Hyper-punk:
Cyberpunk and Information Technology

Steve Jones

What is it you're after?

Uh, information?

Oh. Another one. Life was simple before the first war. You wouldn't remember. Drugs, sex, luxury items. Currency in those days was no more than a sideline...Information. What's wrong with dope and women? Is it any wonder the world's gone insane, with information come to be the only real medium of exchange?

from *Gravity's Rainbow*, by Thomas Pynchon

I

The clearest statements of cyberpunk ideology come from contemporary science fiction texts that combine information, technology and ideology to construct a reality in the near future (a time that seems almost parallel to the present rather than ahead of it) in which *information* fuels not only the global economy but individual existence. Where science fiction once projected itself into futures thousands of years ahead, cyberpunk science fiction is obsessed with conjecture about what is to come within our lifetime, even, as the theme of the "Max Headroom" television show put it, in a world "20 Minutes Into The Future."

The consumption of information via the mass media is an ideological practice within the realm of symbolic activity. What Peter Berger and Thomas Luckmann term the "social construction of reality" is precisely what information gathering is to many people—with the difference that electronic media permit (and necessitate) that construction to be private.[1] Cyberpunk literature, art and music are at the forefront of a movement, preoccupied with electronic media, technology and information, and with the social construction of reality, that is quickly growing in popularity, especially among youth.

Rudy Rucker's 1982 novel *Software*, which revolves around the analogies between hardware and human flesh, software and mind, was

perhaps the first elucidation of cyberpunk's emphasis on information and its manipulation. But it is William Gibson's writing, in the short story collection *Burning Chrome*, and in the cyberpunk novels *Count Zero*, *Mona Lisa Overdrive* and especially *Neuromancer* (which depict a world based not light years ahead, but just around the corner) that are considered the classic cyberpunk texts. Gibson is the quintessential cyberpunk author. His first novel, *Neuromancer*, published in 1984, signaled cyberpunk's foray into a credible future. His first short story, "Fragments of a Hologram Rose," published in 1977, contains the elements that would evolve into cyberpunk's icons: high tech electronics, computers, pop culture, and dark, glossy streets and alleyways of the kind well illustrated in Ridley Scott's *Blade Runner*.

Bruce Sterling, writing about cyberpunk authors, said:

> The cyberpunks are perhaps the first SF generation to grow up not only within the literary tradition of science fiction but in a truly science-fictional world. For them, the techniques of classical "hard SF"—extrapolation, technological literacy—are not just literary tools but an aid to daily life. They are a means of understanding, and highly valued. (Sterling xi)

In essence, even though the cyberpunks may write about the future, they are doing so to understand the present, and perhaps that is why their work is so strikingly current rather than futuristic.

Cyberpunk's settings are already familiar to anyone who has viewed recent science fiction films or TV programs (many music videos use cyberpunk themes as well). Its first articulation was in rock music, in the song "Secret Agent Man," as the singer tells of the "Secret *Asian* man" who's "'cruisin' on the Riviera one day/lying in a Bombay alley next day" all the while "giving you a number/and taking away your name." The song deftly sums up the ethos of most cyberpunk stories.

Three striking characteristics frame cyberpunk. First, the populace is multicultural, a crazy-quilt of cultures and subcultures blended into one interculture uncovered by language. Objects are represented in combinations of Russian, English, Japanese, French and any of a dozen other languages, reflecting less their linguistic origin and more their technological birthplace. The economic structure of cyberpunk is determined by the *zaibatsu*, the multinational corporation, and its culture is seemingly randomly derived from any number of sources.

Second, a post-industrial bleakness permeates the landscape. The following description from *Neuromancer* is typical:

> Case watched the sun rise on the landscape of childhood, on broken slag and the rusting shells of refineries...staring out the train window at blasted industrial moonscape, red beacons on the horizon warning aircraft away from a fusion plant. (Gibson, *Neuromancer* 85)

The setting could be one from any of a dozen visual texts—*Robocop*, *Max Headroom*, *Aliens*, *Brazil*. High-tech as cyberpunk's world may be, its everyday signs betray the remnants of low-tech debris and high-tech danger zones. Both, however, are immediately familiar to today's society; black metal urban landscapes, the low-tech postmodern detritus, excremental culture, and Cray supercomputers, ROM viruses, high-tech artifacts that dot the pages of the *Wall Street Journal*.

But it isn't the physical world that is of prime importance to cyberpunk (though it may be where much of the social exchange occurs). The most significant scene is cyberspace, the third (and critical) characteristic of cyberpunk.

Cyberspace is a data grid, an information matrix (the "open architecture" of the Macintosh or IBM PC gone berserk), accessed via (elec)trodes "jacked into" the brain. Gibson explains it best:

> "The matrix has its roots in primitive arcade games," said the voice-over, "in early graphics programs and military experimentation with cranial jacks."..."Cyberspace. A consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts...A graphic representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the nonspace of the mind, clusters and constellations of data." (Gibson, *Neuromancer* 51)

Cyberpunk's heroes are masters of cyberspace, "console jockeys" who jack into the matrix via their computers.

Cyberspace is a virtual space of information, an area through which the mind, by means of a computer interface, has immediate access to a global information network. Databanks dot the landscape, and the three-dimensional information matrix is the infrastructure of the zaibatsus, government and military. As one of Gibson's characters says, "The blood of a zaibatsu is information, not people. The structure is independent of the individual lives that comprise it" (Gibson, *Burning* 107). The movement of information along the matrix is the *raison d'etre* of the multinationals.

In the late 1890s inventor Nikola Tesla envisioned a world linked by electricity. He proposed the development of a global electrical network (an early form of the matrix) to facilitate communication. Tesla believed that anything could be coded into electrical impulses and transmitted via electricity. In that sense he presaged the current

trend toward digitization. But he also foresaw the postmodern shift from meaning to flow,[2] from a social space within which signs took shape, metamorphosed, disappeared and reappeared, to a space where meaning shifts while signs remain constant; cyberspace and the hyperreal.

Cyberspace thus *is* the "Postmodern Scene" that Arthur Kroker and David Cook examine, Frederick Williams's "electronic space," *is* the hyperreal, Baudrillard's simulation on an unparalleled scale.[3] The hyperreal, Baudrillard wrote, is the "realization of a living satellite," in which:

> each person sees himself at the controls of a hypothetical machine, isolated in a position of perfect and remote sovereignty, at an infinite distance from his universe of origin. (*Critique* 202)

In fact Baudrillard's descriptions of a "cybernetized society" are remarkably similar to cyberspace:

> ...a social environment of synthesis in which a total abstract communication and an immanent manipulation no longer leave any point exterior to the system. (*Critique* 202)

The origin of cyberpunk via cybernetics is obvious—Norbert Weiner's theories of systems, control and communication brought over to science fiction wholesale. The combination of telecommunications and computing, telematics, figures prominently in the work of those who have followed Weiner[4] and is the antecedent of cyberspace.

The fusion of "punk" with cybernetics is most interesting. It inserts an oppositional framework into a technological structure, a framework owned and operated by the computer hacker, the technologically hip but socially outcast. The prime movers of cyberpunk are not the traditional armed-and-ready James T. Kirk-style West Point graduates. Instead they are typically young, in their teens or twenties (for who best understands the latest technology?), streetwise and without the loyalties (that is, *ideologies*) associated with traditional science fiction.

Cyberpunks exist in a world where nationalism, of any kind, does *not* exist. Mathias Rust, the West German youth who piloted a plane to Russia and landed it in Moscow's Red Square, is a cyberpunk—he mastered a technology and used it for his own pleasure, not for the CIA, KGB, or any political movement (incidentally, perhaps, the prefix *cyber* comes from the Greek, meaning "to pilot"). It is not surprising that a multinational information *industry* must exclude nationalism. The cyberpunk w[illegible]d is one with only information at its center.[5] The

cyberpunk ethos was set forth by Tesla in 1904, when he made public his (modernist) goal to harness the earth and atmosphere to conduct electricity, voice transmissions, music, pictures and so on. What puts him squarely in the ranks of cyberpunk is his desire to transmit this information for *free* to any point on the planet. As author Rudy Rucker stated:

> What matters, nowadays, is to break all barriers that might come up between things and let information flow through them. (Riche 9)

Nationalism is a barrier to information flow that is overcome via the economic structure of the information industry. What matters to cyberpunks is not whose side you're on, but that you can jack into the matrix, break the ice, copy the data and come out alive. If you can sell the high-tech code, all the better.

The social fabric of cyberpunk life is held together by wheeling and dealing in the information marketplace, in bars akin to the one in *Star Wars* where Luke Skywalker and Han Solo meet for the first time. In that sense technology has not obviated the need for social mediation. But personal relationships *are* virtually unnecessary except insofar as they facilitate the exchange of information. Pleasure is constructed from a media world in which simstim (simulation/stimulation) devices conjure lifelike mnemonic fantasies recorded by Tally Isham (a girl with Zeiss Ikon lenses/eyes, a Robin Leach-like hostess of personal experience); ASP (Apparent Sensory Perception) units play prerecorded sensory cassettes, and holoporn units project three-dimensional bordellos in teenage bedrooms—the simulation is as real as real. Value is derived primarily from the usefulness of information as a means of negotiating cyberspace, the matrix. If, as has been argued, the "monopoly of knowledge does not so much refer to specific information, more or less fragmentary, but rather to the theoretico-conceptual apparatus underlying it" (Ferraroti, *End* 29) then cyberpunk's prioritization of the matrix belies a subtle understanding of the interplay between information and knowledge. And the emphasis on information also underlines their *image*-ination of the matrix: "In contemporary terms, information means power. If power involves control, and if it is impossible to control what is not known, then information is the necessary, if not exclusive condition, which lies beneath every exercise of power" (156). The matrix is at once the theoretico-conceptual apparatus, the power structure, and the site of the struggle over information/knowledge/meaning.

II

It is probably also no surprise that cyberpunk authors consider themselves part of the postmodern movement and frequently borrow ideas from many avant-garde sources. But lately the sources have been borrowing ideas back. Examples of cyberpunk philosophy permeate the edges of contemporary art and music, and a mix of technology, rebellion and counterculture is emerging within fields (science, art, literature) that cut across traditional boundaries. As Bruce Sterling said:

> ...a new alliance is becoming evident; an integration of technology and the '80s counterculture. An unholy alliance of the technical world with the underground world of pop culture and street level anarchy.
>
> The counterculture of the 1960s...was rural, romanticized, anti-science, anti-tech. But there was always a lurking contradiction at its heart, symbolized by the electric guitar. Rock tech has grown ever more accomplished, expanding into high-tech recording, satellite video, and computer graphics. Slowly it is turning rebel pop culture inside out, until the artists of pop's cutting edge are now, quite often, cutting-edge technicians in the bargain. They are special-effects wizards, hackers, emerging through new media to dazzle society with head-trip extravaganzas like FX cinema. (Leary 87)

Most importantly these technicians rely on editing—whether it's Burroughs-like word play, digital video effects like those found in Peter Gabriel's videos, or tape editing of the type popularized by rap and hip-hop (M/A/R/R/S's "Pump up the Volume"). The cyberpunk aesthetic is best illustrated in the Michelob "Bring on the Night" commercial in which a fellow is editing a film of a woman and man in a bar. The pair begin to leave the bar whereupon the editor stops the film, cuts in a scene of the woman turning down the man's advance, and the woman leaves the bar alone. Satisfied with his work, the editor takes a drink from his bottle of Michelob, glances out the window of his loft, and sees the woman (from the film) leaving a bar, looking up at him. The point is not that art imitates life, life imitates art, and so on, but that *life itself can be edited*. Still, this is an example of editing text; cyberpunks more often alter context, moving signs from one place to another rather than changing the signs themselves, and thus the best current popular examples of the cyberpunk aesthetic remain in the realm of popular music, particularly among those who use digital sampling.

Cyberpunk artists loot signs almost at random, using their editing tools (usually computers) to participate in the most prominent of postmodern activities. And of course meaning is shifted over an increasingly unstable terrain as signs are articulated and re-articulated[6] in numerous

ways. Meaning *must* shift because there is no room for it in cyberspace; there is room only for information. With meaning, representation and ideology involved, information could not be quantified—in cyberspace there is room only for a one or a zero, a yes or a no, binary code.

But cyberpunk is *not* meaningless. Cyberpunks control the screen and thereby control the creation of meaning from information, the site of articulation. As Timothy Leary recently said, "When it's on my screen, I'll decide how it plays" (Sheff 228). Cyberpunks control the screen (context) and need the sign (text). And in cyberspace, where information must be separated from meaning, the text is separated from context, thus becoming *hypertext*, the ecstatic form of information where "there is no longer any metaphor, rather metamorphosis" (Baudrillard, *Forget* 75). The effect is similar to what has been described elsewhere, in a discussion of music videos, as "digital narrative," a narrative form within which the audience "is left to make sense of...bits (of information) and to associate each bit (as opposed to merely relate each bit) to another bit or bits" (Jones 27). Hypertext is the non-linear analogue of the linear thinking based on scientific rationalism McLuhan identifies in *The Gutenberg Galaxy*.

The term "hypertext" (along with "hypermedia") is now often used in the computer industry as a label for CD-ROM and videodisc data storage systems that allow easy access to information via electronic pathways. Though hypertext is used here in a different sense, to mean the decoupling of information and context, it is important to note that those who use personal computers are rapidly adopting cyberpunk language. Apple Computer's Hypercard system, for instance, is called an "information navigation engine." The new data storage systems are thought of as "interlinked non-linear knowledge structures" (an adequate definition of memory, life-based or not) and were forecast in *The Atlantic Monthly* in August 1945 by Vannevar Bush, in an article titled "As We May Think" (18-22). The following passage by Bush contains a clue to the origin of cyberpunk and hypertext:

> When data of any sort are placed in storage, they are filed alphabetically or numerically, and information is found (when it is) by tracing it down from subclass to subclass...one has to have rules as to which path will locate it; and the rules are cumbersome. Having found one item, moreover, one has to emerge from the system and re-enter on a new path.
>
> The human mind does not work that way. It operates by association. With one item in its grasp, it snaps instantly to the next that is suggested by the association of thoughts, in accordance with some intricate web of trails carried by the cells of the brain.[7]

The title of Bush's paper has particular resonance in the context of cyberpunk, for console jockeys use electronic information networks *as they think*. Associative processes are not even called into question—they are the motivating force for moving through cyberspace. The process of association is, however, being scrutinized by the computer industry, and it vexes those involved in computer security. Government and military agencies are concerned precisely with the possibility of hackers compiling bits of data into top secret documents. A *New York Times* News Service report about a West German hacker who gained access to more than 30 U.S. military computers stated:

> The Reagan administration has been concerned that foreign intelligence agents could piece together classified information by assembling a "mosaic" of computerized data. (18 April 1988 *New York Times*)

The implication of such "assembling" of data points to an active creative process, albeit one that operates only on data that is available, that is simulated. Controlling the screen implies a kind of response in Baudrillard's terms. But the response is also simulated, it is a response *from*, not a response *to*. The real response comes from "turn(ing) its function inside out" (Baudrillard, *Critique* 171) from manipulating the screen and jacking into the system—for these are cyber*punks* and not cyberneticians.

And within cyberspace, the immediate, saturated information environment, it is as if a superconductor is connected across which information flows, and at some critical point all the switches are open, creating "a kind of dizziness induced by the connections, the switching operations in which the subject gets lost" (Baudrillard, *Forget* 77). The need to communicate is satisfied at the same time as the need to be alone.

The opposite of cyberspace, a low-information state, is disdained by cyberpunks—and by youth, whose simultaneous need to be with others and alone is currently often met via the telephone and computer modem. "Max Headroom" was popular among youth because, as claimed in *Newsweek*, "Max, after all, speaks their language: computer-literate, media-wise and gleefully disrespectful" ("Mod About M-M-Max"). The computer simulation replaces the automobile (simulation) for the teenager. The site of rebellion is no longer the rolled-down-window-blasting-radio car but the PC terminal and modem.[8] For Matthew Broderick's *Wargames* character who can access hundreds of computer networks from his bedroom, the question is: why leave home? Buckaroo Banzai's statement that "wherever you go, there you are" becomes the model of cyberpunk. Vivian Sobchack's expression of this idea in visual science fiction texts is illuminating:

> If the digital "bit" has fragmented our experience and representation of space, then the character of electronic dispersal has dislocated our experience and sense of "place." We are culturally producing and electronically disseminating a new world geography that politically and economically defies traditional notions of spatial "location"...Our new electronic technology has also spatially dispersed capital while consolidating and expanding its power to an "everywhere" that seems like "nowhere." (Sobchack 232-33)

Cyberpunk's space is, obviously, not traditional. And neither is its representation of the future. Instead of the traditional concept of a far-off future (or at least one that is considerably *ahead* of the present), it situates the future as, for all intents and purposes, within the present. Julian Halliday, in an analysis of advertising and film, wrote:

> ...the representational strategies, which, by constructing the present *as* the future, seem to position us as living *in* the future.... There is something reassuring, therefore, as *now* becomes *the future*, to discover that things are still okay. (Halliday)

In an age of rapid change, when the present seems to always be in flux, there is also something reassuring about simply *knowing* something about the future. Common sense tells us that short-term forecasts are more accurate than long-term ones, and our forecasts of the future bridge incrementally smaller units of time. Such knowledge of the future, as Halliday intimates, stabilizes (and closes) what is essentially a future of open and unpredictable possibilities.

Yet the irony and power of cyberpunk is in its rhetoric of decentralization, of freedom. Cyberpunk relies on the abstract codification of signs, on the separation of meaning from information, to create an environment saturated with *possible* meanings, ones that can be chosen at random. Cyberpunk's possibilities remain open primarily because signifiers that appear on the screen (cyberspace) constitute a hypertext. What is more important is that the representation of the future not only "forecloses options and possibilities" but also inserts a way of knowing, an ideology, based on information consumption via computer networks and mass media. The parallels we draw between machines and living things strongly color our understanding of the world. When hydraulics was at the center of physics, the human circulation system was at the center of biology. When physics was occupied with thermodynamics, energy balance was thought to be the key to understanding life. Now information is central to biology—life is thought of as a genetic code, and like a machine code is available for editing.

Information technology likewise colors our values. If something is boring, doesn't have a lot of information, it's a waste of time. Why play tic-tac-toe if you can play global thermonuclear war? Rudy Rucker wrote in "What Is Cyberpunk," an unpublished manuscript, "If you value information the most, then you don't care about convention. It's not "Who do you know?"; it's "How fast are you? How dense?"

Senility is the revenge of nature upon information. And information overload is not a problem—if you're fast enough.

Notes

A version of this paper was presented at the 1991 Popular Culture Association meeting.

[1]For a thorough discussion of the privatization of experience see Richard Sennett's *The Fall of Public Man*.

[2]For a discussion of the idea of "flow," see Gilles Deleuze and Felix, *Milles Plateaux* (Paris: Minuit, 1980).

[3]For a thorough discussion of space and postmodernism, see Arthur Kroker and David Cook, *The Postmodern Scene* (New York: St. Martin's 1986) and Jean Baudrillard, "The Ecstasy of Communication," in *The Anti-Aesthetic*, ed. Hal Foster, (Port Townsend, WA: Bay, 1983) 126-34.

[4]The term "telematics" was first introduced by Simon Bora and Alain Minc in *The Computerization of Society* (Cambridge, MA: MIT, 1980).

[5]Nationalism (of any sort) recedes seemingly in proportion to the need (or potential) for standardization. Examples are numerous in any software-based industry. For instance, the addition of MIDI (Musical Instrument Digital Interface) codes to compact discs is perceived by Warner Communications, its developer, to be so important that it is allowing other manufacturers to use its process. In another case, much of the reason for the cassette's popularity was due to its standard format. Philips Corporation freely gave the specifications to any manufacturer, provided that the specs were rigidly adhered to. Digital technology of most any sort essentially permits, practically requires and ensures standardization because of its use of binary code.

[6]I use the term "articulation" to refer, as Stuart Hall does in "An Interview with Stuart Hall," *Journal of Communication Inquiry* 10.2 (Summer 1986), 45-60, to that which is both *expressive* and *joined*. In Hall's words, "An articulation is thus the form of the connection that *can* make a unity of two different elements, under certain conditions."

[7]Howard Rheingold has written an interesting, short history of Bush's ideas, from which this excerpt was taken, in "Vannevar Bush, 'As We May Think,'" *Hyperage*, Feb./Mar. 1988: 12-16.

[8]The easy mix of rock 'n' roll and high tech may have as much to do with aging rockers grasping at computers to provide a connection to youth culture as it does with rock's technological means of production.

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