the interplay of hands, neurons, clay, a moving wheel and social context result in a thrown pot, to the links between a blind man’s stick and brain plasticity.



Future Bright: A Transforming Vision of Human Intelligence

Michael E. Martinez OXFORD UNIVERSITY PRESS (2013)

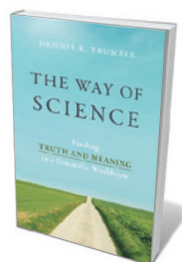
Intelligence can be learned, argues educationalist Michael Martinez. Noting that tackling planetary crises hangs, in part, on the focused work of many agile minds, Martinez shows how such a revolution is possible. Beginning with the deep structure of cognitive ability, such as “fluid” intelligence — the capacity to adapt to the unfamiliar — he paces the landscape of intellect. His journey reveals tools for change, including the rich variety of intelligence, from social to creative; the brain’s extraordinary adaptability; and the cultivation of supportive behaviours such as the urge to excel.



The Neanderthals Rediscovered: How Modern Science is Rewriting Their Story

Dimitra Papagianni and Michael A. Morse THAMES & HUDSON (2013)

Recent findings in geology, genetics and archaeology have radically changed our understanding of Neanderthals. In the first complete chronological narrative of the species from emergence to extinction (perhaps 250,000 to 25,000 years ago), archaeologist Dimitra Papagianni and science historian Michael Morse have shaped a gem. Our big-brained relatives buried their dead, cared for the disabled, hunted creatively and ate grains, wild herbs and even dolphins. A beautifully synthesized portrait of a powerful people.



The Way of Science: Finding Truth and Meaning in a Scientific Worldview

Dennis R. Trumble PROMETHEUS (2013)

The popular perception of science hinges largely on medical and technological advances. Biomedical engineer Dennis Trumble calls for more: a widespread reconnection to science as a way of knowing ourselves and the world. Rationality and critical thinking, he asserts, are moral pathways. Quoting Charles Darwin’s “there is grandeur in this view of life”, Trumble aims — without histrionics — to urge the religious towards science as a source of meaning. [Barbara Kiser](#)