

Presence and Form in the Architecture of Cyberspace

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This paper is an introduction to the concepts of cyberspace and those elements by which it may take form as it expands from its science-fiction birthplace to the world of everyman's space of digital dreams, virtual realities and the meetings of minds. As such, it is and will be visited and inhabited by a growing population who's ambitions and aspirations for security, freedom and personal gain will determine the form of that digital space in which they are momentarily present.

The space of digital dreams

Definitions of terms may be much for many, especially when they are terms in the making. Both cyberspace and cyberpunk are just such terms, with varying meaning for the creators, readers and occupants of both.

This paper will concentrate on that cyberspace which is available and real today. The cyberspace which consciously or unwittingly is populated by many or most computer users in academia. By extension and analogy, pockets and islands of cyberspace are visited daily by millions of computer user everywhere, whether in or out of that matrix of cyberspace collectively called the *net*.

By way of clarification, let us first then, examine "cyberpunk", in order to eliminate that which we will not be discussing here. In *Earth/Cybertech Sourcebook*, Lester W. Smith gives a concise definition of cyberpunk:

"Cyberpunk is the term given to a particular genre of 20th-century science fiction. It is coined from two different words: "cybernetics" — the science of electronic, mechanical, and biological control systems— and "punk" referring to modern street culture. The sense of the combined term is of ultratechnology grafted onto the culture of the street. The theory is that technology is changing so fast that each new discovery is old news before we have even had a chance to consider its implications.

The effect of that technology is a culture shock that not only separates one generation's ideals from the next generation's, but actually shakes the next generation's ideals as fast as they are formed. Mixing genetic material from animal to animal, or even from human to

animal; raising crops of human embryos for organ transplants; creating machines that think like humans and humans that think like machines. All of these things, and more, are within our grasp. The problem is that they all tear at the definition of what it means to be human. And without that definition, we have no inherent basis for human rights.

That is the realm of cyberpunk: to explore what it means to be human, or inhuman, in the world of the future."



Blue Pearl "(Can you) feel the passion" from MTV. A sense of non-interactive cyberspace and the ideals of cyberpunk pervade many of the popular music videos that are globally transmit-

We should also mention the heroes of cyberpunk, the *corporate climbers*, *bionic warriors*, *rock-and roll rebels* and *technological scavengers*, as their ideals and aspirations will in large measure be the foundations of both presence and form in the architecture of cyberspace. For although the vernacular is well entrenched in the cyberspace we know, many of the ideas and creations of the science fiction of cyberpunk will find their way into the reality of common cyberspace.

The term "Cyberspace" was coined by William Gibson in his science fiction novel *Neuromancer*. Many facets of cyberspace as it is variously conceived are discussed in Michael Benedikt's *Cyberspace: First Steps*. In this discussion, I will restrict the concept of cyberspace to digital space in which we are momentarily present. Particularly that digital space which is described and confined by the internet matrix and its various nodes, pockets and extensions spanning from one to n-dimensional space.

Thus cyberspace is available to anyone and all of us who are capable of consciously projecting our presence into it. Its form takes its cues from our visions of form in digital space, visual or imaginary. It is the 2-dimensional space of drawings, the 3-dimensional

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space of synthetic models, the n-dimensional space of sound, time and words. Its media are as diverse as the technology involved, spanning from the pulsating columns of mud that carry telemetry from instruments in oil well drilling bits into the networks of oil companies to the very-high speed broadband optical networks of NREN.



Interfaces to cyberspace
Peter Cook, *Info*
Gonks, 1968.
(Nakamura, *Architecture and Urbanism*)

The means of letting us into cyberspace are increasingly diverse. From the familiar and trusty keyboards and glass screens of very dumb and somewhat less dumb terminals to 3-dimensional viewing goggles coupled with microphones, datagloves and sensory devices our interface to cyberspace is slowly blurring the demarkations between mind, body and digital space.



Plate C

Nasa Goggles and VPL Glove.
Coutesy of W. Sisler and S. Fisher, NASA Ames Research Center. (Krueger, *Artificial Reality II*)

The basis for this discussion is that cyberspace which is embodied in the dimensions of available hardware and software systems. It may be envisioned as an isolated spacial domain on a single-user computer. It expands into a limited territorial domain in a local network, and finally becomes global and universal space when its limitless space is the net.

Before we go on to consider the architecture of cyberspace, the following description of the spacial qualities of cyberspace might lend some insight into its nature. In his article *Old Rituals for New Space in Cyberspace: First Steps*, David Thomas writes: Gibsonian cyberspace can be distinguished according to three, dominant, "Euclidian", characteristics. First, it is conceived as a common transnational work environment. Second, it is a transportation space designed to accomplish work-related tasks - both a space in which one can travel in real-time or by way of "bodiless, instantaneous shifts" and a space through which human memory and identity are transported globally. Third, it redefines and restructures what it means to be human in techno-economic terms through a data-based collectivization of the human sensorium or, in the more radical customized and therefore "individualistic" terms, of "personality" or synthetic dataconstructs.



Transporting space.
Vernacular, architectural space being transported.
(Rudolfsky, *Architecture Without Architects.*)

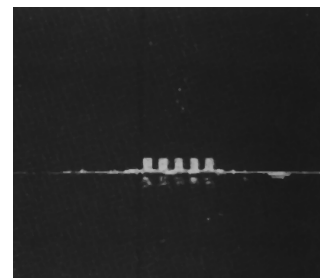
It should not be difficult for those of us who use the net daily to concur with that description. A graphic example of the Thomas' 3rd "Euclidian" dimension is the difference between paper information that crosses national frontiers and the digital. When paper passes a certain size, appearance or material form, it suddenly becomes of great concern to national authorities wishing to examine and levy its contents. What will be their interest when they awake to the realization that the net is a not only a new-found space for the transportation of their information about taxable goods, but a space in which those very goods are transported?

Where we are.

In his book of 1923, *Towards a New Architecture*, Le Corbusier describes the state of physical architecture 70 years ago: "The engineer's Aesthetic, and Architecture, are two things that march together and follow one from the other: the one being now at its full height, the other in an unhappy state of retrogression."

LeCorbusier

His visions of a new order where physical space would be ordered by materials, light and function to answer needs were destroyed by that 3rd "Euclidian" dimension where techno-economic power became concentrated with those seeking personal gain from the building of space



rather than those occupying it. Order was the loser and the modern city high-rise fell into chaos. (Thiis-Evensen, *Arkitekturens Uttrykksformer.*)

At the time reinforced concrete, structural steel and glass had entered the realm of the structural engineering as the first new materials of construction since the Renaissance. However, as materials in the design of buildings they were repudiated by the architects of the time. Even more exciting to Le Corbusier and the handful of modernists that were to shape the architectural environment of this century, were the achievements of engineers in other fields. The great passenger liners of