

## **Holography—The cubism of our time**

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The invention of holography made one of the oldest dreams of humanity become reality. Since the earliest days of his cultural history the homo sapiens tried to reproduce his environment in a most realistical way to reflect himself—in every meaning of the word. Finally it is his ability to think that distinguishes him among all other living creatures. In holography—as a means of artistical expression—his abilities of self-representation have found a hitherto unknown perfection. With the means of holography it has been made possible to create real three-dimensional images.

The cave-men of the stone-age decorated the walls of their dwellings with large mural decorations, showing the most important parts of their environment—animals, tools, weapons and ritual objects—with very simple means of expression.

A story from the beginnings of our humanistic education, related by the Roman author Plinius, documents the crave for the creation of an image—as perfect as possible—of our environment. As is reported, the Grecian painter Zeuxis made a picture of a plate of grapes (in a contest) in such a vivid reproduction, that even the birds were misled by it and tried to pick at the grapes.

The next great attempt of three-dimensional reproduction was made during the period of Renaissance, when in Florence Utrillo and others introduced perspective drawing.

Man, having long since become the dominator of world—and this with a breath-taking speed—, must have felt his inability of generating three-dimensional reproductions in the pictorial sector as a blemish to this day.

The history of photography was accompanied since the beginning by numerous attempts to infer the desired plasticity to the flat image. Stereography, the red/green anaglyph technique, polarization methods, these may be the most famous of all the pseudo-3-D techniques, which all have one decisive disadvantage: In order to profit from the 3-D effect, it is necessary to use additional visual aids, such as goggles of different makes.

Finally now holography allows pictures to float freely in space, to reproduce solids and things so as to make them appear three-dimensional in space.

Naturally, holography as such is no art, just as a painter's brush or a sheet of paper or the canvas is no art. Nobody would ever have the idea to call a house-painter an artist. Also, the holographer is no artist. Holography is only a technique, a technical method of conserving light informations.

The holographic product, the hologram, can be compared to a record. A record disc contains coded sounds, which were first reproduced in a pick-up style, now with a laser (which also is light!). On the holographic plate we find super-imposed light-waves in the form of interference patterns, which are activated with the help of light.

No wonder, that this new medium was fascinating for artists since the beginning. Carl Frederik Reuterswärd, Bruce Naumann and Salvador Dali rank undoubtedly among the contemporary artists who discovered the medium holography" very early and made use of it. In cooperation with fellow technicians and engineers they had holograms made, inspired by

their artistical and creative powers. But—especially in the early seventies—artistic fantasy mostly reached further than technical reality. Then exclusively laser-transmission holograms were feasible holograms which needed laser light not only for production, but also for reproduction and thus were very limited in their distribution.

Of the above mentioned artists only Reuterswärd stayed true to this medium and his intellectual wit adds a lot of character to the whole of his holographic oeuvre. He made a hologram as a birthday present for Dennis Gabor, the inventor of holography, as a homage. The hologram, size 50(60 cm, entitled "Gateau Gabor", shows a huge birthday cake with seventy burning candles.

The hologram may show everything except light, for the hologram itself is nothing but playing with light. Heat, though, the physical companion of light, is visible in the hologram. Thus the cake shows 70 smoking candles.

Pointing out the limits of holography in his birthday present is really Reuterswärd!

## HOLOGRAPHY IN ART

"Meeting" is the title of one of the most popular holograms, created by the American artist Rick Silberman.

Silberman holographed a wine glass and produces this in an edition of 24 as a hologram. In the reproduction the glass seems to stand right in front of the holographic plate.

In reality on a little tablet fixed to the plate's frame, there is a broken glass, the hologram completing it to its original shape. Here we find a perfect synthesis of reality and illusion.

Also another of Rick Silberman's holograms deserves attention: The hologram of a jug was cut into three strips. The observer stands in irritation in front of the hologram, entitled "Rough Cut". But if he moves within the parallax—within a certain angle of view—both handle and spout are to be seen on each of the three strips simultaneously. With a little bit of gymnastics, however, the jug can be seen as whole.

Rick Silberman has made use of another effect of holography here: A partial hologram always shows the complete message. Every holographic fragment contains the whole image. This might be compared with a magnet, which—broken into pieces—will always retain its magnetic force.

In his works Rick Silberman deals with the particularities of holography which make him also appear a pioneer of this medium. The hologram "Rough Cut", offered as an edition, is—as we have mentioned—quite a piece of work.

In his latest holographic works, Sam Moree has enlarged holography—which can be understood as light-sculpture—by the introduction of real plastic elements. He combines high steel-like glass plates with his holograms and frames the hologram-glass collage with a neon frame. Thus light-sculptures are produced, giving a peculiar aura to their environment. These montages exceed also the dimensions of normal holographic works, which are limited by the size of holographic plates.

Rudie Berkhout finally with his abstract holograms makes Op-Art and Zero look rather obsolete. His holograms are fascinating plays with light, living on the colours of the spectrum, which he incorporates and transforms in a really masterly manner.

These four holographic artists with their completely different approaches document that this very new technique, the holography, can be considered a new artistic manifestation without hesitation. Every era creates its own means of expression. Holography is a medium of the next century, the creation of which we can already watch at the end of ours.