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LEONARDO THINKS

Opinion: A Partial View Of A Three-Dimensional World

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A PARTIAL VIEW OF A THREE-DIMENSIONAL WORLD

I want to say everything in this introduction to convince the reader that holography, three-dimensional (3D) laser photography, is 'the' art medium of the twentieth century. I want to grab your ear and fill it with the most exquisite music of words that will make you hear, and understand, your importance in the world's acceptance of holography. I want to open your eyes to a new way of seeing, a more comprehensive, deep-space perception of truth. I want you to open your hearts to holography, so that you may know and love this medium.

It is both a privilege and a curse to be an art holographer during these early days of development. Serious artists exploring holography have discovered a phenomenal medium that offers completely new areas for creative exploration. The curse is that making a hologram, even for the experienced practitioner, is incredibly hard work, demanding ongoing intellectual, emotional and financial investment. And, at the successful end of hard work, markets, exhibition venues and even knowledgeable praise or critiques are scarce or nonexistent.

A hologram is a 3D photograph, an extremely fine diffractive record of the path of laser light. In manipulating holographic space, the holographer has many choices to make. Depth, projection, color, kinetic motion of the imagery, the kinetic movement of color and light, space within space, and parallax-all contained within the thin film plane of the hologram-represent the uniquely holographic avenues for aesthetic exploration. And what of aesthetic exploration? The creation of beauty-late twentieth-century, end-of-the-century beauty-is the heady goal of most holographic artists. Beauty is not an easy thing to create. Its creation demands an evolved and detached soul. It is almost as difficult to recognize beauty created in a new manner as it is to create beauty.



The making of a hologram demands sophisticated tools, some of the finest tools our current civilization has managed to produce. The laser offers pure light, directable and coherent in both time and space. The lasing system is a unique humanmade mechanism, a positive ascendancy over nature and the sun's incoherent light. The optics that direct laser light during the holographic process are delicate front-surfaced mirrors, composed of chemical elements and crystals deposited through electron-beam evaporation in a high-vacuum chamber. This process represents such fundamental understanding and control of the underlying atomic structure as to represent a pinnacle of twentieth-century technology. Such is the poetry of the holographers' tools. That these tools can be very expensive goes almost without saying.

Yet, fashioning a hologram into a work of art demands much more than technical (and economic) finesse. The art holographer, that is, the holographer who is also an artist, must understand and manipulate whole new journeys into the holographic space contained within the flat film plane.

The star and money-making system of historically 'correct' art champions each successive step in art philosophy as 'the art' of the moment. Holography is not currently recognized as a significant development by the art establishment. Beauty, too, is out of style in the mainstream art world. Ironically enough, of all art media, it can be argued that holography best represents the technical, scientific, philosophical and aesthetic advances that guide our perception of reality in this century.

What are the criteria for great art? I believe that great art uses the most current technology its civilization has produced. As we have seen, the holographic artist must understand and command complicated technology. Great art is universal in its appeal. This does not mean that it is immediately recognizable, but rather that it contains elements that are common to all of us, that it is universal in its basic content, symbolism and archetypes. Holography allows us to produce universal images in a new manner. Great art stirs the soul; it uplifts the viewer with potential beyond the ordinary, everyday occurrences. (Uplifting art can contain either positive or negative subject matter, reflective of the civilization and time in which the art is produced.) Great art leads our perception of reality. Holography presents a new way of seeing, a record of time and a record of space that reflects Einsteinian theoretical guideposts for our understanding of fundamental matter.

The last two criteria for great art are dependent on a more widespread acceptance of holography for its success. Great art influences other art. Holography needs to be more widely exhibited in museums and galleries if its originality is to influence other art. Holography has the power to perpetuate a continuum of creativity. Great art is lasting. This longevity is a duality. The truth of its beauty must remain as truth for future generations, rather than passing as a fad or gimmick that initially captures the eye but loses its appeal over time. For holography, a somewhat fragile medium recorded on photo emulsions, the archival issue is undetermined. However, if holography comes to be valued by our civilization, then the technological means can be discovered to ensure the archival nature of contemporary holograms.

Holographers can be compared with two groups in history, the early photographers and the Impressionist artists. The early photographers had to



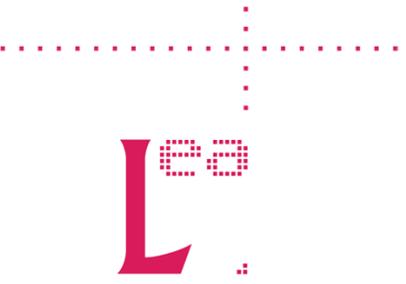
lug over 100 pounds of equipment around with them in order to make a photograph, which in those simpler days was considered a daunting achievement. Today our museum curators are still arguing over the relative merits of photographs as works of art. The Impressionist artists, a somewhat disaffiliated group of painters centered in France during the 1860s through 1880s, immediately recognized the photograph's extremely accurate image-recording mechanism as the liberating tool of their contemporary art. Their work took a relative 'quantum leap' from accurate renderings to recordings of their impressions of light and shadow upon people, objects and landscapes. And, like the holographers of today, the beauty of their work was not immediately recognizable to contemporary viewers. Their work was often vilified and sold poorly, so that many of the Impressionist artists lived a life of economic duress.

Perhaps holographers are Impressionists and early photographers, reincarnated. If so, our karma in this more sophisticated age dictates that we combine both advanced photographic and Impressionistic studies. We explore the nature of light and its fundamental wavelengths' effects on the objects of our world, just as our predecessors did. Our work, too, is vilified, with as much negative judgment and dissension within our holographic ranks as pressure brought to bear by the outside world.

There is one major difference in the comparison between the Impressionists and the holographers. In the Impressionists' contemporary France it was a popular practice for newspapers to write about Impressionism, with even negative texts serving to keep the fledgling art medium alive in the public eye. Such print discussions are rare for holography, making this special issue of Leonardo even more important in establishing a public record of the development of holography.

With the "Archives of Holography," I had hoped to present a 3D view of the holographers' worlds, in our own words—a contemporary record of the early days 408 Editorial of the development of holography. This task was both fantastic, because most of us are still alive, creative and cognizant, and impossible. This goal was limited by all number of farraginous and farseeing things: our personalities, natures and time, as well as the space available: 120 printed pages, maximum. And we are confined in our communication by the limitations of that nineteenth-century recording medium, photography. Even the most descriptive words and the finest photographs can only suggest the nuances of holographic art in its manipulation of 3D space.

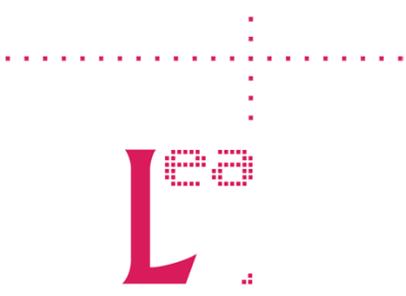
To create a true, archival record, written by the holographic artists themselves, presents an almost impossible dichotomy. The aim was to create an objective record, yet it could only be written by those who are intimately involved with their work and therefore write subjectively. I had hoped that the cumulative weight of our words would add up to an accurate, 360° composite picture of the medium's formative days. (This issue probably represents a 120° angle of view, or 1° per page.) The reader should remember that there is a minimal support structure in society for the holographic artist. Each of us must be creator, scientist, technician and inventor, proselytizer, educator and salesperson, financier and businessperson, all in one. We must be renaissance people to work successfully in this twentieth-century renaissance medium.

A decorative graphic in the top left corner. It features a dotted crosshair with a solid red 'L' shape overlaid on it. The 'L' is composed of a solid red vertical bar and a dotted red horizontal bar. The 'L' is positioned such that its top-left corner is at the center of the crosshair.

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The "Archives of Holography"-indeed, the public acceptance of holography- is further limited by the natures of the individual holographers. If holographers are renaissance artists, then we must act in an evolutionary manner. In our complex times, this demands self-awareness and the spiritual consciousness of a fully realized human being. We have the potential, the intellect and the tools to influence the world's visual perceptions.

I fervently hope that, after reading this special issue, you will be inspired to purchase holography. You will be buying in at the bottom of the market. Your support will ensure the archiving of holography. It will be fundamental to the continuance and growth of the creativity of the artists who are defining holography for future generations. Here we are, the holographic artists, some of us who have written manuscripts for this journal; we are at our peak of creativity and energy. We are waiting for you.



Bio: Nancy Gorglione is a laser and holographic artist. She is also President of the Laser Arts Society for Education and Research.