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BOOKS

Computer Punks and 'Cyberspace'

By **Simson L. Garfinkel**

IF you've ever used a word processor, you've dipped your big toe into the whirlpool of "cyberspace": It's a world inside the computer's memory where reality is created and recreated by the arrangement of electrons. Information is the currency there - a creative force more valuable than a thousand gold mines.

Books about cyberspace share a problem common to all travel guides: Reading about a place can never be as beguiling as traveling there. Nevertheless, both "Cyberpunk" and "Virtual Reality" make an excellent go at laying out the guideposts, explaining what the new technology can do, what has been done, and where it's going.

Computers are fundamentally communication systems, transporting information within a desktop box or across the country with almost equal ease.

If you've ever had a word processor "eat" your document after you've spent 10 hours working on it, you know the dangers that lurk behind the integrated circuit.

In "Cyberpunk," Katie Hafner and John Markoff explore what happens when technically adept teenagers around the world discover how to pick electronic locks. Electronic joy-riding is just the beginning.

The authors follow the exploits of three groups of self-proclaimed

hackers. First, there is Kevin Mitnick, a Los Angeles "phone phreak," who quickly learns the ins and outs of subverting Pacific Bell's computers to procure free telephone calls.

Teaming up with fellow conspirators, Mitnick discovers ways to harass his enemies by canceling their phone service, altering their credit rating, or stealing their data. Mitnick's most powerful weapon is his talent for "social engineering": stealing passwords by merely asking for them.

The second story is about Pengo, a West German youth who, together with his cyberpunk friends, broke into computers all over the world and sold the stolen information to the KGB. Cliff Stoll told this same story in his best-seller "The Cuckoo's Egg," but here, the story is seen through the eyes of the perpetrators.

Lastly, Hafner and Markoff follow the exploits of Robert Tappan Morris, the author of the computer "worm" that in November 1988 immobilized thousands of machines on the Internet computer network.

"Cyberpunk" is a fascinating inside account of the lives and exploits of these youths, who have little respect for privacy, social norms, or the law. The book is painstakingly researched and written in a lively style. It's only flaw is that it is told almost exclusively from the viewpoint of these self-righteous criminals.

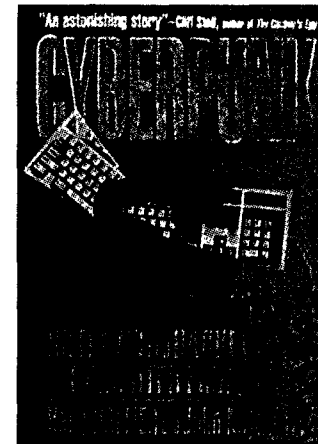
Few words are devoted to exploring the real damage - the hassles, compromised secrets, and

lost trust - caused by their exploits. Even more disappointing, Hafner and Markoff fail to mention the United States Secret Service's 1989 backlash against hackers. Operation Sun Devil was a nationwide dragnet widely criticized for its cavalier disregard for civil rights. But, for what it does cover, "Cyberpunk" can't be beat.

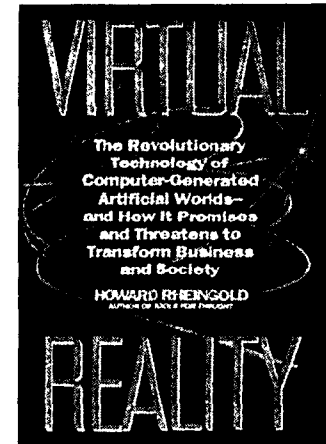
If "Cyberpunk" is a book about people, Howard Rheingold's "Virtual Reality" is a book about incredible machines. Rheingold takes the reader on a voyage around the world in search of better and better "reality engines": computers equipped with head-mounted video display terminals (one for each eye), stereophonic acoustic synthesizers, and suits that track the body's every movement.

HERE'S how he describes the reality engine: "A detailed three-dimensional model of a virtual world is stored in the computer's memory, encoded into microscopic lattices of bits. When a cybernaut shifts his gaze or waves her hand, the reality engine weaves the data stream from the cybernaut's sensors together with updated depictions of the digitized virtual world into the whole cloth of a three-dimensional simulation."

While Rheingold's book reads like a Who's Who of the virtual reality research community, he's clearly more excited by the hardware these brilliant minds have come up with than the people who designed it. Morton Heilig's



**CYBERPUNK:
OUTLAWS AND HACKERS ON
THE COMPUTER FRONTIER**
By Katie Hafner and
John Markoff
Simon & Schuster,
368 pp., \$22.95



VIRTUAL REALITY
By Howard Rheingold
Summit Books
416 pp., \$22.95

"Sensorama" is a 1960s prototype arcade game that features a stereo filmstrip, sound, touch, and olfactory simulation. Myron Krueger, the man who invented the phrase "artificial reality," says the ultimate computer input device is a video camera watching hand gestures on a desktop. "I can give you your desk space back," says Krueger. Virtual reality will make keyboards obsolete.

And then, of course, there is Jaron Lanier, president and chief visionary of VPL Research Inc., the company that makes the gloves and head-mounted video displays that have become the stock hardware of the virtual reality trade. Lanier sees a future - perhaps just a few months away - in which scientists around the world will suit-up and step into a

"reality net," where they can all sit and talk in a virtual room, somewhere in cyberspace.

For all Rheingold's clever twists of phrase, his book seems both overwritten and sedate. It's simply more exciting to experience cyberspace than to read about it. To make matters worse, the book doesn't have a single photograph to illustrate the visual explosions that await the eager "cybernaut."

"Virtual Reality" makes an excellent reference, but I would rather be there.

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Moving Deserts Can Deceive