Into the Work

by John Forwalter

HOLOGRAPHY—art or science? "...a revolution that shatters every concept and aspect of our traditional representational visual traditions"... is claimed by Gallery 1134, newly become a "Fine Arts and Holographic Research Center."

Loren Billings has a tiger by the tail, with some miniscule help from the Illinois Arts Council. But will artists share the ride? To see the wild eyed beast, on view at Gallery 1134 through July 3rd, visit her collection of what is called "Holographic Art."

But, before we get to art, what is "holography?"

The idea is implicit in the Michelson-Morley experiment in light propogation in the 1880's. The construction of the interfermoter in 1897 was its application to measuring gauges. The science of optics, and the diffraction grating X-ray spectrometer was its habitat until the 1940's.

In 1947 Dr. Dennis Gabor of Scotland, working on electron microscopes, conceived a technique for eliminating their interference light wave shadows. In 1948 the first transmission type in line hologram on film was created by Dr. Gabor, for which he received the Nobel prize in 1971. This was then a scientific curiosity from an art viewpoint.

Many of us saw simple objects, recreated by holography on display exhibit in both scientific and art museums in the 1950's. (Bell Labs had one, of a ceramic dancer, turning in space.)

Now, back to the question of what is a hologram? It is encoded light messages, more like an X-ray film than a photo image. It is made by having two light waves cross, either before or after one set of light waves has illuminated an object.

With the screen in front, or to one side of the object, the sum of the light waves or the mathematical difference, is caught by a translucent film or screen that records the light and shadow. All that is necessary is to project light through the screen once more. That will recreate the original image.

Holography leaped from the stage of scientific curiosity to art medium with the invention of the laser. The Nobel prize in physics was awarded in 1964 to inventors Charles H. Townes of the U. S., and A. M. Prokorov and N. Basov of the USSR for independently developing it. The first operational laser dates from 1960.

What did the laser do for holography? Somewhat like some sunglasses that polarize light, they produced undirectional light beams. This made sharper lights and shadows, better holograms.

Other ways of making holograms were developed rapidly, and developed in 1967, in Russia.

Only one more bit of science: the objects projected from a holographic screen can be made to seem in front of or behind the glass (or plastic) which is the viewer's point from which to view the object. That is Optics; the rest is art.

The first show of holography in an art context was held at the Cranbrook Academy in 1970. A Museum of Holography was created last year in New York city. The exhibition at Gallery 1134 (1134 W. Washington St.) is a state-of-the-art statement. In it are several "scientific curiosities" and a number of artistic beginnings, using the various holographic techniques of both making and projecting.

First, Deborah Gaventa's laser and sunlight installation (non-holographic) is one of the best art works in the show. As an environment, it shows a little of the effects of light, and makes changing light patterns the subject of its meaning. "Into One" by Loran Billings is another environment, and an art statement about the relation between straight light beams and reflecting tin foil room surfaces.

"Holo Dali: Crystallized" by Mark Diamond; and "Dr. Einstein's Chessboard" by Peter Cladius are transformations of what could be static two and three dimensional images (Dali's face in flat multiples, and a 3-D chessbord of multidimensional space.)

Tung H. Jeong and David Wender create multiple whiskey bottles in space from one original bottle. But their computer generated "Cathedral" is a real transformation and a thing of beauty.

Hart Perry's "Birth of Venus" is a colored mathematical form in 3-D. Its line patterns change as it tumbles in space in a continuous manner. But we see it only from one side, so it seems an evolving thing. A similar, non-holographic series of forms is to be seen

in the mathematics exhibit at the Museum of Science & Industry.

Rudie Berkhout catches motion in "Milkshake" But this and most of the portraits in the show belong to the simple "scientific curiosity" level of images.

Without attempting to analyze each work of art exhaustively as art, one can but mention that twenty-seven artists are trying the methods of making and showing holograms. It may well become the primary method of creating final art forms in the next century. Already hologram multiples have been created.

Holography as technique has proved its potential as an art form artistic medium, far beyond curiosity, both a new medium and a new method of generating images. Its 3-D dimensional nature is an asset beyond easle painting, and a new set of conditions in which to do art work.

The dichromate reflection holograms in plastic will soon be a major sales promotion gimmick. Yet Rich Rollinson's "Little Watches and Watchparts" is an attempt at art. Both are dichromate plastic.

While only artists can produce good art, good artists can easily produce bad art with a new technique. Thus, holography is a jungle of new adventures, for exploration, and a tiger which may enclose the artist in a messy skin.