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BRIDGES
Mathematical Connections
in Art, Music, and Science

The Collapse Series
(No.2, No.3, No.4, No.10)

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Abstract

This series of images is a bridge between artistic and scientific, between imagined and empirical. They represent a quest on the part of the artist to apply principles of the scientific method in exploring human perception of the physical environment. I began this quest by asking a question vital and central to my work as an artist, '*what if...*'.

For this study, I was specifically interested in the human capacity for seeing and perceiving light. What if we could see light in a different way than we are now capable? What if we could see individual, distributed strokes of light after they strike one object and prior to interacting with any other physical object? If we could only control the physicality of our world: time, behavior of light, properties of materials? While it is impossible to change the way we physically view light and world around us, it is the act of pursuing these *impossibilities* that brings us from the framework of the scientific method into the realm of imaginative investigation.

I felt the best method of exploring these questions was to bring my investigation into the virtual environment. The *creative process* in this case was derived from: the creation of reality in the virtual, the manipulation of tightly controlled conditions (the scientific), the ability to imagine (the artistic), and the final registration of facts in image format. The images presented depict the progressive refinement of an object by methodically increasing a number of reflections. With each reiteration, light is allowed another bounce, thus revealing more and more of the object's form. In this process of refinement it is intriguing that transparent objects can become temporarily opaque and colors behave as momentary attributes not permanent properties.

My aspiration was not to mimic or test with computer models the reality we observe, nor was it to arrive at a photorealistic and empirical representation of a change in seeing. My aspiration was to fill the gap of what the everyday experience and our physical limitations preclude us from seeing and in this way inform the perception of reality. I was seeking to use my art in the same way other past genre's (e.g. Cubism, Impressionism) utilized their art – to converge upon a greater, holistic and unified vision of the world about us.

The resulting images represent the process of refining light until ultimately we arrive at the closest portrayal of the 'final' reality. These images, as a group, inform human perception regarding the act of seeing. The art not only provides a vehicle toward understanding the physical world but also pushes the traditional boundaries of perception. With the introduction of the virtual, we are able to broaden the picture of reality beyond the human eye and 'the eye' of scientific instruments.
Thus, we have an increasing understanding of our reality and our world. Furthermore, the artist strongly believes once these envisioned *im/possible realities* become more real to us, they will also affect our expectation of the surrounding us physical environment.

Perhaps, we would be able to control the physicality of our world: time, behavior of light, properties of materials. Perhaps, we could experience with our eyes what computer simulation is doing for us.

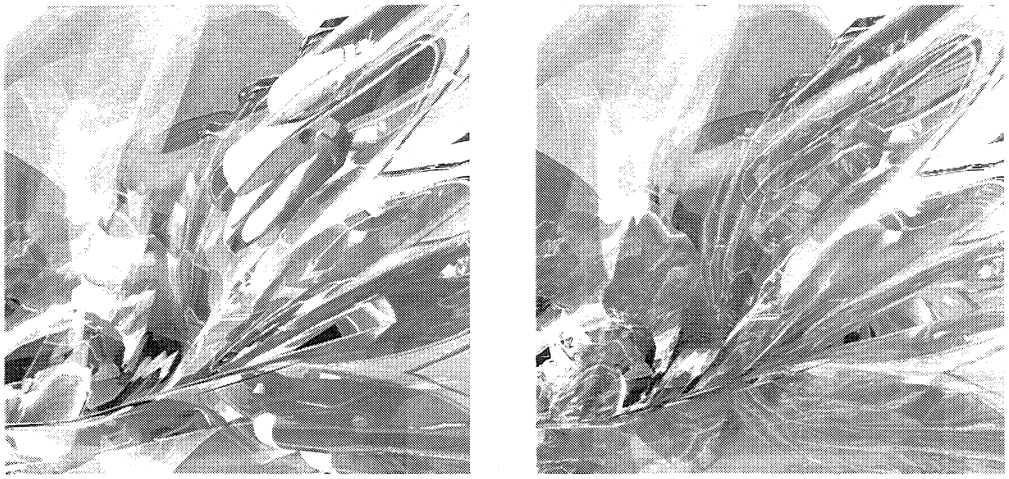

Figure 1, 2. *The Collapse No.4 & No.10*