CYBERPUNK

With virtual sex, smart drugs
and synthetic rock 'n' roll,
a new counterculture
is surfing the
dark edges of the
computer age.

TITLE: EDEN RESTORED
ARTIST: JOHN BORRUSO

Images from old catalogs were
put into digital form,
combined and colorized on
a Macintosh to create this
New Age Adam and Eve

In the 1950s it was the beatniks, staging a coffee-house rebellion against the *Leave It to Beaver* conformity of the Eisenhower era. In the 1960s the hippies arrived, combining antiwar activism with the energy of sex, drugs and rock 'n' roll. Now a new subculture is bubbling up from the underground, popping out of computer screens like a piece of futuristic **HYPERTEXT** *(see margin)*.

They call it cyberpunk, a late–20th century term pieced together from **CYBERNETICS** (the science of communication and control theory) and **PUNK** (an antisocial rebel or hoodlum). Within this odd pairing lurks the essence of cyberpunk culture. It's a way of looking at the world that combines an infatuation with high-tech tools and a disdain for conventional ways of using them. Originally applied to a school of hard-boiled science-fiction writers and then to certain semi-tough computer hackers, the word cyberpunk now covers a broad range of music, art, psychedelics, smart drugs and cutting-edge technology. The cult is new enough that fresh offshoots are sprouting every day, which infuriates the hardcore cyberpunks, who feel they got there first.

Stewart Brand, editor of the hippie-era *Whole Earth Catalog,* describes cyberpunk as "technology with attitude." Science-fiction writer Bruce Sterling calls it "an unholy alliance of the technical world with the underground of pop culture and street-level anarchy." Jude Milhon, a cyberpunk journalist who writes under the byline St. Jude, defines it as "the place where the worlds of science and art overlap, the intersection of the future and now." What cyberpunk is about, says Rudy Rucker, a San Jose State University mathematician who writes science-fiction books on the side, is nothing less than "the fusion of humans and machines."

As in any counterculture movement, some denizens would deny that they are part of a "movement" at all. Certainly they are not as visible from a passing car as beatniks or hippies once were. Ponytails (on men) and tattoos (on women) do not a cyberpunk make—though dressing all in black and donning mirrored sunglasses will go a long way. And although the biggest cyberpunk journal claims a readership approaching 70,000, there are probably no more than a few thousand computer hackers, futurists, fringe scientists, computer-savvy artists and musicians, and assorted science-fiction geeks around the world who actually call themselves cyberpunks.

Nevertheless, cyberpunk may be the defining counterculture of the computer age. It embraces, in spirit at least, not just the nearest thirtysomething hacker hunched over his terminal but also nose-ringed twentysomethings gathered at clandestine **RAVES,** teenagers who feel about the Macintosh computer the way their parents felt about Apple Records, and even preadolescent vidkids fused like Krazy Glue to their Super Nintendo and Sega Genesis games—the training wheels of cyberpunk. Obsessed with technology, especially technology that is just beyond their reach

MICHAEL M. SHEEHAN

BRAIN IMPLANTS
Slip a microchip into snug contact with your gray matter (a.k.a. wetware) and suddenly gain instant fluency in a foreign language or arcane subject.

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ACID HOUSE
White-hot dance music that falls somewhere between disco and hip-hop.

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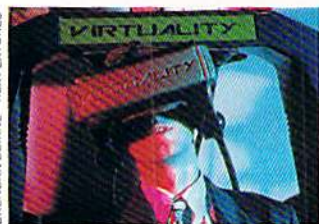
VIRTUAL REALITY
An interactive technology that creates an illusion, still crude rather than convincing, of being immersed in an artificial world. The user generally dons a computerized glove and a head-mounted display equipped with a TV screen for each eye. Now available as an arcade game.

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INTERNET
The successor of an experimental network built by the U.S. Defense Department in the 1960s, the Internet links at least 3 million computers, many of them university- and research-related, around the world. Users can connect to the Internet by phone to share information or tap into data banks.

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VIRTUAL COMMUNITIES
Collections of like-minded people who meet on-line and share ideas on everything from politics to punk rock. The global village is full of tiny electronic subdivisions made up of cold-fusion physicists, white supremacists, gerontologists and Grateful Deadheads. Like any other community, each has its own in-jokes, cliques, bozos and bores.

(like **BRAIN IMPLANTS**), the cyberpunks are future oriented to a fault. They already have one foot in the 21st century, and time is on their side. In the long run, we will all be cyberpunks.

The cyberpunk look—a kind of SF (science-fiction) surrealism tweaked by computer graphics—is already finding its way into art galleries, music videos and Hollywood movies. Cyberpunk magazines, many of which are " 'zines" cheaply published by desktop computer and distributed by electronic mail, are multiplying like cable-TV channels. The newest, a glossy, big-budget entry called *Wired,* premiered last week with Bruce Sterling on the cover and ads from the likes of Apple Computer and AT&T. Cyberpunk music, including **ACID HOUSE** and **INDUSTRIAL**, is popular enough to keep several record companies and scores of bands cranking out CDs. Cyberpunk-oriented books are snapped up by eager fans as soon as they hit the stores. (Sterling's latest, *The Hacker Crackdown,* quickly sold out its first hard-cover printing of 30,000.) A piece of cyberpunk performance art, *Tubes,* starring Blue Man Group, is a hit off-Broadway. And cyberpunk films such as *Blade Runner, Videodrome, Robocop, Total Recall, Terminator 2* and *The Lawnmower Man* have moved out of the cult market and into the mall.

Cyberpunk culture is likely to get a boost from, of all things, the Clinton-Gore Administration, because of a shared interest in what the new regime calls America's "data highways" and what the cyberpunks call **CYBERSPACE**. Both terms describe the globe-circling, interconnected telephone network that is the conduit for billions of voice, fax and computer-to-computer communications. The incoming Administration is focused on the wiring, and it has made strengthening the network's high-speed data links a priority. The cyberpunks look at those wires from the inside; they talk of the network as if it were an actual place—a **VIRTUAL REALITY** that can be entered, explored and manipulated.

Cyberspace plays a central role in the cyberpunk world view. The literature is filled with "console cowboys" who prove their mettle by donning virtual-reality headgear and performing heroic feats in the imaginary "matrix" of cyberspace. Many of the punks' real-life heroes are also computer cowboys of one sort or another. *Cyberpunk,* a 1991 book by two New York *Times* reporters, John Markoff and Katie Hafner, features profiles of three canonical cyberpunk hackers, including Robert Morris, the Cornell graduate student whose **COMPUTER VIRUS** brought the huge network called the **INTERNET** to a halt.

BUT CYBERSPACE IS MORE THAN A PLAYGROUND for hacker high jinks. What cyberpunks have known for some time—and what 17.5 million modem-equipped computer users around the world have discovered—is that cyberspace is also a new medium. Every night on Prodigy, CompuServe, GEnie and thousands of smaller computer bulletin boards, people by the hundreds of thousands are logging on to a great computer-mediated gabfest, an interactive debate that allows them to leap over barriers of time, place, sex and social status. Computer networks make it easy to reach out and touch strangers who share a particular obsession or concern. "We're replacing the old drugstore soda fountain and town square, where community used to happen in the physical world," says Howard Rheingold, a California-based author and editor who is writing a book on what he calls **VIRTUAL COMMUNITIES**.

Most computer users are content to visit cyberspace now and then, to read their electronic mail, check the bulletin boards and do a bit of electronic shopping. But cyberpunks go there to live and play—and even die. The **WELL**, one of the hippest virtual communities on the Internet, was shaken 2½ years ago when one of its most active participants ran a computer program that erased every message he had ever left—thousands of postings, some running for many pages. It was an act that amounted to virtual suicide. A few weeks later, he committed suicide for real.
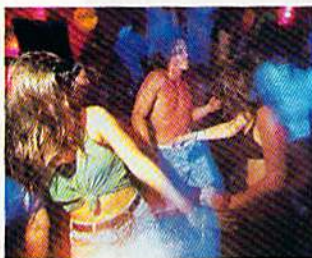
INDUSTRIAL
Mixing rhythmic machine clanks, electronic feedback and random radio noise, industrial music is "the sounds our culture makes as it comes unglued," says cyberpunk writer Gareth Branwyn.

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CYBERSPACE
SF writer William Gibson called it "a consensual hallucination . . . a graphic representation of data abstracted from the banks of every computer in the human system." You can get there simply by picking up the phone.

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COMPUTER VIRUS
The cybernetic analogue of AIDS, these self-replicating programs infect computers and can destroy data. There are hundreds loose in cyberspace, although few are as destructive as the Internet virus—which is now classified as a "worm" because the writer of the program did not mean to do damage.

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THE WELL
Compared with million-plus-member networks such as CompuServe and Prodigy, the Northern California–based Whole Earth 'Lectronic Link is a tiny outpost in cyberspace. But its 7,000 subscribers include an unusual concentration of artists, activists, journalists and other writers. "It has a regional flavor," says co-founder Stewart Brand. "You can smell the sourdough."

TITLE: EARTH TO MONDO
ARTIST: BART NAGEL

Photos of *Mondo 2000's*
Nagel, Sirius and Mu were set
in a surreal background using
Adobe Photoshop software

The WELL is a magnet for cyberpunk thinkers, and it is there, appropriately enough, that much of the debate over the scope and significance of cyberpunk has occurred. The question "Is there a cyberpunk movement?" launched a freewheeling on-line FLAME-fest that ran for months. The debate yielded, among other things, a fairly concise list of "attitudes" that, by general agreement, seem to be central to the idea of cyberpunk. Among them:

▶ *Information wants to be free.* A good piece of information-age technology will eventually get into the hands of those who can make the best use of it, despite the best efforts of the censors, copyright lawyers and DATACOPS.

▶ *Always yield to the hands-on imperative.* Cyberpunks believe they can run the world for the better, if they can only get their hands on the control box.

▶ *Promote decentralization.* Society is splintering into hundreds of subcultures and designer cults, each with its own language, code and life-style.

▶ *Surf the edges.* When the world is changing by the nanosecond, the best way to keep your head above water is to stay at the front end of the Zeitgeist.

The roots of cyberpunk, curiously, are as much literary as they are technological. The term was coined in the late 1980s to describe a group of science-fiction writers—and in particular WILLIAM GIBSON, a 44-year-old American now living in Vancouver. Gibson's *NEUROMANCER*, the first novel to win SF's triple crown—the Hugo, Nebula and Philip K. Dick awards—quickly became a cyberpunk classic, attracting an audience beyond the world of SF. Critics were intrigued by a dense, technopoetic prose style that invites comparisons to Hammett, Burroughs and Pynchon. Computer-literate readers were drawn by Gibson's nightmarish depictions of an imaginary world disturbingly similar to the one they inhabit.
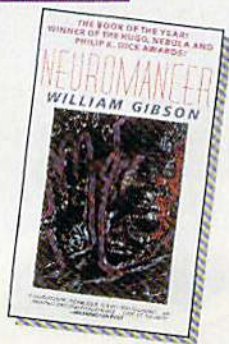
SURFING OFF THE EDGE

By RICHARD BEHAR

MORTY ROSENFELD WAS SO STONED on Euphoria, a hot new synthetic drug, that he danced faster than a speeding cursor on a computer screen. It was 3 o'clock one morning last July at the Limelight, one of New York City's wildest night spots, and the computer-generated "techno" music was deafening. Not the best place for an interview, perhaps, but Rosenfeld, 21, a promoter who did marketing work for the club, insisted on this surreal setting. He feared that the interview could be some kind of setup arranged by Secret Service or FBI agents, and thus he wanted to be near "friends and security" in case something went wrong.

The young man had reason to be wary. He had been busted several months earlier by the feds and was awaiting his sentence, having already pleaded guilty to a crime that was just as high-tech as his favorite nightclub: stealing credit reports from TRW Inc.'s computer system. Four months after that encounter at the Limelight, he moved into a Michigan jail cell, where he is serving an eight-month term.

Rosenfeld—known on computer networks by the code name Storm Shad-ow—is a hacker who went to extremes, a cyberpunk who surfed right off the edge. Authorities say he was just one of many bandits stalking the electronic highways. In recent years, individual outlaws and entire "gangs" have broken into computers all over the U.S., using their wits and wiles to pilfer and destroy data.

Though barely of drinking age, Rosenfeld is a veteran hacker. He says he invaded his first computer—a low-level NASA system—at age 15 as a member of a cyberpunk gang called Force Hackers. Before long, he was devising electronic schemes to swipe cash from Western Union, phone service from the Baby Bells and valuable credit information wherever it could be found. "We once pulled the credit reports of a whole town in Oregon," Storm Shadow recalls.

Rosenfeld was arrested in 1991 after hatching a plot to build and sell IBM computers. He and some pals bought nearly $1 million worth of computer parts using credit-card numbers from strangers' credit reports. A Secret Service raid on Rosenfeld's Brooklyn, New York, home uncovered 176 credit reports stolen from TRW, a leading credit-rating company. He says he sold "thousands" of such reports to private investigators.

While Storm Shadow is doing time, a bigger case involves five other young hackers, some of whom have had dealings with Rosenfeld. All five are allegedly members of a gang called Masters of Disaster. They are charged with breaking into computers at a host of companies and institutions, including the University of Washington, Bank of America, ITT and Martin Marietta. In one of its most damaging

The wasteland setting of William Burroughs' *Naked Lunch* (1959) has become a favorite haunt for cyberpunk writers. It is here, in Gibson's words, that "the street finds its own uses for things," subverting cutting-edge technology to suit the needs of the underground.

BURROUGHS

Better known for media pranks than records (*Helter Stupid*), this band canceled a tour in 1988 after a Minnesota teen axed his family to death. The band's press release said the family had been arguing about Negativland's song *Christianity Is Stupid*. The story was a hoax, but the press ran with it, turning the band into cyberpunk heroes.

In fact, the key to cyberpunk science fiction is that it is not so much a projection into the future as a metaphorical evocation of today's technological flux. The hero of *Neuromancer*, a burned-out, drug-addicted street hustler named Case, inhabits a sleazy INTERZONE on the fringes of a megacorporate global village where all transactions are carried out in New Yen. There he encounters Molly, a sharp-edged beauty with reflective lenses grafted to her eye sockets and retractable razor blades implanted in her fingers. They are hired by a mysterious employer who offers to fix Case's damaged nerves so he can once again enter cyberspace—a term Gibson invented. Soon Case discovers that he is actually working for an AI (artificial intelligence) named Wintermute, who is trying to get around the restrictions placed on AIs by the TURING POLICE to keep the computers under control. "What's important to me," says Gibson, "is that *Neuromancer* is about the present."

THE THEMES AND MOTIFS OF CYBERPUNK HAVE been percolating through the culture for nearly a decade. But they have coalesced in the past few years, thanks in large part to an upstart magazine called *MONDO 2000*. Since 1988, *Mondo's* editors have covered cyberpunk as *Rolling Stone* magazine chronicles rock music, with celebrity interviews of such cyberheroes as NEGATIVLAND and TIMOTHY LEARY, alongside features detailing what's hot and what's on the horizon. *Mondo's* editors have packaged their quirky view of the world into a glossy book titled *Mondo 2000: A User's Guide to the New Edge* (HarperCollins; $20). Its cover touts alphabetic entries on everything from virtual reality and wetware to designer aphrodisiacs and

British mathematician Alan Turing predicted in 1950 that computers would someday be as intelligent as humans.

Mondo is Italian for world; 2000 is the year. Says editor R.U. Sirius: "I like the idea of a magazine with an expiration date."

Yes, he's back. At 72, the ex–Harvard professor who encouraged a generation to "turn on, tune in, drop out" now counts himself a cyberpunk. "The PC is the LSD of the 1990s," he says.

DIGITAL DUDE: The cyberspace of hacker Morty Rosenfeld (a.k.a. Storm Shadow) is now confined to the Clinton County jail in St. Johns, Michigan

raids, the group allegedly wiped out most of the data on the Learning Link, a computer owned by a New York City public-TV station that provides educational information for hundreds of schools. A chilling electronic message was left behind: "Happy Thanksgiving, you turkeys, from all of us at MOD." It was signed with five code names: Phiber Optik, Acid Phreak, Outlaw, Corrupt and Scorpion.

Could MOD have been stupid enough to leave behind such a confession? One member says the gang was framed by a rival hacker who liquidated the Learning Link himself. The defendants' court-appointed lawyers claim the feds have built an elaborate Mafia-like case against rebellious yet relatively harmless kids. "Being arrogant and obnoxious is not a crime," argues attorney Michael Godwin of the Electronic Frontier Foundation, a group that defends exploratory hacking. As for Masters of Disaster, he adds, "it's just a way-cool name. Teenagers aren't going to call themselves the Electronic Birdwatchers Society." While most charges remain to be proved, in December two MOD members pleaded guilty to selling Rosenfeld passwords to TRW computers.

Rosenfeld, the alleged MODsters and their ilk do not fit the standard image of a hacker: the wealthy, suburban geek who trespasses on computers just for fun. These cyberpunks are ethnically mixed (from blacks and Hispanics to Italians and Lithuanians), favor close-cropped hip-hop haircuts and live in urban, blue-collar neighborhoods. They fight rival gangs with cheap computers,

not sticks or knives. Some are big drug users; most are simply addicted to what Rosenfeld calls the "adrenaline rush of computer power, which is better than sex, drugs or rock 'n' roll."

The best known of the hackers accused in the MOD case, Mark Abene (alias Phiber Optik), insists that he's innocent and not a gang member. This acid-tongued media darling, featured in *Esquire* magazine and on the *Geraldo* show, offers weekly computer advice on a New York City radio program. A high school dropout, Abene, 20, still lives in the city with his parents, whose home has been raided twice by the Secret Service. In 1991 he pleaded guilty to stealing service off a 900 phone-sex line, but now denies the charge.

For all their bravado, many of the hacker hoods come from broken homes and have deep psychological problems. Rosenfeld's parents split up when he was 15, and the young man recalls brutal physical fights with his hard-drinking father. Several months ago, the hacker literally hacked his wrists with a razor, in his second attempt to kill himself since 1991. "Most of my childhood is a blur, partly because of LSD and partly because I just don't want to remember," says Rosenfeld, who is open, insightful and very likable when he removes the cybermask. "I have no clue who I am." ∎

TECHNO-EROTIC PAGANISM
Sound intriguing? That's probably why the editors of *Mondo 2000* put the term on the cover of their book. Unfortunately, they never get around to explaining what it means.

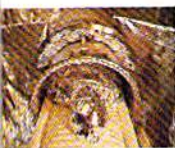--------

TEMPORARY AUTONOMOUS ZONES
These are the electronic analogue of mountain fortresses and pirate islands, but they can be formed or dismantled in a flash, says cyberpunk essayist Hakim Bey. As political systems decay and networking becomes more widespread, he envisions a proliferation of autonomous areas in cyberspace: giant worker-owned corporations, independent enclaves devoted to data piracy, Green–Social Democrat collectives, anarchist liberation zones, etc.

ARTIFICIAL LIFE
Inspired by the behavior of computer viruses, scientists are wondering how sophisticated a computer program or robot would have to be before you could say it was "alive." One computer-software company, Maxis, has marketed a whole line of simulated animals, ant colonies, cities, train systems and even a planet-like organism called Gaia.

CRYONICS
For a price, a terminally ill patient can be frozen—as in the new movie *Forever Young*—until some future time when a cure has been discovered. Some people save on storage costs by having just their head frozen.

ECSTASY
Enthusiasts describe this New Age psychedelic, which heightens the senses, as "LSD without the hallucinations." The drug was outlawed in the U.S. in 1987.

TECHNO-EROTIC PAGANISM, promising to make cyberpunk's rarefied perspective immediately accessible. Inside, in an innovative hypertext format (which is echoed in this article), relatively straightforward updates on computer graphics, multimedia and fiber optics accompany wild screeds on such recondite subjects as SYNESTHESIA and TEMPORARY AUTONOMOUS ZONES.

The book and the magazine that inspired it are the product of a group of brainy (if eccentric) visionaries holed up in a rambling Victorian mansion perched on a hillside in Berkeley, California. The MTV-style graphics are supplied by designer Bart Nagel, the overcaffeinated prose by Ken Goffman (writing under the pen name R.U. Sirius) and Alison Kennedy (listed on the masthead as Queen Mu, "domineditrix"), with help from Rudy Rucker and a small staff of free-lancers and contributions from an international cast of cyberpunk enthusiasts. The goal is to inspire and instruct but not to lead. "We don't want to tell people what to think," says assistant art director Heide Foley. "We want to tell them what the possibilities are."

Largely patched together from back issues of *Mondo 2000* magazine (and its precursor, a short-lived 'zine called *Reality Hackers*), the *Guide* is filled with articles on all the traditional cyberpunk obsessions, from ARTIFICIAL LIFE to VIRTUAL SEX. But some of the best entries are those that report on the activities of real people trying to live the cyberpunk life. For example, Mark Pauline, a San Francisco performance artist, specializes in giant machines and vast public spectacles: sonic booms that pin audiences to their chairs or the huge, stinking vat of rotting cheese with which he perfumed the air of Denmark to remind the citizenry of its Viking roots. When an explosion blew the thumb and three fingers off his right hand, Pauline simply had his big toe grafted where his thumb had been. He can pick things up again, but now he's waiting for medical science and grafting technology to advance to the point where he can replace his jerry-built hand with one taken from a cadaver.

MUCH OF *MONDO 2000* STRAINS CREDIBILITY. Does physicist Nick Herbert really believe there might be a way to build TIME MACHINES? Did the CRYONICS experts at Trans-Time Laboratory really chill a family pet named Miles and then, after its near death experience, turn it back into what its owner describes as a "fully functional dog"? Are we expected to accept on faith that a SMART DRUG called centrophenoxine is an "intelligence booster" that provides "effective anti-aging therapy," or that another compound called hydergine increases mental abilities and prevents damage to brain cells? "All of this has some basis in today's technologies," says Paul Saffo, a research fellow at the Institute for the Future. "But it has a very anticipatory quality. These are people who assume that they will shape the future and the rest of us will live it."

Parents who thumb through *Mondo 2000* will find much here to upset them. An article on house music makes popping MDMA (ECSTASY) and thrashing all night to music that clocks 120 beats per minute sound like an experience no red-blooded teenager would want to miss. After describing in detail the erotic effects of massive doses of L-dopa, MDA and deprenyl, the entry on aphrodisiacs adds as an afterthought that in some combinations these drugs can be fatal. Essays praising the beneficial effects of psychedelics and smart drugs on the "information processing" power of the brain sit alongside RANTS that declare, among other things, that "safe sex is boring sex" and that "cheap thrills are fun."

Much of this, of course, is a cyberpunk pose. As Rucker confesses in his preface, he enjoys reading and thinking about psychedelic drugs but doesn't really like to take them. "To me the political point of being pro-psychedelic," he writes, "is that this means being against consensus reality, which I very strongly am." To some extent, says author Rheingold, cyberpunk is driven

SYNAESTHESIA
From the Greek *syn* (union) and *aesthesia* (sensation), synesthesia is a merging of sensory input in which sounds appear as colors in the brain or words evoke a specific taste or smell.


VIRTUAL SEX
The way it would work, says Howard Rheingold, is that you slip into a virtual-reality bodysuit that fits with the "intimate snugness of a condom." When your partner (lying somewhere in cyberspace) fondles your computer-generated image, you actually feel it on your skin, and vice versa. Miniature sensors and actuators would have to be woven into the clothing by a technology that has yet to be invented.
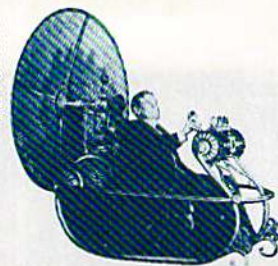

TIME MACHINES
Anyone who has read H.G. Wells or seen *Back to the Future* knows how these things are supposed to work. Certain obscure results of Einstein's relativity theory suggest that there could actually be shortcuts through the space-time continuum, but it's unlikely that a human could squeeze through them.

SMART DRUGS
"Don't eat any of that stuff they say will make you smarter," says Bruce Sterling. "It will only make you poorer."

RANTS
A hyperbolic literary form favored by cyberpunk writers, these extended diatribes make up in attitude what they lack in modesty.
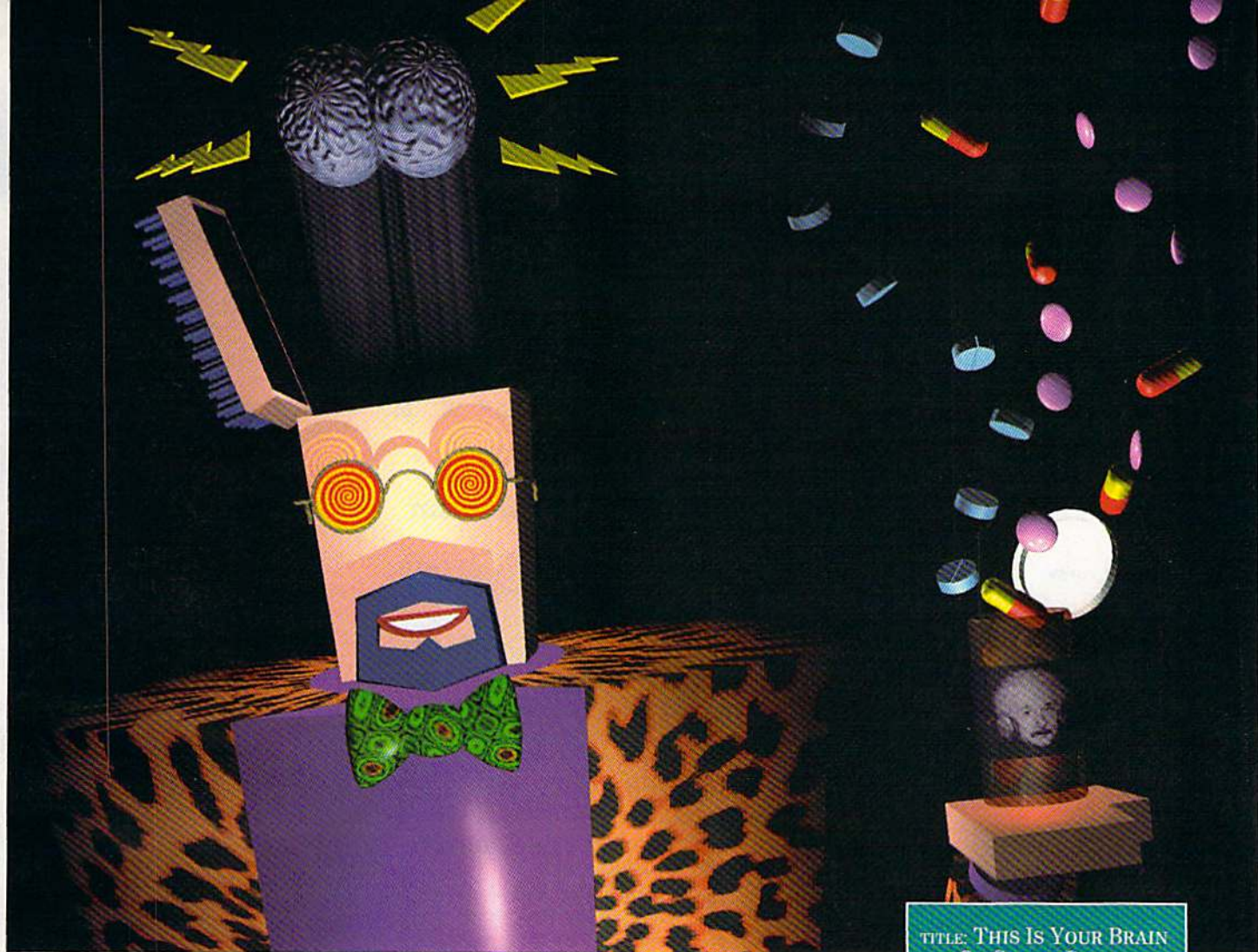
DYSTOPIA
Utopia's evil twin. Merriam-Webster defines it as "an imaginary place which is depressingly wretched and whose people lead a fearful existence."

PAUL WINTERNITZ—MONDO 2000

SIMSTIM DECKS
These simulated stimuli machines are what television might evolve into. Rather than just watching your favorite characters on TV, you strap some plastic electrodes to your forehead and experience their thoughts and feelings—slightly edited, of course, to spare you the headaches and hangovers.

by young people trying to come up with a movement they can call their own. As he puts it, "They're tired of all these old geezers talking about how great the '60s were."

That sentiment was echoed by a recent posting on the WELL. "I didn't get to pop some 'shrooms and dance naked in a park with several hundred of my peers," wrote a cyberpunk wannabe who calls himself Alien. "To me, and to a lot of other generally disenfranchised members of my generation, surfing the edges is all we've got."
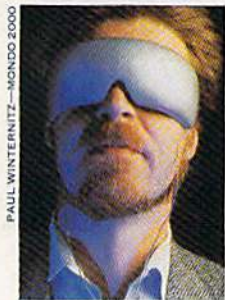
More troubling, from a philosophic standpoint, is the theme of **DYSTOPIA** that runs like a bad trip through the cyberpunk world view. Gibson's fictional world is filled with glassy-eyed girls strung out on their Walkman-like **SIMSTIM DECKS** and young men who get their kicks from **MICROSOFTS** plugged into sockets behind their ears. His brooding, dehumanized vision conveys a strong sense that technology is changing civilization and the course of history in frightening ways. But many of his readers don't seem to care. "History is a funny thing for cyberpunks," says Christopher Meyer, a music-synthesizer designer from Calabasas, California, writing on the WELL. "It's all data. It all takes up the same amount of space on disk, and a lot of it is just plain noise."

For cyberpunks, pondering history is not as important as coming to terms with the future. For all their flaws, they have found ways to live with technology, to make it theirs—something the back-to-the-land hippies never accomplished. Cyberpunks use technology to bridge the gulf between art and science, between the world of literature and the world of industry. Most of all, they realize that if you don't control technology, it will control you. It is a lesson that will serve them—and all of us—well in the next century.   —*Reported by David S. Jackson/San Francisco*

MICROSOFTS
Without apologies to the software company by the same name, Gibson has his fictional characters alter their reality by plugging into their brain these angular fragments of colored silicon, which house a read-only-memory chip.

BART NAGEL FOR TIME