A NEW TECHNOLOGY
William Bricken
April 1988

Just a quick note...

The really neat news is our new project: CYBERSPACE (aka Virtual Reality).
The idea is to step into the computational display, as-if real.

Components

Head-mount 3D display: Pioneered by NASA. You wear two LCDs like glasses,
one for each eye. Stereoscopic images driven by a graphics accelerator
provide a 3D full-color wide-angle display.

Head-tracking: 6df Polhemus tracks head movement, and coordinates
simultaneous movement of the field of view. Turn your head to see what's
behind you.

Dataglove and Hand-tracking: A virtual hand coordinated with actual finger
and hand movement provides direct manipulation of virtual objects.

We're hooking this into large databases for architectural glide-through, but
the excitement is in constructing custom realities, literally fantasy coming
true. We are building the Cyberspace Construction Kit.

Technical issues/observations

Everything you know about interface is redefined. Desktop, menus, etc. *get
in the way*. We're using a helicopter metaphor for flying, a flashlight
metaphor for identification of objects and teleporting, voice input
throughout, dataglove for manipulation of objects.

All the hardware is off the shelf. The technology is ripe, getting cheap,
and presents no technical difficulties.

Cognitive response to artificial realities is virtually unexplored. We
suspect it grabs deeply, like lucid dreaming. Thus far, no one wants to come
out!

Scale is another accessible dimension. Cartesian reality is a *projection* of
the higher dimensional cyber-reality.

Scientific observation and visualization becomes participation-with-data.
Boundary mathematics is at the heart of our development. The user
(cybernetically) is the computation.

The display technology is not dependent on computational support. Can also be used to view TV and VCR sources. Cinemascope from the front row. Every seat is the best in the house.

I have never seen a project engender such commitment. Folks volunteering nights just to be in it. As yet, no technical obstacles. I suspect the potential is huge, in entertainment and education.

Some application ideas

Flying.

Virtual conference. Each local participant is projected into a communal virtual conference room. No more executive travel.

White room. A physical location coordinated with a virtual room. Your physically empty desk is full of cyber-real toys.

3D database. Explore tornadoes, bodies, the terrain of Mars. Go with the flow.

Fantasy. Stand on an asteroid and watch the stars as-if a million miles away.

Interactive gaming.

Well, I hope this motivates you to visit us when you're in town.