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Artists Probe Science in Emergence and Structure Exhibit

by Michael Bradbury April 9, 2012

Abstract artists Daniel Hill and Ron Janowich say, "Art and science are both born from a sense of wonder and curiosity and a desire to understand."

After a series of conversations about the complexity of the natural world, the two men decided to mount an exhibition, featuring the artistic side of science. Looking at scientific theory with artist eyes helps convey very complicated technical information to a broad audience.

And while no collaborating artists are scientists, their work incorporates the precision and accuracy of science and math to tell a story about the subject, which often is rooted in science.

The traveling exhibit *Emergence & Structure* takes specific aspects of science, adapts scientifically inspired methodologies, conceptual underpinnings, natural systems or structures that exist in all scales throughout the universe and turns it into art.

Hill and Janowich say, "Whether it is the Higg's boson particle and the origin of mass/structure (the so-called "God particle"); Heisenberg's uncertainty principle; entanglement's "spooky action at a distance"; or the experience of perception and the origin of consciousness, these ideas prove not only irresistible but abound in profound and potentially unrealized implications in the quest to comprehend our world."

In the foreword of the exhibition catalog, neuroscientist Jonah Lehrer says that people have an innate need to see the world as it is but also to make sense of what we see. He says that need explains the necessity of art. He says, "Within the framework of art we are able to affirm simultaneously the mystery, even as we seek to unravel it." Hidden within the abstract are patterns that elicit a feeling of familiarity that conveys truth about the world around us.

Lehrer says, "Even when staring at these deliberate abstractions, we still see the familiar stuff of life, those forms we never seem to leave behind. They emerge, like ghosts, from the brushstrokes and charcoal marks, from the acrylic on wood and the shellac on paper. Such simple materials give rise to such complex thoughts that the artist provokes us to see patterns while forcing us to recognize where these patterns emanate from."

The two curators say the artists in "their investigations into the sciences have added significantly to the theoretical foundation of their practice." They say the *Emergence*

& Structure exhibition is an expression of that understanding.

Since the 1990s, electronic music buff and Australian visual artist John Aslanidis has been exploring the relationship between optical and sound art by looking at patterns of waves, frequencies and vibrations. In each of his paintings, he uses color and line patterns to create a visual intensity that invokes the experience of listening to music.

Aslandidis says, "This latest phase adds another level of complexity, and interactivity, between the intersecting patterns in the paintings. My intention is to create imagery with a sonic resonance where there is no start or end point. They capture a fragment of infinity and represent a sense of a perpetual change."

His sonic painting series includes *Sonic Current No. 2* and *Sonic Network No. 10*, which are featured in the current Emergence & Structure exhibition. He says he draws concentric circles with a beam compass and uses a lot of masking tape. Then he layers oil or acrylic airbrushed paint in alternating layers to mirror his own cyclic creative process. He believes his paintings represent a fragment of infinity, a scientific concept that is difficult to show visually but somehow the visual depiction of sound makes this pattern easier to recognize.
Angie Drakopoulos is trying to to find balance between the complex and the simple in her mixed media art. And in the process she is trying to unite the scientific with the mystical.
Using symmetry as her base, she adds elements from biology, geometry, physics, metaphysics and eastern philosophy. She says, "I try to find the most subtle and interesting way to connect the different elements that will reveal an underlying structure or system."

In her acrylic and resin on plexiglass *Negentropy III*, Drakopoulos explores the intersection point between entropy and life. Nobel Prize-winning physicist Erwin Schrödinger introduced the concept of negative entropy or negentropy in his popular 1944 science book *What is Life?* In the book Schrödinger states that life feeds on negative entropy. For example, people eat dead food in order to stay alive. In other words the entropy that a living system exports to keep its own entropy low is negentropy.

Drakopoulos expresses the very complex physics with light. She allows refined and intricate patterns to emerge as light dances over the paintings' surface, showing different tonalities of iridescent paint locked in the translucent layers. She says, "Slowly as the work evolves, these inner connections and details begin to form an alternative definition of the energy and invisible forces that govern the movement of matter, from the microcosmic level of molecules and light particles, to the macrocosmic level of planets and galaxies." For her the work then becomes a "diagram for energy and a quest for unity."

Exhibition co-curator Hill uses squeeze bottles of acrylic paint to showcase the "omnipresence of pattern in life and systems," drawn from physics and eastern philosophy. He says the final product "recalls patterns which we are surrounded by by rarely notice or even see such as: gravity, sound, light, water, magnetism, or thought,

emotions, breath or pulse."

Hill says we are expert modelers, relentlessly constructing visual models to truly see the world, including the parts of the world that we can't possible see with our eyes. He says, "Visual modeling is an invaluable tool in both how we perceive our world and how information about our universe can be organized and better understood."
The abstract artist takes abstract theories, ideas and concepts of science that are often difficult to comprehend. With the aid of visual models and the language of abstraction Hill and the other exhibition artists can be transform physics, biology and neuroscience into more easily digestible and familiar forms, such as graphs, schematics, diagrams, and maps.

Hill believes that our collective future is deeply rooted in the imagination and that abstract art such as that featured in *Emergence & Structure* plays a role not in answering the big questions of life and the natural world. But rather, this type of art can play a larger role in our understanding of the world by helping to reveal the right questions to ask.

He says we did not solve the great problems of the past with a sudden influx of intellectual capability. Hill says, "What did change was our ability to look at the problem in new ways."