



Robert Rauschenberg's 1963 installation *Oracle*, created with engineers Billy Klüver and Harold Hodges.

## ARTS

# The third culture

**Michael John Gorman** is intrigued by a survey of art informed and invigorated by science.

After months of injections with horse immunoglobulin in 2011, artist Marion Laval-Jeantet had a transfusion of horse blood in a Ljubljana art gallery. She walked around the donor animal on prosthetic hooves; then samples of her hybrid blood were freeze-dried and placed in engraved aluminium cases. In 2005, a New York gallery showed a starburst of glass orbs and aluminium rods depicting the explosion of space after the Big Bang, by sculptor Josiah McElheny and cosmologist David Weinberg.

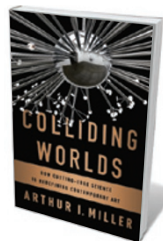
Such are the collaborations chronicled by historian Arthur I. Miller in *Colliding Worlds*. Miller argues that we are seeing the emergence of a “third culture” — a term coined by writer John Brockman — in which boundaries between art and science dissolve.

The past decade has seen a proliferation of galleries, labs and residency programmes devoted to mingling art and science. Miller surveys these, from London's Wellcome Collection to the Ars Electronica Futurelab in Linz, Austria; the Science Gallery at Trinity College Dublin (of which I was founding director); Le Laboratoire in Paris; and the Collide@CERN artist-residency programme at Europe's particle-physics lab near Geneva, Switzerland. He provides engaging pen portraits of many of the artists involved, such as

Evelina Dornitch and Dmitry Gelfand, who experiment with sonoluminescence.

Miller touches on early examples of cross-pollination, such as physicist Niels Bohr's interest in Cubism, but locates the origins of the modern art–science movement in 1966, with *9 Evenings: Theater and Engineering*. These experimental “happenings” had proto-pop-artist Robert Rauschenberg and avant-garde composer John Cage as key participants, in the presence of Andy Warhol, Marcel Duchamp and other New York art luminaries. Unfortunately, technical disasters and delays led to negative press coverage.

The unlikely hero of Miller's story is Billy Klüver of Bell Labs in Murray Hill, New Jersey, the instigator of *9 Evenings* and a gifted engineer. Klüver's earlier collaboration with Swiss artist Jean Tinguely — on *Homage to New York*, a self-destructive kinetic artwork made from bicycle and pram parts — led to meetings with Rauschenberg and



**Colliding Worlds: How Cutting-Edge Science is Redefining Contemporary Art**  
ARTHUR I. MILLER  
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other high-profile artists. Klüver persuaded his Bell Labs colleagues that artists would stimulate new directions in technology. As the philosopher Marshall McLuhan put it in his 1964 book *Understanding Media*, art can be considered “precise advance knowledge of how to cope with the psychic and social consequences of the next technology”.

The twenty-first-century explosion of art-and-science programmes and spaces has been fostered partly by significant investment from funding organizations. Miller documents the tension here between art's roles in illustrating, communicating and interrogating science.

Some artists, including Antony Gormley or McElheny, draw on areas such as foam physics or cosmology as aesthetic inspiration. Others provoke critical discussion around future directions of research, such as Australian performance artist Stelarc, who had an ear-shaped scaffold implanted into his forearm. Discussing the rationale of the Collide@CERN residency, which has featured sound sculptor Bill Fontana and photographer and media artist Julius von Bismarck, CERN director Rolf-Dieter Heuer tells Miller that revealing what scientists are doing for society is key. “To transmit that through art ... opens horizons,” says Heuer. It is a suggestion that would sit uneasily with many of the critically engaged artists whom Miller discusses.

Experimental art–science collaborations have not always been embraced by conventional galleries and collectors. Peter Weibel, founding director of the Centre for Art and Media (ZKM) in Karlsruhe, Germany, tells Miller that this should not be a concern because “private industry will finance” artists, liberating them from the vagaries of the market. Indeed, *Colliding Worlds* opens with the heady atmosphere of Bell Labs half a century ago; towards the end, it considers digital artists Scott Draves and Aaron Koblin, who both work for Google.

Unlike other surveys, such as artist Stephen Wilson's *Art + Science Now* (Thames and Hudson, 2010), *Colliding Worlds* features interviews with the artists, scientists and engineers involved in projects from speculative design to data visualizations, sound art and cosmetic surgery. Such tales enliven the book. But it is hard to accept “artsci”, as Miller terms it, as a coherent movement. The third culture, he shows, consists instead of exciting, experimental and mutually enriching collisions.

Ultimately, Miller suggests, such collisions — once in the mainstream — become just ‘art’. The important question that remains is whether such art can alter the direction of scientific research, beyond provoking public discussion and debate. ■

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