



Patterns of Harmony

by Gaspar Battha

Galileo said the language of nature is comprised from an alphabet of simple shapes: spheres, triangles, pentagons and their combinations. In beginning this project I was driven by some simple but deeply important questions, such as: What are these shapes? Why are they constructed such as they are, and why is it that we find the same shapes and geometrical structures at both the largest and smallest scales of the cosmos? What exactly is geometry, a sensory illusion or an inherent building block of the universe?

The eminent and genre bending physicist David Bohm is maybe best known for his theory of implicate and explicate order, his life long project towards a holistic cosmology. The basic premise is that any individual element could in essence; reveal great details about every other element in the universe. He posited a borderless flowing momentum of information and communication throughout the universe. This information or meaning is understood and seen via causality at the explicate order where things are unfolded and thus recognizable. However, like a hologram [Bohm's favorite metaphor], at the implicate order in the same way that prisms bend light, that same information from our vantage point via human sensation vanishes or when seen, seems to disobey all the known laws of the universe.

He developed this theory in response to the growing field of Quantum Mechanics that studied the seemingly inexplicable interactions between subatomic particles regardless of time or distance known as the EPR effect, which by the very nature of said interactions requires a signaling mechanism faster than the speed of light.

Bohm believed that there were sub-quantum particles and effects enacting sub-dimensional forces while still in total agreement with causality and general relativity. It is the hiddenness of these forces that has compelled me towards Patterns of Harmony. To be able to envision other dimensions and the forces therein we must be able to both let our minds complete seemingly unfinished problems so that that momentum towards wholeness can be felt not just intuitively, but as embodied experience.

Patterns of Harmony, seeks to compel the viewer's imagination through the artistic process to visualize an origin point of geometry. It is an interdisciplinary quest that leads deep into quantum physics and likewise science and cosmology, in search of those unknown implicate forces resonant of that Bohmian momentum. It focuses on all of nature's weird beauty, takes concepts from far beyond the perceptivity of the human mind and attempts to translate them into a unified and spatial form that give articulation to those hidden forces and dimensions.

In my journey, I've found that an extremely effective way to visualize more than 3 dimensions is to make a 2 or 3 dimensional projection of a higher dimensional shape. This way we can examine objects from various sides and perspectives and get an intuitive feel for their physical shape. For example a 4D cube (Hypercube) rotating around the 4th dimension, projected onto a 2D plane, looks exactly like a rotating cube. This means that from a certain angle, the 4D extension of the cube is hidden behind the coordinates of the 3D cube. This process emboldens a vitally important perceptual lesson: just because we cannot see something, doesn't mean it isn't there.

If we go deeper still into the 'floor' of quantum mechanics, we would find tiny strings of energy vibrating in 11 dimension (String theory). These strings of energy are the core of all being, a dynamic description of the world that holistically defines all properties of our universe. They define the mass and energy of every particle, how those particles form atoms and molecules, and finally, how those molecules construct matter, and thus geometry.

The actual substance of 'Patterns' is a series of fractal cubes. The work doesn't actually contain any physical cubes, but only their reflections and subsequent projections. It is built by applying a combination of rear-projection and two-way mirror foils on acrylic glass, and then projection mapping animated designs upon the rear surface of the installation. Light is thereby "trapped inside" the object, breaking against its physical structure and creating the illusion of other shapes. Our minds, faced with only parts of geometric patterns, visually completes them without even realizing it.

The most difficult part of this quest was finding a way to merge all of the inspiration, and ideas into a single physical shape. I tried to focus on what I found beautiful in nature and in science, and what I could use to define a new kind of aesthetic. There are still hundreds of different concepts in the background that give just tiny fractions to the final shape, but at some point along the way those various and at times seemingly disparate concepts started to present similarity and to eventually congeal.

In Patterns, I have followed those similarities and through each step of the process and can say in looking back that when I look at the project now I am able to see an image that holds continuity, harmony, and in its own way the implicate, even if often unseen, nature of the cosmos.