

Double take

Seeing things at the holography museum

by Joanne Trestrail

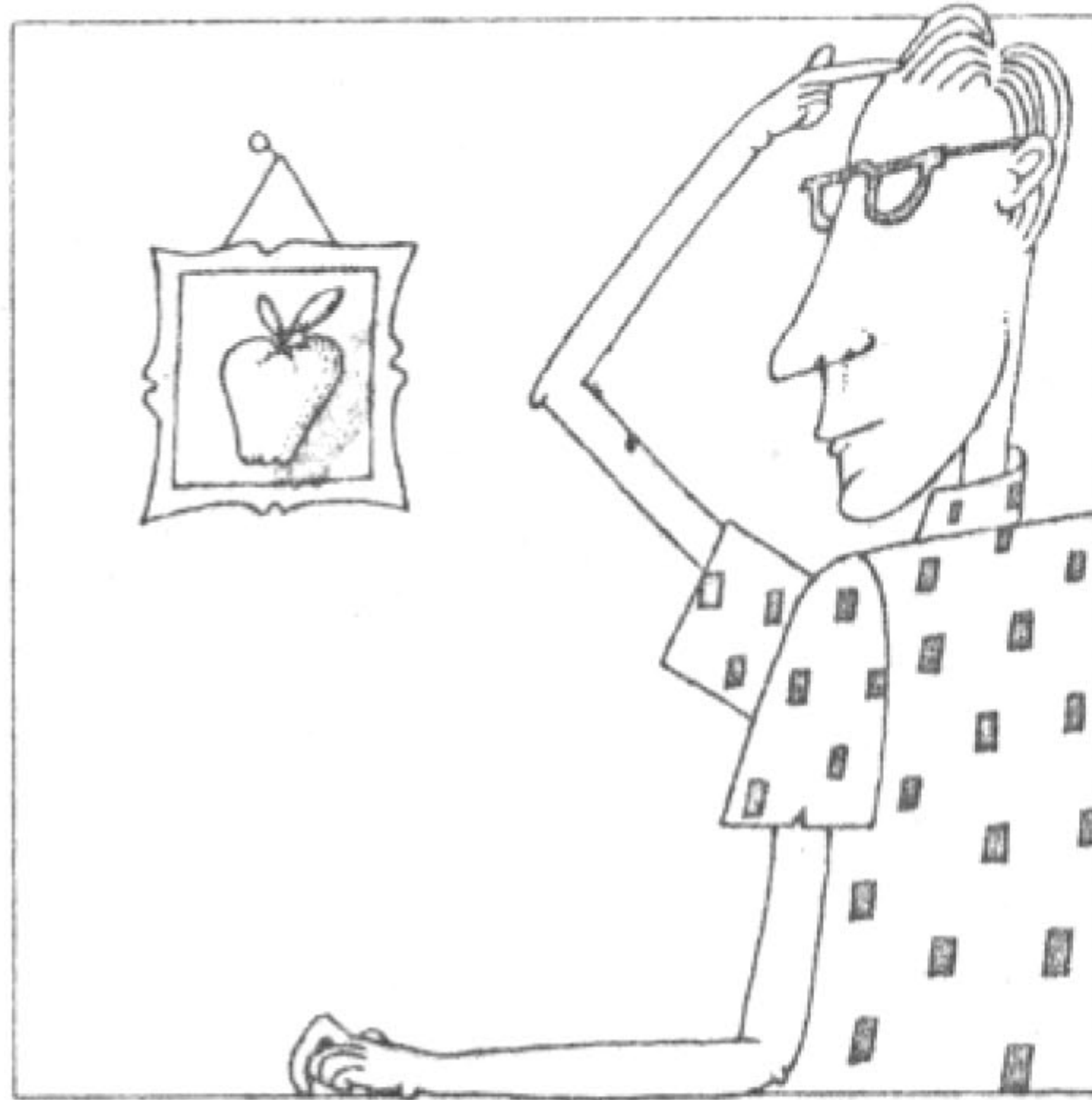
You may own a hologram and not know it. Look at a Visa card—over to one side there's a small silver square with a picture of a bird on it. Move the card around to catch different angles of light, and watch the bird. You see that it has an unmistakably three-dimensional quality, that its wings catch rainbows of shifting colors as it flutters gracefully, seemingly trapped inside your card. What's this pretty thing doing in your wallet?

For the time being, at least, it's foiling the attempts of counterfeiters to illegally duplicate bank cards. But at the rate the science of holography is entering the public consciousness, it may not be long before the science of counterfeiting catches up with it. (This is not inside information, just a guess based on the way these things usually go.) Until then, holography remains a complicated image-making process, one that can seem impenetrably mysterious to a layperson, yet one that holographers claim is perfectly understandable—once you understand it.

There is no better place to learn about holography or to enjoy its aesthetic qualities (or, for that matter, to buy earrings with holograms on them) than the Museum of the Fine Arts Research and Holographic Center. Housed in a building formerly occupied by the Free Methodist Publishing House, the center is the world's most complete institution devoted to holography. It includes galleries open to the public; a permanent collection of holograms of historical importance; a school that conducts classes in optics, photochemistry, and the physics of light, in addition to five levels of course work in holography itself; and research facilities for advanced studies.

The first transmission hologram was produced in 1948 by Dr. Dennis Gabor of the Imperial College of London, who was researching ways of improving the resolution of electron microscopy. In 1960 came the invention of the laser, with its intense, spectrally pure light, and developments in holography followed rapidly. The Fine Arts Research and Holographic Center was founded in 1976 to house and encourage study in the field.

An elaborately controlled setup is required to make a hologram. The center has an assortment of lasers in different sizes, as well as "isolation tables" from 30 by 42 inches to nine by 20 feet in



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size. (An isolation table is necessary for mounting the object to be recorded and the optical elements—laser, lenses, mirrors, beam splitter, photographic emulsion—in a vibration-free environment.)

If you're not a scientist, your main interest will probably be in the center's galleries, and they are fascinating. The first room contains reflection holograms (for which the light source and the viewer are on the same side of the hologram; in a transmission hologram, the light passes through the hologram to the viewer). There are images of an apple, a sculptural head of Minerva, a faucet. A faucet? It juts out at you from its silver frame—a real faucet, apparently. It even casts a shadow. But this is impossible, no? This thing is flat. You try to see around and behind it, but the image disappears. There is no "behind." You reach out to touch it and your hand passes through it, ghostlike.

While not the most sophisticated hologram on display, the faucet makes an impression on you, sets you up for what is to follow, progressively more complicated arrangements of objects—abstractions, human faces, rocks that float and merge—created by ever-subtler colors and movements. The largest gallery is a dark, quiet, richly paneled room; most of the illumination comes from the eerily glowing holograms themselves. The visual "trick" of the holograms is that they manage to persuade you completely that they are three-dimensional, at the same time

showing you that they couldn't possibly be. Some artists are readier than others to make the most of this unusual effect. You have the impression, as you move through these galleries, that you are in on the beginning of something, that the technology is waiting for artistic impulses to explore it in a mature way, though it appears to be off to a good start.

Loren Billings, founder of the center and now its executive director, foresees a day when ordinary citizens will own holographic equipment as convenient and affordable as today's photographic equipment. "Children today are growing up with this sort of thing!" she insists. "With computers! With lasers! You should see them here, in the gallery, looking at the holograms. They know how to look at them. Holograms don't seem strange to them." She is wearing holographic earrings and a brooch to match. She demonstrates a pair of holographic eyeglasses: When you put them on, three-dimensional spirals of light appear to bore into your head where your eyes would be. A weird effect.

Billings is a knowledgeable enthusiast. "Holography has so many applications for physicists, for engineers, for industry, as well as for art," she says. "It's being used in Italy to record sculpture that's in danger of disappearing because of the ravages of time and floods and pollution. And holography deals in photons, and in billionths of seconds, so it can be used for the most precise sorts of testing. It's used as a tool for detecting imperfections within the whole length of atomic-reactor structures. At Fermilab, in Batavia, they've made holograms of cosmic-ray trails." She pauses in front of a wall-mounted hologram of shifting, intersecting planes. "Look at the colors in this one," she says. "This really represents an advanced state of understanding of holography. You know, there is no color in a hologram. The colors you see are the colors that make up white light, the colors of the spectrum." Thinking of them as the colors of light itself makes the holograms seem even more beautiful. So this is the future? "Yes!" exclaims Billings. "This is the future! This is a museum for the 21st century!" ■

Fine Arts Research and Holographic Center, 1134 West Washington Boulevard, 226-1007. Museum hours: Wednesday through Sunday 12:30 to 5 p.m. Admission: \$3.50 for assisted tour, \$2.50 unassisted.

Tower Place, 835 N Michigan; Woodfield Mall, Schaumburg 882-2828; Oak Brook, 654-0225.

Chicago Art Galleries—Sept 14. Exhibit and sale of works by Chicago-area artists. 20 W Hubbard. 645-0686.

Chicago Art Network—Sept 19 thru Oct 21. Paintings by Vivian Nunley and Ellen Kamerling. 118 N Peoria. 829-3915.

Chicago Center for the Print—Sept 12 thru Oct. Etchings by David Driesbach and Brian Lynch. 1509 W Fullerton. 477-1585.

★ **Chicago International New Art Forms Exhibition—Sept 19-22.** A new art show sponsored by John Wilson's Lakeside Group emphasizing sculptural works of art. Galleries from around the world exhibit a variety of works, many of them called "crafts" until use of the word became considered derogatory. Navy Pier, Grand Ave at the lake. 787-6858.

Cicero—Sept 5 thru Oct 4. New works by Susan Michod; group show by Mary Strasevicius, Peter Marcus, David McCullough, Sue Kwak Gross, and Alan Neider. 221 W Erie. 440-1904.

Cohon—Thru Sept 30. Works by Ashley, Baber, Drapell, Feist,

Bowman, and Mullen. 2057 Greenbay Rd, Highland Park. 432-7310.

Contemporary Art Workshop—Thru Sept 5. New Talent Midwest: 2nd Summer Invitational, with works by Brown-Wagner, DeJong, Drannon, Heimler, Mishlove, Moon, Moses, Roler, Siewkowski, Santiago, Thomas, and Wexler. 542 W Grant Pl. 472-4004.

Cortesi—Sept 14 thru Oct. Works by artists represented by the Co-op Gallery of the Evanston Art Ctr. 777 Central, Highland Park. 432-1888.

Countryside Art Ctr—Sept 5-30. Works by members. 408 N Vail, Arlington Heights. 253-3005.

Dart—Sept 19 thru Oct 14. Paintings by Karla Knight and John Beerman. 212 W Superior. 787-6366.

Deson—Sept 12 thru Oct 11. Photographs by Mary Ahrendt, new works by Elizabeth Newman. 340 W Huron. 787-0005.

DuPage Art League—Thru Sept. Works by members and non-members. 219 W Front, Wheaton. 643-7090.

Evanston Art Ctr—Sept 12 thru Oct 11. 7th Annual Evanston and Vicinity Juried Exhibition. Works by members and students. 2603 Sheridan, Evanston. 475-5300.

Exhibit A—Ceramics, sculpture, and paintings. 361 W Superior. 944-1748.

Fairweather Hardin—Sept 19 thru Oct 3. Ragdale Foundation 10th Anniversary Exhibition. 101 E Ontario. 642-0007.

Gallery Vienna—Austrian art. 212 W Superior. 951-0300.

Goethe Institute—Sept 1 thru Oct 3. Exhibition: From the Supermarionette to Machine Art, photographs of European experimental theatre from 1910 to 1930, organized by the University of Hamburg. 401 N Michigan. 329-0915.

Gruen—Works by gallery artists. 226 W Superior. 943-3841.

Johnson Fine Art—Thru Sept. 500 Years of Master Graphics: Dürer, Rembrandt, Piranesi, Goya, Picasso. 645 N Michigan. 943-1661.

Kass/Meridian—Sept 5 thru Oct 3. Works by Andy Warhol and Keith Haring. 215 W Superior. 248-1300.