

# OMNI

The background of the cover is a detailed illustration of a Mars rover, resembling a Curiosity rover, on the red, rocky surface of Mars. In the foreground, an astronaut in a full space suit is shown from the waist up, looking down at a small, glowing blue device on their wrist. The overall color palette is dominated by the reds and oranges of the Martian landscape.

AUGUST 1994

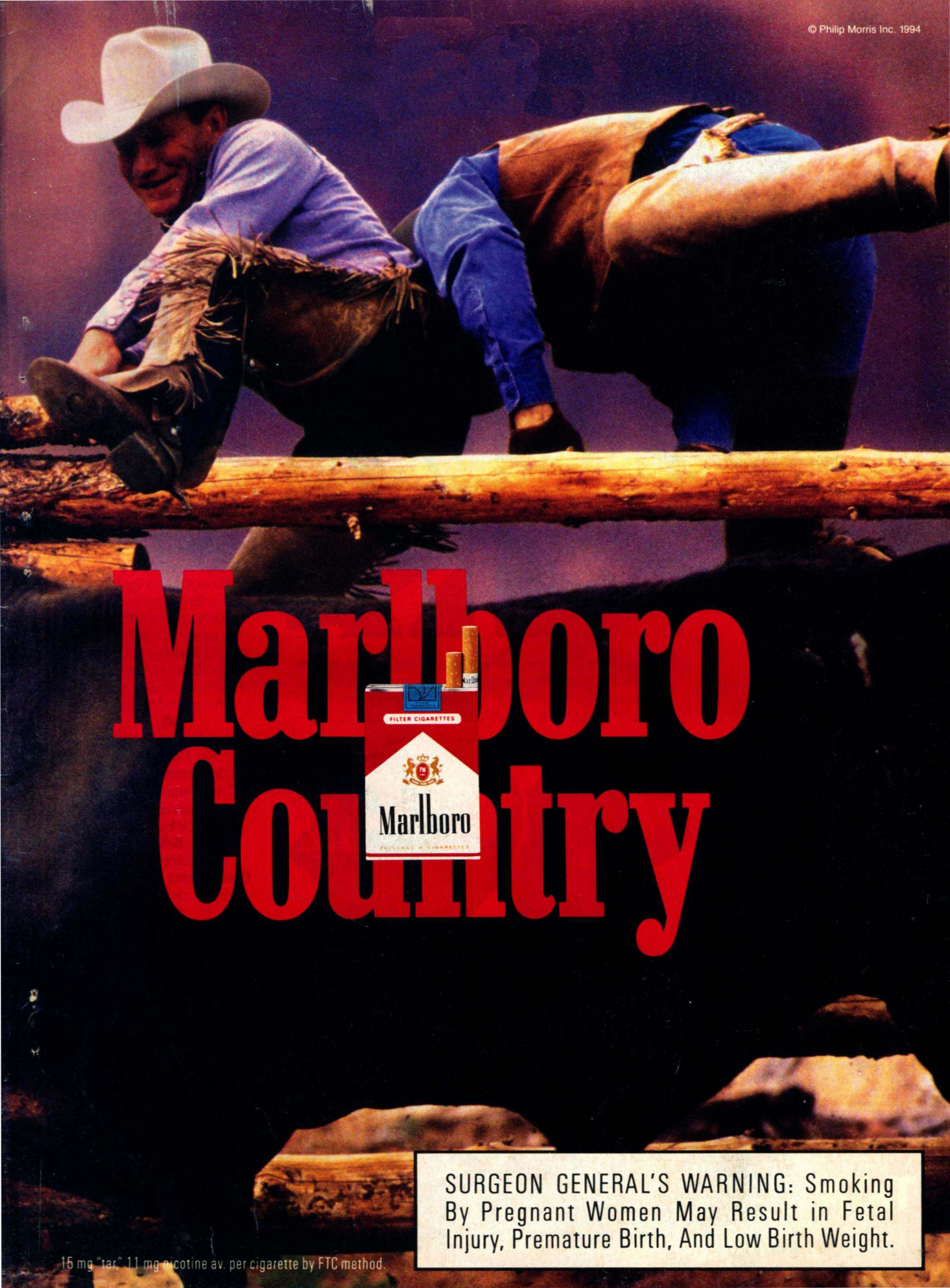
**MARS FACE  
MYSTERY:  
NEW  
INSIGHTS**

**UFO  
COVER-UPS:  
SECRET  
RESEARCH  
PART FIVE**

\$3.50







# Marlboro Country



**SURGEON GENERAL'S WARNING:** Smoking By Pregnant Women May Result in Fetal Injury, Premature Birth, And Low Birth Weight.

15 mg "tar," 1.1 mg nicotine av. per cigarette by FTC method.



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VOL. 16 NO. 11

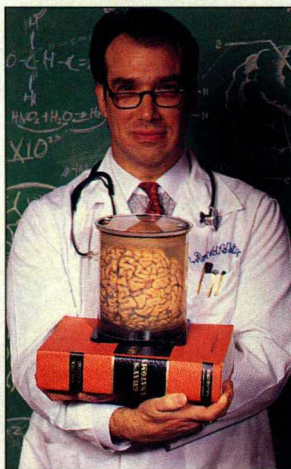
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By Scot Morris



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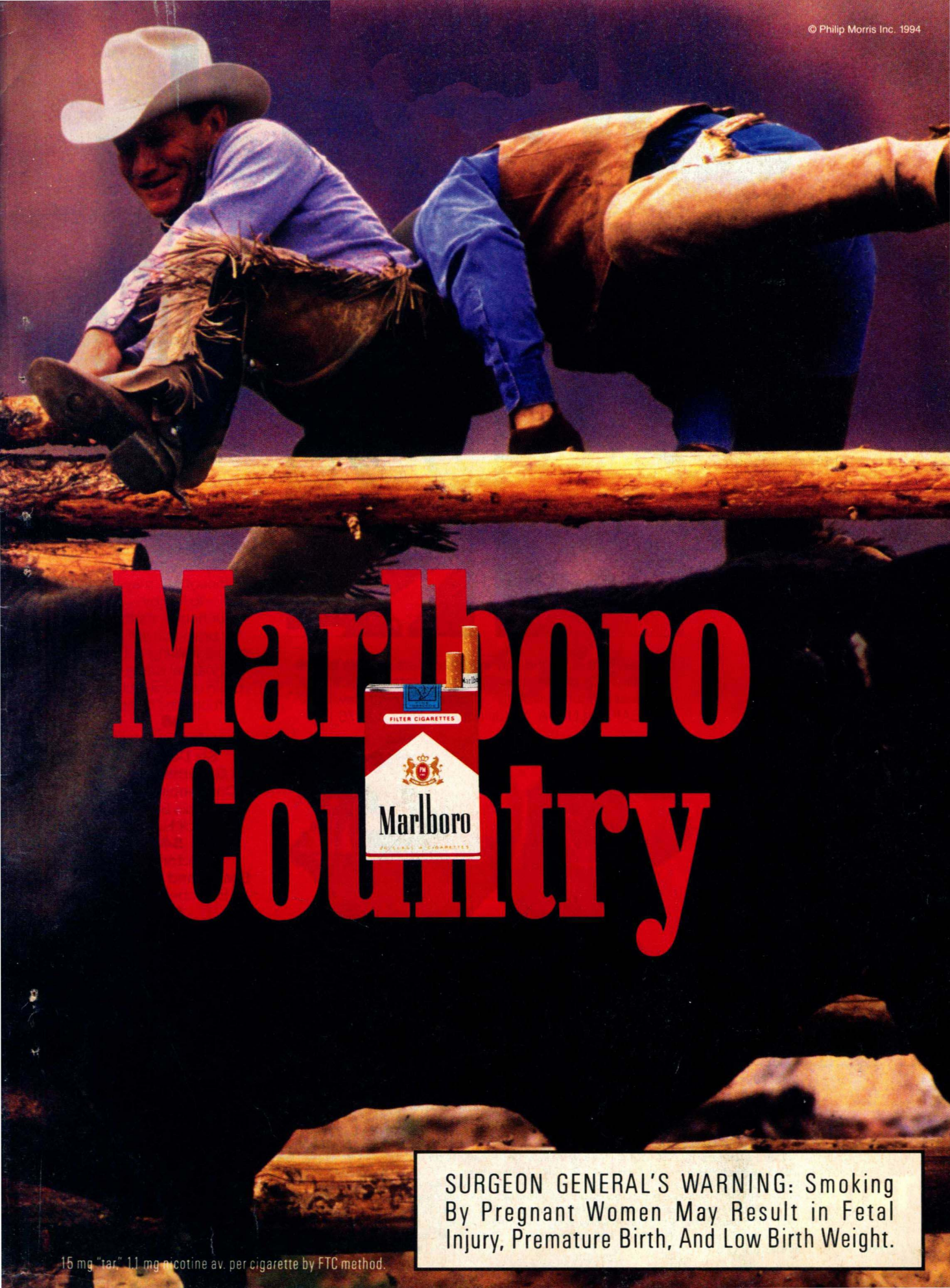
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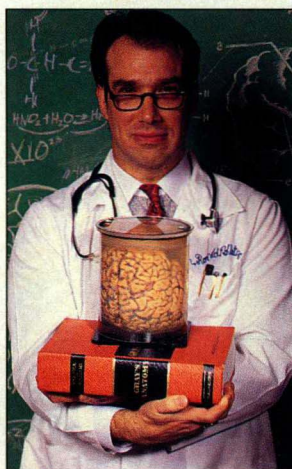
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**YOU  
WILL<sup>SM</sup>**

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your correspondence,  
from postcards to memos,  
will be immediate.

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from the screen of your  
personal communicator to  
someone else's. Or to their  
E-mail or fax. No paper.  
No pen. No postage.

Notes from thin air.

The company that will  
bring it to you is AT&T.





# FIRST WORD

## PICKING RIPE:

There are just some things you can't do in cyberspace

By Paul Levinson

**"Some of us still get a kick out of actually handling video cantaloupes, hefting the boxes, and reading the blurbs."**

**M**y grandmother had a reputation as a fruit squeezer among the bustling stalls off Pelham Parkway in the Bronx. "Mrs. Hoff," they'd see her coming, "we've got some great cantaloupes for you." And they'd hand her one, which she'd hold up to the light, divine in some indefinable way, and either accept or reject regardless of the hype from the fruit store. And she'd do the same for every carrot and head of lettuce she bought.

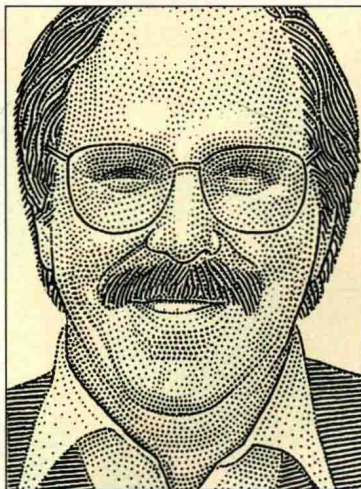
In-person presence—the full interplay of every relevant sense in the sensorium—was the only way of interacting with reality for my grandmother. At least insofar as fruit and vegetables were concerned. (She did, however, read the newspapers.)

The twentieth century can be regarded as an age of increasing surrogacy in our relations with the outside world. We started a hundred years ago with a shift from live theatrical performances to movies on the screen. Midway through the century, more and more people started watching movies at home on little TV screens rather than going out to public theaters. Recently we've acquired the option of ordering movies for our TV screen via pay-for-view—eliminating the quick trip to the video store.

All this, of course, pales in vicariousness to the precincts of VR and cyberspace, where not only our interactions, but the very stuff of our choices is an informational construct, a digital concoction through and through.

What residue of fruit-handling will be left in the twenty-first century? Is the yearning that people feel for in-person presence a nostalgia akin to the preference for typewriters and ink pens?

Not likely—certainly not for some aspects of life which can



only be experienced in the flesh. A dinner at a fine restaurant, with its rich mixture of tastes, smells, sights, and sounds—a walk on a moonlit beach in August, soft sand and sanalogue. The hottest chats on the fastest networks hold not a candle to the restaurant and the beach. Some parts of our lives, I think we can safely say, will always be conducted with best result offline.

In-person environments still provide a dimension of choice. Since the digital world is deliberately constructed, it is inevitably prepackaged, and prepackaging limits options in its early phases. Ultimately the reach of purely informational access will offer options undreamed of in the old-fashioned store, but at present I have a far greater selection of tapes in the video store than via pay-for-view. My grandmother had far greater choice of cantaloupes in the fruit store than had she bought one from a mail-order catalog. Indeed, in the fruit store she could forego the fruit altogether if it didn't pass her tactile muster.

The best guide to the likely survival of modes of communication is media history: Sound-only

radio flourishes in an age of sight-and-sound TV, whereas sight-only silent movies fell by the wayside once talkies came along. Why? Because hearing-without-seeing is a mode literally hardwired into our specieshood: We have eyelids not earlids, the world grows dark every night but not necessarily silent, and so on. Thus radio, in tapping into an already-profound human mode of communication, survived; silent movies did not.

Still photography survived the advent of motion pictures because stillness is a fundamental part of human perception; black and white photography, on the other hand, is no longer used except as a deliberate artistic statement, because we see in color. In activities in which surrogacy satisfies the already-present patterns of our species, it will likely not only survive but supplant some in-person modes. The lowly amoeba has no capacity for vicarious perception or interaction—all it knows of its world is what it physically bumps into—and dies the instant it comes to know something noxious.

Evolution has given more complex organisms better buffers to help them navigate the world—perception in animals, ideas and technologies in humans—and these allow us the safety, the dignity in some cases, of knowing things without the risk of our physical commitment. The vicariousness of our newest media thus has a deep-rooted evolutionary imprimatur.

But in human activities in which only the real thing will do, in which the call of the amoeba is still eminently felt, we can expect the spirit of my grandmother to prevail into the twenty-first century and well beyond. Hefting the cantaloupe still has its appeal. **□**





**You** want to save  
for your kid's education.

**Your kid**

**wants \$80 sneakers.**

**Let's take this one**

**step**

**at a**

**time.**

First off, you're absolutely right.

Not that your kid is wrong.

Because while saving for college is important, so are the everyday costs of raising a family. (Hey, it could be worse. Some kids want \$120 sneakers.)

Obviously, **this** takes *some planning.*

Start by choosing a school. A private college, class of 2009, will cost at least \$200,000.

You OK?

A state school, like Michigan State University, will probably come in around \$70,000. (Not including books, travel, and

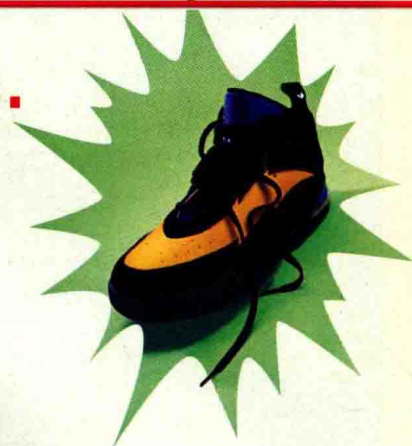
spending money.)

So what do other people do, besides buying lottery tickets? Well, mutual funds, savings bonds and CDs are all options.

**One thing many people choose is life insurance.**

True, that's our business. But in the first place, we don't think it's the only thing you should do. And in the second place, it's actually a good idea.

**If something happens to you, your kid will still have the money to go to school.**



If it doesn't, you'll be able to get your hands on a nice chunk of money.\*

**What about the sneakers?**

No, we won't pay for them. But **one of our representatives will help you** figure out a workable plan that takes them and other financial realities into account.

Where to begin?

**Just call 1-800-THE-ROCK**

for our free booklet, "College Costs 101."

And think how proud you'll be on graduation day.

\*Legally speaking, "chunk of money" means the Cash Value of the policy, which you can take a loan against to help pay college costs. To ensure the full benefits of your policy, the loan must be repaid with interest. ©1994 The Prudential Insurance Company of America.





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AUGUST

# COMMUNICATIONS

## READERS' WRITES:

Drivers' Ed for ETs, thanking a thinker,  
and a simpler scientific solution

### The Burden of Proof

I enjoyed the UFO articles [April, 1994] but was perplexed by the number of crashes. What gives? My kid sister drives better than that. Looks like these intergalactic hotshots should practice with Frisbees before putting pedal-to-the-metal and heading our way. At the very least they should carry pilot liability insurance.

Fred J. Hermon  
Santa Ana, CA

I truly enjoyed the information in your UFO issue, but feel I must convey how ludicrous the idea of proving any of this information is. Proof always becomes an issue of quality and, as in art, every individual has his or her own level of proof. One person's proof is another's hoax. The bottom line is that the reality of the existence or nonexistence is entirely independent of the burden of proof.

Dan Janisse  
Windsor, Ontario, Canada

I compliment *Omni* for starting Project Open Book [Forum, April 1994]. The UFO phenomena are clouded by rumors, confusion, half-truths, and misconceptions. The government is hiding UFO information from the public. Your project is a step toward differentiating between the fact or fiction of extraterrestrials. I further commend its ready acceptance of whether or not alien life has visited Earth.

Alex Lee  
Seattle, WA

### Praise for Profet

As a mother of two children, I want to applaud Margie Profet for her work on pregnancy sickness. Thanks to Profet, I realize I wasn't depriving my babies by having morning sickness, nor was it a subconscious wish for oral abortion [as my doctor told me]. How enlightening! After years of feeling guilty, I am finally able to absolve myself. Women today need no longer hear such erroneous, guilt-inducing garbage, thanks to the dedicated research of people like Margie Profet.

E. Jackson  
Winnipeg, Manitoba, Canada

### Interesting Quark

I applaud Dick Teresi's feature "The Last Great Experiment of the 20th Century" [January, 1994]. I know a bit about quantum physics, and Dick's writing style made this article very interesting for me. It was on a level which I could discuss with nonscience-minded acquaintances and still have an enjoyable conversation.

A. R. Taylor  
West Hollywood, CA  
AOL: ART 77

### Take A Past Life and Call Me in the AM

Thank you for the interview with Dr. Brian Weiss [April, 1994]. I am a psychologist who uses the same techniques and philosophies with wonderful results for many of my patients. The essential idea is that the patient's subconscious mind is much smarter than either the patient or therapist. Patients with psychological problems do not come to therapists to be understood, they come for relief of their pain. Any approach that advances healing is most welcome. I applaud Dr. Weiss on his work and for his courage.

Richard G. Schulman  
Sarasota, FL

### Simpler Solution

Donald Vaughan's article [Continuum, April 1994] on electronic warning devices developed to avoid harming manatees was as interesting for what it omitted as for what it told. High tech has advantages, but what about low-tech alternatives, like a simple protective cage for propeller blades. Scientific advancement ought not exclude common-sense ideas which cost less, sell easier, and are fail-safe.

Ted Z. Manuel  
Chicago, IL

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# FUNDS

## BUYING THE FUTURE:

An investor's map of the digital superhighway

By Linda Marsa

**T**he collapse of the \$33 billion Bell Atlantic-TCI merger was a jolt of reality for the overhyped interactive media revolution, where the prevailing attitude seemed to be "If we build it, consumers will come." Now skeptical analysts are asking the tough questions. How will this information be delivered? Through a television? A computer? A telephone? More to the point, do consumers want all these services? And how much are they willing to pay for them?

In this world of uncertainty where trends change frequently, investing can be treacherous. So why take chances? The answer is that telecommunications is one of the few growth sectors of the economy. Even mere mortals can make money if they can analyze the terrain and identify which firms will flourish. This month, we'll focus on the infrastructure of the superhighway. Next month, we'll handicap what will be beamed into the nation's living rooms and the key players in this digital derby.

Right now, one thing is certain: blanketing the nation with the equipment needed to deliver a wide assortment of interactive services will require a staggering hardware buildup, roughly equal to the cost of constructing the interstate highway system. Thus, the ability to raise capital will determine which industry—cable or telephone—will lay the pipeline.

Cable companies are straining under a huge debt load and were recently hit with a rate rollback by the FCC. Consequently, "the phone companies will dominate—they're the ones with the

money," says Denise Jevne, a vice president and portfolio manager for T. Rowe Price in San Francisco. Companies like Ameritech and Pacific Telesis, which avoided cable alliances and instead spent billions to add video capability to their phone systems, now look smart. Other Baby Bells may gobble up the smaller cable franchises.

Hedge your bets by investing in technologies that will be needed no matter what becomes the scaffolding of the superhigh-

architecture of the highway.

But both technologies will require "a computer chip which can compress volumes of digitalized information and deliver audio, video, and color to a screen in your home," says Michael Murphy, editor of the *California Technology Stock Letter*. "So one way to play this is to focus on semiconductor makers."

Leading innovators here are Intel, TI, Cirrus Logic, C-Cube Microsystems, and Silicon Graphics, which has devised a reduced-instruction-set computing (RISC) chip that is designed to work in a converter box and a home computer.

Other top performers will be the companies that can make this complex and difficult technology simple for a nation that still can't program a VCR. That's why Michael Murphy touts Apple, the industry's trailblazer in user friendliness, and First Person, a subsidiary of Sun Microsystems; both are devising software to help consumers navigate through the electronic maze and set up toll booths at checkpoints. "These two companies

are focused on the real problem—how to get people to use this stuff and how to get them to pay," says Murphy.

Despite the prospect of spectacular financial gains, investors need to be nimble. "The industry is very dynamic and volatile because it is driven by invention," cautions Edward Silver, a Los Angeles investment advisor specializing in technology and communications. "You can do your homework and still be wrong because things come out of left field all the time." ☐



way. For example, you'll need a hardware device to turn your home into a terminal for the superhighway. Some are betting the off-ramp will be the set-top box, an upgraded version of the soon-to-be-outdated cable converters that sit on top of the TV sets of the nation's 60 million cable subscribers. Others believe the highway gateways will be phone lines linked to personal computers outfitted with semiconductors that can handle multimedia—especially if the phone companies help to determine the

**Plan your route with care when investing in the data superhighway. It may be a bumpy road until it's finished.**



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# ELECTRONIC UNIVERSE

## GAMING'S FINAL FRONTIER:

Interactively going where none have gone before

By Gregg Keizer

**S**ome of us are simply adrift in space. *Star Trek: The Next Generation* has retreated into perpetual reruns, its cast and props heading for a bigger screen, bigger paychecks probably, too. The wrinkling crew of *Star Trek* has seen its last new script. What's a Trekker to do? Watch *Deep Space Nine*?

Play games with *Star Trek*, that's what.

Interplay's *Star Trek 25th Anniversary Enhanced CD-ROM* may be essentially the same game that beamed Trekkers to the PC a couple of years back, but once you stick

(the onscreen characters remind me of cartoon voodoo dolls, believe it or not), but the play's the thing here. Devotees of the 1960s *Star Trek* won't be disappointed.

*Star Trek: Judgment Rites*, also from Interplay; (licenses being what they are, there are only a handful of *Star Trek*-stuff producers, and Interplay's one) is more of the same, minus voices. Eight episodes provide new plots and adventures. You get to bash heads in space (though here you don't *have* to fight, and if you do, you can choose from two difficulty levels), and the graphics look a bit snappier. "Though This Be Madness" was my favorite of the octet, for it seemed to have a bit of everything that made *Star Trek* so grand: Klingons, a bit of killing, and a computer gone bad. Just as much fun as watching the reruns.

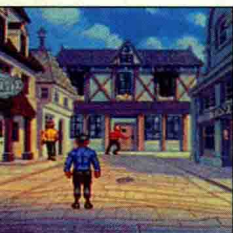
Spectrum HoloByte (another of the *Trek* game makers) has the *Next Generation* license and puts it to good (not great) use in *Star Trek: The Next Generation, Futures Past*, a title for the Super Nintendo videogame deck. This blend of adventure, puzzle, and shoot-'em-up is a bit more cohesive on the plot side, for you're trying to locate a weapon of powerful proportions, the Derandomizer (where do they *get* these names?) before the Romulans and another alien species, the Chodak, wrap their hands around it. A multimission game, *Futures Past* lets you run the *Enterprise D* from the bridge, then lead an away team on the ground. In space, there's enough phaser fire to satisfy even the most rabid battle fan, while the away team action

plays a bit like a maze game. Unusual for a cartridge game, *Futures Past* requires some analytical skills to solve its adventures. Sega plans to roll this one to the Genesis system sometime soon, so you won't need to rush out and buy a SNES to get your *Trek* fix.

Spectrum will beam down several more *Star Trek: The Next Generation* games over the next year, including a graphic adventure on CD-ROM designed for MS-DOS computers as well as *A World for All Seasons*, an interactive adventure for the hot but pricey 3DO system. Everything and everybody is rendered in computer-created 3-D images, and though that gives Picard, Data, and the other TV stars a bit of a mannequin look, the backgrounds are stunning. And with the 3DO's ability to move graphics on the screen, expect fast and smooth animation.

Paramount (the studio behind the *Star Trek* pantheon of TV shows and movies) gets into the act, too. Its CD-ROM *Star Trek Interactive Technical Manual: Enterprise D*, which should be out this fall, opens up the ship like a tin can, showing you its systems, subsystems, and floor plans in exquisite detail on the PC and Macintosh. And an upcoming game, *Star Trek, Deep Space Nine: The Hunt*, features the lineup's newest show in a you-are-there adventure fashion.

*Star Trek* has been around for nearly three decades and, thanks to digital technology, the series looks to remain familiar ground for a long, long time in the future. All I can say is, "Make it so." And make it snappy. 



Games based on *Star Trek* are pouring onto the shelves and burying us like Tribbles falling from an overhead bin.



the CD in the drive, you'll hear a big difference. Voice-overs by the original cast (and by some literally faceless extras) transform this game into a blast from the past. Shatner, Nimoy, Kelley (Bones), Doohan (Scotty), Nichols (Uhura), and others speak the parts in this "talkie." Fairly true to the original series, *25th Anniversary* has you beaming down for seven small adventures—tiny TV episodes if you will. The graphics show their age



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## THE MAN WHO FOUGHT WITH SQUIRRELS IN HIS SLEEP: Odd things happen when the dreamer is awake (and vice versa)

By Steve Nadis

**In many cases, brain scientists cannot figure out how the mind works until something goes wrong, such as the man who wakes up in bed paralyzed and sees demons.**

**I**n neurology, the physician is often presented with an array of baffling symptoms. What, for instance, would you make of the husband who employs a hammerlock on his wife while he's fast asleep? Or the guy who enters a trance while driving and snaps out of it wondering where he is and how he got there? And what could this have to do with Doberman pinschers who get so excited upon eating their favorite foods that they collapse head first into their bowls?

These bizarre occurrences are common to people (and dogs) afflicted with narcolepsy, a syndrome also characterized by daytime sleepiness. The diagnosis, however, does not explain the phenomenon, and the precise causes of narcolepsy are unknown. Mark Mahowald and Carlos Schenck—neurologist and psychiatrist, respectively, at the Minnesota Regional Sleep Disorders Center in Minneapolis—offer an explanation. There are three basic states of being: awake, rapid-eye-movement sleep, and non-REM sleep. Strange things happen when these states inadvertently commingle.

REM behavior disorder (RBD) causes some people to act out their dreams. Most of us can't move while we dream because our muscles are actively paralyzed. People with RBD show all the normal signs of dream sleep except the loss of muscle tone. And this leads to odd behavior, such as the slumbering wrestler or another man who fought squirrels in his sleep. At the other end of the symptomatic spectrum is cataplexy, periods of weakness


brought on by excitement or heightened emotion. The episodes, which can last a few seconds to several minutes, may induce temporary paralysis or even collapse. The phenomenon occurs, Mahowald suggests, when the paralysis associated with REM sleep suddenly intrudes into waking hours.

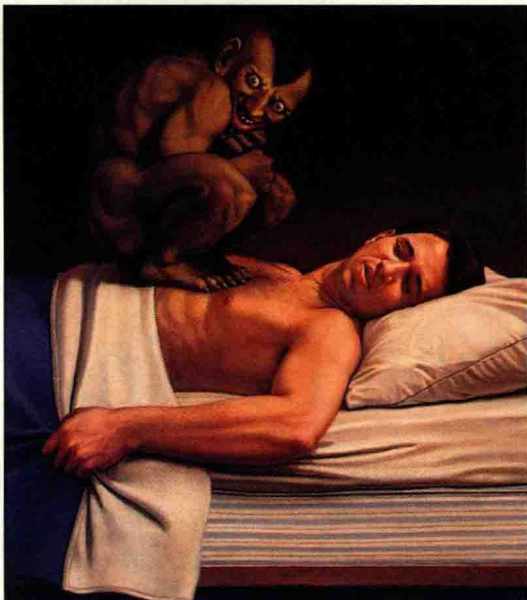
"If REM-sleep paralysis can

monitoring brain waves and eye and muscle movements can document this blending of states. In the extreme case of *status dissociatus*, Mahowald and Schenck's patients simultaneously display elements of all three states. "When you watch them on videotape, they appear to be asleep, yet polygraphs show none of the conventional sleep characteristics," Mahowald says.

These "impaired state boundaries" play a role in narcolepsy, notes University of Michigan neurologist Michael Aldrich. "But that's not proof." To pinpoint the disorder's origins may require animal models. Neuroscientist Jerry Siegel at UCLA is investigating a group of neurons in the medial medulla of the rat brainstem, just above the spinal cord. "If that region is deactivated," Siegel says, "You don't get the normal suppression of muscle tone in REM sleep." When narcoleptic dogs get excited, he observed, neurons in this area start firing, perhaps triggering cataplexy.

Siegel is now studying the neural systems that feed into the medulla, including cells emanating from the pons, located higher up in the brain stem. The pons is known to be involved in regulating REM sleep. "We're trying to follow the chain back to a gene that produces a structural defect in the brain," he says.

Yet, there's hope. "Most patients come to us with a psychiatric diagnosis," Mahowald says. "The overwhelming majority of them are not mentally ill, and the sleep disorders they suffer from are largely treatable." 



occur during wakefulness, why can't we dream while we're awake?" he asks. Some narcoleptics do, especially during transitions between wake and sleep. A man visited by a "night hag" continued to dream after waking up—an example of a hypnopompic hallucination. Others start dreaming before they're fully asleep, leading to hypnagogic hallucinations. Out-of-body experiences may represent yet another form of "wakeful dreaming." And the converse, lucid dreaming, occurs when consciousness mixes with the dream state.

Sleep polygraph devices



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# MEDICINE

## ON THE SUNNY SIDE OF THE STREET:

A new way to fight depression

By Nina L. Diamond

**S**ocrates tried to explain it to the Greeks, Ovid to the Romans, Shakespeare to the English, Cervantes to the Spanish, and Goethe to the Germans. It is the subject of poetry and the stuff of tragedy. Love and loss have inspired great thinkers and fruitful art throughout human history. Today, however, they are inspiring good science.

Researchers have isolated a neurohormone called PEA, an amphetaminelike substance in our bodies, which regulates our highs and lows. PEA is not the latest in designer drugs, but a new way to treat reactive depression, or the short-term drop in energy and interest that usually follows death or loss.

Dr. Hector Sabelli, director of the Psychobiology Research Laboratory at Rush University is currently conducting FDA field trials for a PEA replacement, which he hopes will be an effective treatment for reactive depression.

"There are many causes of depression," Sabelli explains, "and a PEA deficiency is one that is very important. Just as diabetes can be treated with insulin, PEA deficiency can be treated with a PEA replacement." In previous studies, Sabelli found that 60 percent of people with major depression and 100 percent of people with reactive depression have low levels of PEA, and 60 percent of those treated with a PEA compound are relieved of their depression very quickly.

How does PEA work?

It begins with food. We eat foods, like chocolate for in-

stance, laden with proteins that contain the amino acid phenylalanine. When triggered by emotional responses—and our bodies are constantly registering our emotions—phenylalanine is converted into a neurohormone—PEA—and spread throughout the body, with the highest concentrations found in the brain.

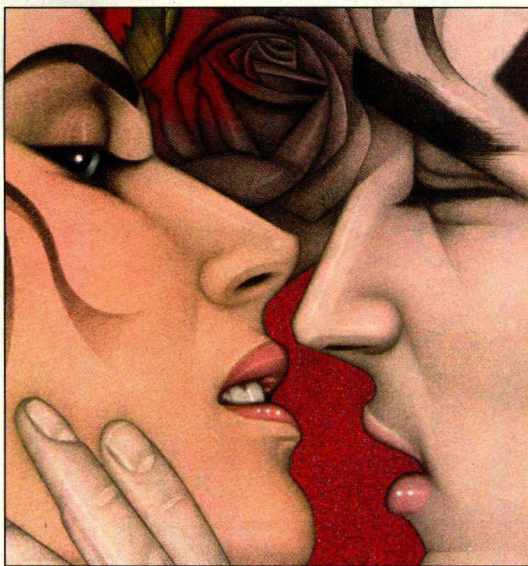
The function of PEA is to monitor our emotional responses. High concentrations of PEA might produce euphoria or elevation—a love high of sorts.

Eldepryl can target only the offending MAO enzyme and neutralize its ability to break down PEA. The compound can thus slow down metabolic degeneration of PEA and allow a healthy accumulation of the chemical to soothe our aching hearts. So far the Eldepryl compound seems to be working. In the Spring 1994 issue of the *Journal of Neuropsychiatry*, a report of a study conducted in Buenos Aires claimed that six out of eight people given a PEA compound got well within two weeks. The effect was immediate, the depression lifted.

Sabelli has duplicated the study in the United States and has come up with similar results—about an 80 percent recovery rate. "Most antidepressants take two to three weeks just to *begin* acting," says Sabelli, adding that the PEA replacement for depression has thus far produced dramatic results.

In addition to the obvious benefits of PEA replacement over, say, the blood-letting of the sixteenth century or the narcotic sedatives of the Fifties and Sixties, it looks like PEA replacement is both nontoxic and nonaddictive. "A major component of addiction," Sabelli explains, "is tolerance. And we have discovered in animals that as PEA is administered the animals need less, not more."

There are depressive states which require more than a chemical tune-up. PEA replacements may soon be able to offer us a safe and healthy alternative to cope with life's ups and downs, which is great news for us, and bad news for the blues. ☐



Lower concentrations of PEA, below normal levels, may bring on depression or moodiness.

There is a problem: MAO-Type B, a common intestinal enzyme, quickly breaks down the structure of PEA before it can have much lasting effect. Eating chocolate, for example, will do little to take the edge off a PEA deficiency. The question, then, becomes how to stabilize PEA.

Using a compound substance composed of PEA and the nontoxic drug Eldepryl, Sabelli hopes to find an answer.

**What happens when we fall in love may be what happens when we fall out. High levels of PEA may send us to cloud nine, but too little, and we are singing the blues.**