



COLLIDING WORLDS

HOW CUTTING-EDGE SCIENCE
IS REDEFINING CONTEMPORARY ART

ARTHUR I. MILLER

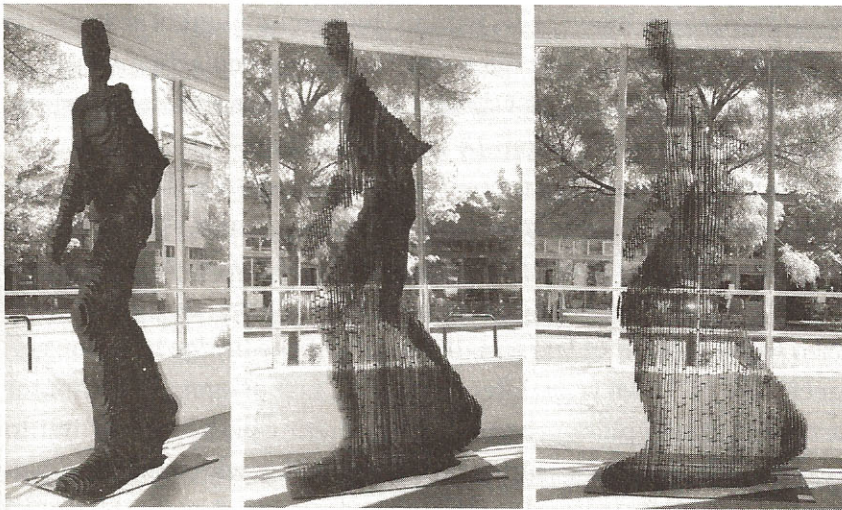
and future being so different and the present moment special and unique—arises from an underlying timeless reality.”

Barbour agreed to participate by writing an essay for the catalogue of Friedlander’s show. However, Friedlander does not consider his interactions with Barbour as direct collaboration—rather, Barbour’s ideas stimulate him to use light sculpture as a way to visualize the invisible. Thus Friedlander’s physics-influenced art examines how an unorthodox view of nature might affect how we see the cosmos.

Quantum artist: Julian Voss-Andreae

“Only as an artist am I able to do something that feels significant to me,” says Julian Voss-Andreae. Voss-Andreae is a tall, youthful Austrian who radiates intensity of purpose. I first meet him in 2009 at a conference in Dortmund on Einstein and Picasso, although I am already familiar with his work.

Voss-Andreae completed his most conceptual piece, *Quantum Man*, in 2006. Eight feet tall and made up of over a hundred paral-



5.1: Julian Voss-Andreae, *Quantum Man*, 2006.

lel vertical steel sheets, when viewed from the front it looks like a man, but as you move around, the man becomes invisible. Just as in quantum physics, where if an experiment is set up to detect the wave nature of an electron, then the electron will be a wave, but if the experiment is set up to demonstrate that the electron is a particle, then it will be a particle: how you look at it, that's what it is.

Voss-Andreae understands the fundamentals of physics. At the University of Vienna, he was part of a research group under the distinguished physicist Anton Zeilinger. The group explored arcane properties such as entanglement and quantum cryptography, and called their work applied quantum philosophy. Voss-Andreae received his MSc for an experiment demonstrating that massive objects such as carbon 60 molecules (shaped like Buckminster Fuller's hexagons, and known as Bucky balls) have quantum properties. They are the heaviest particles ever found to have such properties.

Voss-Andreae's earliest artistic inspiration was German Expressionism, especially *Der Brücke* (The Bridge) and *Der Blaue Reiter* (The Blue Rider) groups. Their members included Wassily Kandinsky, and they showed works by Picasso and Klee in their exhibitions. *Der Brücke* was an early manifestation of Expressionism, using subjective experience to depict the world, while *Der Blaue Reiter* was one of the driving forces behind the development of abstraction in twentieth-century art. Voss-Andreae is particularly inspired by the poignantly expressive works of Picasso's Blue and Rose Periods, which combine Expressionism and abstraction.

His interest in science arose from a very young age through popular science magazines and chemistry and electronic sets. At twelve he got his first computer and learned code. He wanted to construct an aesthetically appealing computer game. "It was then that I realized that I needed to learn mathematics as the bridge between science and art." Five years later, he made a first attempt at computer art, writing a graphics program and modifying his needle printer to make a scanner. The result was disappointing, which he put down to the analytical manner in which he had produced it. He concluded that "probably all intellectually conjured, brain-born art is doomed

to be boring and empty, a prejudice that, to this day, fuels my work: in a way all my work is an attempt to disprove this hypothesis—and to see what that secret ingredient is, beyond the purely intellectual idea, that makes the work come alive.”

Voss-Andreae exudes a strong sense of independence, of going his own way, which he attributes to his friendship with the German artist Horst Janssen, a friend of his father, who lived near his family in Hamburg. Best known for his drawings, etchings, and woodcuts, Janssen “drew without the intellect interfering, [using] the influence of the consciousness on the art.” Voss-Andreae’s desire to work without the interference of the intellect became an essential part of his art, which represents in a free-flowing manner forms best understood using highly mathematical theory.

He is “intrigued by the time when relativity and quantum physics emerged—for example, Schrödinger, Musil, Schiele, Gödel, Kafka—from the collapsing Austro-Hungarian empire,” and wonders if and how scientific and literary change related to political upheaval. He also admires van Gogh’s “honest and strong dynamic,” which revealed the static world as a “quantum dance. His sense of love as the primordial force of the universe always shines through his work.” Listening to Voss-Andreae, one cannot help sensing the German Romantic in him.

In 2000, Voss-Andreae emigrated to the United States, and studied at the Pacific Northwest College of Art in Portland, Oregon, graduating in 2004. To Voss-Andreae aesthetics depends on satisfactory design. “To me, form and function are always a unit, and both together make a good design. Like in mathematics or engineering, I cannot separate the experience of discovering or understanding such a solution from a beautiful aesthetic experience.” As both an artist and a scientist, he realized that he was in a unique position to plunge into the growing movement of science-influenced art. In fact, he had been planning *Quantum Man* since 1999.

He is currently based in Portland, where several of his works are exhibited. Others are at the Scripps Research Institute in Florida, Rockefeller University in New York, and the American Center for Physics in Maryland. Says Voss-Andreae, “I feel a strong excite-

ment about work that really merges art and science, and I believe that this is a sign for the emergence of a new culture. But we are only at the beginning.”

Russian mysticism meets physics: Evelina Domnitch and Dmitry Gelfand

Although they have not formally studied physics, the husband-and-wife team of Evelina Domnitch and Dmitry Gelfand produces impressive works deeply based in the subject. Domnitch and Gelfand’s goal is to stimulate the senses, stir the imagination, and even touch consciousness. They produce sonic immersion environments and ask evocative questions like, “Is it possible to create a sonic rainbow? Is it possible to render the wave behaviors of sound into those of light? Is it possible to render sound visible and allow a musician to work with the shape of sonic currents?”

One of their solutions is their *Camera Lucida*, or light chamber. They write, “The *Camera Lucida* project began as a speculative



5.2: Evelina Domnitch and Dmitry Gelfand, *Camera Lucida: Sonochemical Laboratory*, 2006.