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DREAMS!

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What do our dreams tell us about ourselves? It's a question as old as our species—and as new as the latest technology. In fact, the worlds of our dreams and the worlds of technology may be on a collision course. (Art and photo credits, page 84)

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FIRST WORD

DEFEATING DISEASE

Public health remedies vs. biomedical quick fixes

By Edward S. Golub

The reappearance of tuberculosis, a scourge we thought was gone forever, is the first serious health problem to be spawned by the AIDS epidemic. Unlike AIDS, which takes its toll primarily in a few defined risk groups—gay males and intravenous drug users—tuberculosis has the potential of causing serious illness in large segments of the general population forcing us to face ethical questions we failed to address in the first decade of the AIDS epidemic.

For the moment, tuberculosis and AIDS are both increasing in a population characterized by drug use, poverty so extreme that many are homeless, and the general poor health one would expect of people living in these conditions. In contrast, the largely middle-class gay population has responded to educational programs by modifying its sexual practices and has reduced the incidence of new infections with the AIDS virus. Deprived intravenous drug users can't expect to be

reached by education, and this is the source of the dilemma.

We look to technology to solve our problems, using dramatic examples of penicillin and the polio vaccines as the rule rather than the exceptions they are. Technology doesn't often provide quick fixes for our medical problems; epidemic diseases were conquered primarily through public health measures. Immunization and antibiotics were important but neither would have been enough to stop such scourges as cholera or tuberculosis, which were brought under control by the establishment of public health barriers. Drugs were essential for saving the lives of those few who still contracted tuberculosis (including this winter), but they weren't responsible for the decline of the disease, and there is no effective vaccine for TB.

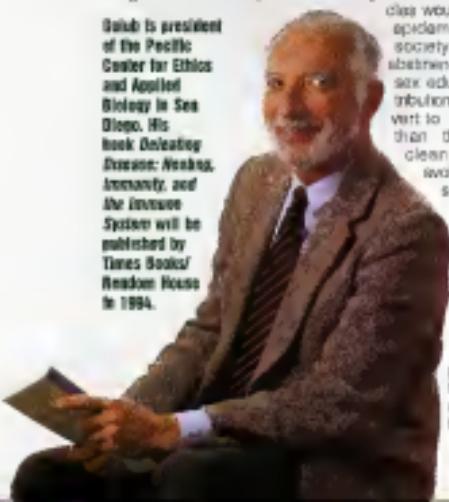
By maintaining our faith in a technology we haven't had to face the ethical questions raised by public health remedies. Few demands that safe sex and clean needles would contain the AIDS epidemic, but many in our society prefer to counsel abstinence rather than safer-sex education and the distribution of condoms, and revert to "just say no" rather than the distribution of clean needles. We have avoided these controversial ethical questions by taking refuge in our faith that technology will solve the problem for us, and by saying that those at risk are the ones with the ethical problem.

Although AIDS impairs the immune system, its victims do not die from infectious diseases but

from what are called "opportunistic infections": diseases caused by agents always around us but which the healthy immune system is able to keep in check. The ethical problem hasn't seemed urgent because the AIDS populations are marginalized and the diseases that characterize the syndrome aren't infectious to the health of society in general hasn't been at risk. TB, in contrast, can easily spread to the general population and is now reaching epidemic proportions among people who don't have AIDS but who live in such poverty and poor general health that they're highly susceptible to many diseases. These are the people who, coming in contact with tubercular AIDS patients, themselves contract it. As they encounter ever-widening ranges of the population, it doesn't take much imagination to realize that the risk of TB increases for all of us.

We can no longer see the AIDS epidemic as our technological and theoretical problem. We must face the kinds of questions that we've been hoping technology would protect us from. Requiring the schools to provide students with condoms and drug centers to furnish addicts with clean needles will be simple problems compared to deciding if we'll make laws forcing impoverished people with TB to be quarantined or even imprisoned to prevent them from spreading a potentially lethal disease. We must, of course, continue research that can lead to technological solutions, but how we face the present ethical challenge will be a test of how we can understand religious, moral, ethnic, and financial differences in a diverse, free society. It may also serve to force us to think about why we place so much faith in technology to solve our health problems. **□**

Golub is president of the Pacific Center for Ethics and Applied Biology in San Diego. His book *Defeating Disease: Health, Humanity, and the Immune System* will be published by Times Books/Random House in 1994.



FUNDS

STOCK SLEUTHS:

Tracking down obscure and obsolete securities

By Linda Mansa

In the 1960s, Berne Cornfeld, a pint-sized financial wizard whose fast-lane lifestyle was legendary, built a worldwide mutual-fund empire. Investors Overseas Services (IOS), which had more than \$2.5 billion in assets. But when Cornfeld's successor, the infamous Robert Vesco, absconded to the Bahamas with most of the loot, IOS investors assumed they were out of luck. Not so. It took 13 years for bankruptcy officials to pick over the rotting carcass of Cornfeld's failed domain—but now millions of those investors' dollars are sitting in government coffers, just waiting to be collected by their rightful owners.

This isn't another of salesman extraordinaire Berne Cornfeld's enticing come-ons. It's true. IOS is just one of perhaps thousands of companies that have gone bankrupt, changed names, or are simply defunct, whose stocks still have value. There's also a mushrooming collectibles market, in which exquisitely engraved stock certificates or capital-reducing issues that were signed by slobbery barons like John Jacob Astor, cash-poor inventor Thomas Edison, or even Charlie Chaplin can fetch thousands.

"There are literally billions in stock shares just sitting out there," says Michelene Massie, president of Stock Search International in Tucson, Arizona, who tracks down obscure and obso-

lete securities. Undisclaimed funds exist because 2,500 companies change names every year; bankruptcies often leave assets; and the average family moves every five years. Unforwarded mail means lost stockholders. Massie estimates that 60 percent of the shares brought to her are worthless, whether 20 percent have collector's value, 10 percent may eventually be worth something, and 10 percent have intrinsic value—and that means money that's immediately available.

The French-Canadian Massie the self-styled pit bull of stock sleuths—"I never take no for an answer," she says—conducts about 3,000 searches a year and has recovered more than \$4 million for her clients since she started her company in 1989. Massie hasn't racked up any million-dollar scores because many of her clients are small fry. But the \$5,000, \$10,000, \$20,000—even \$85,000—bits are nice change for what investors thought were worthless pieces of paper.

Established in 1880 in New York's financial district, R. M. Smythe is the granddaddy of stock-sleuthing companies. Researchers at R. M. Smythe will track down obsolete issues of defunct companies that may still be

valuable. But their emphasis is on the collector's market: early stocks and bonds with extremely ornate portrayals of historic scenes, beautiful calligraphy, and detailed engravings, which were designed to foil counterfeitors; issues of historic importance like war bonds issued by states to raise money during the Revolutionary War, or certificates signed by notables like Ben Franklin, P.T. Barnum, and Buffalo Bill.

If you've discovered some old stock certificates, the first step to determine their value is to talk to a stockbroker. If the shares are relatively current, the broker may know what's happened to the company even if its shares are no longer traded. However, if the company has changed names or merged several times, which is likely with older issues, consult the Fisher Manual of Valuable and Worthless Securities. This comprehensive directory of 15 manuals by Robert D. Fisher, vice president and head of R. M. Smythe's research department, is available in most libraries.

If it seems the stocks are valuable, it's wise to enlist the aid of a pro, who can navigate the confusing maze of bureaucratic red tape—or at least point you in the right direction. For \$50, R. M. Smythe will check the history of a company, advise you on the worth of the stock, and explain how to go about retrieving your money. Stock Search International has a \$75 research charge and will collect the money for a percentage of what is recovered. "I love doing the detective work," says Massie. "Right now, I'm researching shares in a Texas company that was a predecessor to Texaco. They could be a real bonanza." (For information, contact R. M. Smythe at 800-622-1980 or Stock Search International at 800-537-4528.) **□**

Asked to admit
you may have
invested in dubious
ventures? Don't
be. They could be
worth plenty.



ELECTRONIC UNIVERSE

CABLE GAMES

New entertainment for channel surfers

By Gregg Keizer

Tune in, turn on, drop out. We're not talking mind-altering pharmaceuticals here; we're talking TV. There may be as Springsteen laments, "fifty-seven channels with nothing on" at the moment, but colonies of technology company CEOs are making deals and spewing up strategic partnerships so that we may have something worth watching later in the decade.

Companies from Microsoft to advanced-workstation makers like



Game show:
Seen, games like
Jurassic Park
will be available
right from
the tube via the
Sega Channel.



Sun Microsystems are hoping to help us have fun during the Nineties. But while many of these firms seem interested only in providing the black box that links our television sets with our cable cords so that we can view movies on demand, others have more mundane dreams.

One of the most intriguing channels of the future may be something right out of videogames. Dubbed the Sega Channel by its confounders—Sega, Time-Warner, and Telecommunications, Inc.—this premium service will let you play videogames piped right into your home. No more trotting down to the video rental store to leave a game for a couple of nights. No more toiling in front of the kiosk at the software store to decide if a title's worth its \$50 or \$60 price tag. You get Sega Genesis videogames home delivered through your cable hookup. Another plus for couch potatoes.

Here's how the Sega Channel will work. You'll plug a tuner/decoder cartridge into a Sega Gen-

esis videogame machine, jack your cable line into the cartridge, turn on the TV and game box, and then after surfing through an onscreen menu, pick a game. Within a few minutes, it's ready to play. You can play as long as you want, but unlike game cartridges now, you won't be able to save your spot when you quit.

Sega and its partners say they'll price TSC in the same range as a premium movie channel: \$10 to \$20 a month. Tests should start the fall with TBC available to all cable operators next year. By 1996, they figure on a million or two subscribers.

I don't think finding subscribers will be tough. Telecommunications, Inc., better known as TCI, and Time-Warner, which started the premium-cable-channel business with HBO, are the two biggest cable operators in the country. And though Sega may be a step behind Nintendo in total machines sold, its Genesis videogame system equals those beside the TV in more than 12 million homes. For the price of three or four new games, you'll be able to play all year long.

Don't expect the moon, though. Expect something more along the lines of the distribution route of feature films: Games will drop into retail, like they've always done, just like movies hit the theaters. Only after a title's sales have slowed will it make sense to put it on TBC, just as movies typically make it to tape and then cable only after box office runs.

The potential, to say the least, is intriguing. But why stop with the Sega Channel? HBO may have kicked things off, but others can see the money to be made in providing commercial-free entertainment. Dots with digital fun.

Assuming TSC takes off, Nintendo would be insane not to follow suit. Eventually, some of the

biggest computer-game publishers will figure out how to deliver play-once games directly to the PC or Mac via cable. Before you know it, we'll have to have TV Guide to figure it out.

In fact, here are just some of the channels you'll see in those listings within a few years:

TED (Turner Entertainment, Digital): Ted Turner will buy up the backlog of old but still entertaining videogames—*Pong*, *Asteroids*, and *Space Invaders*—and then slap them on the satellite.

Maybe the Blues' politically incorrect *Tombstone Chop* will be replaced by the new *Joysticks* *Thumpress*.

APGC (Role-Playing Game Channel): Dungeons & Dragons moves to the TV when fantasy role playing gamers connect to a channel that delivers nothing but mixed-up magic and dark corridas. Richard Garriott, creator of the Ultima series of role-playing games, hosts the channel from the secret passage under his Austin, Texas, mansion.

A&EW (Arts & Entertainment & War): A&E will admit that the most popular programming is its repetitive WWII retrospectives and enter the cable-game business by specializing in military simulations. George C. Scott, dressed as Patton gives you the tips and hints you need to "make the other dumb bastard die for his country."

DW (Dawn Multiplayer Net, Interactive): The futuristic magazine branches out by offering up the first multiplayer cable channel around. Gaggles of players take on other groups in science-fiction-dominated games of robotics, spaceships, and time travel.

Thirty-seven channels with nothing on? Who cares when you can turn off reruns and play *Sonic the Hedgehog X* instead?

Just gimme the remote. **GD**

TRAVEL

FUTURE FUN:

A Hawaiian resort nurtures mind, body, and spirit.

By Rita Ariyoshi

Hucked out of the lunar-esque lava coast of the island of Hawaii, the Hyatt Regency Waikoloa has a kind of monumental Mayan presence. The lobby building, as long as four football fields, presides over a network of canals, lagoons, pools, waterfalls, gardens, preserves, a New Age spa, and golf greens.

Built at a cost of \$360 million, the Hyatt Regency Waikoloa is the prototypical megaresort, one that's ushering hospitality into

bright skies. Neighboring Mauna Loa glowed rosy and luminous. Mahoney set up his telescope while the Milky Way seemed to trail behind the mountains. Through Mahoney's telescope, we saw Saturn with its bright rings, brilliant Mars glowing so pink it sang, and the Andromeda constellation, a galaxy 2.2 million light-years away.

Kilauea Crater, a mere three miles away, provided more of the evening's drama, spewing fiery lava from its Puu Oo vent. The powerful telescope put the lava right into our laps.

And the Hyatt mixes other brushstrokes with the natural world. I was lucky enough to win the dolphin lottery—an opportunity to play with the hotel's own school of dolphins. I swam in a lagoon with a friend who looked like Flipper and whose skin felt like patent-leather shoes.

The dolphin handlers work hard to educate visitors about these intelligent mammals and the peril in which people have placed them. A portion of the profits from the Dolphin Encounter program supports cetacean research.

the age of Star Wars. Indeed, the hotel has three registered astronomers who give free sessions several nights a week, making the science of the universe a postprandial crowd pleaser.

We went one night in a small group with astronomer Edward Mahoney to the heights of Mauna Kea, where the air is so clear that ten major observatories sit on the mountain's summit. At 13,000 feet, it was bitter cold. The sun sank into the clouds beneath us, painting the sky with streaks of orange and red in swirls and

In fact, the focus on spiritual issues is particularly strong. In the old days, this area of Hawaii—the sunny, dry Kohala Coast—was considered a place of "unbinding," of healing, oneness, and personal freedom. It abounds in what the Hawaiians call mana—spiritual energy. Ancient temples litter the landscape.

According to Suki Kwiakowski, a Kohala-born historian, "Some places are spiritual touch points, which is why you'll see petroglyphs (picture writing on walls) crowded together in one area, as at Waikoloa, when there are miles of usable rock."

Anani blends the cosmic with the corporeal. After analyses by a personalized computer fitness program, I was flushed to the aerobic gym, sentenced to the Girotron, the PTS Turbo incline bike and the bicyclette. After working up an impressive sheen, I was soaked in a seaweed bath, pummeled with hundreds of waterjets, scrubbed with loofah, massaged in an herbal body wrap, and massaged with the ancient Hawaiian lom lom technique. I dozed off in the stress-reduction session so I guess it worked.

The rest of my Waikoloa vacation was punctuated with early morning power walks, exhilarating tree down the resort's white-water river—manned with rubber rocks—and tai chi lessons in front of a great Buddha that was carved in China at the hotel developer's own marble quarry.

In the end, I came away refreshed, but I also learned some things—things that should benefit me in the real world—such as how to enter a trance and that we should use low-phosphate laundry detergent to keep the water pure for whales and dolphins. And I heard the even call of pink Maia at a retreat with not simply ocean views, but galaxy views. **OO**



The Hyatt Regency Waikoloa, an ordinary tropical paradise, melds serious pampering with both celestial and earthly delights.



Dolphin Encounter program supports cetacean research

I also did some research on myself, courtesy of the hotel's Anara Spa. Anara is an acronym for A New Age Restorative Approach. When I checked in, I was asked questions such as, "Are there vague stirrings in your mind that are not addressed in your day-to-day life? Are there specific contradictions between your beliefs and the world you live in?" Usually, everything a resonant wants to know about me is on my credit-card impression.

REPAIRING THE MIND WITH MACHINES The supernormal possibilities of neural prosthetics

By David P. Snyder

Since civilization's beginning, the quest of healing artists and prophets alike has been to make the crippled walk, the blind see, and the deaf hear.

Now research into the brain's motor and sensory functions offers the promise of doing just that—interfacing the nervous system with machines. Five to ten years from now it may be possible for totally blind people to see by using a neural-prosthetic device employing a television camera attached to tiny electrodes feeding into specific areas of the brain.

Also in the not-too-distant future, people may be able to operate computers, typewriters, or turn on a television set just by using their brains—through recording electrodes and telemetry, a special radio transmitter that sends signals picked up from the motor cortex to the machine.

Conduits of much research leading to these medical miracles of neural prosthetics are F. Terry Hambrecht and William J. Heetderks, the head and deputy head, respectively, of the Neural Prostheses Program at the National Institute of Neurological Disorders and Stroke, a part of the National Institutes of Health in Bethesda, Maryland. They are among a small group of pioneers in the field of neural-prosthetic implants: the science of using microscopic electrodes inserted into neurons to stimulate or record from damaged or disconnected areas of the cerebral cortex.

Present applications of neural prosthetics are phenomenal; future applications may be truly mind-boggling.

An experimental visual implant recently tested on a volunteer pa-

tient by Hambrecht and colleagues involved 38 indium electrodes, each one-third the size of a human hair, implanted into the visual cortex in the occipital lobe in the back of the brain. The electrodes were attached to gold wires that exited the scalp and fed into a computer. The computer sent signals that stimulated the brain's primary "seeing area" and allowed the totally blind person to discern patterns of light.

By the end of the decade, the research team hopes to have con-

Hambrecht and Heetderks are also collaborating with investigators to perfect the development of auditory implants. So far, more than 7,000 hearing-impaired persons worldwide have had some degree of hearing restored with cochlear implants, devices that stimulate the cochlear nerve.

In motor prosthetics, Hambrecht predicts it may eventually be possible to "make normal people supernormal," the true bionic man or woman. That means we might be able to detect signals

from the motor areas of the cerebral cortex, then bypass muscles and communicate directly with machines. We might be able to use the output from the motor area to control machines without having to wait for the slow muscles of the body to respond," Hambrecht speculates.

"And for people with spinal-cord injuries, we could bypass the injury to a certain extent," says Heetderks. "If one small part of the system isn't working but the rest of the system is still functional, we hope to re-route that function by making an electronic bypass."

"It's possible that spinal-cord injury patients who have impaired sexual function could lead essentially normal sex lives, to have erections and ejaculations," suggests Hambrecht.

But what about mind control? Couldn't such neural implants be manipulated for malign purposes? Couldn't mind terrorists use telemetry to cause implant patients to have visual or auditory hallucinations or worse?

"It's possible but not likely," says Hambrecht. "It would be much easier to give people brain-injecting drugs, which are already available." □

Blind and deaf volunteers with implanted brain-to-computer interfaces are drivers of the truly bionic man and woman.



structed a device utilizing a television camera that would interface with 250 or more implanted electrodes and a signal-processing computer to stimulate the occipital lobe.

"What we are planning for," Hambrecht reports, "is that a totally blind person would have a miniature television camera to wear. Then they should be able to recognize printed text or detect environmental hazards in their visual world such as low-lying limbs. They would also use it as a reading and mobility aid. Their visualizations would be something like a stadium scoreboard made up of individual lights."

SIGHTS

I WANT MY CCTV

TV captioning goes to the masses

By Robert Angus

If you're planning to buy a new television this fall, you'll find that something new has been added to the set—a feature called closed captioning. Originally designed to help the hearing impaired follow the action on the small screen, TV captions are essentially subtitles for TV programs appearing in two or three lines of text at the bottom of the screen. According to Don Thieme of the National Captioning Institute in Falls Church, Virginia, the organization that first introduced closed-captioned television, 8 percent of the population suffers hearing impairment sufficient to benefit from captions. But captions can also serve entirely different audiences. Set manufacturers tout the feature as an easy way to teach children to read and also to teach English as a second language for the 24 million families who don't speak it at home. And the captions provide a way to follow the action on TV while you answer the phone and to watch a late movie without disturbing your sleeping significant other.

Captions already exist in most feature films, whether they're shown on TV or from videotape or laser disc. Most syndicated TV programs have captions, as do much of PBS's output, most network newscasts, and even the local newscasts of more than 160 stations. Many TV program guides identify captioned programs and a special logo is often shown at the start of captioned shows.

Once typed in, the captions are turned into data and inserted into what's called the vertical blanking interval. Most TV viewers know it as the black bar between TV frames that's seen only when adjusting the vertical hold. Special decoding circuitry separates the presence of information in that particular part of the vertical

blanking area, converts it from data to text, and displays it at the bottom of the screen.

That decoding circuitry is the reason why most people haven't ever seen the captions. Until recently, it was packaged only in a black box costing \$130 to \$160 that sat on top of the TV set. However, last year Congress decreed that under the Television Decoder Circuitry Act, every set with a screen 13 inches or larger sold after July 1, 1983, must include decoding circuitry.

Exactly how much the caption circuit will affect the cost of a new set is a matter of conjecture. Some manufacturers predict a hike of \$20 to \$30 for their most advanced models, while others insist that intense competition in the industry will force dealers and/or manufacturers to absorb any price increase.

The infrared remote controllers supplied with virtually all new TV sets will provide access to the captions and a companion feature called Text, which allows broadcasters to put sports updates, headlines, and other information inside a large black box on the screen. Text displays are still something of a rarity—partly because nobody's figured out what sort of information viewers will want. However, ABC lists some program information in Text.

The standards that govern captioning and Text technology provide for two "fields," each consisting of two subareas. The first

field includes the dialogue with which most caption viewers are familiar, and the Text feature. At present, the second field isn't in use, it may eventually be used for such services as foreign-language translation of English-language programs. Some manufacturers have decided to offer all the features contained in the two fields on new sets, while others are merely complying with the law, which mandates that all new sets offer access to the captioning feature contained in the first field.

Set makers are adjusting the numbers of features according to the price of the TV set. RCA, for example, doesn't provide access to Text on models under \$600.

In spite of their outward enthusiasm, television manufacturers harbor some concerns about whether captioning might confuse viewers. They fear, for example, that novice caption viewers may accidentally switch to one of the unused subareas, see no text, and decide that something's wrong with the set. Also, parts or all of local newscasts or sports events—such as live interviews—may not be fully captioned.

The industry will know soon enough whether its concerns are valid as consumers begin taking the new sets home from the stores and trying out the captioning features for themselves. Will captions benefit the general public as well as hearing-impaired viewers? Tune in tomorrow. **DO**

Reading
the table: All new
television sets
sold after July 1,
1983, must
include circuitry
for decoding
the captions that
go along with
many TV programs.



ARTS

GOING ONCE

Computer technology puts art on the auction block

By Paul McCarthy

Some people in the art-marketing business feel they've seen the future, and it's spelled I-T-E-L-L-I-C-T-U-R-E-N-I-C. They foresee a day when collectors will purchase art much as many people already shop via online networks.

Ask Bob Chapman of the Ambassador Graphics and Wildlife Gallery in North Charleston, South Carolina, who for a year has operated the Birth Art electronic bulletin-board system. Potential purchasers can dial in 24 hours-a-day, download wildlife art images to their computers, and make a credit-card purchase of the print. Chapman's board has already paid for itself, and he's expecting art dealers to jump on the electronic bandwagon. "You can't visit any other gallery at two in the morning," he says.

Even at staid old Sotheby's in New York, Joseph Williams, vice-president of worldwide information systems, says he's open to new ideas. Sotheby's already accepts some 25 to 30 percent of its bids by phone and fax. "Remote bidding also has some appeal, and Sotheby's has even built a prototype for worldwide use. This technology will only get better as desktop telephone video begins to mature," says Williams. Sotheby's has been putting fine-art images onto videotape for the past three years, and, Williams says, it's not inconceivable that they would put them onto CD-ROM for international distribution.

Fine-art investors can already subscribe to the I-SYS online system from Centex Corporation. The New York company, according to technical director John Nulty, currently carries more than 600,000 images online and the text from some 5,000 auction catalogs—a whopping 34 gigabytes of information.

With the proper software, di-

Wolfgang Heiter's oil on wood panel "Strange Weather" might be one of many artworks available online.



ents worldwide can dial in to track and evaluate fine art. The database contains the going prices for artists, says Nulty, so it can assess appraisers, buyers, and banks that lend against artwork, and at the same time tout future sales. It even permits the downloading of fixed images—water colors, prints, photographs, sculptures, and drawings.

PSIR developer Tom Deckow, now president of Q Systems, a New York image-database design company, has also computerized the Art Loss Register in London. Art-theft victims register stolen works in the database, including images of the works, which permit auction houses and other buyers to ask for computer searches to compare potentially "hot" sale items to the Register. Deckow says there were nearly 300 recoveries since 1991.

The New York arm of the Register is run by Anna Kislak of the International Foundation for Art Research. She says her database

contains about 40,000 items with a minimum value of \$1,000. Her most memorable case began with a call from the Miami office of the FBI in 1991. A work titled *Aurora* by "a guy called Rubin" was on the market for \$3.5 million. Did she have a match? She did. It so happened that an oil sketch titled *Dawn* by Peter Paul Rubens was stolen in Spain in 1985. "It was recovered and is back in Spain," says Kislak.

Deckow sees other uses for computers, too. "People are talking about a positive register," a database of artworks with their provenances. It would keep track of who previously owned the art and whether it had gone through legitimate channels. Surprisingly, Deckow is not an enthusiast of online auctions. He believes buying fine art online is unlike trading stocks where purchasers know what they're getting. "The assessment of the value of a work has a lot to do with face-to-face confrontation," he says. **DO**

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SPACE

A MARRIAGE MADE IN THE HEAVENS

The European Space Agency courts the very eligible Russian space behemoth

By Brenda Forman

International cooperation" is every space program's catchy slogan these days, but don't assume that it stems from any principles of brotherly love or the comity of nations. Fratty rhetoric aside, the underlying principle is far more mundane: The money's running out. Space budgets everywhere are either stagnant or declining. The scramble for cooperative partners represents an urgent effort to save programs by spreading the costs and the loads.

These pairings may not result in love matches—but some have intriguing possi-

bilities in Space Station Freedom. The resulting tiffs caused the ministers to instruct the EEA director general to begin looking elsewhere for money and cooperative partners.

In the past, anyone shopping for prospective space partners outside Europe was largely limited to the United States and Japan. (Canada already has a cooperative agreement with EEA.) And, indeed, cooperation with the United States remains central to EEA's plans for the foreseeable future. But the demise of the Cold War has created an entirely new and profoundly interesting option.

In a frenzied search for hard currency, the ex-Soviet Union's superb space capabilities and choice technologies have become increasingly available for sale or rent. Bargain hunters all the way up to the U.S. Strategic Defense Initiative Office have begun sniffing eagerly at the Russian goods.

EEA has therefore awarded a large number of contracts to various Russian space institutes and companies to explore how EEA programs could incorporate Russian space expertise and technology. These contracts amount to upwards of \$100 million over the next three years.

The first round of contracts calls for the Russians to critique and improve the design of the Hermes space plane. Others fund joint studies of a future joint European-Russian space station to be based on Russia's Mir 2 station but incorporating EEA's Man-Tended Free Flyer (MTFF). EEA originally intended the MTFF to be a part of its own future space station but has currently put the project on the back burner for lack of funds.

As to what this incipient relationship may amount to in the long run, no one knows. That's

Russian contracts, for example, represent a departure from EEA's standard principle of "just return," under which each member gets contracts for EEA programs in direct proportion to its contribution to them. Inasmuch as Russia has no money to put into EEA, it is therefore not strictly entitled to get any contracts.

Whether the Russian space colossus would make a good match for EEA also remains open to question. European space capabilities have grown impressively since the formation of EEA, but overall, they're as yet no match for Russia's.

Still, the money is running out, and that single, hard fact could cause the EEA-Russian relationship to flower into something approximating true love. If so, it could presage a major shift in the space world's center of gravity.

The Ariane rocket has already captured over half the worldwide market for commercial launch services. The Russians have had a space station in orbit since 1971, launched their second-generation Mir station in 1986, and are currently planning Mir 2. Their unparalleled experience might enable a Euro-Russian space station to reach orbit as early as Freedom—or even earlier if Freedom continues to suffer redesigns and limited funding.

In short, if the EEA-Russia marriage takes, the United States could climb to a second-rate space power by comparison, resulting in a badly bruised national ego—never a politically healthy phenomenon. NASA and U.S. companies have looked into the possibilities of space cooperation with Russia, but their efforts to date lag behind the creativity and initiative Europe demonstrates. This may be the real Space Race of the 1990s. One wonders if we've noticed. **DD**

Needling money despite the success of its Ariane launches (right), the European Space Agency has begun working with the near-destitute Russian space program, which recently flew a Japanese newsman (above) aboard its Mir space station for a hefty fee.



but this for the future, such as the embryonic partnership now developing between the European Space Agency (EEA) and Russia.

In the fall of 1991, the ministers of the 13-member European Space Agency met to contemplate the costs of EEA's new Ariane 5 heavy-lift booster, its Hermes space plane, and its participa-



POLITICAL SCIENCE

WHAT TO DO WITH OUR ADDICTION PROBLEM

Waging peace on drugs

By Tom Owadatzky

People from the entire political spectrum are calling for the legalization of drugs. Others argue that it's both immoral and absurd to legalize substances that are destroying not only individuals but communities—and that we should "crack down harder."

No question that drug addiction is the immediate social problem today. The flight of junkies ruined lives and hoods creates its own cancerous underground economy—and nourishes a thriving overground economy we can hardly afford. Beefed up police forces, overcrowded prisons, and understaffed health-care facilities

Instead of futilely trying to keep jades away from drugs, should we seek a way to keep the addicts away from everyone else—in “jabs” that provide them with drugs free of charge?

a medical and psychological—not criminal—issue. Junkies

At first glance, these two propositions seem totally at odds. How then, to please all? What plan can satisfy the pragmatists trying to cut costs, the individual-freedom advocates, the moralists who argue that society must set standards for everyone and, of course, the unites?

But looking beneath the rhetoric, you'll observe a couple of things: first, that when you're rich, society looks the other way if you have a drug problem. There are many low-profile alternatives. just ask visitors to the Betty Ford Clinic. When the rich get in a jam they go to a sanitarium or—if it's the kids—to a boarding school or academy. We don't need a bunch of law-enforcement agencies to shove the rich into rehab programs either. All it takes is cash, check, or charge.

Then, acknowledge that whether a junkie has money or is broke, we can't keep him or her from the drugs. Several decades and billions of dollars after we declared war on drugs, we've won only minor battles. The conflict itself is lost. Drugs are easier to get than ever before.

We can end the war and at the same time keep junkies off the streets by making drugs freely available—in pharmacies located in minimum-security prisons. I've never known a junkie who'd hassle me hassling people when he or she had drugs. Wish drug availability

able in prisons, we could at the same time and place offer cost-effective treatment services, high-school courses, and health care. So, instead of spending all of our money to catch junkies, we could encourage addicts to check into jail.

The deal would be: 'If you do drugs, all right, but you can't leave high, and you won't find drugs on the outside. Do drugs, but pay with your freedom until you can leave clean.' Make pharmacists the mallus for the addicted and cut out the middlemen who prey on their disease.

Think of the prisons as Betty Ford Clinics for the poor. Addictive crimes to get drugs. They don't do drugs to commit crimes. Let the junkies live in peace and get on with their lives, confront their inner demons, work through their journeys. And let our neighborhoods experience a little peace and quiet, too.

Perhaps we should examine why we won't give drugs to people. There's a world of difference between condemnation and control. We can condemn addicts by making them check into secure drug-use and treatment facilities to pursue their chemical nightmares, to remain separated from civilized society until the time they're clean and ready to return. Or we can try to control them and fight over this long, strange trip we're on.

What do you think? Would you trade freedom for free drugs? Call 1-800-803-8883 or 703/9101. Your views will be recorded and may appear in a future issue. Calls are 96¢ per minute. You must be 18 or older. Touch-tone phones only. Sponsored by Pure Entertainment, P.O. Box 166, Hollywood, California 90078.

DIGS

THE PYRAMIDS OF ILLINOIS

A mysterious culture built huge mounds here in the United States

By Peggy Noonan

Near East St. Louis, Illinois, a 60-home residential subdivision has been torn down, its roads removed, and every trace of its existence erased. Illinois didn't spend \$1.3 million simply to destroy a town. The state is trying to preserve one of the world's foremost treasures—the once-great mound city of Cahokia.

More than 800 years ago, the 120 or so huge mounds spread for thousands of acres. Today, the 68 mounds that remain cover only about 2,200 acres, or 3.5 square miles—approximately half the original size.

"It was the biggest thing that ever happened north of Mexico," says William I. Woods, a Southern Illinois University at Edwardsville (SIUE) archaeologist investigating the site. "These people were capable of all sorts of things, including vast earth-moving engineering achievements. Nothing like it ever happened before, and nothing like it has ever happened again."

People have lived in the area now called Cahokia since as far back as 1000 B.C. but didn't develop the great mound city until between 900 A.D. and 1150 A.D. after the introduction of maize around 800 A.D. created "a revolution in the food-production system," Woods explains.

The Cahokians built their

mounds in three distinctive styles: Conical—or "chocolate drop"—and ridge-top mounds marked important places or burial sites of VIPs. Flat-topped pyramid mounds served as the bases for ceremonial buildings and temples. The Cahokians used stone, shell, and wood tools to dig claylike earth from pits, and they carried it to the mound sites by basket loads on their backs.

Like the Aztec capital city of Tenochtitlán in what is now Mexico City, Cahokia was laid out in neat rows with a ceremonial central plaza featuring "stepped" pyramid temples. At the heart of the central plaza stood the giant Monks Mound, the largest mound in the New World; it covered more than 14 acres and measured 1,060 by 710 feet. The Cahokians moved more than 22 million cubic feet of earth to make Monks Mound alone.

At the top of Monks Mound stood the largest building in the region, a 100-by-45-foot wooden edifice with a 30-to-50-foot ceiling. The Cahokians probably used the building as a temple or a residence for the religious leader; however, archaeologists can't be sure of its purpose because the Cahokians left no written language and relatively few of their artifacts have been found.

While the Normans invaded England in 1066, Cahokia

neared its peak, flourishing with a population estimated at about 20,000. It had all the characteristics of modern cities—organized government, enormous public-works projects, science, art, and a specialized labor force—but by 1400, only the mire mounds remained.

Cahokia's increasing reliance on lumber for fuel, houses, and temples may have caused its collapse. Removing too much timber from nearby bluffs would have left nothing to anchor the loamy soil so that heavy rainfall would have washed it down into the valley, wiping out crops, says Woods, a specialist in prehistoric agriculture.

Cahokia was "discovered" in the early 1800s, and serious but intermittent and underfunded investigation and restoration began in the 1920s. In 1982, the United Nations Educational, Scientific, and Cultural Organization placed Cahokia on its registry of World Heritage Sites, which includes only 16 other U.S. sites. In 1985, the state legislature created the Illinois Historic Preservation Agency to protect cultural sites such as Cahokia. So far, "less than one percent of the site has been excavated," says William R. Iseninger, public-relations director for the Cahokia Mounds Historical Site. "It won't be finished in my lifetime." **DO**

**The mound city
of Cahokia
flourished in the
American
Midwest nearly
1,000 years
ago, housing a
population
of 20,000 people.**





CONTINUUM

INSIDE A VIRTUAL ROBOT:

The BattleTech Center experience. Plus, airing dirty laundry, and why environmentalists shouldn't cook out.

I had the opportunity to visit the thirty-first century the other day. I was far from Earth, on a small, cold planet in a distant galaxy of the Inner Sphere. And there, I waited to do battle.

The call came. The 'mechs were decked, ready, and it was time to board. After the cockpit hatch closed, I had only the view of the dock elevator and the glow of my instruments for company. I could feel the reactor warming up below me. Anytime now.

Wrapping my right hand around the control stick and my left around the throttle, I held my thumb poised over the transmission switch. The screen lit up, and my weapons display flared. Scanning the arsenal, my index snapped the logics to configure for an Alpha strike: a missile barrage, and a laser barrage. I let my thumb and index hover over the three sensitive fingers.

Reaching up, I initiated the advanced steering system and released the torso lock of my 30-meter-tall robot warrior. I settled my feet onto the pedals, slid back into the seat, and swallowed hard as the elevator doors slid open.

Twilight. The desert planet was bathed in a purple glow as the large crescent of the second moon hovered over the dark and distant horizon. I checked my radar. Teammate to the left; enemies behind. I slid the 'mech in gear and stepped onto the dust-strown concrete. As I turned, the sky was streaked with the parabolic arcs of missiles arcing toward Hoover, my second. I punched my throttle forward, fast, steering with my feet to avoid the hunkered-mounted defensives systems. I checked the lasso, a twist to the left, then right. Slow and in control.

Keep the breath steady.

I saw them then, two against one, the orange speck of flames casting dark shadows over the eroded rock formations. Did a river once flow through here, millions of years ago? I wanted to ponder. I wanted to explore the alien beauty of the world, but as I approached, I felt the rumble of the fire in the skeletal skeleton of my Madcat V2 BattleMech. (You can choose between 25 'mechs.)

Toggling a gear change, I jumped the 'mech into reverse for an instant to slow the inertia of the 60-ton extension of my being. I shut down propulsion and stopped, twirling the torso slowly. My computer first targeted Hoover, and I nudged the joystick left, the crosshairs moving over to target the Thor Version One. Matsasaki. The enemy. His name



flashed in red as the hairs pulsed, telling me it was time—to go lower. Range 200 meters. I thumbed an Alpha strike and watched as my salvo arced toward him. A solid hit. Hoover must have suffered his error, because his 'mech disintegrated into a flail of orange and white. Matsasaki's cockpit, a Kevlar-hardened safety shell, blasted away. He would live to fight again. I watched my heat core bleed as the heat sinks set into my 'mech bleed away the reactor's temperature. I released my breath, forgetting that I'd been holding it all this time.

Reality came back to me in a cold chill. For the last half hour I had been immersed in the technology of 3052, far from the cold breezes of Lake Michigan and the Chicago-based center is only one of three in the world. (The other two are across the ocean in Japan, in Tokyo and Yokohama.) Virtual World Entertainment has stumbled into what could be the next drug: a virtual experience so real that I felt the primitive, puny technology of our twentieth century as soon as I stepped back into reality.

The BattleTech experience is complete, from costumed assistants to yellow-and-black caution tape outlining the Fuzzy Area. Virtual World Entertainment has gone to great lengths to make the experience of far-future robotic warfare as real as possible. The player descends into an entire fictional realm, replete with warring feudal houses, advanced and pleasurable technology, and the opportunity to control a gigantic anthropomorphic robot with as much complexity as one can dare assume. The experience is governed by a network of custom-designed computers, controlling the players' cockpits and the virtual world they enter.

While the system allows the BattleTech game to be played with only two controls, it also gives the option of unlimited detail, providing a cockpit that includes an instrument panel as full as Leavena. Every one of the hundred-plus controls is functional, allowing a multitude of steering and combat options, screens upon screens of maps, sensors, and damage assessment.

Could this be the next drug? Physiologically speaking, the BattleTech virtual-reality experience elevates the heartbeat, excites the sweat glands, pumps the adrenalin, and washes euphoria through the veins. All of that on a cold, dusky-purple moon of the Inner Sphere. Or was it the lakefront of Chicago? I can't be sure.—PAUL SCHUYTERMAN



CONTINUUM

IF SMELLS COULD KILL . . .

Cows' breath may smell pretty rank, but some mosquitoes love it to death.

—Daniel Kline, a U.S. Department of Agriculture entomologist

ALTHOUGH EUROPE IS THE SECOND SMALLEST CONTINENT IN AREA, IT HAS THE SECOND LONGEST COASTLINE—37,887 MILES.

entomologist, is testing octenol—a key compound in the breath of ruminants—to lure mosquitoes into traps. Of the 71 species of mosquitoes that call Florida home, between 16 and 20 find pure octenol or octenol blended with carbon dioxide quite enticing. "We're looking for ways to minimize the use of pesticides," Kline says. "Drawing mosquitoes to traps is one way."

Kline's lab is testing a host of attractant odors, including subtle scents from human skin, animal skins, and flower fragrances. (Mosquitoes

crave high-energy nectar to sustain flight.) Many species, Kline says, enjoy the smell of virgin buffalo urine.

One of the most intriguing parts of the study, Kline admits, is field-testing the traps. To quantify mosquito

population levels, he explains, an intrepid researcher must roll up a pant leg and expose a naked calf to raging hordes of mosquitoes for one minute. On one trip, Kline received 260 bites in 15 seconds. "After 15 seconds I had enough and simply extrapolated the population from that response."

—Bandy Fritz

"He that overvalues himself will undervalue others; and he that undervalues others will oppress them."

—Samuel Johnson



Scent of a bovine. Entomologists lure mosquitoes to traps with odors like octenol which makes cows' breath smell so well distinctive.

28 CROWN



A HEALTHY ROOM IS A LEAFY ROOM

You're working in your office, and your stomach begins to roll and your head starts to pound. Don't assume the pain you feel for lunch is to blame; you may be suffering the effects of airborne pollutants from such items as rug and detergents. It's the quintessential modern, high-tech problem. Fortunately there's a low-tech, low-cost solution: house plants.

According to former NASA environmental scientist Bill Wolverton, scattering plants around your office or home may be the easiest way to rid the air of benzene fumes, formaldehyde, and other so-called "silent" pollutants that can make indoor air up to five times dirtier than the air outside.

"We've always known" that plants fight pollution, Wolverton says. "We just didn't know how." While conducting research on how colonies might survive in the hostile environments of the moon and Mars, Wolverton and his colleagues found that a plant's leaves act as its

police force, nabbing airborne pollutants. The plants then funnel the contaminants down to the roots, where microbes literally eat them.

After retiring from NASA, Wolverton set up his own lab to continue studying plants' effects on indoor air, cataloging the pollutant-fighting abilities of 42 varieties so far. He also doubles as the scientific spokesperson for the Plants for Clean Air Council.

"Plants should be incorporated into a building's design," he says. "If you seal off a room away from plants, you make the air unhealthy."

But just plopping a houseplant in your living room won't solve all your air problems. You need the right combination of plants for effective, round-the-clock protection. Chrysanthemums, eureka palms, and corn plants handle things

U.S. ASTRONAUTS ARE PROVIDED WITH SPECIAL FIREPROOF PLAYING CARDS

during the day, succulents such as jade plants and cacti go to work after dark.

Wolverton suggests two or more plants per room, and he practices what he preaches. He has a plant system designed into his home in Picayune, Mississippi, that uses bathroom waste water for its nourishment.

"Plants and people were meant to be together," he emphasizes. "We couldn't live without them."

—Peter Callahan



The Mars Direct plan would equip explorers to use the carbon dioxide in the Martian atmosphere to produce spacecraft fuel.

LIVING OFF THE (MARTIAN) LAND

Can the discovery of the Northwest Passage through the Canadian Arctic in 1906 help man reach Mars by the turn of the next century? Martin Marietta engineers Robert Zubrin and David Baker think so.

Zubrin and Baker's "Mars Direct" plan relies on a "live off the land" philosophy used by some early explorers. For instance, Roald Amundsen, who discovered the Northwest Passage, was successful because he and his crew knew how to survive on local resources. When frozen in on an island for two years, they even got fat from eating too much carboy. Zubrin and Baker would have the first Mars explorers live off Martian "carboon"—carbon dioxide in the atmosphere.

The Mars Direct plan begins with a single heavy-lift rocket launching an unmanned Earth Return Vehicle (ERV) from Earth to Mars. Once on Mars, the ERV

would use a small nuclear reactor and six tons of liquid hydrogen brought from home to make both methane and oxygen from the Martian atmosphere, which is 95 percent carbon dioxide. An onboard pump would suck in Martian air and then a nickel catalyst would cause the carbon dioxide and liquid hydrogen to become methane and water. The methane would be stored and electricity supplied by the reactor would split the water into oxygen and hydrogen. The hydrogen would be recycled to react with more carbon dioxide while the oxygen would be stored. Two years later, astronauts would land on Mars at the same site. Excess fuel from the first ERV launch would allow the astronauts to explore Mars in a rover and the Mars-kited ERV would return them to Earth.

The plan, Zubrin says, saves time, money and technological woes by reducing the amount of mass that needs to be launched from Earth—Debra Pine

CINNAMON'S SECRET

If you have diabetes, cinnamon could be more than a tasty topping on cereal or toast—one day it could be part of your treatment. Scientists at the U.S. Department of Agriculture's Human Nutrition Research Center in Beltsville, Maryland, believe the spice contains an unidentified compound that may greatly boost the effectiveness of insulin.

The researchers tested a variety of spices in cells to see if they could influence insulin. Of them all, cinnamon consistently had a positive effect, boosting insulin activity in several experiments by nearly 1,200 percent.

Although cinnamon contains chromium, a mineral linked to insulin effectiveness other spices with more chromium didn't produce the same cinnamon results. "We're isolating hundreds of different compounds found in cinnamon to find out what exactly initiates the biological activity of insulin," notes biochemist Richard Anderson, who heads the re-

search project.

Cinnamon's effects may one day allow diabetics to take less insulin. "That's very important," Anderson explains, "because most of the secondary problems diabetics get like cardiovascular disease, are the result of elevated insulin."

Clinical studies on people will begin soon. Anderson says, "We've already heard from diabetics saying they've seen a definite improvement by using a half a teaspoon of cinnamon a day."

Anderson's cinnamon discovery points out how little we know about the ways food can influence health according to Don McCormick, chairman of the biochemistry department at Atlanta's Emory University School of Medicine. "There is a diverse abundance of natural foods that may well have beneficial, even directly protective effects," he notes. "That's why it's so important to eat a varied diet."

—Sherry Baker

Cinnamon may boost not only the flavor of food, but the effectiveness of insulin as well.





CONTINUUM

MEAT POLLUTION

As if meat didn't have enough of an image problem these days, a recent study by the California Institute of Technology found that in Los Angeles, more than the usual suspects are responsible for its infamous smog. Meat cooking on restaurant grills and backyard barbecues does its smoky part as well.

The culprit isn't the smoke from the grill's burning coals, but compounds released by the meat itself while it cooks. "If you walk around the city



Meat on the grill—and in the air. A study indicates that cooking meat outdoors contributes to air pollution.

and look for visible emissions from stationary sources," says Caltech environmental engineer Glen Cass, "there are very few sources except for these commercial charcoalers."

Cass and his colleagues tracked the meat-smoke component in the air by a familiar chemical compound—cholesterol—and found that cooked meat causes up to 4 percent of the city's visibility problem on any given day. While that may not seem high, Cass emphasizes that "It's lots of these little

activities that are producing our present problems."

An accumulation of small efforts could cut L.A.'s haze by as much as 50 percent, Cass estimates.

—Peter Callahan

DIRTY FOREVER

While waiting for the wash, the soot on your clothes goes through chemical changes that could leave some of the garments stained forever.

A recent study at Cornell University in Ithaca, New York, found that it can take

only a week for the skin oil in soiled clothing to leave a permanent mark. "It's going to be worse the longer you let it sit around," warns B. Kay Obendorf, chairman of the textile and apparel department, who conducted the study with Eun Kyung Park.

As your dirty clothes sit, the carbon-carbon double bonds present in various skin-oil molecules oxidize, becoming more soluble and easier to wash. Yet as more time passes, these same compounds can react with one another to form larger molecules that are tougher to wash out. Meanwhile, the skin-oil compounds on the clothes are coating, chang-

ing from clear to yellow and possibly reacting with the cellulose fibers in clothing like a dye. It's a stain tough for any detergent to remove.

In the lab, with plenty of oxygen and light, Obendorf and Park have brought off this oxidation reaction in less than two hours. In the dark, relatively airtight confines of the laundry bag, it may take one or two weeks. "This is most likely to happen with something you don't know was stained to begin with," Obendorf says.

—Ed Hardy

The right taste.



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CONTINUUM

VOICE OF A NEW MACHINE

When accomplished tenor Ingo Titze walked onstage at the University of Iowa Clepp Recital Hall to join robotic tenor Pavarobotti in his operatic debut last year, the audience undoubtedly stood spellbound for another tedious performance of man and voice synthesizer. But

titze can learn more about how various factors influence voice and speech, and the machine will eventually also find use as a voice-education tool. By analyzing a speaking or singing voice in use, "it can show the most effective way to use your voice," Titze says, "and it can show the least damaging way to use your voice."

Research stemming from

THE AUSTRALIAN WALKING FISH CAN NOT ONLY SURVIVE WITHOUT WATER, IT CAN ACTUALLY CLIMB TREES TO FEED ON INSECTS.

unlike the digitally simulated human voices often found in toys and cars, Pavarobotti's voice is, in some ways, nearly indistinguishable from that of a person.

Researchers at the National Center of Voice and Speech in Iowa City created Pavarobotti's voice from computer models showing lung pressure and air flow. "It's just a simple matter of solving all the physical laws [governing human speech] on a computer program," explains Titze, the center's director.

By studying Pavarobotti, scien-

Trovobotti may help to build new voice boxes for people who have lost theirs due to disease or accident. Doctors have so far found it difficult to construct voice prostheses because the larynx occupies only a small space in the neck, where it connects to several major blood vessels. Titze explains, "But still, it might be possible to replace pieces of soft tissue in the larynx," he says.

—Joseph Bonath Allen

AMELIA EARHART—THE MYSTERY CONTINUES

Last year, The International Group for Historic Aircraft Recovery (IGHAR) declared that it had found proof—parts of a shoe and a wing section—that Amelia Earhart crashed on the South Pacific atoll of Nikumaroro where her Lockheed plane disappeared in July 1937. It looks convincing, but Bill Plymack, president of the Amelia Earhart Society (AES) in Broomfield, Colorado, claims that IGHAR is wrong.

The heel and sole the group found came from a size 9 shoe, but the curator of the Earhart museum in Atchison, Kansas, and Earhart's sister both agree the women wore a size 8 to 8½, according to Plymack.

When the whole story comes out, Plymack says, "it's going to be a huge black mark against Franklin Delano Roosevelt, Harry Truman, and Amelia Earhart herself."

—Peggy Noonan

What about the alleged wing section? In an AES publication, Ed Warner, who Plymack says was in charge of assembling Earhart's plane, says, "The rivet holes on the Earhart airplane were three inches apart, but the ones on the other piece were four inches apart."

Hard evidence has convinced "every researcher in our group" that Earhart went down in the Marshall Islands, Plymack says. "She was possibly taken to Saipan and then to Japan."

As for what happened afterward, Plymack has only "tentative evidence but nothing concrete." We do have a telegram from her to her husband, George Putnam, which was dated August 28, 1945, from a prison camp in China.

This just in: Amelia Earhart is still missing.



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Psychiatrists and psychologists with advanced degrees are investigating the mysterious realm of kundalini, UFOs, and ghosts.

DARK SIDE OF THE UNKNOWN

ARTICLE BY PATRICK HUYGHE

Tell us about it. Terrorized by little gray creatures with large black eyes who whisk you away from your bedroom at night? Plagued by poltergeists rattling the bookshelf and hurling pictures from the wall? Haunted by the ghost of a loved one, aay, or preognitive dreams that sum suddenly real? Whatever the nature of your encounter with the unknown, you may have been left physically drained or emotionally scorched. Charcoal are you've confided in no one, fearful friends and relatives would consider you insane. So where do you turn?

Actually, you have some options. You might, for instance, place your trust in someone who makes a business out of the unknown. You saw the movie; you know the tune. Who you gonna call? Ghostbusters! If it's psychic trouble you've had, you call a parapsychologist. And

when it comes to possessions and voo-doo and such there's always the minister, rabbi, or parish priest. On the plus side, you can be fairly confident these people will believe you. On the other hand, if your trouble is even partially psychological, how much help would they be?

That's where mainstream psychologists and psychiatrists come in. If you're hallucinating, they might have a treatment or cure. But don't expect them to believe you. They'll dismiss your story as a raving fantasy; and if you can't shake the episode, you may end up diagnosed with schizophrenia and on antipsychotic drugs.

Not what you had in mind? Then consider your third option: the new breed of mental-health professional now contending that such other worldly experiences are legitimate and commonplace among the

PAINTING BY THOMAS THRUN

sane. That's not to say they accept the reality of alien abductions or preognition or ghosts—though much to the horror of their colleagues, a few of them have. But what many of these therapists have come to believe over the past five years is that such experiences—regardless of their cause—are common among normal healthy people, and that those who find themselves traumatized by such episodes are just as deserving of psychological ministrations as those who suffer anxiety, depression, or the trauma that follows a plane crash or a rape.

To signal the birth of this new discipline, some dedicated professionals have even formed a group known as TREAT, for clinicians and physical and behavioral scientists interested in the Treatment and Research of Experienced Anomalous Trauma. TREAT, which holds a conference each spring, deals with everything from reports of UFO abduction and preognition to near-death episodes, satanic possession, and alleged contact with the dead. Another favorite TREAT area is kundalini—often perceived as a burning, vibrating, or electrifying sensation associated with meditation or any other heavily spiritual choice.

By all indicators, TREAT is a movement whose time has come. Indeed, every national poll on the paranormal confirms just how widespread such experiences are. A 1992 survey by the Roper Organization, for instance, suggests that 2 percent of the population, or 1 of every 50 adult Americans, exhibits the symptoms that sometimes mark a UFO abduction experience. A 1987 study conducted by Andrew Greeley and colleagues at the University of Chicago showed that 42 percent of American adults reported contact with the dead; 67 percent claimed ESP experiences, and 31 percent reported clairvoyance. And a 1981 Gallup poll showed that an extraordinary 15 percent of all people revived from the clasp of death reported the spectacle of the near-death experience in which they glimpsed such generic sights as beckoning loved ones or a tunnel of light.

One must not, of course, mistake these experiences for proof of their reality. "Truth should not be defined by what people believe," warns Harold Goldstein, a psychologist in the division of epidemiology and services research branch of the National Institutes of Mental Health. "Facts are facts."

Now it may turn out that there are aliens and such things, but there needs to be evidence for it, and belief is not evidence."

Then again, say the professionals on the frontier of the new psychology, beliefs should not be dismissed. "Paranormal experiences are so common in the general population," psychiatrists Colin Ross of Dallas and Shaun Joshi of Winnipeg, Canada, said in a recent issue of the *Journal of Nervous and Mental Disease*, "that no theory of normal psychology or psychopathology which does not take them into account can be comprehensive." Such experiences, they say, could be studied scientifically "in the same way as anxiety, depression, or any other set of experiences without making any decision as to whether some, all, or none of them are objectively real."

That may sound good in theory, but some observers wonder whether it's really possible in practice. Therapists, it turns out, are no more immune to the potent lure of the unknown than anyone else. Unwary specialists of the human mind may, in fact, be particularly prone to

accepting the reality of their patients' fascinating tales. And enchantment can lead to obsession. The psychoanalyst Robert Lindner admitted as much in 1955 after coming under the spell of a patient who provided detailed accounts of visits into the future reality of another planet. To help the patient, Lindner studied the mass of written records Kirk had prepared, noted the inconsistencies, and confronted him with the truths. That effort forced cracks in the fantasy and led, eventually, to Kirk's recovery. But Lindner, meanwhile, became so absorbed in the story that he had difficulty extricating himself from its grip. In his classic book, *The Fifty-Minute Hour* he admits to skirting "the edges of the abyss." Now, some 36 years later, the latest mental-health professionals to flit with UFO abduction, the near-death experience, and psychic phenomena face the danger as well.

One mental-health worker to dive headlong into the dark pit of the unknown in recent years is psychiatrist Rima Laibow. Her sprawling office in the upscale Westchester County town of Hastings-on-Hudson, New York, is ringed with the big fluffy pillows she uses in holding therapy, originally designed to repair early attachment deficits in autistic children but now used with other serious childhood and adult prob-

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Over the weeks that followed, Labow worked to quell her patient's anxiety and panic. But the doctor herself remained genuinely puzzled. In search of answers, she read all the literature she could find on reported alien abductions and spoke to the primary investigators in the field. New York artist Budd Hopkins, who had written two books on the topic, and Temple University historian David Jacobs, who, like Hopkins, had become a kind of folk guru and de facto therapist for UFO abduction victims.

"What I found," Labow states, "left me both impressed and appalled."

"She was impressed," she says, "because there's a substantial body of data suggesting that under some circumstances, at some times, for some reason there are things in the atmosphere we call UFOs that appear to have external physical reality. But she was appalled because from her lead and shocking experience, UFOlogy as it exists today is little more than a collection of belief systems vying for dominance. The field is plagued by the notion that just collecting neat stuff is the same as doing research. If I were the National Science Foundation, I wouldn't fund the research either."

Hoping to change all that, Labow began by giving UFO abduction and the whole gamut of experience with unexplained phenomena a nice, more respectable name: "Experienced anomalous trauma," she called it, so that professionals, who would otherwise stop listening because you've mentioned UFOs, parapsychology and other weird things would now stop and process those three words in relation to each other and think, Like what?

The strategy worked. In fact, with the name experienced anomalous trauma as a draw, Labow found dozens of psychiatrists and PhD psychologists intrigued by her ideas. To take advantage of the momentum, she formed an umbrella organization for the Treatment and Research of Experienced Anomalous Trauma, or TREAT, and held the group's first meeting in May 1989.

TREAT quickly attracted some big guns in the mental health community. One was John Wilson, a professor of psychology at Cleveland State University. Wilson is one of the pioneers in the field of posttraumatic stress disorder. He helped both to coin the term and to formulate a definition of the disorder as far back as 1980. In the past two decades, Wilson has listened patiently to more than 10,000 people traumatized by some major life event and has conducted major studies of PTSD in Vietnam combat veterans and victims of toxic exposure.

Wilson's own curiosity with the unknown dates back to childhood, when a neighbor of his worked for Project Blue Book, the notorious Air Force effort responsible for investigating UFOs. When the abduction phenomenon emerged, he began to wonder what symptoms the alleged victims would report. The most obvious answer, he says, is that they would have PTSD.

According to Wilson, in fact, those who report memories of UFO abduction find themselves in the same sort of psychologically stressful dilemma as those who have been exposed to invisible toxic contaminants such as hydro-



gen outside. They aren't sure about it; he explains, not sure anybody is going to believe them, don't know how to stop it, and don't know how long it has gone on. But the big difference is that those claiming a UFO abduction don't even know if it occurred for sure. If you've been exposed to a toxic chemical you can usually have a toxicologist come and study your house—and they'll say yeah, it's there, or it's not. But someone who's had a UFO abduction experience can't point to the flying saucer or the little gray guy with the almond-shaped eyes. That puts them in a really psychologically arousing position. In fact Wilson places UFO abductions and exposure to invisible toxic contaminants in the same general category of traumatic experiences as childhood sexual abuse and psychological torture, calling them examples of "hidden events" that may lead to PTSD but which often can't be proven real.

Wilson isn't surprised by his colleagues' slow reception to anomalous trauma. Fifty years ago mental-health professionals didn't believe in childhood abuse, Wilson notes. When kids or adults would report incest experiences, sexual molestation, or rape and went to see a mental-health professional they were told, That's a fantasy that doesn't happen, it can't be real. It wasn't until the 1980s that the American College of Pediatrics even did a study to find out what was going on. And then, voilà, it was out of the closet, and today we have hard data on childhood sexual abuse. There is a parallel here to anomalous experience: whether it's UFO abduction or demon possession, our culture says no.

But as far as Wilson is concerned, the cultural disbelief system will change as anomalous trauma becomes a diagnostic subcategory of PTSD. "American culture is on the leading edge of this material," he says, "and my prediction is that within five to ten years the idea of experienced anomalous trauma will get the serious consideration it deserves."

Indeed, with Wilson's stamp of approval and Ladouceur's promotional drive, other psychiatrists and psychologists have begun to come around. One already going that route is kundalini expert Bonnie Greenwell, a California-based psychotherapist and author of *Energy of Transformation*. This energy phenomenon, as Greenwell calls it, has been described by Hindu mystics and practitioners of Yoga as an awakening of spiritual energy that supposedly sleeps at the base of the spine. But kundalini awakenings, considered the beginning of the process of enlighten-

ment by masters of the technique, can result in serious psychological disturbance as well.

And that's where Greenwell comes in. Even those seeking the kundalini experience can find it painful, she explains, and for those not expecting it the experience can be a nightmare. Indeed, those undergoing the kundalini experience don't seem to know what hit them because they are unaware that it might be triggered by anything from a physical trauma or emotional shock to a long-term spiritual practice or dose of LSD. What's more, says Greenwell, the experience may be accompanied by visions and trances, the sensation of leaving the body, and alternating periods of ecstasy and despair, symptoms that could lead to pathological diagnoses by conventional shrinks.

But Western medicine is not alone in its ignorance of kundalini according to

It's easy
to mistake the kundalini
experience
for a breakdown in Buddhist
retreats, there
are even cases where people
had to be taken
to psychiatric hospitals. ■

Greenwell. Many spiritual teachers don't have a clue what to do with it, either. "Some teachers will tell them it can't be kundalini or it would feel good," she says. Others tell these people they're having a breakdown. There are even cases in Buddhist retreats where people have been taken to psychiatric hospitals when they had a kundalini opening. Many people who teach yoga or meditation are not developed to the extent that they have gone through the process themselves. It's very unfortunate and it's one of the major reasons I started doing what I do."

Greenwell's craft includes helping those troubled by kundalini tap the positive aspects of the phenomenon while discarding the negative as quickly as they can. Once they understand the process as essentially positive in the long run, Greenwell says, they are no longer afraid of it and can often work it out quite effectively on their own.

One person Greenwell saw overcame the problems of kundalini was Sarah, born after her father's death in

1918. During childhood Sarah spent numerous hours communing with her deceased father and as an adult used that same impulse to meditate. Listening to high-frequency sound and visualizing the inside of her body, Sarah began feeling waves of kundalini along with terrifying visions. In one she was cut up piece by piece, and in another her body was invaded by swords. In the end, Sarah managed to control her terrors by expressing the creative energy of kundalini in the form of dreams, dance movement, and art.

Other clients, Greenwell adds, have been far more distressed by kundalini energy than Sarah. In these severe cases she notes, "the person struggles to get control of a body which involuntarily forces them into motion or freezes them in action, locks pain into the back and shoulders or into the site of any preexisting injury and flushes them with intense heat and cold. Such subjects occasionally fall into trance or report that they are leaving their body. They may be blinded by lights upon entering a dark room or feel they're being electrocuted in bed."

Depending upon who these people consult, says Greenwell, they may be diagnosed with any number of disturbances from schizophrenia to grand mal epilepsy. That's just what happened to Cathy who experienced periods of intense transcendental states, extreme sensations of cold and unusual energy flows moving upward from her feet to her hands. Given medication for everything from psychosis to seizures, Cathy finally decided to abandon all conventional treatment and accept her symptoms as spiritual in nature, coming from energies beyond. It was this acceptance, Greenwell claims, that resulted in an immediate improvement in Cathy's health and enabled her to give up antiseizure drugs and integrate her experiences in a positive way into her life.

Greenwell probably sees more patients with kundalini problems than therapists on the East coast, perhaps because kundalini is largely a California phenomenon. The high percentage of meditators out West, she concedes, means "you have a lot of people primed for the experiences."

Those who suffer from spiritual traumas—kundalini or otherwise—can also access another West Coast resource—the Soquel, California-based Spirit Emergence Network, or SEN, a toll-free referral service (408-484-8261) founded by Christina Giof, who with her husband, Stanislav, pioneered research on the altered state. "We get about 150 calls a month," says Deane Brown, a

therapist and the Network's program director. "People call us when something is happening that they don't understand. The volunteers who answer the phone come from a variety of backgrounds and many of them have experienced some critical or frightening period of spiritual emergence of their own. So they can truthfully say to the caller, 'I know what you're going through, I've been there.' What we do, essentially, is listen. That's the greatest gift that we can give to a caller. We don't judge the content of what they say. We respond to the feeling rather than the content. We never diagnose."

After talking to the caller for a while, SEN volunteers provide the name and number of one of the 500 people in the SEN database. These people range from psychiatrists and psychologists who are familiar with the SEN philosophy of "spiritual emergence" to shamans, psychics, healers, or clergy in the troubled caller's area.

"The types of calls seem to go in cycles," notes Brown. "We will often get a lot of the same calls at about the same time from all over. For a while we may get a lot of kundalini calls. Then we may get a lot of psychic opening, including out-of-body experiences, telepathy, and uncanny coincidences. Often

the callers report possession, psychic attack by demons, and the like."

Despite the common goals of workers like Greenwell and Laibow, however, the TREAT movement has run into some trouble of its own. The reason Laibow's strong resistance to the pioneering group of workers without professional credentials who aided the spiritually traumatized in the first place, years before it became fashionable for those with degrees. The biggest rift was caused by her refusal to accept artist Budd Hopkins, author of the classic volumes *Missing Time* and *Abductees*, and the individual who brought the plight of UFO abductees to the attention of physicians and the general public when everyone else was ignoring them or calling them "insane." Laibow's best Hopkins and others had been hypnotizing the alleged abductees to elicit their tales, and they had no business doing so, "since their formal training amounted to just about nil." Such "wannabe clinicians," she believes, can be very dangerous, indeed.

Says Laibow, "There's a huge difference in being able to induce a hypnotic trance and being a clinician who knows what to do when you've got a trance, who knows how to not contaminate the material, and who knows how

to facilitate recovery rather than cause retraumatization—because people can be retraumatized by the unconscious repetition of their material. And what do you do if a UFO investigator does you clinical harm by taking on clinical responsibilities? Where is his malpractice liability, and how are you going to be protected? People who are not willing to take the time and the effort to become clinicians should not be stamping around in the unconscious."

Though many professionals agreed with Laibow's argument, others felt it was unjust to throw out those who had brought the phenomenon to their attention in the first place. As Hopkins himself said, "Where have all the mental-health professionals been all these years while these people were clamoring for help?" In fact, the dispute has done little to diminish Hopkins' influence who continues to bring mental-health professionals into the fold.

One of Hopkins' recruits is Howard Medical School psychiatrist John Mack, author of the 1977 Pulitzer Prize-winning biography of Lawrence of Arabia. Though he is the most prominent and respected member of the mental-health profession to take an interest in anomalous experiences in recent years, Mack is not a pretentious man.

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The photo from a Boston Globe profile showed him standing in a field wearing corduroy slacks and a plaid shirt. His soft gray-green eyes staring calmly at the camera. Unlike most therapists who take an interest in these matters, Mack makes no attempt to hide the fact that he is "open to what these people are telling us."

Mack met Budd Hopkins in January 1990, and was impressed both by the man and the case histories of alleged UFO abductions he'd collected over the years. "The stories didn't sound at all like dreams or fantasies to me," says Mack, his voice resonant with authority. "It sounded like something real was happening. And I thought, well, if this is real, what is it?" Then Budd asked if I wanted to see some of these people, and I realized I was crossing some kind of line, but I said yes.

Since then, Mack has heard abduction stories from people of all walks of life. "Forty years of psychiatry," he says, "has given me no way to explain what I'm encountering in my interviews and hypnosis sessions of these individuals. Something is going on, something is happening to these people. I'm convinced of it."

In fact, Mack has done as much as TREAT to bring anomalous trauma to

center stage in the professional domain. He has spoken freely with the media about his interest and has given talks and participated in private conferences on the subject. Colleagues who hear him speak often raise the issue of whether UFO abduction stories might not be cover for episodes of sexual abuse and incest in childhood. But according to Mack, the reverse has been the case. "There is not a single known case of the thousands that have been investigated where exploring or looking into the abduction story revealed behind it an incest or sexual-abuse history," he says, "but therapists looking for incest stories have come up with UFO abduction memories instead."

Mack understands his colleagues' reluctance to delve into the subject: "It's so shocking to the paradigm of psychology and psychiatry which tend to look for the source of the experience in the psyches of the people who are affected rather than to acknowledge that something mysterious is happening to these people. The phenomenon is not simply a product of their mental condition but has some kind of objective reality. Whether you call it extraterrestrial or other-dimensional, what it really means is that we may live in a rather different universe from the one Western

science has told us we live in."

Mack speaks of vast philosophical implications for this phenomenon and human identity in the cosmos. "There's really a great fear of opening up our world beyond what we know," he says. "But we need to get out of the box we're in and see ourselves in relationship to the universe and I think this phenomena could be very important in expanding our sense of ourselves."

Mack's clanging views are not shared by all therapists involved in the dark side of the unknown. "If aliens are coming and invading us and abusing us in a very literal sense," argues Toronto psychotherapist David Gorib, "then it's difficult for me to understand how a significant portion of those who are taken could find it curious or enlightening. If you compare it to the Holocaust or the Vietnam War or any kind of traumatic event, then sure you can learn to grow through it, but only after a lot of pain and soul searching and not right away. So it discourages me from subscribing to a literal explanation. It also suggests to me that the phenomenon may be dependent on who's experiencing it as well as on what's happening."

Gorib has thought a lot about UFOs since 1988 when he began treating a woman who had been turned down by



"Instead of more talk about sex and reproduction, don't you think it's time we discussed prenuptial agreements?"

apists can communicate through body language what they want from their patients," he says. "It's like the clever Hans phenomenon. It's like the horse that could come up with the square root of 360 but what it had really learned to do was keep pawing the ground until its trainer released. The trainer was not doing it deliberately. The trainer was convinced that the horse could add and subtract and do square roots. But eventually somebody who was smart enough to figure out what was going on stopped watching the horse and started watching the trainer. I think we should have more people watching the therapists."

Doing just that is Robert Baker, a retired professor of psychology who taught at the Massachusetts Institute of Technology and the University of Kentucky. And Baker doesn't like what he sees. "I hope we can do something about this nonsense, because it's getting to the point where it's almost a national panic disorder," he says. "We have to do something about therapists who really don't know what they're doing. The therapists who commit themselves to this nonsense are not aware of major areas of human behavior and just do not understand the way the human nervous system works."

One thing that fools therapists, says Baker, is cryptamnesia, a series of false memories that form a fantasy with a few minor elements of truth thrown in. "The fact is, we do not remember things exactly," he explains. "We change, arrange, and distort the memories we have stored to better serve our needs and desires. We fill the gaps in memory with events that never happened or with events that did not happen the way we imagine, and the results can be bizarre."

The other major cause of the wild stories people tell, according to Baker, is sleep paralysis, a sleep disorder accompanied by hallucinations that affects about 5 percent of the population. In sleep paralysis, Baker explains, "people wake up in the middle of the night and can't move. They feel like they're wide awake, but they continue dreaming and in the dreams often see such things as demons, aliens, or ghosts. Since they're partly awake, however, they may think the dream really happened when in fact, it didn't. It's no wonder that people find this terrifying, and that's what's responsible for the posttraumatic stress disorder that therapists are talking about."

But Baker has no explanation for the wild stories told by the therapists themselves, unless, he notes, they're "simply seeking attention." Laibow, for instance, claims to have personally expe-

nenced anomalous "healing"—an event she says cannot be explained by conventional medical science. As Laibow recalls, it was a muggy day in August 1991 when she "trucked on down to Brooklyn to an unairconditioned high-school auditorium filled with lots of Polish and Russian emigres." She sat for three hours, she says, watching Kiev-based psychiatrist and self-proclaimed healer Anatoly Kashperovsky dance to New Age Gypsy music and thought, "What's a nice gal like me doing in a place like this?"

Anyway, there was Laibow, watching Kashperovsky's performance, impotent and skeptical, and thinking, "This wouldn't work well at the AMA," when suddenly, she says, "the Caucasian scar that I had, which was thick and ropey and very prominent because I'd gotten an infection immediately after the delivery of my son, began to tingle." As soon as she could decently take a peek, she hiked up her skirt and found to her surprise that the scar was gone.

She immediately made an appointment with her gynecologist, "the head of reproductive medicine at a major university" who, Laibow claims, was shocked when all he could find was a very fine hairline scar. The gynecologist, whom she will not name, was so elated

by her story, "imagine if we could do that," Laibow says, she exclaimed. Laibow adds that the gynecologist may be interested in collaborating on a future study of healing. One possible subject: a Japanese healer who, Laibow says, "seems to have some very substantial powers."

As founder of TREAT and raconteur of stories both marvelous and strange, Laibow is controversial to say the least. But are the doctor and her colleagues merely misguided, marrying their fortunes to the winds of culture much like those who touted fables and dragons in eras past? Or are they onto something new? Will their quest lead more people to come forward with anomalous experiences and encounters, providing the data necessary for proper scrutiny—perhaps even authentication—by the scientific and medical communities at large? In short, are these mental-health professionals finding themselves, or are they forging extraordinary paths through the byways of consciousness and the murky outback of the unknown? To answer these questions, of course, is to know the nature of the unknown, and that is something we humans have ceaselessly attempted for thousands of years—so far, with not much success. **DC**

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atmosphere, you notice



a fleet of flying saucers floating

outside a porthole while



a song in the background keeps

repeating the upbeat



message that girls just want

to have fun. Moments later, your alarm clock rings and you wake

up in your own familiar bed wondering what your latest



dream might possibly mean. It never occurs



to you that all of the images invoked by your sleeping

LANGUAGE OF THE NIGHT

FROM CELLULAR PHONES TO PRINCESS DI, THE ICONS OF OUR GENERATION FORM A DREAM LEXICON FOR THE NINETIES ♦ ARTICLE BY KEITH HARARY

unconscious were unavailable to dreamers a century ago.

The symbolic language of dreams has come a long way since the hayride of the horse and buggy. Even the past several decades have seen dramatic changes. If earlier generations wiled away their bedtime hours dreaming about cultural icons like Marilyn Monroe and Elvis Presley, contemporary dreamers are just as likely to experience nocturnal visits from Roseanne Barr and Homer Simpson. At a rate unprecedented in human history, evolving technology and the mass media expose us all to an expanding pantheon of compelling images. "The images that come across to us in television and movies provide very powerful stimuli for our dreams," says psychiatrist Montague Ulman, coauthor of *Working with Dreams*. "When those images carry personal meaning," he says, "there's no question that they find their way into our dream scenarios." From CNN to MTV, from the Remindertown computer terminals, and from Michael Jackson to Boris Yeltsin, our daily lives provide an almost infinite source of props and characters ready to take center stage in our nightly dream theater.

Psychologists have long recognized that the symbols appearing in our

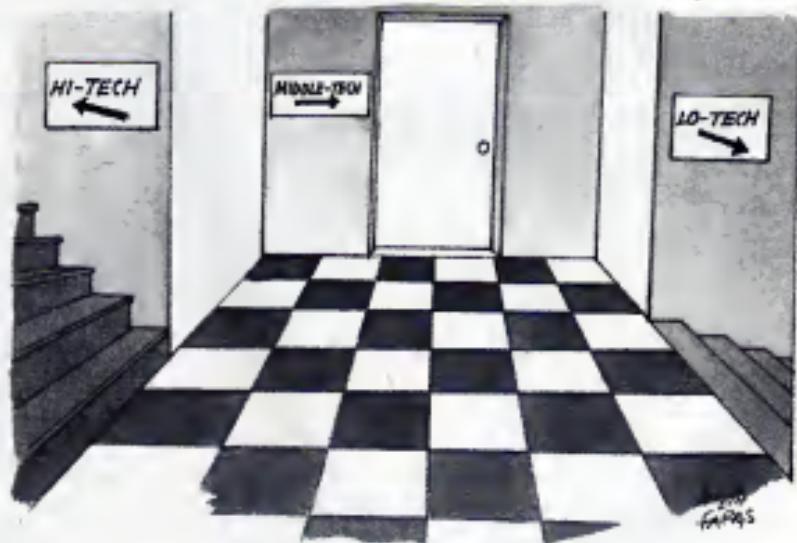
dreams can mean different things to different people. A cigar can be a phallic symbol to one person, while to another it might symbolize Cuban president Fidel Castro or a former lover who flamed stages. For another, in the words of psychoanalyst Sigmund Freud, "Sometimes a cigar is just a cigar." Yet despite these individual differences, many common symbols appear in our dreams, just as many familiar threads run through our shared daily cultural experience. By learning to recognize such familiar symbols and the concepts that tend to be associated with them, we can more easily interpret the meanings of our dreams and better understand their relevance to our lives.

To help you gain insights into your nighttime adventures, we present a sampling of contemporary symbols that dreamers frequently find turning up in our dreams, along with a guide to their possible meanings. This modern dream lexicon was developed in cooperation with leading researchers and clinicians specializing in dream interpretation, including dream psychologist Gayle Delaney, psychiatrist Lorna Flowers, and psychiatrist Montague Ulman.

The End of the World
Nuclear War: The end of a close per-

sonal relationship or any other long-term life situation can often be experienced by your unconscious mind as the end of the world as you know it. Such a feeling is often expressed metaphorically, in dreams in which you find yourself confronting apocalyptic visions on a global scale. "Nuclear war," says dream psychologist Gayle Delaney, author of the book *Breakthrough Dreaming: How to Tap the Power of Your 24-Hour Mind*, "is something people have been dreaming about since 1945. Those who think these dreams are literally about nuclear war are taking a superficial approach. It's far more likely that such dreams represent a situation that feels like the end of the world to the dreamer, such as the loss of a mate for an adult or the divorce of the parents for a child. Sometimes, those who are considering having an extramarital affair will dream about starting a nuclear war, says Delaney, which reflects their feelings of guilt and fear about potentially precipitating the destruction of a marriage."

Chernobyl: Many Nineties dreamers invoke the image of nuclear meltdown to represent a violent or highly destructive personal disaster. The dream image of the Chernobyl nuclear disaster, for example, may symbolize a catast-



strophic life event such as incest or child abuse, which has had a long-term, devastating or emotionally poisonous effect on the life of the dreamer.

Homelessness: A less toxic image of a personal life transition often manifests itself in the concept of being homeless. Although this dream image is especially common among women who are going through a divorce, it doesn't necessarily have negative connotations. One recently divorced woman, for example, dreamed of finding herself stranded in a strange town without a place to stay for the night because all the hotels were full. As she started to despair, she realized that she wouldn't die of exposure even though it was raining and dark. Instead, the dream expressed her ability to use her own inner resources to weather a personal storm.

The Challenger Explosion: In launching any new challenge, there's always the fear that everything will blow up in your face. Few images capture that fear as completely as the explosion of the space shuttle Challenger. A dream about the Challenger explosion can represent a major inner conflict and the fear that whatever you do will end in disaster. It can also have a more specific meaning, according to Gayle Delaney, who states that some patients have in-

voked the dream image of explosive booster rockets to represent the fear of wreaking havoc in their lives through an extramarital affair.

A World Apart

The Russian Federation: "In dreams, relationship issues are often represented by countries and by how you see those countries," says San Francisco psychiatrist Lorna Flowers, who emphasizes dream interpretation in her psychotherapy practice. With the collapse of the communist regime in the former Soviet Union and the emergence of democratic reforms in the new Russian Federation, the symbolic meaning of the major world power has undergone a dramatic transition. According to Flowers, during the Cold War, dreams about the Soviet Union typically reflected feelings of repression in a close personal relationship, including self-repression. Since 1989, she says, that image has undergone a reversal so that the Russians are currently seen as reformers who represent an emerging sense of flexibility in relationships with others. A dream about Russia may therefore represent the dreamer's desire to let go and open up to new life possibilities. "The current political developments in Russia," she adds, "also reflect the

risk of losing control and the many other problems attendant to such a transition. These developments are also likely to be reflected in the richness of meaning of dream images of Russia."

Red China and Tiananmen Square: In striking contrast to the more positive image of democratic Russia that has emerged in recent years, dream images related to Communist China have taken on a decidedly negative bent since the notorious massacre of hundreds of peaceful demonstrators in Tiananmen Square. Dreams containing such images typically reflect a sense of brutal repression in a relationship with a co-worker, mate, or other person. These dreams need not necessarily take place within the geographic boundaries of Communist China but may simply contain disquieting images of Chinese communists pursuing or otherwise threatening the dreamer.

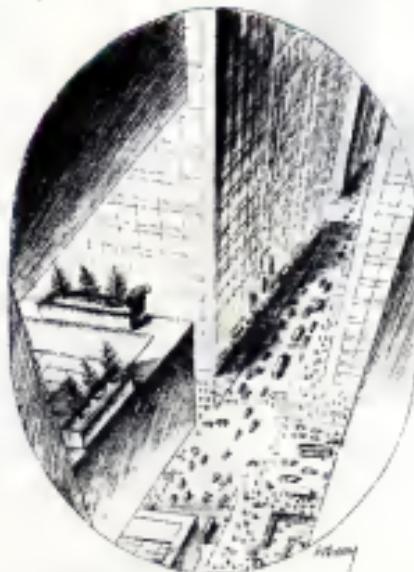
Wet Dreams

The Rubber Raincoat: In the age of deadly sexually transmitted diseases, the image of wearing or not wearing a condom has taken on an expanded symbolic meaning, according to Gayle Delaney. It isn't uncommon for women to dream about having a sexual liaison with a man during which they worry about whether or not he's wearing a condom. It's equally common for men to dream about having unprotected sex with a new love interest, in which they worry about whether or not that person may be carrying a sexually transmitted disease. Dreams involving such images may express the latent concern over catching a venereal disease, but they may also express a dreamer's more general concern over becoming too emotionally vulnerable when beginning a new relationship.

AIDS: Although we may consciously deny the subtle signals that alert us to the possibility that a particular relationship may turn out to be severely unhealthy in the long run, the significance of such signs is rarely lost on the unconscious. Few images capture that early warning message as clearly as the image of catching AIDS, which has emerged as a powerful metaphor for the emotionally deadly relationship.

Phallic Fantasies: From high-tech heat-seeking missiles to the low-tech saxophone played by President Clinton, the phallic symbols appearing in our dreams have also kept pace with the times. Joining such traditional standbys as lollipops and splitting exponents, contemporary phallic symbols now also include such images as videotape and computer joysticks and Luke Skywalker's luminescent Light Sword.

CONTINUED ON PAGE 86



ARTICLE BY
PAMELA
WEINTRAUB

PAINTING
BY MICHAEL
PARKES



D

DREAMING FOR DOLLARS

DREAM BELIEVERS SELL TOOLS AND SERVICES FOR THE JOURNEYS OF NIGHT.

LUCID DREAMS, IN WHICH DREAMERS ARE CONSCIOUS OF DREAMS WHILE IN PROGRESS, HAVE LONG BEEN ACHIEVED ONLY THROUGH CONCENTRATION AND DILIGENCE; PRACTICE A PRESCRIBED SET OF EXERCISES FOR LITERALLY MONTHS, AND YOU MIGHT ATTAIN THIS COVETED STATE, WRESTING ENOUGH

control over the images of night to edit the action, the characters, the scene. Yet according to lucid-dream pioneer Stephen LaBerge, who did his world-class research at Stanford, "Although lucid dreaming is a positive, life-transforming experience, mastery of the technique is difficult and often too time intensive for people who already have busy lives—the very people who would most want to make better use of their sleeping time." His solution? An effective, easy-to-use, thousand-buck gadget called the DreamLight. To market this technology and to raise money for lucid-dream research, LaBerge has also founded the for-profit Lucidity Institute, complete with a business manager and a long-term business plan.

When it comes to the quest for profit, Stephen LaBerge isn't alone. From the creation of a 900 number to help interpret dreams to a glossy magazine sold in bookstore chains, the dream community has begun to market itself to a fascinated public hungry for a road map to the recesses of the mind.

There are those, of course, who view the new entrepreneurs bent in dream work as lowbrow and crass. For instance, addressing the issue of the dream hotline in the dream community's own magazine, *Dream Network: A Journal Exploring Dreams and Myth*, famed dream researcher Montague Ullman, founder of the Dream Lab at Maimonides Hospital in Brooklyn, New York, finds little to appreciate: "At best, I feel this undertaking is born out of ignorance about the nature of dream work and, at worst, is nothing more than a commercial scam covered over by a veneer of legalese and professional pretension. In my view, this project will not result in anything resembling an authentic professional approach at



helping a dreamer with a dream."

But the scientists and connoisseurs participating in the new wave of dreams-for-sale defend what they do. Stephen LaBerge, for instance, says he would never have the money to go forward with his research if he depended on government grants alone. Respected dream researcher Gayla Delaney, who will head up the dream hotline, says her venture will bring a grasp of the dream world to thousands of the uninitiated, something she considers "a true public service." And Roberta Ossana, the successful editor and publisher of the nation's largest dream magazine, states that "people see beauty, meaning, and purpose in the symbols and metaphors of their dreams. We want to help people awaken to the value of the and make it easier for them to find their way."

Whatever your slant, there's no doubt that the market for dreams has

come of age. For a glimpse at America's new dream entrepreneurs and a guide to the latest dream products and services, read on.

Magazine Dreams. Roberta Ossana, a community-service worker in Moab, Utah, had long been influenced by the powerful imagery of her dreams. Finally, in 1988, she decided to retire from her twenty-year career as a poverty worker, teacher, and counselor to pursue her heart's true desire: understanding the symbols that drive human culture and the workings of the unconscious mind. Ossana was partway through her master's degree in cross-cultural mythology and symbolism when she began subscribing to a 24-page newsletter called the *Dream Network*, serving the small community of laypeople and professionals involved in studying dreams. "I'd received maybe two or three issues," Ossana explains, "when I noticed the newsletter was advertising for a new editor/publisher." Ossana responded to the ad immediately. Although the position included much responsibility and zero pay, she hoped it could help her stay in touch with the symbols in others' dreams.

"When they passed the torch to me," Ossana explains, "the publication had a circulation of 350." In her new role as dreamer-cum-editor, Ossana hoped that could change. In the true spirit of a publishing entrepreneur, she set out to turn the small newsletter into a journal that spoke not just to those already initiated into the dream community, but to an interested public as well.

The dream catcher at left, is said to prevent nightmares from entering the dreamer's brain and causing fear. The dream chime top, reproduces the sounds and sensations of a waterfall, easing users into restful sleep.





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SOON, OSSANA WAS PUBLISHING A SLICK, THIRTY-EIGHT-PAGE MAGAZINE WITH BEAUTIFUL COVER PHOTOGRAPHY AND ENgrossing FEATURE ARTICLES. "WE CREATED A REAL MOOD OF MYSTERY AND EXPLORATION AND DIDN'T JUST PRESENT THE OPINIONS OF AUTHORITIES," OSSANA EXPLAINS.

Though Ossana had no prior experience in publishing, her instincts were uncanny, and they worked. A recent issue, for instance, includes a how-to on starting your own dream group, a feature on Tibetan Dream Yoga, and a story on the human/insect relation in dreams. The Dream Network contains book reviews and a letters-to-the-editor column as well. "A new reader can interact with the magazine by responding in our own pages," Ossana says. "I believe in the concept of an interactive publication and try to further that tradition whenever I can."

Proud of her new-and-improved publication, she began to contact magazine distributors. Soon, nine were convinced that the quarterly magazine was a winner. Together, they're responsible for placing it in hundreds of bookstores around the country, including such giant chains as Barnes and Noble and Waldenbooks. The Dream Network is also distributed around the world in Europe, Australia, and even Russia. While Ossana won't reveal the current circulation, she says it has increased by 200 percent in the last year alone.

To veterans of the publishing industry, where new magazines put out by major players fold on a regular basis, Ossana's success will sound particularly sweet. The editor now receives a living wage for her work, and for the first time, the Dream Network is in the black. "The journal's direction has been guided by its staff," says Ossana. "Though most decisions are made by myself or a council of advisors, the publication seems to have a life of its own. It seems to me there's an awakening in this country, and most people are looking for tools to grow, change, and heal. Dreams are free and available, and they provide us with one of the



most personalized ways of coming to terms with ourselves."

You can pick up a copy of the Dream Network at many bookstores for \$5.95. If you're interested in subscription information, call (801) 289-5306, or write 1337 Powerhouse Lane, Suite 32, Moab, Utah 84532.

Night Lights. To help dreamers gain consciousness in their dreams and, ultimately, control the plots and action within, lucid-dream innovator Stephen LaBerge has come up with the DreamLight. "It gives you a cue—tap on the shoulder, so to speak—to let you know when you're dreaming," LaBerge explains. It works like this: You go to sleep with the DreamLight mask over your eyes. Then, when you start to dream, your eyes will start to move rapidly, a period known as rapid-eye-movement, or REM, sleep. The DreamLight mask will detect the rapid eye move-

ment, a sure sign of dreaming, and alert you by flashing lights positioned inside the mask near your eyes. The flashing lights will appear in your dream, providing the cue. When you see the light in your dream, you say to yourself, "Aha! The DreamLight! That means I'm dreaming!" Once tipped off, the dreamer can begin to direct the dream with full awareness. Because the DreamLight is made with a microcomputer chip, it serves other functions as well. It can store ten nights of sleep data, for instance, permitting you to observe your sleep and dream patterns over an extended period and even enter them into a computer. It also includes a Dream-Alarm that helps with dream recall by awakening you from your dreams while they're still in progress.

Because the DreamLight is so expensive (\$999), however, LaBerge is also marketing a lower-end, more affordable device called the DreamLink for \$195. Instead of detecting rapid eye movement, the DreamLink can simply be set to give light and sound cues when you expect to be dreaming. As with the DreamLight, when flashing lights come on during dream time, you should get the message that you're asleep and become lucid, as you become aware of dreams in progress; you'll be able to gain control.

The DreamLink also includes what LaBerge calls "a reality-testing aid." If you think you may be dreaming, push the button on the front of the mask. If you're actually awake, you'll see a flash of light and hear a click. If you're asleep and immersed in dream reality,

A lucid dreamer, above, perfects her technique at the Lucidity Institute in Palo Alto, California. At left, the Stress Shield bathes a user's eyes in a field of colored light, even fully inducing deep relaxation.



however, the button probably won't work right—you won't see a light and hear a click, and that twist of reality will tell you that your dreaming. Both products come with computer home-study training programs that guide students from the first steps of increasing dream recall to sophisticated techniques for achieving lucidity.

There's also a new kid on the block. Hoping to fill the niche between the two machines and to capitalize on lucid dreams, inventor and veteran dreamer Samuel Abebe of the Dream Consciousness Institute in Virginia is marketing the Twilight Navigator for \$245. The Navigator works by detecting REM sleep through sensors at the sides of the eyes. Whenever REM is detected, a light flashes, signaling the onset of a dream. Audio tapes that come with the Twilight Navigator add enhance the experience before sleep sets in with audible suggestions such as, "I will remember to be conscious during my dream," and, "When you see a bright light, it's a sign that you're dreaming." To order, call the Consciousness Institute at (703) 906-0078.

Lucidity Institute. To sell his dream devices, books, and tapes, and to raise money for research on a large scale, Lu-

cid-dream entrepreneur LaBerge has also founded the nonprofit Lucidity Institute. For an annual fee, members receive the Lucidity Institute's quarterly publication, *NightLight*, as well as discounts on the Institute's lucid-dreaming seminars and products.

"Our mission at the Institute," he declares, "is to advance research on the nature and potential of consciousness and to apply the results of this research to the enhancement of human health and well-being." A range of memberships are available, from \$25 for students to \$5,000 for patrons.

Members keep up with the latest lucid-dream research, learn to use lucid-dream devices, and also become part of the experiments published in each issue of *NightLight*. And for qualified investors hoping to fund development of lucid-dream technology, it's even possible to buy Lucidity Institute stock.

Such investment will eventually pay off, LaBerge declares, "when people realize that lucid dreaming offers a fully realistic, virtual-reality-world stimulus that enables them to experience anything imaginable."

For product or membership information, write to the Lucidity Institute, 2555 Park Boulevard, #2, Palo Alto, California 94306, or call (415) 321-8969.

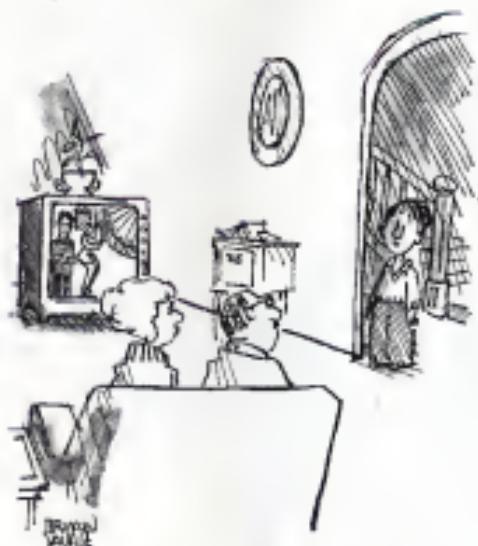
Dream College. While students of psychiatry and psychology are formally trained to recognize depression, treat schizophrenia, and manage antipsychotic drugs, very few receive much formal training in interpreting dreams. Considering how much insight dreams provide to the workings of the unconscious mind, this oversight in training is grave indeed. But now, a psychologist and a psychiatrist have joined forces to fill the gap.

Psychologist Gayle Delaney and psychiatrist Lorna Flowers have managed to create one of the most successful—and legitimate—dream businesses in the United States. The duo's school, the Delaney & Flowers Dream and Consultation Center, based in San Francisco, California, was founded in 1981 to train people in problem-solving and the development of new ideas through a practical understanding of dreams. According to Gayle Delaney, trainees at the center use an interview method that places each dreamer's individuality above any one theory or doctrine. "We feed back each dreamer's descriptions using his or her own words," Delaney explains. "This helps the dreamer crystallize the meaning of the dream in the context of his or her own life."

As a student of the Center, you can learn to work with common dream themes, such as flying, falling, being chased, finding new rooms, and discovering treasure. You'll be taught interpretive strategies that will enable you to understand recurrent dream images and nightmares. You can also learn how to focus on a problem before going to sleep in order to awaken the next morning with a dream that will help you resolve that specific problem.

"We aren't a rich company," Delaney notes. "We're a small business, but we love it. We don't advertise. People hear about us through word of mouth or by reading our books."

The dream school offers a diploma program with five levels of achievement. Fees range from \$35 to \$100 for group or single sessions. For those interested in short-term workshops, fees range from \$425 for a two-day workshop to \$600 for a five-day workshop. For information, call (415) 587-3424.



"It's 10:30 p.m. Do you know where your brain cells are?"

1-800-DREAMS. It can happen to anyone. You wake up toward morning, jolted by a dream of amazing texture and emotion. The train you're riding glides into the station, and a mysterious woman, shrouded in veils and reeking of perfume, climbs aboard. The moon is bulbous, the atmosphere noxious, and just ahead, beyond sight, lies a terror you wish you could fathom before the continued on page 21

Art Appreciation

FICTION BY
BARRY N. MALZBERG AND JACK DANN

Glop.

There went another gallery-goer, an overweight middle-aged woman, earwax slung over the right shoulder, blue sunglasses, a peaked cap, long purple fingernails. The kind of woman you'd fantasize being eaten by a painting, perhaps. The kind of woman—a tip of the hat to Morden here—who made you want to burn every bed in the world. Glop. Glop. Into the Giacondo smile.

The Mona Lisa seemed to wink at Ewes and Evans struggled against the impulse to wink back. That would have made him a collaborator. He was definitely not that. He was witnessed with alarm. Horror, in fact.

The Mona Lisa
has a consuming passion
for her admirers—
so what's a poor art lover
to do?



Glop. Tourist disappeared head first into the maw of La Giacondo. This woman was the fifth within the hour. How long had this been going on? he asked himself once again, as if repetition could bring enlightenment. Had it been going on since the opening? Since Leonardo had painted the spindly wife of the merchant Pier Francesco del Giocondo? Could he have been her first adultery? There was a certain lascivious satisfaction in that thought indeed. Leonardo da Vinci unleashes the atom bomb of archetypes. Hateful man. But, alas, he could certainly paint.

All of this had its comic aspects, of course, and the indignity of exit was provocative, but



PAINTING BY RAFAL OLBIŃSKI

you were really dealing with tragedy here. Evans had to keep that in mind. This was his Blue Period, as he had decided to call it only a little while ago when the tourists started to slide away. It was no improvement upon the Yellow Period, which seemed to have gone on for several decades up to this point, but it looked as if it was going to be instructive. Alone in the gallery now, bereaved, he supposed, Evans could feel waves of satisfaction coming from the famous painting, along with the hint of a bitch: Well, what was he supposed to do? Arrest the painting? Turn in La Gioconda to the authorities? What did you do with something like this?

There was a whole clump of guards just outside the gallery, standing suddenly, pacing around, they represented. Evans supposed, a kind of authority. Should he go to them, point out that La Gioconda was gobbling tourists, waiting until only Evans and a straggler were there, then snatching the incautious traveler who came too close to the frame and inserting the surprised victim into a mouth grown not ambiguous but suddenly huge? The screams from the tourists, however brief, were intense enough to travel, but the guards had shown no reaction. The dangers posed by this kind of cannibalism seemed immense. Still, there seemed no proper way to deal with the situation. "Excuse me," he could say to one of the union guys carrying batons and small radios. "I don't mean to interrupt your conversation, but there's some very strange stuff going on here. I don't quite know how to tell you this, but—"

"Well, but what? This wasn't the kind of thing you could tell a stranger. The terms were imponderable. The worst sign would be indications of inter-



est and credulity. That would mean that he was being humored while reinforcements were called in. One-to-one things would happen. Evans himself might stand accused of killing tourists, *corpus delicti* or not.

Still, "Still now," he said to the Mona Lisa, the painting on special international loan placed high on the wall opposite, buttressed by heavy frame and protected by guys in the anteroom with batons and receivers: "I've got my eye on you, lady. You're not going to get away with this, lady. Evans is on the job and sees exactly what's going on here, which is why I'm keeping a safe distance. You're not getting away with anything in front of me." He pointed out quietly, meanwhile trying to maintain a reserve, a glacial calm. He knew he was safe if he stayed more than six feet away. "This is my Blue Period," Evans confided in a whisper. To a theoretical stranger he would appear perfectly insane; he knew, but there were no strangers in the gallery itself, just Evans and the painting. Oh, how they squealed and looked in their dismay. It was a grim thing to see. "I didn't intend it to be this way," Evans went on, talking to the painting as if it were an actual, a reasonable woman rather than an assassin. "I had plans, you know, but the economy got tight and how I have to fill up the days any way I can. You're not going to get away with this though, lady. We're going to take measures."

In truth, Evans knew this was pure bluff. He had no plans whatsoever. Shortly, the absence of the eaten would be noted and bureaucracy in its fumbling way would try to deal with the situation, but there was no way that this could fall within its lexicon. Detectives might get to the Bug-ganheim, but how could they possibly implicate a painting, even one

The
screens from the tourists were
intense enough to
travel, but the guards had
shown no reaction.

which was priceless? She wore an expression of utter innocence and had a terrific provenance. Her scheme was not only diabolical, it appeared foolproof. But, futile as it might be, Evans at least was on the case. "You're going to be stopped," he said harshly. "We're going to bring him to a conclusion." One of the guards outside moved to the doorway, put a hand on the sill, leaned peered in, an uncomfortable moment of gnawing brushing. Evans shrugged, shook his head, then stood. There was no point in appearing crazy, although this museum like millennial New York itself was filled with mumbler. He would fit right in. Everything fit right in, one way or the other.

It was time to go out on Fifth Avenue and ponder his next moves, anyway. Couldn't stay hammered in with La Giaconda all day not without attracting undue attention. There was more space out there; he would work something out. Trust not in Evans to abandon the situation, he thought hopefully. He would do something to avenge those innocent lives, protect others. Just as soon as he could figure out some means of approach.

The Yellow Period (he had not called it that then, had merely thought of it as his life itself) had apparently ended. Evans was vaulted into a new and difficult circumstance. Once, not so long ago either, Evans thought he had the whole project worked out, a series of activities (lack of activity, perhaps), which was a process of real accommodation. You couldn't be a remittance man all your life, not if you wanted to lead an active, useful existence in millennial times. You had to get out there to the mainstream, compete in some way. Furthermore, he had always been interested in painting, not creation exactly but certainly art appreciation, had felt that someday he would really pursue it. Take in all the museums, the better galleries, follow the more important exhibitions, and then when his head was filled with all of the finest in art, he would register at the School for Visual Arts and try some work of his own.

Well, why not? Look at what had happened to Pollock, Kandinsky, Van Gogh, Roualt, Burns, all of them. Picasso too and that mystic Chagall, foun- dered lives, preposterous charges which to everyone's surprise had worked out. Picasso had derived his first major success by painting whorls from his favorite cathouse in the shape of squares. There were thirty-year-old punks around who had been stamping up subway cars not so long ago, now picking up big money from the downtown

crowd. Evans had at least as much to offer as they did; he knew he had the talent. It was just a matter of bringing it out.

So the renovated Guggenheim with its imported La Giaconda seemed a good place to start. There had been a lot of controversy about using the Guggenheim for the site of the Mona Lisa loan, a lot of critics had thought that it should go somewhere else, somewhere larger, more important. If not the Metropolitan then at least the Frick.

But the Guggenheim needed an attention getter to bring its audience back and make a statement for the contributors. In their fervor to make this coup, the Guggenheim administrators broke, or perhaps bent, museum rules about acquiring and exhibiting only modern art. No small amount of emoluments, kickbacks, pleas, golf, sexual promises and maneuvers even less des-

sembled reasonable. People had been put away permanently, he suspected, for far less than the kind of reportage he was resisting.

Out on Fifth Avenue, watching traffic, Evans considered his ever-narrowing options. Not much movement on a cloudy Tuesday morning, even the remittance men were sleeping in. He discussed metaphysics with a pretzel vendor, wrote two letters to an old girlfriend in his head, the first filled with euphemism, the second desperate and scatological. He looked at a woman walking her poodle, feeling a thin and desperate lust, and shook his head. Undone by his own mindless need.

"Good, isn't she?" the pretzel vendor said politely. "You see a lot on these streets, don't you?"

"More than I would ever know," Evans said hopelessly.

"Know what?" the vendor asked. "Know who? As long as you figure that they were just put there to torment us you've got the right handle on the situation. It has nothing to do with getting and keeping."

"But what is getting and keeping?" Evans asked and then, before the conversation could get out of hand, backed away from the vendor. "We'll talk about it later," he said. "It doesn't matter." The vendor shrugged. "I should just go home. Evans thought, go back to remittance-men's heaven, go to my studio condominium in a reconverted downtown loft, get away from all this before I start to take it seriously. After all, none of this is my problem. If they want to come by and get taken away by a demented painter, that's their business. I'm not involved. I just happened to be on the premises. The only point is this. They aren't snatching me. As long as I'm not being picked up, what's the difference?"

But the argument seemed halting and unconvincing. It seemed to evade the issues, whatever those issues might be. Another good-looking woman earphones clamped, sharp notes of baroque streaming from the earphones like pennants, jogged by heedless of Evans's stare. He looked after her with confusion and a longing born of years of deprivation. She should stretch him up. She should do to him, Evans thought, what La Giaconda was doing with the tourists. Oh how he yearned to run after her, find a cab maybe, catch up, pick her up. It wasn't as if he was disfigured, or an idiot. It wasn't as if he had nothing to say.

He had plenty to say. Look at what was going on in the gallery. That certainly would be a way to make contact continued on page 68

• He hadn't counted on La Giaconda grabbing solitary tourists when the gallery was momentarily empty. That had not been part of the plan. •

Evans had been employed to lever La Giaconda from the Louvre for a six-month enlistment. It was worth it all for the prestige and publicity La Giaconda was something of a cliché, a joke really Evans had perceived from his assiduous researches, certainly not to be taken as seriously as might have been the case earlier. Picassos maybe, but a tourist phenomenon. So La Giaconda had ended up in the Guggenheim and so had Evans, starting his grand tour of what he liked to think of as his post-Yellow period, but he hadn't counted on the Yellow turning Blue so rapidly, he hadn't counted on La Giaconda grabbing solitary tourists while guards complained to one another in the hallway when the gallery was momentarily empty, except for the keenly observant Evans. That had not been part of the plan.

It was a disconcerting business that was for sure, and Evans was hardly positive that he was handling this properly. It probably was not a police matter, though. His instincts on that

W alking across the lawn stretching down from a New Jersey house, I marveled at the pristine prow-shaped living room dressed in white porcelain-glazed steel panels, at the curved, gleaming glass and long parapets spreading like wings to either side. As the sun burned off a morning mist, I couldn't help but

INTERVIEW

**FROM THIS
MOST APOLLONIAN OF
ARCHITECTS,
A TESTAMENT TO THE
GLORY
AND RESILIENCY OF
THE CITY**

notice that the place was dust-phobic clean. Just then, its owner appeared on the parapet. "Is it clean?" she called out. "Yes," I replied. clean and pure of form.

He is known for the whiteness of his buildings, a whiteness inside and out, calculated to take advantage of the penetration of natural light, which he deploys to

script spatial relationships between walls, floors, ceilings, objects—and people. The changing light, he says, keeps the space alive.

At 58, Richard Meier is not the fresh-faced new architect of the moment, whose startling forms, revolutionary materials and bold ideas are blazing the way for a vacuum-packed City of Tomor-



RICHARD MEIER

PHOTOGRAPHS BY VICKY KASALA



now. Instead, in cities across Europe and the United States, this modern master is executing meticulously designed buildings that expand the ideas for which his houses are celebrated: livability and harmony rather than outsized cacophonous forms that confound both the people who use them and those who must navigate the urban terrain they command.

That may seem like no big deal, except that this is a time when cities struggle warmly to recover from sweeping losses in population and industry and the concomitant decline in tax revenues and services they pay for. The landscape is fusing into one sprawling suburb, an endless mall punctuated only by desolate ghettos. In this context, Meier's buildings are a testament to the future of the city, one where buildings and public places have an inviting, purposeful scale relationship with one another and with the people who use them. Cities can be reborn this way, through an understanding of how architecture is not just a presence, but a participant in the life of a community, acting as a bridge between neighborhoods, creating a gathering place, encouraging public life.

Meier works in the concise language of the modern

movement, whose pioneers, from Le Corbusier to Mies Van Der Rohe, used technology rather than historically derived decorative flourishes to determine their buildings' shapes. The last 20 or 30 years have seen that spirit fall out of favor for a fast-changing succession of trends and styles. Meier, however, has continued to refine the modernist tradition, adapting technology not as a ridiculous universal solution, but as a tool for solving a variety of problems. "Each situation, each project," he says, "is different."

As a teenager, Meier worked summers for a Newark, New Jersey, architect in whose office he discovered that he loved "designing and creating." After graduating from Cornell University, he moved to New York City in the late Fifties and worked for a brief time in the office of Marcel Breuer, another important figure in the Modern movement. Meier even tried painting, sharing a studio with Frank Stella, who remains a close friend. Making his mark through the Seventies with crisp designs for several houses and some modest but impressive institutional buildings, Meier came into his own as a civic architect with designs for the High Museum of Art in Atlanta, and



**"WHITENESS
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I'M INTERESTED
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IN DIFFUSING IT."**

the Museum of Decorative Arts in Frankfurt, Germany. These buildings helped the architect learn how to weave large structures into urban and suburban sites, a skill that has led to Meier's current crop of large institutional buildings.

Building design and city planning were once "top-down" activities imposed by architectural fiat. But increasing concerns for security, universal access, and community involvement now threaten

to reverse the process, something Meier finds difficult to swallow. He deplores the growing numbers of walled suburban communities—feudal settlements mandated by urban decay—and the growth of "consensus" architecture—the rush to interfere in building design by community activists who fear change in the status quo. "They don't represent the community," says Meier of a group that has lobbied for changes in the Getty Center design. "They represent themselves as members of the community."

Earlier this year, he served as one of three Americans on a jury that from 850 entries selected the architects and master plan for the redevelopment of the central-government sector of Berlin. Meier found the political infighting extremely frustrating, although he praises the clarity (and, of course, scale) of the winning selection. "It was surprisingly democratic," he shrugs, "but I would rather have designed it myself."

—Peter Slatin

Q: Where do you see yourself and your work? **A:** Architecture is a continuum; each generation informs the next. The work of Le Corbusier or Borromini or Bramante—it's all important. CONTINUED ON PAGE 48



ANTIMATTER

UFO UPDATE:

UFO buffs may be unwitting pawns in an elaborate government charade

For decades, UFO buffs have delighted themselves with tales of crashed saucers and government cover-ups of recovered aliens and ships. They have dedicated themselves to "digging out the truth" and "exposing the government's deceptions." Now, in a delicious irony, a famous UFO case may actually involve a real U.S. government cover-up, but UFO buffs are on the wrong side. Instead of exposing the truth, they may be unwitting pawns in the deception.

The case in question involves the alleged crash of the so-called "Kecksburg UFO," recently featured in magazines and even reenacted on TV. The cone-shaped object supposedly fell to the ground in western Pennsylvania on December 9, 1965. As the story goes, Air Force search teams cordoned off the wooded area and hauled a large object away. It was later reportedly seen at the Wright-Patterson Air Force Base near Dayton, Ohio.

One suggested identity for the mystery intruder was the Soviet Kosmos-96 satellite, which actually did fall back into the atmosphere that day. But according to Air Force spokesmen, that craft had plummeted 12 hours earlier over another part of the planet.

It was a shame, of course, because Kosmos-96, a failed Venus probe whose booster had blown up in parking orbit, would have been a wonderful UFO. The reentry capsule, incorporating the latest Soviet missile warhead technology, was shaped like a squashed spheroid with a sliced-off top—in other words, like an acorn.

That's why in May of 1981, the Pittsburgh Press decided to verify the Air Force claims on its own. Toward that end, reporters obtained official space-tracking data from the archives of the North American Air Defense Command in Cheyenne Mountain, Colorado. The decades-old data finally arrived in the form of eight "snapshots" of the satellite's orbital position. The last snapshot, when projected forward in



space and time by a leading amateur satellite watcher who doesn't want his name revealed, seemed to confirm the official Air Force account.

But going on a hunch and tapping my own expertise in space operation and satellite sleuthing, I decided to check the data myself. The released tracking data couldn't be positively identified with specific pieces of the failed probe. It could have been the jettisoned rocket stage or a large piece of space junk. The probe itself

could have been headed off toward Kecksburg.

But why in the world would our government lie? In the 1960s, U.S. military intelligence agencies interested in enemy technology were eagerly collecting all the Soviet missile and space debris they could find. International law required that debris be returned to the country of origin. But hardware from Kosmos-96, with its special missile-warhead shielding, would have been too valuable to give back.

Hard-line skeptics still doubt that anything at all landed in Pennsylvania. Robert Young, an investigator from Harrisburg, keeps finding new holes in the claims of alleged witnesses. "I'm now more convinced than ever that nothing came down in Kecksburg," he says. And arch skeptic Philip J. Klass attributes the poor NORAD data to "foul-ups, not cover-ups."

But those of us who've studied the relationship between U.S. military intelligence and the former Soviet Union still wonder. After all, what better camouflage than to let people think the fallen object was not a Soviet probe but rather a flying saucer? The Russians would never suspect, and the Air Force laboratories could examine the specimen at leisure. And if suspicion lingered, why UFO buffs could be counted on to maintain the phony cover story, protecting the real truth.—JAMES OBERG

*Editor's note: James Oberg, a veteran space-space sleuth, is author of *Uncovering Soviet Disasters*.*



ANTIMATTER



PSYCHIC MALLS

To most people, malls mean one-stop shopping for clothes, CDs, appliances, and more. But thanks to Shirley and Vincent Tabatnecks, owners of the

New Jersey-based Ad-Com Psychic Fairs, many people are adding psychic readings to their shopping lists.

At \$17 for a 15-minute reading or \$32 for half an hour, shoppers can

choose from a cornucopia of psychic options at the Ad-Com tables in a mall's center court. They can have their palms or tarot cards read, learn about past lives, or consult clairvoyants, numerologists, or runestones readers. Shoppers can even get a reading about a friend, lover, or family pet. "Hundreds of psychics work for us on a freelance basis," says Shirley, a former disbeliever who now gives psychic consultations herself.

As an extra bonus, Ad-Com guarantees its readings. "If at the start of a reading a client isn't relating to a particular reader, the client can

choose someone else at no charge. Even psychics have off days," Shirley explains. "One reason for our success is that we're reliable."

Anyone interested in Ad-Com's Psychic Fairs will be most likely to find one in New York, New Jersey, Connecticut, Pennsylvania, Massachusetts, and Florida, although the Tabatnecks have brought their business to 25 other states as well. The company also holds weekend fairs at six New York, New Jersey, and Connecticut hotels. To locate the next psychic fair scheduled near you, call Ad-Com's 24-hour hotline at (201) 318-9511.—Anita Baskin

FIELD GUIDE TO THE SASQUATCH

You're hiking through the woods when you spot some 17-inch-long footprints in the soil below. Do they belong to a hulking brown bear, a New York Knicks player on vacation, or the elusive Sasquatch, the half-human, half-ape critter commonly called Bigfoot?

The recently published *Field Guide to the Sasquatch* by Washington State nature writer David George Gordon, also author of field guides to the bald eagle, gray

whale, and orca, can help you decide. The guide offers a history, physical description, and suggested Sasquatch family tree. It also lists previous documented Sasquatch sightings from California to British Columbia.

But according to Gordon, the real meat of the book is the section on how to confirm a Sasquatch find. "People need to know how to document what they're seeing—usually footprints—so that science can substantiate or deny their claim," he says. Among the hints for the would-be Sasquatch-

watcher: Write a full description of everything you see, take photographs of the sequence of footprints and the surrounding scene, and contact the police.

Gordon, who has never seen a Sasquatch himself, believes there isn't yet enough genuine evidence for or against the existence of the creature. But he hopes that someone who reads his guide "will bring in new data that proves it's real." To order a copy for yourself, call Sasquatch Books at (800) 775-0817.

—Anita Baskin

SWAN SONGS

Most hospitals employ doctors, nurses, nutritionists, and aides. But St. Patrick Hospital in Missoula, Montana, is the only health-care facility in the country to retain 24 harpists-in-residence as well. The reason: It's the first program ever in music thanatology, a technique that uses harps and voices to help the dying disengage from pain as they take leave of the world.

The program, dubbed the *Chalice of Repose* Project, was founded by

Theresa Schroeder-Sheker, a former music professor who worked in a nursing home as a student. Shocked by the treatment accorded the dying, she decided to do something about it, and the seeds of music thanatology were sown.

St. Patrick provides the service for any patient requesting it, Schroeder-Sheker explains. At its best, she says, music thanatology can ease the dying process by reducing pain, slowing vital signs, and decreasing the agitation of coming face-to-face with the unknown. "In some exceptional cases of excruciating pain," she notes, "music can affect us in ways that

morphine cannot."

Schroeder-Sheker is so committed, in fact, that she has recently created a two-year certification program for music thanatologists. The 20 students currently enrolled include "several artists, an architect, a nun, you name it."

Is there a need? Obviously, says Schroeder-Sheker, since "we will not have enough graduates for the agency inquiries coming in."

—Paul McCarthy

DYING PATIENTS AT ST. PATRICK DISENGAGE FROM LIFE WITH THE HELP OF HARPS AND GREGORIAN CHANTS FROM THE MIDDLE AGES



FAXING GOD

For centuries, Jews have inserted written prayers into Jerusalem's Western Wall—also known as the Wailing Wall—which is all that's left of the holiest place in the Jewish religion—the second Temple, razed in 70 C.E. "It's as close as we can get to where the presence of God physically resided among us in the earliest days," explains David Blumenthal, professor of Judaic Studies at Emory University in Atlanta. Obviously, not every Jew can visit the Wall. Recently, however, modern technology has come to the rescue; thanks to Bezeq, the national telecommunications company of Israel, you can now fax a message to God.

According to Elaine Friedman of Bezeq, prayers faxed to the company are gathered each evening, carried to the Western Wall, and slid into crevices in the stones. The service, started early this year, was immediately flooded with calls and regularly handles 70 to 100 messages each day from all over the world.

As for Blumenthal, he sees no theological problem with using a fax to reach God. In fact, down through the centuries, it has been acceptable to have someone speak



your prayer in the Wall if you can't do it yourself. Says the professor, "The new technology simply enables you to make the telephone company your messenger."

To contact God via Bezeq, fax your message to 011-972-3-612-222. There's no fee other than the cost of the fax call.

—Sherry Baker

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LANGUAGE

CONTINUED FROM PAGE 10

Entertainment Tonight!

Darth Vader Another particularly powerful image from the Star Wars trilogy emerges in the form of arch villain Darth Vader. The image, says Monique Ulmer, may possibly represent the dreamer's feeling that he or she is hiding behind a mask. Darth Vader is also a familiar presence in children's dreams, says Gayle Delaney. He often reflects concerns about the excessive need for emotional control involved in growing up and relinquishing the natural playfulness that most of us associate with childhood.

Murphy Brown Ever since former vice president Dan Quayle made a campaign issue out of Murphy Brown's decision to become a single mother, this fictional television character has been showing up in unscheduled reruns in the theater of the unconscious. Her appearance in a dream can symbolize the independence of a woman who insists upon making her own decisions as well as disapproval by a father or other authority figure. Because many women's groups disliked Murphy Brown, however, her image may also represent a woman finding strength in the support of other women, especially in the face of unjust attack.

The Kingpins Although symbolic puns are relatively rare in dreams, they do occasionally show up in surprising ways. A dreamer who was concerned about becoming too dependent and "clingy" in her relationship with her mate recently reported a dream in which she envisioned herself as one of *Star Trek's* notorious Kingpins. These futuristic primitives can also represent a dreamer's image of another person such as a boyfriend or colleague, whose nature is combative and perhaps destructive.

The Politics of Dreaming

Saddam Hussein "Unless an American has a personal relationship with him," says Lorna Flowers, "Saddam Hussein probably represents an authoritarian and ego-centric individual, or the dreamer's own tendency to bully others. If you know Saddam Hussein and he's your benefactor, however, you might dream of him as a powerful advocate who assists you in meeting your life goals."

Hillary Rodham Clinton According to Gayle Delaney, the dream image of Hillary can serve as a positive role model for women seeking greater independence. The first lady may also represent a powerful ally coming to the rescue of

women who feel oppressed. "Of course," adds Delaney, "if you're a staunch Republican, she might represent a threat to family values."

Bill Clinton The symbolic significance of President Bill Clinton is often affected by the political perspective of the dreamer. While liberal Democrats tend to envision President Clinton as a positive and heroic role model and father figure, conservative Republicans are more likely to see him as a spendthrift and philanderer. Regardless of the dreamer's political affiliation, however, the president of the United States consistently represents power, authority, and influence.

Princess Di To some dreamers she represents the desire for glamour and celebrity. To others, she represents a suicidal and desperate woman, one who has been mistreated by her husband and is ultimately isolated and un-

of similar people in the dreamer's life."

Nazis Although this deeply disturbing image has haunted the sleeping consciousness of dreamers since the rise and fall of Nazi Germany, it has taken on a greater sense of immediacy with the frightening emergence of neo-Nazi political movements in the United States and Europe. Widely used by dreamers as a symbol of severe oppression, Nazis can represent anyone who exerts a malevolent level of control in your life. "If you dream of a person who you see as a Nazi and you describe a Nazi as someone who will do anything to have things his or her way," says Gayle Delaney, "you're in a lot more trouble than if you dream about a Chinese Communist who is very controlling but isn't necessarily going to eliminate an entire race of people. Nazis can also represent a destructive force in your own personality as well as a person in fear for your life."

Getting Technical

Computer Terminals "Computers have become such a constant presence in our waking lives," says lucid-dream researcher Stephen LaBerge, author of *Exploring the World of Lucid Dreaming*. "It is only natural for them to show up in our dreams." People learning to use computers often tap that experience as a metaphor for gaining new capabilities and developing greater self-confidence in other aspects of their lives. The meaning of a computer in a particular dream, however, depends on the context in which it appears. It can, for example, represent the dreamer's fear of overloading, crashing, becoming prematurely obsolete, or even suffering the sexual embarrassment of a malfunctioning floppy disk. The absence of a dreamend computer may also be significant. People who dream about a manual typewriter instead of a computer these days could be feeling inadequate and uncomfortable," says Lorna Flowers. "They may be feeling old and chunky and are perhaps dealing with the loss of their young sexuality and power."

Automated Teller Machines Virtually unheard of 20 years ago, 24-hour automated teller machines (ATMs) have quickly become an essential convenience of fast-paced modern life. Dreamers who undervalue their own self-worth may find themselves standing at an ATM that provides them with more money than they thought they had in their account. On the other hand, those who feel frustrated about not getting all they feel they deserve in their career or personal lives may find themselves standing before an ATM that

• When
Prince Charles inhabits
your dreams,
he may represent an
uptight and
rigid authority figure
who withholds
affection from others. •

happy despite her outward image of popularity and success.

Prince Charles To some, he represents a charismatic philanthropist committed to the environment and the arts. These days, however, many dreamers invoke his image to represent an uptight and rigid authority figure who withholds affection from others.

Anita Hill To dreamers convinced Hill was sexually harassed by Judge Clarence Thomas, says Lorna Flowers, she may symbolize a victim with the courage to stand up for her principles and fight. Those who do not believe Hill, however, see her as a symbol of insincerity and exploitation.

Clarence Thomas If dream reports are any indication of widespread perceptions, Clarence Thomas has not fared well in the court of public opinion, despite his appointment to the Supreme Court. "Thomas is widely seen as an individual who was promoted because of his political affiliation rather than his competence for the position," says Flowers. "He has therefore become a caricature

won't release any of their funds.

Cellular Phones: Once exclusively a part of the technological repertoire of science-fiction characters like Captain Kirk, pocket communicators are now considered commonplace equipment for anyone from corporate executives to college students. Cellular phones have come to symbolize instant communication and independence as well as personal power. A woman dreamed of being accosted in her home, for example, and envisioned herself pulling a cellular phone out of her pocket and dialing 911 to summon the police. According to Gayle Delaney the dream expressed the woman's confidence in her ability to call upon her own resources to get the help she needed rather than depending on others to make the necessary connections for her.

Robots: "Robots are very scary non-people in dreams," says Gayle Delaney. "Usually they're about to do something bad and have no feelings. They won't listen to reason and are on automatic." If you have a dream involving robots, Delaney suggests, you might wish to ask yourself who or what in your life is putting you in a situation in which you feel out of control and dehumanized at an extremely fundamental level. The situation may involve unreasonable pressure at work, or it may involve an especially unpleasant personal relationship.

Headline News

The Federal Deficit: Dream about the federal deficit, says Lorna Rowens, and you may be creating a metaphor for your personal financial situation. A man who felt guilty about his spendthrift tendencies, for example, dreamed his father was lecturing him on the federal deficit and telling him that it was responsible for him to have allowed the country to get so deeply in debt.

Crack: With substance abuse and drug addiction becoming a burgeoning social problem that consistently grabs the headlines around the nation and the world, it isn't surprising that this unsettling trend often shows up as a prominent theme in many of our dreams. Often such dreams concern the emotional trials of dealing with a major drug supplier, reflecting the dreamer's concerns over becoming too dependent in a personal relationship.

Endangered Species: As more and more species near the threshold of extinction, dreams about endangered animals are reportedly becoming more common. Often such dreams indicate that the dreamer feels endangered and even suggest an underlying sense of helplessness. ☐

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DREAMING

CONTINUED FROM PAGE 83

train moves on. What gives? Unless you're currently in psychotherapy or part of a dream workshop, you may never know. Now, however, dream researcher Gayle Delaney, codirector of the Delaney & Flowers Dream Consultation Center in San Francisco, has joined forces with DreamScene Partners, a group interested in dreams. Their endeavor: a 800 number aimed at helping callers understand their dreams.

When Vince Cannon of DreamScene called Delaney with the idea about nine months ago, her response was just about what you would expect from a highly respected academic with multiple publications to her credit and a PhD from Princeton University: "Are you kidding?" she asked. But DreamScene pursued Delaney, finally convincing her that the 800 number could be handled responsibly and provide a public service as well.

"We feel this number can aid the cause of national education," states Delaney. "Many people who wouldn't even read a book on dreams will call this number and gain a better understanding of their dreams and themselves." According to Delaney, the phone lines will be manned by dream consultants with backgrounds in psychology as well as a few chosen laypeople. The caller will relay the details of the dream as briefly as possible, communicating what Delaney calls "the major action, the major image, and the major feeling."

Says Delaney, "We all dream our own private images, and no dream dictionary can tell you what the dream means." But the hotline's consultants will pose a series of questions that are specifically designed to help dreamers intuit the meanings of their dreams themselves. Callers must be at least 18 years of age, and each call will last from 10 to 15 minutes at a cost of \$3.99 per minute. The 24-hour hot-line numbers are (800) 820-0020, (800) 903-2345, and (800) 454-6667.

Dream Catchers: According to ancient Indian legend, a silvery net adorned with feathers could catch nightmares like a spider's web catches flies, preventing them from entering the brain of the dreamer and causing woe. The same net is said to reflect the wonder of good dreams, allowing them to pass through the hole to the dreamer's conscious mind.

The legend of the dream catcher is famous in the country near Taos, New Mexico, where Joyce Poteat arrived

The Artist

© ART CUMINGS

What do
you think?



It lacks
a focus



Brilliant
touch —



How
can I ever
thank
you?



Promise
my ability
to draw flies
remains our secret!



last June without a job. Struck by the popularity of three plate and basket-like items, she decided to try her hand at making one herself.

Joyce's rage-to-riches story adds to the popularity of dreams. She started crafting dream catchers of her own at home in August 1992, and some nine months later she had orders for \$2,000 worth of dream catchers in three weeks alone. Overwhelmed by orders, Joyce now subcontracts some of her assignments and has taken on apprentices who are learning to wrap metal rings with leather and to weave. What's more, Potest has managed to expand her business to include dreamcatcher sterling-silver earrings, pendants, and greeting cards.

"When I first got to Taos, I had no money," Potest explains. "Now I have a two-story adobe house with passive solar. People tell me that I remind them that *Cinderella* came to life."

To order a dream catcher, write to Potest at 218 M Plaza del Pueblo Norte, suite 205, Taos, New Mexico 87571, or call (505) 751-2340. Dream-catcher prices range from \$8 to \$100, depending on the size and the design; the standard nine-inch model costs \$27. All orders are accompanied by a card embossed with a poem written by Potest's partner, Bob Goldsack.

Dream catcher legends
say dreams in the night
will pass through the webbing
before the dawn's light.
Bad dreams will stop
and pass out of sight,
and good dreams are caught
for your spirit's delight.

Light-and-Sound Machines. A consummate technology buff, entrepreneur George Szalless made his first fortune in the 1970s with a chain of personal-computer stores throughout Maryland. "There were no other such chains around at the time except for Radio Shack," Szalless explains, "and we were there from the beginning."

If his first venture was prescient, his next may be equally ahead of its time. Szalless is now manufacturing what experts say is a state-of-the-art light-and-sound machine, the Mind Gear PR-2X. "The light and sound work to unchain your brain waves," Szalless explains, "so that they take on the frequency at which you've been stimulated, like a tuning fork. The pulsating lights and sounds also overwhelm your senses, much like the shamanistic beating of drums, fatiguing your mind until part of it shuts down, allowing your dreaming mind to come to the fore."

If you listen to audio tapes with sounds evocative of streams, crickets, and the like, you'll find it easier to enter those scenes and render them real while using a light-and-sound machine because the stimulation will occupy your consciousness, which will eventually become inured to the outside world and start to check out.

For dream buffs, adds Szalless, "a programmable light-and-sound machine like ours is best, because it allows you to create your own program. Let's say you want to have flying dreams. First, you might play a tape with music that seems compatible with flight. Then you can think about flying while the machine induces theta waves, putting you into the hypnagogic state characteristic of intense imagery and dreams. You'll be likely to have what we call a 'walking dream,' near the edge of consciousness, that includes images of flying. This will help you prime the pump for flying dreams at night."

Szalless' multimillion-dollar Concord, Ohio, firm, Mind Gear sells nothing but light-and-sound machines. For information on the Mind Gear PR-2X at a cost of \$299, call (800) 525-MIND.

Other light-and-sound machines useful for dreamers include the highly portable O-A VI D Paradise, the affordable Shaman, and the MindEye Synergizer, which hooks into your personal computer. These machines and others can be ordered from the consciousness catalog profiled below.

Consciousness Catalog. For the purveyor of dream items, it might seem like acquiring the best requires special inside knowledge and journeys around the world. But these days you can access much of the new dream technology from your living room with help from catalogs specializing in consciousness. The king of consciousness catalogs is *Taste for Exploration*, founded five years ago by Terry Patten, a one-time real-estate and financial services professional. Tired of the same old grind and interested in maziers spiritual, Patten explains, he and his wife Leslie sold their house and cars and furniture and bought a couple of one-way tickets to Hong Kong.

"We wandered around Southeast Asia for about six months," Patten explains, "and when we came back, we wrote a book called *Breakthrough*. By now both mystic and businessman, Patten began selling his book by mail order. His effort was so successful that he soon started selling other consciousness products as well.

He was drawn, for instance, to Michael Hutchison's book, *Magnesium*



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which triggered the worldwide brain-technology revolution in the first place. Hutchinson helped Patten choose the best of the consciousness technology for his catalog, including light-and-sound machines, biofeedback machines, lucid-dream machines, and a host of books and tapes.

One rare gem found in Patten's catalog is a Japanese product known as the Electronic Mind Pyramid, which provides brain-wave information that enables dream trippers to sustain the coveted theta state characteristic of dreams. Another product is the Stress Shield, which bathes the eyes in an undifferentiated field of colored light in red, green, or yellow. After about 20 minutes of use, the visual field changes of color, and the individual enters a deeply relaxed altered state of consciousness associated with intense mental imagery and waking dreams.

The catalog also offers flotation tanks, lucid-dream tapes and books, audio products that use tonal sounds to induce brain states associated with intense waking imagery and dreams, and virtually every lucid-dream machine available on the market today.

"I owe the success of my business to a passion for changing states of consciousness and a steady, long-term

view," Patten states. "We were able to supervise our employees and plan for the future, and when other similar catalogs succumbed to ills in the business cycle, our book ate those minnows in the sea and got to be a bigger minnow. We have 12 employees and are unique in what we do. You can order the Tools for Exploration catalog by calling (800) 456-9887."

Also recommended for those interested in dream books is a catalog called Megamind, which can be ordered at (800) 765-4544.

Sinus Minds. We've all been to high-tech fitness centers, complete with Lifecycles, StairMasters, and more. But now, in a twist on the all-American health club, New York City entrepreneur David Adler, a systems analyst, has recently opened Sinus Minds in a temporary studio at 455 West 43 Street. At this new "brain fitness center," clients can tap a circuit of high-tech consciousness machines used to enhance mental well-being and sharpen the mind. The modest facility currently provides the public with easy access to a host of light-and-sound machines, the latest stress-reduction technology, including biofeedback and "bio-load-in" equipment, "waterfall" chairs, and dry flo-

ation tanks, which envelop users with a membrane-covered gel instead of water.

According to Adler, the gym is a special haven for those pursuing the realm of dreams. One interesting option is the "dream chair." Somewhat like a Banzai bouncer with the supersonic sounds and sensations of a waterfall inside, the chair lures many users into a deep and restful sleep from which pleasurable dreams may result.

The host of light-and-sound machines and myriad tapes can be used to invoke a variety of intense waking dreams. In one elaborate form of the light-and-sound machine, known as the Star Kid Travel Chamber, dream seekers enter an enclosed, mirrored capsule that induces brain waves associated with intense daydreaming or the semi-conscious hypnagogic state, a prelude to lucid dreaming. When Adler expands his facility, hopefully sometime this year he says, he'll install a spectrum of lucid-dream machines as well as mood rooms that immerse the user in elaborate altered realities, often generating waking fantasies and dreams.

For those with cerebral fitness in mind, the cost of a Sinus membership is \$100 a month. A single session costs \$20. For more information, contact David Adler at (212) 757-1800. **DO**



"You dare to garnish my wages?"

CREDITS

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The jogger was wearing pink sweatpants and a red T-shirt. It made him crazy watching her slowly diminish, like a favorable weather condition being undone by cosmic dust. The cleanliness of his desire overwhelmed Evans then as it often did and he shook his head hard to push all of it away and walked back into the museum showing his hand stamp. I don't know why I'm going back, he thought. I don't know why I'm bothering with all this. I've seen all there is to see five tourists gobled and every angle of La Gioconda. And two women, one in red and pink, the other avocet green, who wouldn't look at me twice. If I were up there on the wall with Mona. Maybe that was the point. Maybe that was what he was driving toward. He thought of the School of Visual Arts, what an insult it was to him. If he could only get on that wall, become a simulacrum of himself.

Hell, if Leonardo da Vinci could do it why couldn't he? Wasn't La Gioconda supposed to be a portrait of the artist? Hadn't Evans heard a gallery guide putting forth that very possibility to a group of disbelieving tourists? Hadn't someone in fact used a computer to prove a point-by-point congruence by judging La Gioconda with Leonardo's red-chalk self-portrait? Take one part Leonardo's face and one part of La Gioconda and presto—you have the world's most enigmatic smile, the simulacrum to end all simulacra, eternal art. One need only follow the recipe.

Glop. It was all too abstract for him. The gallery was still empty, the guard hinging around the hall nodded to him as he walked by. There in the corner, invisible from his first angle, was yet another pretty woman. Indeed this was his morning for them. This woman looked somewhat like his jogger, all in red, though, a red dress, yearning wax-on expression, a handbag clutched against her small breasts. She was ached like a boy staring at the Mona Lisa. Somehow she had gotten into this room, gotten into the Soggetto, gotten through all of her life up to this point without Evans having ever seen her. Maybe she had come from the upper corridors, examining Bengal sculptures. Of whatever provenance, she was extraordinary, in his sudden and lingering mood Evans felt he had never been so struck by anyone. Sensitively came from her eyes, from the angle of her handbag, from the intelligent anguish-tint of her head, as she

searched the eyes of La Gioconda for meaning.

"Hey, he said quietly. You shouldn't do that; I don't mean to intrude, I mean I'm not trying to come on like a masher or something, but you shouldn't lean into the painting like that; it's dangerous, you know what I mean? You're alone, something might happen— He was babbling, that was all. In any event she did not hear him. "Please," Evans said, "I'm just trying to be helpful, that painting is a masterpiece all right but it's very threatening—"

Who was threatening? Who was acting like an idiot now? He stopped talking, sized up the situation with shrewd and caring eyes, then began to move toward her thoughts of rescue in mind.

This is ridiculous, Evans thought. I'm making a fool of myself. It was humiliating not even to be noticed. If he was going to lose control like this, then he should at least shed anonymity, make some kind of explanation. Was this the real problem? He had never really been observed, never been the object of love and focus and interest, never had a sense of real connection. No wonder La Gioconda wouldn't set him. He couldn't even establish a relationship at the point of consumption.

"Excuse me," he said very loudly to the woman in red. "You shouldn't do that, please—"

Now it seemed that he had caught her attention. She had fine tense lips, an openness of expression, an enormity of mood into which Evans felt he could suddenly plunge. He suddenly and truly loved her. As he stared at her in this moment of revelation, he had never been at such a distance in his life.

"Do what?" she asked. "What are you taking about?"

"The painting," he said hopelessly.

I want to tell you about the painting. The woman put both hands on her pocketbook, backed a crucial step away from the Mona Lisa. Her cheekbones cast light, cast swift intelligence. Oh, he was definitely communicating, getting something through now. He had taken her a step away from the painting, and that was definitely progress.

"I don't understand," she said. "What do you mean?"

Her face showed interest, but it was that of the student, of the appreciator of art, of the listener to a recorded guided tour. The handbag could have been a device whispering words of information as she rubbed it subtly against her face, her ear. Allotent, no possibility. Evans thought of calling for a guard, then put that thought away. It was hopeless. There was simply no way of dealing with the situation. I should

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have followed the jogger instead, he thought; I would have had fresh air, and she would not have been in danger.

"I don't know what I mean," Evans said abruptly. "I'm just trying to tell you about that painting. You shouldn't be near—"

"Do you want something? What do you want?" Displeasure streaked her beautiful features now; she seemed to be plunging toward a tunnel of accusation. Evans could pick up on those signs, too. He had had plenty of experience at a difficult mid-yellow point of life. "Why don't you just go away," the woman said.

Well, there was nothing to say to that. Evans had nothing to say. If he wanted to, which was a reasonable possibility, he would confirm her impression, but then he would leave her exposed to the *Mona Lisa*, smash and grab. Meanwhile, the guards were no factor unless she began to scream. She could start screaming very soon, though. Evans had the feeling that he was working within narrow perimeter here. Although he had the smallest possibility of achievement, he had to plunge on. "You're very pretty," he said. "You're beautiful in fact. But you're too close to that painting. Move back, another step."

Are you a member of security?

Yes. If you will. If you want to call me that. I'm trying to keep you secure, can't you see?

"You don't look like a security person," the woman said, not pleasantly. Degas seemed to be sleeping, along with confusion, into her sensitive features. "I don't think you're on staff at all."

"You don't understand," Evans said. "The painting is only on loan."

What does that have to do with anything?

"It's not permanently ours. It's a bell-and-switch game. It picks up and re-assembles in France, maybe. The population problem—

But now she had clearly reached an opinion as she backed slowly away from him. But at least she was moving away from the painting. Opening up space. That was the important thing. Evans followed her irresistibly. They moved in tandem toward the door. Now, for the first time the guards seemed to take an interest; they peered in.

"One moment," Evans said. "Uno momento. I have to tell you something. I wanted to say how beautiful you are. You're a whole gallery in yourself."

The woman turned, as if ready to break into a full run. At least I've saved her, Evans thought. This is a dangerous situation, very pernicious, hardly exploitable, but at least I got her out of this

"So listen to me," he said. "Before you go away, before you talk to the guard before you complain, you've got to understand my angle here. It's not just because you're beautiful. It's because—"

Obviously, he had not put this the right way. She ran away, the red and brown handbag flapping like a decapitated bird. The guards were crooning to one another, then seemed to make a collective decision. They advanced.

Evans reversed his course, backed, moved toward the painting. There was simply nowhere else to go. "Hold it," a guard said, "just hold it right there, pal, we want to talk to you." Talk did not seem to be properly in his mind, however. The guard seemed enormous, a club extended like a baton from his right hand. He was conducting the others into a massed assault.

"Oh, damn," Evans said hopelessly. He scuttled toward the painting. On his right shoulder then he could feel a burning touch, a grasp of enormous assurance and power and then smoothly, inexorably, he felt himself moved upwards. Gug, he thought. Glop. He was too high now to see the guards or to judge their reactions; he seemed quite out of control, and yet, at the center was an awful certainty.

He felt the pressure and the wind as he was drawn.

You don't understand, he thought. "You don't understand," he wanted to say to the guards. He wanted to explain somehow, tell them about the floating, righteous woman, the vanished jogger, all of the vanished woman of his Yellow and Blue periods, but the words would not come. "This is dangerous," he wanted to say. "This is a dangerous place. I just wanted to save her, can't you understand that?"

It's not just its humanity, he wanted to say.

Glop.

No, it seemed that they could not understand that. Evans was plunged into a clinging darkness, damp, cold certainly pressing around him and then, shocking, he was falling. I wonder if there's anything down there, he thought. I always wanted to see Venice in its seasons, see the colors of the old Renaissance. Maybe that's waiting for me, maybe the others are waiting there, too, he thought. He thought many other things as well, but they do not fall into the scope of the present narrative. He is still thinking. He will be thinking for a long time.

Also, those further thoughts are not to be recorded.

He is not on exhibition, not exactly. Evans is on permanent loan. **OO**

INTERVIEW

CONTINUED FROM PAGE 70

to me in understanding the relationship of structure to space. What I do is different from what was done in previous periods, but always there is a relationship to human scale. That's understanding of spatial relationships is what is behind the certain uplifting value we give great works of architecture, the way we constantly marvel when we experience them. It's not so much what it looks like that concerns me, but the experience of being there.

Omn: How does American culture view architects and their work?

Meier: The general public doesn't distinguish between buildings and architecture. They look around and say "All these buildings are so terrible." But then 80 to 90 percent of houses built in the United States are just done by a builder putting up a shell. There's no architecture to it. And around our cities, many larger buildings look like there's no architect involved.

Omn: An architect is no guarantee of architecture.

Meier: True. But when there is, if it's not controversial, it probably goes without notice. If it is controversial, good or bad, at least someone has an opinion about it. Making a work of architecture is a tough assignment for both the client and architect. Unless you have a client who wants something better than the banality we see all around us, you're not going to get that. Most of the time, economics drive the situation to the point where what is the most expedient is what gets built.

Omn: What makes architecture an art as much as a building science or engineering field?

Meier: The way the idea of the building finds physical form. Your idea for a project can get beaten out of the end result by public agencies, clients, financing, a hundred things, so the idea is no longer in the built work. In that case you've failed.

Omn: What haven't you built that you'd like to?

Meier: A high-rise building. I'd love to build one in New York.

Omn: You don't think the high rise is a relic of the twentieth century, especially after the World Trade Center bomb attack early this year?

Meier: No. The high rise is still a valid building form, depending on where it is and how it was designed and built. But this bombing may threaten its existence. When the next building comes along in, say, Des Moines—basically a two- or three-story city with a few high-

rees—which might make sense at 20 or 22 stories, certain associations are going to say, "Ah, another World Trade Center!" It starts being used as a kind of symbol for anything that appears threatening, even if it's not.

In places other than New York, say, people are less enamored of high-rise buildings. They feel they're threatening in some psychological way. The World Trade Center bombing reinforces that sense of threat and alienation and in a sense justifies their fears. It will affect the building of high rises throughout the world where people want to do something out of scale—as these buildings already have been. Totally out of scale! Even in New York City! In Paris, the 28-meter height limit on houses makes sense. That's why people love Paris; that human scale, that quality of maximum limit. When the tower at Montparnasse was built, it was, "How did this happen? How was our scale destroyed by this one tower?"

The same thing happened when the Trade Center was built, yet without the public outcry. Why is it necessary in one stroke to change the scale of the city? Imagine a city of 110-story towers. It's our worst nightmare of the future. This drive, as we've seen in Chicago for 50 years, to have the highest tower, is absolutely ludicrous. I feel an appropriately scaled high rise will now meet with opposition fueled by the furor of the World Trade bombing.

Omer: Architects adore jargon, and one of the most overused phrases is "the urban fabric." What do you mean?

Meier: If someone asks, "What is the urban fabric of New York City?" I'd say it's the grid. If you go beyond the grid—as some buildings in midtown have—then the specific site is more important than the urban fabric. You can't build according to the grid and face the void. You respect the grid.

Omer: Does L.A. have an urban fabric?

Meier: I wouldn't have thought so before I was chosen as architect for the Getty Center. But when I started working there, I felt I needed to understand the urban fabric and how this site related. I discovered Los Angeles has a very strong grid that runs from the mountains through the valleys, shifting slightly in different places to accommodate the terrain. It's reinforced by the San Diego Freeway going north-south, Wilshire Boulevard going east-west, and Santa Monica Boulevard. Looking at the city from the Getty's hilltop site, you see the order from the desert to the sea, from downtown to Santa Monica.

Los Angeles gives its feeling of chaos from the incredible disparity of scale within that grid. You go from a

downtown of relatively dense, tall buildings out to a plain in which there is nothing to the west, then east through residential districts of two-story houses where in some places the grid is clear and in others it's not. It's like a wave going up and down from downtown to Santa Monica, where again there's a little hiccup and it goes into the sea. The Wilshire Corridor as it goes from downtown to Santa Monica shows pockets of high-rise buildings. Again, that's a relative term: 25 stories in a two-story district looks very tall. But these pockets will probably disappear over time, and there will be a walled corridor separating north from south. The higher the real-estate value, the higher the building. What's needed is a three-dimensional vision of what this city should be.

Omer: Whose job is that, to have this vision of the city?

Meier: I'd be happy to take the job.

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Again, you've got to respect the grid as we did in Paris and Ulm. The completion of Cathedral Square in Ulm has been the subject of 17 architectural competitions over the past century. It's been a parking lot bombed out, asphalted over—a horrible place. But it was never finished. The greatest Gothic cathedral in Germany sat in the masses of garbage for 400 years until the mayor had the vision to finally complete this living room of the town. There has been enormous public debate about this project because a lot of people liked it the way it was. It wasn't nice, but there wasn't a horrible modern insertion.

There are opportunities to make things happen within an historical context today that just are phenomenal and don't necessarily have to do with preservation or restoration but with insertions that make the old even better.

Omer: The Getty Center for Arts and Humanities will be a \$360 million campus—an urban project, museum, laboratories, a combination of public and private spaces. How does your design exem-

pify the Getty Trust's concern for the future of the arts?

Meier: I leave the future of the arts to those who are there. What I hope to provide is a physical environment in which all kinds of things can happen. Coming to this place will be a special experience, whether for the scholar, curator, visitor, the Los Angeles resident who wants to come every weekend, or the person from the Orient who finds this their first tourist attraction and therefore will see not only the Getty, but the Getty in relation to the city.

There's no other place in Los Angeles where you understand the city as you do from that site. It's absolutely unique: an isolated domain on top of a hill and somewhat inaccessible unless you come by car or bus through the freeway underpass. Ideally I'd like it to be more accessible. On the other hand, the site is so spectacular and so much related to the city. You realize you're part of the entire city in a way that's impossible from, say, the corner of Fifteenth Street and Santa Monica Boulevard, where you might be accessible but you'd be nowhere. I try to guide the visitor through the complex so that the views frame aspects of the city you can't see anywhere else.

Omer: How does the campus differ from the Salk Institute?

Meier: The Salk is basically a building, a research facility, where scientists go to do their own number. The communal spaces are basically only the plaza and a few meeting rooms. At the Getty, there is constant interaction.

Omer: You're aware that Jonas Salk wants to build an addition to the Institute, which many architects see as a sacred twentieth-century masterpiece by Louis I. Kahn. What do you think of Salk's plans?

Meier: It's complicated. Salk, who with Lou Kahn was instrumental in creating the great plaza, has chosen to modify it in a way that may partially destroy what he's created. It's not as though someone else is coming in and destroying the work. I think he's gone out of his way to listen to arguments against what he's been doing, but I lament that he hasn't been more receptive to the criticism. This is a mistake. Unfortunately, the Salk is not public. In our society people have the right to alter their own environments. In Europe this couldn't happen because it would be protected by law. In this country art isn't protected. I can go and paint over that picture [points to a Frank Stella painting] because I'm tired of that red.

Omer: In the mid-Eighties, you built a Venues Center called the Athenaeum in New Harmony, Indiana, where a nine-

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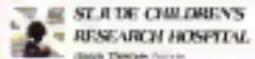


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teenth-century social engineer attempted to create a utopian society. How did you incorporate that history into your design for the building?

Meyer: The historical part of New Harmony dates back to 1826 and has a three-foot-high fence around it. Outside are the fields. We are outside that historic area, creating the path and the viewing platform for what was the utopian community. I think of it as a way of viewing, understanding, experiencing the past as you walk through the old part of New Harmony. We're jumping the fence into the nineteenth century. The utopian vision of New Harmony was a social vision. It had no physical manifestation. People lived together, slept together, and worked together, but the original drawings of the physical utopian society were never realized. What is there is just this farming town that grew up with log cabins and places to work. For me, the Athenaeum is not a utopian building, but one in which as you move through it, views are framed in relation to the particular place. It's based on a podium of earth above the Wabash river so that when flooding occurs, it doesn't go into the lobby but creates this incredible area of water around the building.

Omni: Your Canal Plus headquarters in Paris looks toward the twenty-first century. What were your intentions here?

Meyer: This building is the result of winning a competition. The other participants were packaging the program, taking all the disparate elements of studio, rental, rehearsal, function, and putting them into an umbrella that somehow accommodated them all. My project pulled all these elements apart, allowing them to be separate and yet connected. Architects have learned in recent years that it doesn't work to put all the ingredients for the stew in one pot. Now more than ever, you have to allow certain things to take on their own life, and if that life changes, it doesn't change everything. We always talk about change in architecture as being incremental, as something you add on, an answer to needs as changing over time. Building. But it's no longer a question of incremental growth. Now change is from within, and that change must function and have its own life without changing the whole body.

Omni: With security a new concern in offices and gated communities in the suburbs, does the model of this walled city at New Harmony apply today?

Meyer: Security at New Harmony was keeping the wild boars out. People today are more frightened than ever of the outside world, so the more barriers they have between their interior world

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and the unknown violence that exists in our cities. The more comfort they feel Architecture has to react to this need for security. I want to create an open-free environment in which there is some relationship between interior and exterior space. That becomes more and more difficult, because people don't want to be exposed to unknown elements. One commission I'd never accept is to design a prison or jail. How can you make architecture out of such an invitation?

Omen: Practically every other major U.S. architect has built for Disney. Why haven't you? What do all these Disney projects mean for architecture?

Meier: Not a lot for architecture; architecture means a lot for Disney. I was approached by some Disney people. The project was not a theme park; hotel nor part of something in one of the Disney areas but a golf clubhouse in Florida. But what I do and what they do are not necessarily the most compatible of situations. I'm interested in abstraction. What interests Disney is a representation of some idea that relates to Disney theming or Disney ideas of the world, about Disney movie characters or some kind of fantasyland represented through cartoons. It's cartooning; architecture caters on a large scale. Making it Disney means applied decoration throughout because that's what they're about. I do make decorative objects. I think of them as objects with a utilitarian purpose, and I have a certain attitude about design expressed in the objects, whether a picture or a candlestick. But I don't think of them as decoration.

Omen: Has your view that architecture principally aims to unite space and light changed much over the years?

Meier: It's been there from the beginning. It was evident in my first house. It showed itself in the way certain private spaces were more enclosed and more open spaces were a little more transparent. And in the way space was layered, more open to more closed and less versatile, and more closed to more open, depending on the situation. For me, light isn't an object, but a factor in the way I think about space. I'm constantly thinking of ways light changes in stages and how we perceive the change. There are many ways of admitting light—not just through the horizontal or vertical surface, but through refracted or reflected light, which may be even more interesting than direct light.

Omen: How do you think of light as a sculptural element?

Meier: Sometimes it works within the order you've established; sometimes you deviate from that order because of the ideal, or the relationship of light to

space. I'm trying to remember what it was like 20 years ago. I might be more arbitrary now, doing things just for the sake of experimenting. Thinking of people who've lived in my houses and talking with them 20 years later, it makes me feel good that their response is as positive today as it was the day they moved in, because their perceptions have been heightened by awareness made possible by the architect. The architecture is set up for them as a frame for viewing the change of color of an hour, the day, the seasons.

Omen: Has it become more difficult to get your designs built?

Meier: There's less continuity, more disruption, more second-guessing. Of anything you want to do, there are ten people to say, "Why didn't you do it some other way?" Here's a lamp [points to lamp]. You don't lift the base or move it around, it's fixed. But someone might say, "Why didn't you just move it?" And I say, "Oh my god, it's always there—we can't move it." Someone else will say, "Why do you have to move it?" You say, "Well, someone may want to move it." And there will be 100 reasons not to do that lamp that way. The bulb is too big or too small. You can't get your fingers around it. It doesn't have the proper UV filter. Whatever you can think of, some people will fight against you doing it like that. And that's simply a lamp! Expand that to the making of a place and to the people from every area who have reasons for you not doing it the way you think is right and the way you believe in. At a certain point you say, "You know, I'd rather do sculpture. No one has to tell me . . ." I don't have to talk to anyone. Omen: What does the word style mean to you?

Meier: People perceive my work as modernist, relating to ideas about opacity and transparency, linear and planar elements, the relationship between structural and nonbearing elements. Modern to me means essentially what you see is what you get. It doesn't look like something else; it's not meant to connote be metaphorical in terms of images of something it's not. To me, that's the essence of the modern period—until Disney came along.

Omen: Cities here and in Europe are considering strategies such as banning cars from selected areas to keep moving forward.

Meier: It's a hopeful sign. I arrived in Basel recently in the evening and found I couldn't drive from the airport to the hotel because the center of the city was closed to vehicular traffic. And the city was remarkably alive. It was decree at nine at night with people walk-

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ing. Most American cities lack that density of activity in the center that would warrant closing them off. But in some small towns that still have a core around the town hall and church, doing this may help them come back.

In the Museum für Kunsthandwerk I designed and built in Frankfurt, people walk from a residential community across the Main River to the commercial center on the other side and move through the building as part of that route. People stop and have coffee. Occasionally they go into the museum; it's a part of their daily life because we designed the building as a kind of intersection. There are more opportunities to make these bridges.

Orrin: The steel frame was a major innovation around the turn of the century. Do you see anything missing on the horizon?

Meier: All kinds of building types—from airports to indoor swimming pools—today demand a different structural attitude. You can't divorce new building structures out of context. That's been a problem of technological investigation. Whether you're talking about Buckminster Fuller or any other visionary, they've always searched for a universal way of making a low-cost structure that had infinite possibilities—which meant no possibilities. The geodesic dome is okay as an exhibition shelter but totally inappropriate for many other kinds of buildings.

Orrin: What new materials interest you?

Meier: Lightweight metal for high needs because it's analogous to the airplane. It can still be durable and weather-resistant. It's not necessarily new materials, but new ways of using materials. Glass is a wonderful material and one is always looking for ways to create enclosure and transparency, ways that are lighter weight, more economical, less labor intensive. But I don't see any new pourable, porous, plastic putty that's going to solve building systems of all kinds. People bring all kinds of garbage to us all the time. Unfortunately, a lot of it's downright ugly.

Orrin: "Ugly" is a relative term.

Meier: "Ugly" has to do with how it's perceived and what it feels like and how it wears over time. You know, there's an aesthetic—at least for me!—response to certain kinds of things. And I just wouldn't want to use them.

Orrin: How would you improve your characteristic materials—the white porcelain-glossed steel panels?

Meier: The limitations of the porcelain panel are scale because of the size of the furnace in which they're made. The plastic possibilities are endless, except again the limitations of size. In a

sense, it's like a big brick. The whiteness isn't limiting because it's all color; it's good for anyone to have a heightened awareness. Even those with 20/20 vision sometimes need their awareness focused and stimulated.

Orrin: You recently sat on the design jury for the Spreelobogen Competition, an open competition to design the new Capitol of Germany in Berlin. Why did you accept a position on that jury?

Meier: It was an opportunity to redefine one of the world's major cities for the next century. Spreelobogen is a park, roughly 30 acres, and was the seat of the Reichstag on the edge of where the Wall between East and West was. I'd like to see an organization of elements on the site that allows change to occur for the next 30 to 40 years. This is not Brasília—you come in, do it all at once, and here it is. That's an antiquated notion of a government seat. This au-

What does the Capitol convey through its plan and organization? We've got many schemes interesting as architecture but conveying the wrong image.

Orrin: Architects—and of course, government—have been accused of creating disastrous public housing. How should it be done?

Meier: The quality of space is perhaps the key issue. Twice I have been involved in housing in this city. The first was Westbeth [artists' housing], the first large-scale renovation—what's called "adaptive reuse"—in the world where a building of one function [former Bell Laboratories] was turned into housing. The most important quality we could give to this place was space for each person. To make it economically viable, we made lots. This was when lots were becoming popular in New York. By making lot-type spaces, we created a living environment where people could make their own spaces. I thought Westbeth would lead to new construction in which one could create great spaces for people who'd come in, divide up, and manipulate as they wanted. It was an economical way to build and make wonderful living possibilities. But it never went further.

When we converted Bell Labs into artists' housing in 1986, people said, "You're crazy. Who's going to go live there?" Well, since the day it opened, people have been dying to live at Westbeth. We took a very sound structure that had outlived its use and converted it to another use that allowed it to go on. So it will last another 40 years. In a previous time, they would have torn it down and built another development without the same quality of space and light and openness.

Orrin: Is it architecture's place to have cities, or is it simply a profession at the service of other greater visions?

Meier: I don't think it's one or the other. Architecture is what it can be. This goes back to the World Trade Center. There is no scale relationship between what was Wall Street and that of those towers. That's why they're outrageous. I never liked them. The Trade Center's only saving grace was that the towers weren't in the center of Wall Street but cut at the edge. At least they weren't a sore thumb in the middle of the hand. But I do think architecture has and will continue to give life and meaning in urban situations.

Orrin: You've said that to call your work "timless" is the ultimate compliment. Why so?

Meier: It means people can respond to it at the moment and hopefully for many years to come. But maybe it also means it reminds them of the past. ☐

●That separation of skin and structure—the architecture of the twentieth century—allowed greater freedom. Next century it will get even more open, less defined, more flexible. ●

as is a dense place, an inner city, with a life that's more than just legislative, more than just parliamentary.

Orrin: What factors distinguished the winning design?

Meier: It's clarity. It was straightforward, and you could read a lot into it that wasn't there. It was like a rectangular bar across the middle of the site with straight arms reaching across the river to the East and West, symbolically touching and being part of the city in both directions. It addressed both East and West equally and disposed of the principal buildings of the Capitol in the center in a way that wasn't too specific. It was perhaps less architectural than many other proposals, but its directness and simplicity allows for so many things we don't know about today and can't predict.

Many other schemes were more modular, but their rigidity was overt. There were high rises, and for Germans, the tallest building in Berlin is probably not an appropriate symbol for government. The most interesting debate was

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GAMES

MOVE OVER, PIGSKIN:
A pro quarterback tries out the new football designs

By Scot Morris

Last year, the Museum of Modern Art added a foam football to its Design Study Collection—the Zwr! (below), with grooves that serve as finger grips and spiral around the ball like a screw. Brothers Ben and Gary Winter patented their design and introduced the first spiral foam ball in June 1988. It was the first entry in the ongoing competition to produce a football that can be thrown farther and with more accuracy. No fewer than seven newfangled footballs have hit the market so far. In the interest of improving your football season, I asked Pat O'Hara, a quarterback for the San Diego Chargers, to test some of the most intriguing balls. The results of his throw-off are at the end of the column.

Soon after the Zwr! hit the market, Next introduced the Turbo foam ball with shallow, S-shaped grooves, which is the best-selling foam football.

The Throtton, a hollow cylinder made of a heavy vinyl resin, stretches the meaning of the word ball. Its marketers claim that the cones at each end act like venturi nozzles, "as used in



The Throtton (top left), the Black Bomb (bottom left), and the Vortex (above right)

jet and rocket engines." Whether the cylindrical tail provides any aerodynamic advantage is open to debate, but the tacky surface of the ball makes it very easy to catch.

Cap Toys put a ring of heavier vinyl around their lightweight Black Bomb to distribute more of the ball's weight around its outside circumference, which should maximize the ball's spin and gyroscopic stability. That band can have quite an effect. Think about the difference between throwing a Frisbee and throwing an old record album. Cap Toys offers a money-back guarantee that you'll be able to throw the ball farther than any other foam football.

The four straight tail fins of the long Black ball

Little Kids make it look like a bomb, but while they add some stability they also add so much drag that they slow the ball's rate of spin.

If the designer angles the tail like a propeller, they can actually increase a ball's rate of spin. That's the idea behind the Aerobee Football (above, far right), codesigned by Alan Adler, who was responsible for the Aerobee flying ring discussed in the July 1985 issue of *Omni*. Tests run by Adler, a Stanford University lecturer and aerodynamics expert, indicate that the ball, thrown by a right-hander, should increase its rate of spin up to 300 percent within the first few feet of a throw, resulting in a satisfying spiral and increased accuracy.

The first new spin on the football is the Vortex from GoofyGrr, the Koosh ball

company. Its body measures only six-and-a-half inches long, just half the length of an NFL ball, but it also has a six-inch tail, which adds donut-like stability. Throws tend to connect themselves in the air, producing a highly predictable flight path. The aerodynamics and the small size of the ball's body mean the Vortex has low drag, traveling farther than any of the other balls.

Quarterback O'Hara verified the Vortex's low drag, long-distance theory. Able to throw a regulation NFL ball up to 70 yards, he tossed the Vortex a whopping 90 yards. He managed to pitch each of the foam balls and the Throtton between 45 and 65 yards. He liked all the balls, but he prefers the Vortex for its long range. Hank Bauer, a former Charger running back-turned-TV sportscaster who helped out on the demonstration, likes the Zwr! because of its design. "It feels like throwing a Dairy Queen ice-cream cone," he says.

The truly ultimate football might combine the Zwr!'s corkscrew grooves, the Black Bomb's gyroscopic waistband, the Throtton's catchability, the Vortex's stabilizing tail and the Aerobee's spin-increasing fins. Unfortunately, at this point, competing companies hold the patents for the individual elements. Still, the future-football wars rage on. Two already seen prototypes of the ZZ-ball, which has a hollow air chamber and a toy airplane motor inside. **DO**



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