BODY AND SOUL

OMNI

MARCH 1990

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VOL. 12 NO. 6 MARCH 1990

Spirituality is the way for *Omni* readers this month. Our cover by Japanese artist Takashi Koizumi reflects the unity of mind and body. In achieving this state of harmony, the self becomes one with the universe.

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OMNI

FIRST WORD

By Fang Lizhi

"The Chinese leaders adopt only those scientific theories that act as tools for their own power—technological and military affairs—but they reject the influence of science's spirit and method."

Before the June 4 massacre in Tiananmen Square, many of my foreign friends would ask me, "Why do so many students who support the pro-democracy movement in China come from fields of scientific study? And how does someone like yourself, an astrophysicist, become labeled a dissident, a disciple of political reform?"

My acquaintances from other countries view physics, chemistry, astronomy and biology as far removed from the issues of democracy, freedom, and human rights. In other parts of the world pupils of these disciplines may less frequently associate with social and political issues, but in China the scientific community stands in the forefront of social reform. "Why?" my friends ask.

Many scientists, who want only to teach and conduct research, have suffered from persecution during the political struggles of the last 40 years in China. Communist doctrine has characterized scientists, from Newton to Einstein, as members of the bourgeoisie. When scientific spirit spreads over the society it challenges the authority of the Communistic doctrine and those who enforce its ideology.

In the Fifties, when it became apparent to Mao Zedong, China's Communist leader from 1949 to 1976, that many intellectuals were disenchanted with party leadership, he ordered hundreds of thousands of scholars either stripped of their positions, sent to prison, subjected to hard labor, or executed. During the Cultural Revolution from 1966 to 1976 the so-called "stinking intellectuals" suffered under the wrath of the Red Guard. The party ridiculed scientists and rejected scientific theories that were accepted worldwide. Both relativity and quantum mechanics (two basic theories of physics) were criticized in Communist party newspapers as theories serving reactionary forces that should be denounced along with all other bourgeois ideas.

In China anyone who wants to study science, especially the more abstract fields such as physics, will meet political restraints. In courses on astrophysics at the Chinese universities, to prevent repercussions professors avoid directly discussing whether the universe is finite or infinite. Yet in order to pursue science, one must defend its methodology against the control of ideological doctrine. This often becomes the starting point where scientists depart from the Communist orthodoxy. Scientific thought tends to steer away from the teachings of socialism and leans toward democracy, freedom, and human rights.

For many centuries the key to social order in China has come from an ability to maintain a society of one mind. The teachings of the ancient Chinese philosopher Confucius say that all human beings possess the same inborn moral sense. Based on these teachings, Chinese leaders believe that each individual can be taught to think exactly alike. To establish uniformity or one-mindedness throughout the republic is thought to prevent chaos from occurring within the society. In other words, the Chinese people are firmly discouraged from developing original thought.

A classic example of one-mindedness comes from an ancient Chinese legend. In the third century B.C. the emperor of China put a horse alone in a room, told his ministers the horse was a deer, and then sent the ministers into the room one at a time. As each returned, the emperor asked them individually what they had seen. Whoever reported seeing a horse was immediately executed.

Authorities of today's China stipulate that all educational programs, from physical fitness to courses in math, be taught only while strictly enforcing the ideals of the so-called four cardinal principles, to uphold the teachings of Marxism–Leninism and Mao Zedong, to keep to the socialist road, to strengthen the leadership of the Communist party, and to support the people's democratic dictatorship. Any scientific information that sways from these ideals has no place in the Communist world. Thus the party's function can be compared with the Church's suppression of the writings of Copernicus and Galileo both were denounced for revealing scientific evidence that disagreed with the Church's teachings.

Of course, today's world is much different from the world of the sixteenth century, scientific theories provide the primary components for the advances of today's society. The Chinese leaders, however, have adopted only the theories that act as tools for their own power. The authorities allow research in technological and military affairs but reject the influence of the spirit, the value, and the method of science.

Deng Xiaoping, the supreme Communist leader for the last ten years, and his party promise to modernize China, while at the same time carefully screening out any anti-Communist notions from within society, including the freedom to scientifically seek truth. I believe, most of all, Deng fears the development of free thought among the Chinese people. Indeed, most totalitarians seem afraid of the spirit of science—an international enterprise that can be utilized to break down any ideological barriers placed by totalitarians, whether in Europe yesterday or in China today. Therefore the two most frequent words on the flags of the students and intellectuals in Tiananmen Square, *democracy* and *science*. ∞

Fang Lizhi and his wife, Li Shuxian, remain as guests at the American embassy in Beijing, where they sought asylum on June 4, 1989.

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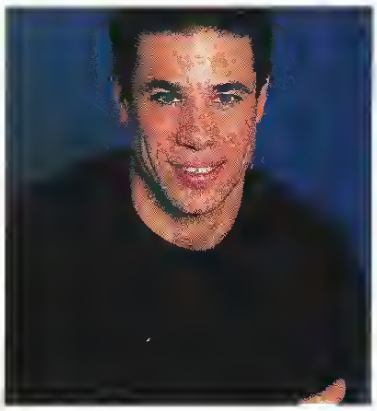
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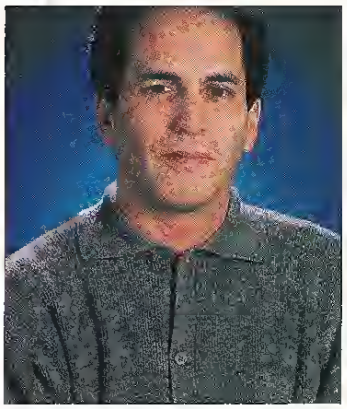
BERGER


TEICH


BOSVELD

For years, certain scientists have eschewed spirituality as primitive. "But today the worldviews of Western science and Eastern mysticism are converging," says *Omni* associate editor Tom Dworetzky, who organized this month's issue on mind–body–spirit unity. "The Eastern ideal of mind–body unity provides us a moral compass with which to guide our actions."

Led by *Omni* senior editor **Pamela Weintraub** ("Masters of the Universe," page 42), reporter **Jeff Goldberg**, former *Omni* senior editor **Jane Bosveld**, and *Omni* editorial assistant **Shari Rudavsky** set out to investigate the popularity that Eastern spiritual masters command among their followers in the United States. Despite the highly ethereal nature of their lives, spiritual guides are often remarkably down-to-earth, says Weintraub, coauthor of *Lucid Dreams in 30 Days: The Creative Sleep Program* (St. Martin's Press).

Indeed, Rudavsky reports that self-styled guru Ram Dass, for example, alternates between using his chosen Eastern name and his given Western appellation—Richard Alpert—often with humorous results. Once, at a party, he introduced himself to two celebrities, thinking they would have no idea who he was. Emboldened by their immediate recognition, Ram Dass approached another guest, Phil Donahue. "Hi, Phil," he said, "I'm Ram Dass." And the talk-show host replied, "Hi, Ron."

Bob Berger ("The Road Warrior," page 62) holds a fourth-degree black belt in karate, which he studied for 20 years before embarking on his inner journey to find *ch'i*, the harmony of mind, body, and spirit. A playwright and winner of the 1988 Eugene O'Neill Award, Berger has held a variety of jobs, ranging from cabdriver to stockbroker.

Mark Teich (Mind, page 22) has written for *Health* and *American Health* magazines. In college, Teich discovered that the Eastern masters' exercises to create mind–body unity helped to stem the pain he experienced from a herniated disk. These "centering" techniques also helped him win a host of collegiate Ping-Pong tournaments.

Jane Bosveld (Interview, page 74), who spoke to anthropologist Alfonso Ortiz, has been interested in the plight of Native Americans since high school, when she and her family moved from Iowa to South Dakota's Black Hills, land of the Sioux Indians. "The symbolism of the Berlin Wall pales in comparison to the walls we have used to socially barricade and trap Native Americans," says Bosveld, coauthor of *Control Your Dreams* (Harper & Row). "But perhaps even sadder than our historical domination is our own ability to ignore the consequences of our actions."

Lloyd Chrein (Space, page 18) doesn't seek the upward mobility of space living. "I would have a hard time in any environment with less than the earth's gravity," says the managing editor of *New York Habitat*, a trade magazine for members of New York co-ops and condos. "Zero gravity can turn your muscles to jelly, and you have to exercise eight times as much to keep yourself from becoming a blob."

Steve Nadis, an author of books on solar energy, nuclear power, and the arms race, first met artist Tom Van Sant last June. The subject of this month's Earth column (page 32), Van Sant enthusiastically planned to replicate the Goddess of Democracy statue that Chinese students erected in Beijing's Tiananmen Square during their rebellion. Nadis assumed the idea was a passing fancy and was surprised when Van Sant completed the project within a week. "Van Sant is a man who acts on his dreams," says Nadis.

Science-fiction author **Pat Cadigan** has long been fascinated by both vampires and serial killers, combining the two subjects in "The Power and The Passion" (page 50). The hard-edged tale, she admits, "is certainly different from all the other stories I've written." Cadigan's first novel, *Mindplayers* (Bantam Books), was a finalist for the Philip K. Dick Award. Bantam will publish her second novel, *Synners*, this fall.

Kudos to *Omni* fiction editor Ellen Datlow and coeditor Terri Windling, who won the 1989 World Fantasy Award for *The Year's Best Fantasy: First Annual Collection* (St. Martin's Press). ∞

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MARCH

LETTERS

COMMUNICATIONS

Social Medicine

The news media are saturated with articles on AIDS, but your article "Phoenix Rising" in the December 1989 issue was one of the best and most thought-provoking articles I've read on the AIDS epidemic. Congratulations to Linda Marsa for cutting through the plethora of information and succinctly and humanely summarizing the backdoor positive impact AIDS has had on society.

Kelly Escabi
Cabo Rojo, Puerto Rico

Sign Language

I congratulate Dava Sobel for the impressive article "Dr. Zodiac" [December 1989]. It was informative, lucid, and totally open-minded in its coverage. One minor fact is in error. The professional astrological community *is* committed to ongoing scientific research through such organizations as the National Council for GeoCosmic Research and the International Society for Astrological Research. Membership exceeds 3,000, and findings are published semiannually.

Jamie Binder
Chicago

Whose Body Is It Anyway?

Kudos for Ruth Borgman's "The Body Snatchers" [Continuum, December 1989], about how the medical establishment tries to seize control over our bodies. A major part of that campaign is to stifle free speech about health matters. An informed public, alerted by muckraking articles such as this, can help us maintain control over our own bodies. Keep up the good work.

Joe Samuelson
Marina del Rey, CA

Even as a fanatical proponent of individual rights, I was absolutely flabbergasted by "The Body Snatchers." Borgman clearly feels that parents should have the right to deny their children qualified medical help and use them as guinea pigs for highly questionable—if not outright deadly—treatment programs. Our society has a definite moral obligation to see that children get the best modern medicine has to offer. A child's right to life far outweighs a parent's right to risk the child's life with potentially deadly treatments.

Edward Napieralski
Hutchinson, KS

Physician, Know Thy Patient

Norman Cousins makes a good point in his December 1989 First Word. Nurses have been doing just what he suggested physicians start doing, namely getting to know their patients. A nurse's greatest tool is therapeutic communication to effectively diagnose and evaluate. Perhaps physicians should take a closer look at the nursing process and our approach to patient care.

Damiano Iocovozzi, RN
Martinez, CA

Crimes of Passion

I am amazed that such an "advanced" country as the United States tolerates censorship ["For Goodness Sake?" Forum, December 1989]. If we ban Stephen King's novels, then we should also ban history books, since they may induce people to act like infamous characters of the past. To make censorship legal is more of a crime than defiling the flag or creating "obscene" art. What will be next? Censorship of clothing or even ideas? Then the Orwellian society will truly exist.

Scott Jacobs
Clifton Park, NY

I have enjoyed Stephen King's books, but his novels are not published at the taxpayer's expense. Your attempt to make *public* funding of objectionable (to some people) art a part of the First Amendment is more dangerous than Senator Jesse Helms's attempt to block public funding of the same. Artists like Andres Serrano may exhibit their art wherever and whenever they choose but not at my expense.

Carl Smith
Waveland, MS

MOON UNITS

SPACE

By Lloyd Chrein

Someday people will inhabit worlds other than Earth. When that day comes, they may find themselves living in colonies already on the drawing boards, thanks to the National Space Society (NSS), a 25,000-member advocacy group that recently sponsored the "Space Habitat Design Competition." Intended to get people thinking about housing on the outer frontier, the contest inspired 59 designs, ranging from outlandish proposals for zero-gravity playgrounds to carefully engineered prototypes for our future homes in space.

To stand a chance of winning, the habitats had to be self-sufficient, serve some economic purpose (such as mining), and offer radiation shielding, internal and external transportation, and recreation. The prize, offered by a society member who had requested anonymity, was $2,001 for each of the winners in three design categories—lunar base, Bernal sphere (a large, rotating cylinder), and free-form—but officials actually chose only two winners. According to David Brandt, a program director for the NSS, no first prize was awarded in the Bernal sphere category because none of the entries were true Bernal spheres.

First prize in the lunar base category went to Christopher Bartz's moon dwelling. Built by robots along the perimeters of four craters, this collective society would house 600 people. It would start with only one crater, a landing base, then expand to make way for satellite assembly facilities. "It's much easier to launch satellites from the moon than from Earth because it takes less fuel to reach escape velocity," explains Bartz, an architect from Austin, Texas.

The winner in the free-form category, "The Asteroid Resource Colony," designed by New York City architects Claudio Veliz, Raul Rosas, Wing Kin Lee, and John O'Connell, combines the economic incentive of mining with the prospect of homesteading in space. Steel tethers would attach its four pods to an asteroid and hold them in orbit. Inside these pods, some of the 14,000 inhabitants would tend gardens, raise livestock, or study the universe. Others would monitor robots working beneath the asteroid's surface, mining metals and minerals, extracting water, and producing marketable products such as rocket fuel and steel.

The habitat would be constructed from asteroid materials. First a mining and processing station, which might be cone shaped, would land on the surface and begin burrowing. Workers would take the lode and turn it into concrete and steel, which they would use to build four huge capsule-shaped pods—their homes. These would attach to the central station with steel tethers and, propelled by low-powered boosters, would slowly revolve around it. The centrifugal force would simulate low-level gravity.

The colony would be a Shangri-la in space. Each capsule would have a different climate—tropical, arid, aquatic, or temperate—in which the inhabitants could grow all types of food and raise livestock. Fiberoptics would bring light in from outside the colony. Large elevators would run inside the steel tethers.

Orbiting abodes. High tech, great views.

The colony's self-sufficiency earned it the prize. "Asteroids are so distant that designs must stress self-sufficiency," says judge John Spencer, a Los Angeles architect and developer. "But such capabilities are not implausible. Nuclear submarines are nearly self-sufficient and can stay underwater for several months." The design is not without flaws, however. "I admit that what I've suggested is very naive," explains Veliz, who designs lobbies and office space. "But in forty to fifty years, I'm sure that advances in space technology will knock our socks off. What I have proposed is like living in 1939 and trying to say what a 747 would look like."

Will we actually live on asteroids? "Some may say it's far-out," states Leonard David, editor in chief of *Ad Astra*, the National Space Society's magazine, "but not impossible." Adds Clark Chapman, senior scientist at the Planetary Science Institute, "It's not a crazy concept. We could see something like this in our lifetime." Even with its tight budget, NASA hasn't ignored asteroids. "We've tried to understand near-Earth asteroid evolution, orbits, numbers, distribution," notes Carl Pilcher, director of the science division at NASA's Office of Exploration. "And we have studied the potential for resource utilization since the late Seventies. The question is whether it is practical to consider gathering these resources. It may not be." One drawback is that most asteroids are between one and three years travel from Earth.

Whether NASA uses any of these ideas, the NSS's David calls the contest a success, and Brandt says the organization may hold another competition next year (if another wealthy patron comes along). "Anytime you can get people thinking about life in space, and other people considering those thoughts, you've won something," Brandt concludes. "Once the interest is there, the reality follows."

SELF CENTERED

mind

By Mark Teich

As a student at Stanford University in the early Seventies, psychologist Gay Hendricks was crossing campus one day when he happened to pass a pottery class. He instantly became mesmerized by a woman working at a potter's wheel. She had a look of rapt, unwavering concentration, and her hands, shaping the pot, glided surely and effortlessly. Then he looked at the pot whirling fluidly at the center of the wheel. It was delicate, elegant, and beautifully symmetrical. The focus and harmony reflected on the woman's face and in the movement of her hands, he realized, were one with the pot itself. At that moment, Hendricks recalls, "I had a flash of awareness. If you're centered inside, you create centered results." The incident inspired Hendricks to write three books on centering, the art of finding the psychological center of gravity within oneself and the world. For Hendricks, being centered meant finding a grounded, unshakable sense of self so calm yet so focused one can deal with any situation or strive toward any goal.

According to Hendricks and like-minded colleagues, the methods for reaching this lofty perch are rooted in the so-called sacred philosophies, ranging from Yoga, Buddhism, and Taoism to the Eastern martial arts. Using breath control, meditation, visualization, and movement, these Eastern mystical traditions have long striven to achieve a state of mind–body unity, in which perfect inner balance results.

In the West, the centering movement has adapted these techniques to help us cope with the modern world. The result: a powerful new harmony between intellect and intuition, enhancing energy, confidence, and calm.

In the following pages, with the guidance of six experts in mind–body integration, we've developed a seven-day program to help you achieve inner balance. On Day One, you will learn to relax through breath control. On Day Two, you will master the technique of "emptying," in which you clear your mind of distracting thoughts and emotions. On Day Three, you will go on to achieve a sense of inner balance. Then, on Days Four, Five, and Six, you will explore your intuitive, spontaneous self through visualization, mandala drawing, and Zen dance. Finally, Day Seven will help you unify both mind and body with your immediate environment and the cosmos at large.

Please remember, even though we have wrapped our exercises into a seven-day program, you may adapt the timing so that it works best for you. We do not recommend completing the program in less than seven days, however, or trying to squeeze all the exercises into a single weekend. Although the exercises we present may *seem* simple, they must be absorbed slowly if they are to have full effect and work well. Before you begin, find a quiet, comfortable room that you will be able to use in privacy for at least 30 minutes, six days in a row.

Our consultants include Hendricks, who emphasizes breathing strategies based on Vipassana Buddhism; George Leonard, who derived his Leonard Energy Training program from the Japanese martial art aikido; teacher Helen Palmer, who conducts intuition training seminars based on the lessons of Buddhism and Sufism; guru Sri Chinmoy, who leads meditation sessions at the United Nations and conducts hundreds of international sports competitions annually; best-selling author Shakti Gawain, whose "creative visualization" strategies evolved from a number of Eastern disciplines; and Sun Ock Lee, the foremost Western practitioner of Korean Zen dance.

Inner balance: Harmonizing body and mind

DAY ONE: BREATHING LESSONS

Your goal today: mastering a technique known as belly breathing, which should be highly effective in helping you relax. The belly breathing exercise below, adapted from Hendricks, will maximize the flow of oxygen into your body by teaching you to breathe deep down in your diaphragm instead of high in your chest. To begin, either sit upright or lie with your spine straight; this allows the greatest respiratory flow. Now relax a moment. Place your hands an inch or two above your waist, your fingers extending across your abdomen below your rib cage. Inhale and exhale several times, feeling the abdominal muscles tense and release around and behind your navel. Now consciously slow your breathing, taking five seconds to tense the muscles and five to relax them. Repeat this a number of times. Then rest about 30 seconds.

Now close your eyes and feel your abdomen with your hands. Breathe in deeply, feeling your belly expand. Then breathe out, feeling it fall and relax. Inhalation and exhalation should be connected in a smooth, circular pattern. Keep breathing in and out slowly and deeply for several minutes, feeling the rise and fall of your abdomen with your hands. When you've had enough, rest quietly for a few moments.

Practice belly breathing once or twice a day during the program. Then use

the technique whenever you want to decrease stress and increase relaxation.

DAY TWO: EMPTYING

For big gains in centering, you must enter a meditative state in which you can patiently focus on your inner self. Toward that end, you will now master the technique of "emptying," in which you clear your mind of distracting thoughts and emotions. Once your mind is empty, you will be able to seek the guidance of your spontaneous, intuitive self.

Before you begin, take a shower, or at least wash your face, hands, and feet. Then put on freshly laundered, lightweight, loose-fitting clothes.

Now practice the belly breathing exercise from Day One. When you are completely relaxed, sit with your spinal cord erect and continue to focus on your breath. Feel its continuous presence as it rises and falls against your abdominal wall and moves millimeter by millimeter through your system. Breathe in as quietly and slowly as possible, so that if somebody placed a tiny thread in front of your nose, it wouldn't budge. Exhale even more slowly. Leave a tiny pause (or even hold your breath a moment) between each exhalation and inhalation. This fixation on your breath will stop intrusive thoughts. Inevitably some feelings, impressions, or physical sensations will invade, but let them float away in the movement and rhythm of your breath. Eventually your thoughts will slow to a few per minute.

Now close your eyes and focus on the sensation of purity and emptiness. If you would like a visual image to help you capture the sensation of emptiness, you may envision an unblemished field of snow or an endless screen of soft white light. Let the emptiness wash over you completely for several minutes, draining your mind.

DAY THREE: BALANCING ACT

Mastering breathing and emptying will give you the peace and silence you need for the bone marrow work of centering—balancing your body and mind. To help you achieve this goal, Day Three taps an aikido-based guided imagery exercise adapted from George Leonard's *Inner Energy Workout*.

An hour or so before you begin your session for Day Three, please have the instructions below recorded on a cassette tape. (You may record the instructions yourself or have them recorded on tape by a close friend.) Remember to have the reader pause where indicated.

Stand up and spread your feet at about shoulder width, settling into a strong and comfortable stance. With your left palm touch your abdomen an inch or two below your navel—the physical center of your body. Run your hand gently over this area for about a minute. Focus on it and feel at home with it.

[PAUSE FOR THIRTY SECONDS]

Now focus on your breathing. Imagine your breath as a glowing ball of radiant energy traveling from your mouth through your chest and into your abdominal cavity. Let your breath descend to the center of your abdomen, an inch or two below your navel. With each inhalation, the ball expands, reaching from side to side and to the very bottom of your pelvis. Feel your breath glowing all around your pelvis, radiating warmth and stabilizing your stance.

[PAUSE BRIEFLY]

Now you will release tension by shaking your hands hard in front of you, your wrists relaxed, until your whole body vibrates. As you exhale, make an extended vowel sound such as "aaaaah" so you hear the vibration in your voice and feel it resonating in your chest. Now drop your hands limp in front of you, then let them float up as if in warm salt water. As your hands rise, bend your knees slightly, lowering yourself into the warmth of the salt sea. Feel your buoyancy. Form a beach ball with your hands and give it a gentle push across the water's surface.

Now stand up straight again. Shake out your hands once more and let them drop limp to your sides. Close your eyes. Make sure your weight is evenly distributed between your left and right feet, between the heels and balls of your feet, shift your weight slightly forward and back and side to side, balancing, as if fine-tuning a distant radio station. Your knees should be neither locked nor bent, you're a cat relaxed yet poised to spring. Now make sure your head is balanced. Let your jaw hang open. Release the tension in your tongue, eyelids, forehead, temple, scalp, and back of your neck.

[PAUSE BRIEFLY]

Breathe sharply in as you raise and tighten your shoulders. Exhale and let them down like soft, warm chocolate. Feel the chocolate slowly melting down your back, shoulder blades, arms, and hands. Feel it moving down your rib cage to your diaphragm, melting your internal organs and pelvic region. Feel the chocolate melting down your legs, past your knees, to your feet, warming the surface beneath them, melting them into the ground. Feel the embrace of gravity holding you to the earth and the earth to you.

A few hours after the recording has been made, retire to your room and go through the belly breathing and emptying techniques. After completing these warm-ups, play your tape.

DAY FOUR: THE INNER CIRCLE

The circular drawings called mandalas (above and on page 28) have long facilitated self-discovery. In Tibetan Buddhism, people focus on mandalas as an

aid in meditation and concentration Carl Jung had his patients draw mandalas so they could see their problems from a broader perspective by projecting them onto a universal form

Many experts believe that the empty field of the mandala resembles a movie screen upon which your unconscious projects your inner life As you express your inner self through the mandala, a new sense of balance can emerge

Before you begin this exercise, retire to your special room and go through the belly breathing and emptying techniques Then take a piece of white paper 12 inches by 18 inches or larger so you won't feel constrained Lay a plate or a pot lid atop the paper Outline the plate with a crayon, colored pencil, paintbrush, or any colorful drawing tool Then take out the rest of your crayons, paints, or pastels, pick a color and draw something inside the circle Spontaneously create anything you want Immediately do two more mandalas Afterward, gaze at the patterns while thinking nothing *Don't* try to figure out what they mean The process of creation helps you down the path to the unknown self

DAY FIVE SEEK THE INTUITIVE SELF

Once you're feeling balanced, your search can advance inward toward the self On Day Five you will learn to tap your intuitive powers through an exercise adapted from intuition expert Helen Palmer As you learn to focus your concentration and awareness inward Palmer says, true intuition will replace your erroneous impressions of the world

To start your session for Day Five, go to your special room and practice belly breathing and emptying techniques Then select a single situation, person or event that you want to focus on Choose an image or impression to represent your choice and focus on it fully Just be alone with the impression forming as deep and relaxed a relationship with it as you can for several minutes Become one with the image and with whatever it represents As you repeat this process you'll become much more attuned on a deep intuitive level to people, places, and things

DAY SIX ZEN DANCE

Those who practice Korean Zen Buddhism strive to keep the mind in a constant state of questioning The name for this process is Yimoko, the quest for the true self Sun Ock Lee, a lifelong Korean Zen practitioner and professional dancer who settled in America 20 years ago, combined her vocation and avocation by creating Zen dance, in which the dancer questions himself while moving This technique harmonizes the mind and body, clearing away emotional debris so that new sources of energy may emerge

The following exercise combines two main factors abdominal breathing, which provides the energy and balance for each dance movement and continual questioning with which you can explore the inner psychological realm

To begin, stand with your legs at shoulder width Place both hands on your abdomen an inch or two below your navel Inhale hold your breath a moment, then exhale slowly As you inhale and exhale, feel your abdomen expanding and gradually relaxing After a few seconds, while exhaling, raise your left arm slowly outward and slowly say, "What" ("Wha-a-at") Remember your abdominal center of gravity is powering your voice and your arm, which is floating as if on the wind

Inhale again, slowly lowering your left arm to its original position Repeat the whole process with your right arm, this time slowly pronouncing "is" during exhalation And finally, lift both arms at once during exhalation while pronouncing 'self?' These three words, known as a koan, not only signal your intention to seek your inner self but also serve as a mantra to help you relax, breathe correctly and empty your mind Do a similar warm-up with your legs

Now you're ready to dance Remember something delicious you ate recently and transform that feeling into movement As you move, practice belly breathing Think of the breath from your abdomen as a power source giving you the energy to move And as you move, feel that wonderful taste suffuse your body—your hands, your arms and legs, your fingers and toes Whenever thought or worry disturbs your concentration, your body will know, throwing you off balance Whenever you are thrown off balance focus on your breath and movement Eventually, the taste will subside When you feel emptied, recall that wonderful taste and continue to dance

As you dance, silently ask yourself, *Who is this dancing? Where does this dance come from?* Close your eyes Feel the power of your abdominal breath and the "rhythm" of the taste Dance, moving in a perfectly centered way As you move, you will strip away layers of pretense, coming closer to the wellspring of emotion within yourself

In future sessions, you can focus on feelings or incidents involving sadness, grief, anger, or joy At the same time, notice how your abdominal breath combines with these feelings and propels you to dance As you dance, ask yourself, for instance, *Who is this getting angry?* If you perform the Zen dance as instructed you may soon see the illusory nature of anger and defuse its power over your life

DAY SEVEN RUNNING TO THE SUN

Our last exercise will enhance your inner balance by helping you connect with the cosmos Please begin by finding a special spot in nature that you enjoy Shakti Gawain says that a park, beach, or any place where you have room to walk or run will do Once you have arrived, look closely at individual elements of the environment Try to notice as many new details as possible Then walk or run (depending upon your conditioning) at a comfortable pace Focus only on the ground, letting your mind roam freely

After five minutes, when you're warmed up, turn your attention totally to your body rhythms Listen to the consistency of your breathing and feel the solidity of your footfalls notice how your breath and feet, connected to the same energy, play a relaxed, perfect beat together Feel the rhythmic power in your beating heart

Keep moving, and keep looking at the ground But now squint your eyes until everything around you is in soft focus, almost a blur After about 60 seconds look up from the ground and open your eyes wide, letting the whole world in at once Scan the sky, the trees the horizon, but don't focus on any one thing Instead, see the entire scene merging in one canvas As you move, visualize your exhalations carrying away all your inner toxins, see all weakness, fear, and melancholy float into the universe each time you breathe out Visualize each inhalation replenishing you—not just with air but with energy from the most remote corners of the Milky Way Visualize yourself radiant with energy from the planets and stars Feel yourself merging with the universe

We hope you have enjoyed these exercises Feel free to use them when life knocks you out of kilter or whenever you wish to marshal all your resources in the course of daily events ∞

SPHERE CAMPAIGN

EARTH

By Steve Nadis

For nearly two years Van Warren, a computer scientist at the Jet Propulsion Laboratory (JPL) in Pasadena, California, burned the candle at both ends pursuing his dream of a "whole-Earth database." He wanted to compile data gathered by remote-sensing satellites orbiting the earth so that he could view any spot on the planet from any perspective, on his computer screen. His supervisors at JPL weren't sure why he was taking on this enormous project in addition to his normal responsibilities as a graphics specialist. His wife wasn't sure why he was doing it. He wasn't sure, either. Then he got a phone call from artist Tom Van Sant. "Suddenly, I knew why I was doing this," Warren says.

Van Sant—a sculptor, environmentalist, and futurist who lives in Santa Monica, California—wanted to create a giant globe whose surface consisted of actual satellite images rather than artistic renderings. He wanted, in other words, a three-dimensional representation of what Warren was doing in software. The GeoSphere, as Van Sant calls it, would be a "living replica" of the earth as well as a tool for visualizing complex global phenomena.

In March 1989 Van Sant formed the nonprofit corporation Eyes on Earth to help finance the GeoSphere. He recruited Warren to oversee the technical chores and donated a graphics supercomputer (paid for with his own money) for the effort. NASA eventually agreed to pay Warren's salary while he was working on the project.

Why did an artist launch a project that in many ways seems more the calling of an earth scientist? "If I had found someone else doing this, I would have thrown myself behind them," Van Sant says. But he didn't.

Van Sant's own inspiration dates back to 1967, when he was "blown away" by the first photographs of our planet from space. He hopes that his sphere will have a comparable effect on raising global consciousness. "I believe that international peace, as well as good resource management, is dependent on our planetary, or whole-Earth, awareness, as opposed to our everyday, flat-Earth consciousness," he says.

Globes sold in department stores aren't enough to do the job. "Cities aren't dots, deserts aren't yellow, mountains aren't brown, Canada isn't gray," Van Sant says. "Folks, it's time for reality. Without reality we're going to perish. Also, reality is much more beautiful."

Approximating reality in this case is a daunting technical task, breaking new ground on all fronts, from assembling the huge software database to pioneering three-dimensional projection techniques. Despite all the technology involved in the project, the GeoSphere, according to Van Sant, is a work of art—a sculptural manifestation of the Gaia hypothesis. That theory, first advanced by James Lovelock, holds that the earth behaves like a living organism.

"It's the most valuable concept since Bucky Fuller's Spaceship Earth," Van Sant says. "The difference is, we're not passengers on Spaceship Earth; we're parts of the earth."

Many people have asked Van Sant why he has to build a sphere when he can do it all in software. He argues that "software can't approach the emotional impact of a pulsing three-D image. If you don't have art, you don't have emotion, just information—like the words you hear on the evening news."

Although global concerns such as the greenhouse effect and the ozone hole are suddenly getting a lot of attention from the news media, Van Sant is not willing to wait and see whether people's attitudes and responses will eventually catch up with the mounting threats to the planet, their lives, and their lifestyles. "It's time for artists to do something useful," he says. "At least it's time for this artist to do something useful."

So what have Van Sant and Warren accomplished? The first GeoSphere, a seven-and-a-half-foot-diameter prototype, was completed in January. The cost of the project to date has been about $300,000. In the initial stage, Warren created the first whole-Earth database—

CONTINUED ON PAGE 100

Globetrotting. The world according to Van Sant, a dreamy artist with a realistic vision

CONTINUUM

APOCALYPSE THEN...AND NOW

The Italian press corps gathered outside the medieval hill town of Gubbio, uniformed in tweed jackets and horn-rimmed glasses and armed with the tools of their trade—tape recorders, cameras, camcorders, and the essential cup of cappuccino. The morning air buzzed with heated debate on the impending "battle" among a small brigade of scientists, a dozen in all, who had come to Gubbio from all over Europe and the United States. The media had descended on this normally tranquil hillside to watch the scientists settle what *The New York Times* described as a "bitter dispute over the extinction of the dinosaurs in a hammer-wielding showdown in the mountains of central Italy." But the proceedings proved discouragingly congenial. There was more agreement than animosity in Gubbio that week.

The leader of one group of scientists, Walter Alvarez of the University of California at Berkeley, had long argued that the impact of a tremendous comet or group of comets killed off the dinosaurs. Mounting the counteroffensive was Gary Johnson of Dartmouth College, who attributes the loss to a period of major volcanic activity. The theoretical combatants had agreed to a bilateral sortie: collecting samples of Gubbian limestone deposits that held within them clues to what actually happened all those millions of years ago and sending them to laboratories around the world for analysis.

Alvarez chipped away at the rock face and passed around a sliver of Gubbian limestone. One half was milky white, the other, coral pink. Separating the two layers was a thin brown line—the stratum representing the Cretaceous–Tertiary extinction, an event that took place about 70 million years ago. It marked the end of the age of dinosaurs and the rise of the age of mammals—most conspicuously, of man. "In your hand you hold the largest extinction in the last two hundred million years," Alvarez said. Pointing to the white half, he continued, "These are the creatures that perished, a rich and varied bunch." He indicated the pink half. "This group didn't know about the impact, they are alive only because a drastic change in the earth's atmosphere killed off the competition."

Although Alvarez and Johnson argue about what event triggered such destruction, both agree that it was neither comets nor volcanoes alone that caused the extinctions. Ultimately, it was a violent alteration of the earth's atmosphere that drastically and irreversibly changed the course of evolution. Alvarez speculates that the impact of a giant comet on land ignited huge fires that spewed enough soot and ash into the atmosphere to lower the temperature dramatically. This scenario is similar to the "nuclear winter" that scientists analyzing the effects of a nuclear war have forecast. If the comet hit at sea, it's possible, Alvarez contends, that the water vapor was superheated, and acid rain—similar to that currently destroying the world's forests—pelted down from the heavens.

Similarly, Johnson does not believe that volcanoes belched a layer of lava so large that it seared the entire earth. Rather, he reasons that volcanic activity caused the "mass killing of plants and animals, creating a greenhouse effect that produced an increase of ten degrees Celsius in the sea. Any creature on land or sea weighing more than fifty kilograms was eliminated." Whether the extinctions were set in motion instantly as a result of impact or gradually as in the case of volcanism, the results were the same: a dramatically altered ecosystem similar to what industrial societies have done to the environment in this century.

The dig at Gubbio was a paradigm of a spirit of cooperation and understanding. Two groups of scientists—each with reputations and grant money at stake—came together not to do battle with picks and shovels, as the media had hoped, but rather to work together to discover just what it was that cooled or heated the atmosphere to the point at which 75 percent of marine life perished. "The evidence is very subtle and difficult to translate," Alvarez says. "We're searching for more complicated, sophisticated answers."

We, too, should look more carefully at the difficult problems that threaten to destroy our world—population growth, food and energy production, pollution, devastation of the rain forest. Like the scientists who gathered in Gubbio, people from all nations and all disciplines must come together to devise more complex, rational, humane solutions to the problems at hand. What happened to the dinosaurs can happen to us. But unlike those ancient beasts, we have the power to save ourselves. —*MELANIE MENAGH*

CONTINUUM

Let me not. Anesthesia may help patients under the knife ignore pain, but whether their surgeon talks too much during the operation?

HEAR NO EVIL

For years doctors have suspected that when patients are under anesthesia they can hear what's being said around them. Now studies in the United States and Britain suggest that anesthetized patients not only hear but also unconsciously "absorb" what is being said in the surgical arena.

M. Ghoneim, an anesthesiologist at the University of Iowa, conducted a study in which a group of anesthetized patients were read a list of words. The day after surgery they were shown a list of word fragments. More than half of the patients filled out the fragments to complete the words they had heard under anesthesia, but they had no conscious recall of hearing them. The same group of patients had been told to touch their ears or noses. After the anesthesia wore off, they were still touching the body parts dictated by the surgeon but had no recollection of being told to do so. As far as Ghoneim is concerned, this confirms that 'some information processing functions in the brain continue to work during general anesthesia.'

In Great Britain anesthesiologists Calton Evans and P. H. Richardson at St. Thomas's Hospital in London have shown that suggestions made during anesthesia can help speed recovery from surgery. Patients who were given positive suggestions, such as 'you will not feel sick,' recovered sooner and had fewer complications than patients who had received no encouragement.

How do these messages influence recovery or lodge suggestions in the minds of anesthetized patients? No one is sure, but writes Evans in the British medical journal *Lancet*, 'it is clear from our finding that these suggestions did get through in some way and improved their recovery from surgery.'

—Olga Gurny

MONEYSPEAK

We all know that figuratively speaking, money talks. But now money will really begin to make noise because the Bank of Canada has released $2, $5, and $10 bills that actually state their value out loud.

The talking money, developed by the Science Technology Center at Ottawa's Carleton University and by the Ottawa electronics firm Brytech, was designed as an aid for the visually impaired. The system relies on a pocket size electronic reader, which recognizes the characteristic patterns of print on the bill and then speaks its denomination in either English or French.

The price of the electronic reader, which has just completed field trials, has yet to be determined. But, says Bank of Canada currency research adviser Don Adolph, "it will probably cost those using the reader very little." Soon bigger denominations of the talking bills—twenties, fifties, hundreds, and so on—are expected to hit the streets. Does talking money presage the day when cereal boxes and soft drink bottles will shout their prices from the supermarket shelves? Adolph doubts that this technology is transferable. 'It's designed for one purpose: to provide blind people with more independence in their financial transactions.'

—Bill Lawren

"You can't expect to hit the jackpot if you don't put a few nickels in the machine."
—Flip Wilson

PET SCAN

If your pet has a knack for disappearing into the great outdoors, a new device may save you hours of worry. For $40 a veterinarian can implant a microchip between the shoulders of errant pets as part of an identification program devised by an Agoura Hills, California, company called Infopets.

Once a lost animal is found the local animal control department can use an electronic scanner to see if it has the identification chip. A registered animal's chip will emit a beep and produce a ten-digit ID number. By calling 1 800-INFOPET the owner's name and the pet's medical history can be obtained. The system, which has about 10,000 pets cataloged, is already in use in San Francisco, Boston, St. Louis, Eugene, Oregon and Yuma, Arizona. Although the chip was designed for use on dogs and cats, Infopets company spokesperson Joanne Gyidik says it will work equally well on rabbits, horses, cows and llamas.

As for a pet python, no problem, says Gyidik. The rice grain size chip can be embedded in the snake just behind the head.

—George Nobbe

"A genius is a man who has two great ideas."
—Jacob Bronowski

"It is not easy to see how the more extreme forms of nationalism can long survive when men have seen the Earth in its true perspective as a single small globe against the stars."
—Arthur C. Clarke

"Experience is the name everyone gives to their mistakes."
—Oscar Wilde

There's no place like home. If your pet likes to stray, ... technology can ... with rub... slippers

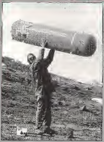
COCOON OF LIFE

Trekking on a 25,000-foot-high ridge in the Himalayas, a mountain climber begins to feel as though he's drowning—a strange gurgling noise wells up with each breath and he becomes too dizzy to stand. At this altitude and without help he is dead 24 to 48 hours later.

Scores of climbers have lost their lives this way. At high altitudes the lack of pressure on the body combined with the lack of oxygen can cause body fluids to flood the lungs and the brain, triggering a condition known as cerebral and pulmonary edema. Unable to breathe, unable to think, a climber can only hightail it to lower altitudes and hope for the best.

A device designed by R. Igor Gamow, however, may give climbers an alternative. Gamow, a University of Colorado professor of chemical engineering, has designed the ten pound "Gamow bag," an airtight sleeping-baglike shelter that, when pumped full of air, simulates lower altitudes. For a climber at 23,000 feet, a fully inflated Gamow bag provides the relatively rich oxygen levels and air pressures found at 16,000 feet. By using this bag, Gamow says, climbers won't have to descend and may be able to continue their climb after only a day's rest.

Last year three Gamow bags accompanied Bob Skinner's 35-member "Cowboys on Everest" expedition. "During the trip I'd say that a number of people from our expedition—as well as



Staying on top: Gamow's bag keeps you climbing

people we met—went inside those bags," Skinner says. "Instead of dying, they were back climbing after about twelve hours inside."

The Du Pont Corporation has bought the technology from Gamow and is proceeding to test the device near Keystone, Colorado. Besides saving lives, the bag, which will retail for around $2,000 to $2,500, should help relieve more minor cases of altitude sickness.

—Gregory Dauer

"I have seen the future and it is very much like the present—only longer."
—Kehlog Albran

"Apartment buildings are what separates us from other species. Remember, man is the only animal with a lobby."
—Richard Jeni

"There are three ways to get something done: do it yourself, hire someone, or forbid your kids to do it."
—Monta Crane

CONTINUUM

Space invaders Northbound killer bees may want to take over docile hives, but can they pull off a sting operation?

THE GREAT KILLER BEE ROUNDUP

Pioneering swarms of Africanized killer bees, last reported south of Brownsville, Texas are due to invade the Rio Grande Valley later this year But they could be in for some strong resistance if they try to infiltrate domestic honeybee hives

Besides having slightly smaller bodies and wings than domestic honeybees, Africanized bees differ from their European cousins in another critical way—they have faster wing beats Knowing this, engineers at the Oak Ridge National Laboratory in Tennessee built a two-channel noise analyzer that measures bee wing beats The belligerent Africanized bee measures 250 to 275 beats per second, while the European honeybee sounds out in the 210- to 230-beat range

The acoustic screening tool, devised by Oak Ridge engineers Michael E Buchanan, Howard T Kerr, and Kenneth H Valentine, works like this A bee is placed inside the device's flight chamber If the bee activates a green light, it's probably harmless But if a red light flashes it's probably a killer bee Beekeepers who discover an Africanized bee in their hives, says Kerr should replace the queen with a certified European queen to quell further infestation The scientists call their device the buzz buster and hope to sell it at $339 to many of the 300,000 amateur beekeepers and 4,000 commercial honey producers in the United States

—George Nobbe

WE HEARD IT THROUGH THE GRAPEVINE

It was a case of serendipity Research chemists investigating an unsightly residue in muscadine grape juice discovered that it contained ellagic acid a compound that inhibits the growth of cancer cells

The finding may be a boon to the muscadine grape juice industry, which has been fairly small up until now William C Olien, a horticulturist formerly with the U S Department of Agriculture now at Clemson University, explains that muscadine grapes, which come in a variety of colors, have always been popular in the South "But," he says, "they are sensitive to cold and are harder to propagate than other grapes, so their commercial value has been somewhat limited "

Only recently have new techniques for growing muscadines created a commercial market for the juice, a distinctive fruity beverage that the industry hopes will prove popular throughout the United States

Further research will determine whether muscadines contain higher levels of ellagic acid than other small fruits such as strawberries or raspberries and whether the cancer-fighting acid they contain is transferred by simply drinking the juice

—Jane Bosveld

The grapes of cash Fussy North American muscadines haven't found their market yet but they score high with cancer researchers

FEAR AND TREMBLING IN THE TEMPORAL LOBES

In Michael Crichton's 1972 science-fiction novel *The Terminal Man,* scientists attempt to cure a panic-prone man by implanting electrodes in a particular spot in his brain. The suggestion: Emotions spring from specific brain sites. It wasn't until last year, however, that actual scientific research found that Crichton may have hit the electrode on the head. A group of researchers at Washington University in St. Louis have traced for the first time at least one emotion, fear, to a specific location in the brain.

Psychiatrist Eric Reiman and neurologist Marcus Raichle measured blood flowing through the brains of nine relaxed volunteers with positron emission tomography (PET) scans. Later the researchers instilled anxiety in their volunteers by attaching electrodes to their fingertips and telling them they would receive an electric shock and that the longer they waited, the stronger the shock would be. This statement alone, even without the accompanying shock, was enough to agitate the volunteers.

While the subjects were in this anxious state, the scientists turned on the PET scanner and charted blood flow in their brains. They found that the fear of being shocked increased blood flow to the brain's temporal lobes, located a few inches behind the eyes. As the volunteers' apprehension of being shocked increased further, it was matched by increased blood flow to the temporal lobes. "This told us that there are certain common areas of the brain, most dramatically the tips of the temporal lobes, that deal with fear and anxiety," says Raichle.

The researchers are now using PET scans to study other states of minds such as simple phobias, panic attacks and depression. Their goal, says Raichle, is to plot "a detailed emotional map of the brain, showing the circuits or combinations of circuits that produce our feelings."—Mark Teich

Blood rush. Some people relish close encounters of the shocking kind for stimulating the cerebral cortex

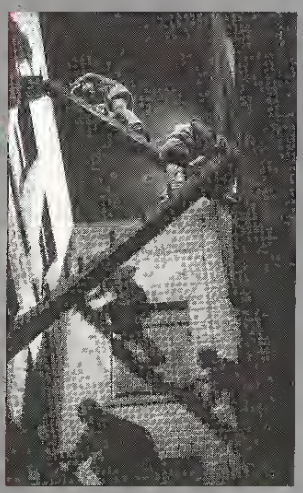
CRIMINALS AND COCKROACHES

Criminals and cockroaches, it turns out, have a lot in common. The more money you spend trying to squelch them, the shiftier they become.

By comparing police outlays for crime in 47 states between 1970 and 1980, finance professor Joseph Friedman of Temple University found that spending deters criminals for a while but breeds a higher crime rate in the long run. Why? Probably because criminals, like cockroaches, learn how to elude increasingly sophisticated efforts to thwart them.

"Let's say people install burglar alarms," Friedman says. "Initially it stops burglaries, but once the criminals learn how to disconnect them crime rates will rise again. After criminals master the new technology you'll have to install more complicated equipment. Then ripping off people with simpler alarms is a breeze, raising the crime rate again."

Since money can't stop criminals, Friedman suggests a different approach: Attack unemployment, which he calls "the biggest indicator of the natural crime rate." Keeping youth in school and providing vocational training for the unemployed and the incarcerated is the key. "Reducing the natural crime rate at its source will have a lasting effect," Friedman says, "while spending more on police is a temporary solution."—Vincent Bozzi



When the game changes, outlaws are quick to catch on

CONTINUUM

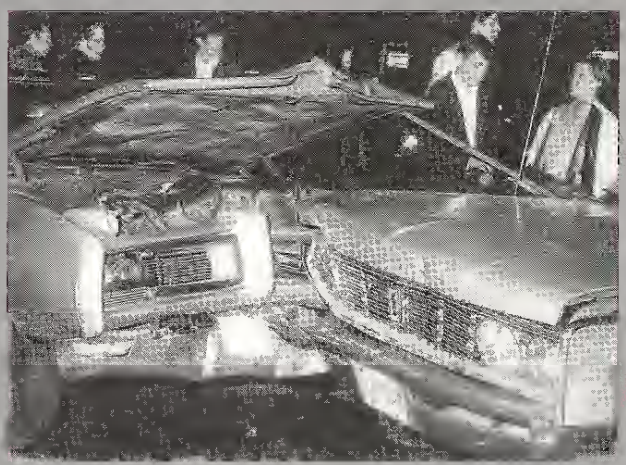
THE INCREDIBLE SHRINKING HEADLIGHT

First it was the incredible shrinking man, followed by the incredible shrinking woman. Now we can look forward to another incredible shrinking phenomenon: car headlights.

General Electric in Cleveland, working in conjunction with the Ford Motor Company, developed the tiny headlights for cars of the not-so-distant future. Depending upon the final configuration, the lights could wind up as two tennis ball–size dimples on a car's front end or as an inch-high strip that runs along the leading edge of a car's hood.

According to GE's John Davenport, the minilights, called xenon (*ZEE-non*) headlights, are "revolutionary." Because they are far brighter than ordinary headlights, they don't need to be as large to create the same amount of light. They're also four times more energy efficient and should last the life of an average car barring a front-end collision. They are, however, about twice the cost of headlights in use now ($120 compared with $60), but Davenport says the cost would be invisible since it would be incorporated into the overall price of the car. But the real revolution, Davenport says, will be in car styling. "It will mean even more aerodynamic designs because the headlights won't be creating as much wind resistance."

The tiny bulbs generate light when an electronically controlled spark jumps between two tungsten electrodes, igniting an atmosphere of xenon gas. The entire reaction occurs inside a capsule no larger than a match head. Davenport predicts that the xenon lights should be standard equipment on 1994 model cars and could be used in outdoor stadiums. —George Nobbe



Making our streets safer. Leading the way are new headlights with far less glass than the ordinary variety.

Dahling, don't you know that strangers stress me out.

WHY ZSA ZSA HIT THE COP

Was it just bad manners or a perverted sense of noblesse oblige that made Zsa Zsa Gabor slap that Beverly Hills cop? A study by sociologist Ronald Kessler of the University of Michigan may shed some light on the issue. Kessler, who was looking at the causes of stress, asked 332 married adults to report stressful incidents along with their moods each day for six weeks. He found that although some stress was apparent two out of three days, the incidents that caused the most stress were not the ones commonly thought to be major stress producers—job demands, financial problems, or sickness in the family. The most upsetting incidents, he says, are interpersonal conflicts.

"A fight with a stranger—a supermarket clerk or a policeman—causes the most stress," Kessler says, but adds that such altercations are rare. Much more common, though usually somewhat less stressful, are disputes with co-workers. Arguing with strangers may actually be more stressful than family fights. Kessler explains, "because when you argue with someone you don't know, the outcome is not certain."

Could it be Gabor was simply stressed out?

—Vincent Bozzi

"When people are free to do as they please, they usually imitate each other."

—Eric Hoffer

BEACON IN A BOTTLE

Life rafts are becoming almost as deluxe as ocean liners. They inflate automatically upon touching water and come equipped with plenty of creature comforts. But the newest accoutrement of shipwreck—a radar-reflecting balloon—can drastically reduce the time you spend lost at sea.

Generally speaking, life rafts are too tiny to be spotted by Coast Guard radar. The Radartron, a bottle containing a self-inflating metallic balloon attached to a 165-foot tether, makes your small craft loom large on the radar screens of passing ships. "It will make your life raft look bigger than a freighter," says Joseph V. Pignatiello, chairman of Aqua Buoy Corporation, which markets the balloon.

Hikers, mountain climbers, cross-country skiers, and other adventurers apt to become lost may find the Radartron indispensable as well. —George Nobbe

SNORE TREK

In 1983 while writing a science-fiction story, Peter Diamandis hit upon a novel idea To keep his characters from suffering the bone and muscle degeneration that earmarks long stays in space, Diamandis had them snooze on rotating platforms that simulated gravity

Four years later as a graduate student at MIT, he got a chance to build his artificial gravity sleeper (AGS)—a 12-foot-wide rotating disc designed to fit in NASAs upcoming space station or in the Soviet Union's *Mir* space station

The device resembles a giant record player with a crib sitting on top of it The sleeper lies in the crib head toward the disc's center while the contraption spins at 23 revolutions per minute, producing the illusion of Earthlike gravity So long as you keep your eyes shut there's no sensation of movement "It is quite comfortable Diamandis says

Diamandis believes that if astronauts doze on the AGS it will do away with the need for extraterrestrial exercise to counteract cardiovascular and bone degeneration Others are more skeptical "I doubt it's going to work,' says NASA astronaut–doctor Bill Thornton 'You need dynamic tension between bone and muscle to keep the problem at bay '

—Steve Nadis

The big Z Bedtime in space may never be the same.

"All philosophy is a form of confession"

—Friedrich Nietzsche

Look, Spot look They say that the grass is always greener on the other side of the fence, but—according to scientists at the University of California—that's not the way Spot sees it

ROVER GOES TO THE EYE DOCTOR

For years there has been a popular debate about whether dogs see the world in black and white or in living color The question may have finally been settled Rover does have an eye for color albeit a limited one

Jay Neitz, Gerald Jacobs, and Timothy Geist from the University of California at Santa Barbara spent a year testing for color vision in two greyhounds and a poodle They put the animals, one at a time in a box with three small translucent circles at one end, then randomly illuminated two of the circles with light of one color and the third with another After some training all three dogs were picking the different-colored light most of the time "That," says Neitz "shows they're discriminating according to color'

Unlike humans however who see a spectrum based on three colors (blue, green, and red), dogs have to make do with two (similar to our blue and red) In the middle or green range of the spectrum, explains Neitz, a dog's color vision fades to white —Bill Lawren

CONTINUUM

BEETLE JUICE

Spanish fly may not be the aphrodisiac it's cracked up to be in the human world, but its active ingredient cantharidin, is a ticket to survival for at least one group of beetles

Cornell University organic chemist Jerrold Meinwald and biologist Thomas Eisner discovered that during sexual foreplay, male pyrochroid beetles emit a gooey substance from a groove in their foreheads, a substance that the females taste as a prelude to mating If the male has previously eaten a meloid beetle, the goo will contain cantharidin, and the female will agree to mate But if the male hasn't had a meloid meal, there's no cantharidin—and no sex 'Once pyrochroid males have cantharidin in their system,' says Eisner, "it's like they have the key to the harem"

The female's craving for cantharidin, suggest Meinwald and Eisner, is a survival trick The substance makes the female's eggs unpalatable to predators They suspect that by mating only with males who offer the cantharidin-containing goo, the female is actually safeguarding her offspring

But the kicker, in terms of sexual politics, is that the male's love potion contains only a small amount of cantharidin The larger doses are saved for the male's semen "To really get enough to make her eggs unpalatable," Meinwald says, "she has to mate with a male that's eaten a meloid beetle"

—Bill Lawren

In the groove Sexual stimulation, at least for the bug pictured above is strictly a matter of taste

ROAD SHOW

If Jay Schiffman has his way, couch potatoes of the future won't be confined to the living room sofa—they'll be able to watch their favorite TV shows while driving their cars

Schiffman, an electrical engineer, got his idea 15 years ago while designing head-up display (HUD) systems for military aircraft HUD systems project images into a space in front of the pilots allowing them to check their instruments without taking their eyes off the sky Schiffman realized that a similar projection scheme would enable drivers to watch a TV show without taking their eyes off the road

His AutoVision device, recently patented by AutoVision Associates in Ferndale, Michigan, is a miniature projector located on the roof inside the car It beams a picture through a small mirrorlike lens on the windshield which reflects a 'virtual image' that appears to float above the road, about 15 feet in front of the car The device has been tested for six years, with some 300 drivers logging more than 200,000 miles "without so much as a scratched fender, according to Schiffman

Paul Green an associate research scientist at the University of Michigan's Transportation Research Institute, has driven a car fitted with the device and discovered that "it's not as outlandish as you might think But that doesn't mean that it's safe" He says that independent experiments are now needed to determine the conditions if any under which AutoVision could be used

Car radios, which were introduced 60 years ago, may serve as a precedent The devices were outlawed in many areas of the country because lawmakers feared they would distract drivers But recent tests by Green and his colleagues have shown that radios help keep drivers alert Car TVs may serve the same function, Green says, or you might be better off with just a radio"

—Steve Nadis

"Anyone who thinks there's safety in numbers hasn't looked at the stock market pages'

—Irene Peter

"Don't go around saying the world owes you a living The world owes you nothing It was here first"

—Mark Twain

"The safest way to double your money is to fold it over once and put it in your pocket"

—Frank McKinney Hubbard

"What happens to the hole when the cheese is gone?'

—Bertolt Brecht

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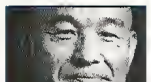
MASTERS OF THE UNIVERSE

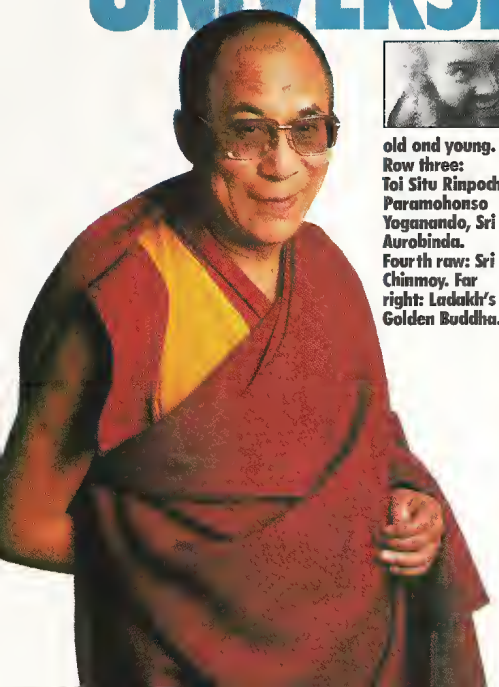
Article By
Pamela Weintraub

Spiritual teachers with roots in the East are helping us reevaluate our lives and renew our love for each other and the earth



Below left: Dolai Lama. Boxes (below): Hokuyu Toizan Rashi, Ram Dass. Next row, from top: Mira Alfassa, Maharajji, Swami Satchidananda, Krishnamurti, old and young. Row three: Toi Situ Rinpoche, Paramahonso Yogananda, Sri Aurobinda. Fourth raw: Sri Chinmoy. Far right: Ladakh's Golden Buddha.






Richard Alpert, Ph.D., was fired from Harvard in 1963. His offense was grave. Along with his friend Timothy Leary, he had been caught not just using LSD but actually dispensing the hallucinogen to *students*. Banished from the kingdom, he set out to discover the meaning of life. His quest took him to northern India, where, in 1967, he met Neem Karoli Baba, or Maharajji.

As Alpert tells it, he was sleeping in the foothills of the Himalayas when, in the middle of the night, he suddenly "had to pee. I went outside," he recalls, "and I gazed at the stars. And I thought of my mother, who had died six months earlier of cancer of the spleen. She just went through my mind, and I went back to bed. The following day, my traveling companion told me he needed to see his guru and invited me to come along.

"The guru, Maharajji, was about seventy-eight at the time. An old man wrapped in a blanket, he was surrounded by half a dozen disciples, and his first words to me were, 'You came in a big car? You'll give it to me?' It was the fastest hustle I'd ever encountered. I was totally bewildered, and my perplexity gave Maharajji and his disciples a good laugh.

"They fed us, and we rested. Then he motioned me over to where he and his translator were sitting. He said, 'You were under the stars last night.' I said, 'Yes.' He closed his eyes and said, 'You were thinking about your mother.' I felt a kind of clammy uneasiness. He said, 'She died last year. She got very big in the stomach before she died.' Then he looked directly into my eyes and said, in English, '*Spleen.*'

"At that point my rational, analytic mind gave up. I had a ripping, violent sensation in my chest, and I started to sob. I cried for two days. At the time I didn't understand why. In retrospect I realize that by confronting the intellectual part of me, he confronted my mind and forced it to the ground, and the result was that my heart opened. He was a person who could know me intimately and also love me. So often before with people who loved me, I'd felt, *If only they could know my dark side.* He did, and it was that combination of love and knowing that made this and all my later encounters with him extraordinary."

Alpert wound up spending two years in India, studying under his guru. When he returned to the States, his name was no longer Richard Alpert, Ph.D., but rather Baba Ram Dass—*Baba* for "respected father" and *Ram Dass* for "servant of God." Ram Dass's message, expressed in his best-selling book *Be Here Now,* was clear: "We are all on the journey towards enlightenment. We are all on the path...daily, slowly, the cloud of illusion becomes thinner and thinner...until, at last, there is light."

To some, Ram Dass's brand of illumination was laughable. His own father, a high-powered Boston lawyer, called him Baba Rum Dum. His brother called him Rammed Ass. And the *National Lampoon* invented a monthly column featuring a dazed and disoriented mystic named Baba Rum Raisin.

But today Ram Dass and a few other teachers, or "gurus," form the high priesthood of one of the more pervasive religious movements in the United States. These "masters," as some call them, base their teachings on the sacred philosophies of the East. Buddhism, which suggests we find true happiness by renouncing earthly desire and exploring the "true inner self"; Zen, a Buddhist sect that strives for enlightenment through altered states of consciousness and meditation; and yoga, a technique for achieving insight and balance through mental and physical exercise. Though their exact philosophies differ, the masters teach their students to shed superficial values, to feel at one with the universe, to show love and compassion, and to achieve the state of "emptiness," in which one eliminates all thought and opens up to waves of endless peace.

The masters who serve this Eastern brew are no lightweights. The Dalai Lama of Tibet, a renowned humanitarian, was just awarded the Nobel peace prize. The late Jiddu Krishnamurti, a critic of organized religion, was one of the preeminent philosophers of this century. Tai Situ Rinpoche, a leader of the Kagyad form of Tibetan Buddhism, is constantly traveling the globe, speaking out for world peace.

You may be more familiar with Shirley MacLaine and her army of crystalgazers. But it is the *masters* who form the *true* philosophical underpinnings of the burgeoning New Age. The serious seminars held weekly at Esalen in California and the Omega Institute in New York are fueled by ideas from such people as the Dalai Lama and Ram Dass. Their techniques have penetrated the corporate world, where some companies teach employees the art of inner balance and "flow." And the masters have recently altered the face of psychotherapy, where some analysts give the "transpersonal" (i.e., spiritual) experience more credence than the superego and id.

As Don Morreale, author of *Buddhist America*, puts it, "Dharma has come home. One is no longer compelled to *leave* home in search of a true teacher or a vital practice center. The Buddhist 'movement' has become a *regional* phenomenon. It is pervasive. And it is quietly transforming our North American cultures. *This* is the golden age of Buddhism. Right *here*! Right *now*!"

The roots of dharma—defined as the

law upon which all processes in the universe are based—go back 2,500 years to the southern edge of Nepal. There, legend has it, a young nobleman named Siddhartha spent his youth in luxury, shielded from the sorrows of the world. But one day he took a ride through the royal park and glimpsed the suffering of life. Vowing to find a solution, Siddhartha renounced his wealth and wandered the world. Then one day he sat down under a Bo tree, refusing to move until the mystery of human misery was solved. After 49 days he was rewarded with "the great enlightenment." He gathered disciples and, as the Buddha, spread his vision throughout Nepal, India, and the East.

You could obliterate suffering, he told his followers, by abandoning desire and becoming blissfully detached from the world. His disciples took vows against killing, stealing, and lying and lived austere, monastic lives. When they reached the pinnacle of bliss—called Nirvana—they would join up with cosmic consciousness by escaping the endless round of painful reincarnation.

By the first or second century A.D. Buddhist missionaries had brought these teachings to China, where some of the theoretical overtones were replaced by a more pragmatic philosophy based on ethical rules. The Buddha's ideas then spread to Korea and Japan, where samurai warriors used a version called Zen to help them concentrate and perform martial arts. Buddhist missionaries continued to promote the spread of dharma, adapting their philosophy to almost every Asian land.

In the nineteenth century dharma finally turned West, reaching the States in the writings of the transcendentalists, including Walt Whitman, Ralph Waldo Emerson, and Bronson Alcott. And in 1893 a Zen monk named Soyen Shaku oversaw the first American conversion to Buddhism, at the World's Columbian Exposition in Chicago.

But it wasn't until the 1920's that dharma really hit the States. Its premier emissary: Krishnamurti, whose story is almost as extraordinary as that of the Buddha himself.

In 1909 Krishnamurti was a strikingly beautiful but awkward fourteen-year-old living with his father, a low-level employee of the Theosophical Society in Adyar, India. The society, a cultlike organization that mixed Buddhism and Indian Brahmanism, had been on the lookout for the new messiah for years. And when Annie Besant, then head of the organization, spied young Jiddu, she declared she'd found her man. Besant lured Krishnamurti away from his father (who spent years in fruitless lawsuits, attempting to get his son back). Taking the young man to Europe, Besant immersed him in the teachings of the society, preparing him to save the world.

Krishnamurti, who eventually settled in Ojai, California, spent 18 years as a messiah in training. He *seemed* to swallow the society's claims whole. But in 1929, at a mass meeting of the Theosophical Society, he shocked his flock by abdicating claim to the throne. "I do not want followers," he declared. "The moment you follow someone, you cease to follow Truth.... Truth is in everyone. No man from outside yourself can make you free."

Renouncing not just Theosophy but organized religion as a whole, Krishnamurti advised people to be their own gurus and seek enlightenment within themselves. He held yearly talks on his philosophy at an oak grove outside Ojai and regularly corresponded with Bertrand Russell, Aldous Huxley, and George Bernard Shaw.

For the next few decades Krishnamurti and a few other Eastern philosophers mingled with intellectuals in the West. But it wasn't until the Sixties, with the advent of the drug culture, that their ideas truly took hold. As Marilyn Ferguson, publisher of the *Brain/Mind Bulletin* and author of *The Aquarian Conspiracy*, says, "The psychedelic movement of the Sixties led a lot of people to religious exploration. Eastern descriptions made sense to a great many people because they paralleled the transcendental experiences they had had with psychedelic drugs."

Finally, in the Seventies and Eighties, with the rise of cosmology and neuroscience, people were able to see the similarity between the laws of dharma and those of the physical world. Says Diana Alstad, who is currently writing a book on spiritual movements in the United States, "Eastern ideas are simply more sophisticated than Western religions in light of the science and technology of today. In fact," she adds, "the Western religions seem childish. It's harder for scientifically sophisticated people to believe in God—in the Father, the Son, and the Virgin Mary—than it is for them to believe in the principle of cosmic consciousness."

By the late Eighties the teachings of the masters had spread across the land. Today, with hundreds of spiritual centers and literally thousands of teachers, there seems to be a master for every personality type and taste.

Though Eastern philosophies in many ways complement science, some Americans look to their masters for a touch of the sublime. Take Sam Spanier, an upstate New York artist who believes his guides—the Indian yoga expert Sri Aurobindo and his spiritual partner Mira Alfassa (also known as The Mother)—may actually have the power to heal.

"This woman called me in great distress," Spanier explains. "She told me

CONTINUED ON PAGE 86

FICTION

THE POWER AND THE PASSION

BY PAT CADIGAN

The voice on the phone says, "We need to talk to you, Mr. Soames," so I know to pick the place up. Company coming. I don't like for Company to come into

PAINTING BY AKIRA YOKOYAMA

"The other guy, Villanueva, I could almost respect him. He probably knows me better than anyone. He was the one took my statement when they caught me."

no pigsty, but one of the reasons the place is such a mess all the time is, it's so small, I got nowhere to keep shit except around, you know. But I shove both the dirty laundry and the dirty dishes in the oven—my mattress is right on the floor so I can't shove stuff under the bed, and what won't fit in the oven I put in the tub and just before I pull the curtain, I think, *Well, shit, I shoulda just put it all in the tub and filled it and got it all washed at once.* Or, well, just the dishes, because I can take the clothes over to the laundromat easier than washing them in the tub. So, hell, I just pull the shower curtain, stack the newspapers and the magazines—newspapers on top of the magazines, because most people don't take too well to my taste in magazines, and they wouldn't like a lot of the newspapers much either, but I got the Sunday paper to stick on top and hide it all, so it's okay. Company'll damned well know what's under those Sunday funnies because they know *me*, but as long as they don't have it staring at them, it's like they can pretend it don't exist.

I'm still puttering and fussing around when the knock on the door comes and I'm crossing the room (the only room unless you count the bathroom, which I do when I'm in it) when it comes to me I ain't done dick about myself. I'm still in my undershirt and shorts, for chrissakes.

"Hold on," I call out, "I ain't decent, quite," and I drag a pair of pants outta the closet. But all my shirts are either in the oven or the tub and Company'll get fanny-antsy standing in the hall—this is not the whatchamacallit, the place where Lennon bought it, the Dakota, yeah. Anyway, I answer the door in my one hundred percent cotton undershirt, but at least I got my fly zipped.

Company's a little different this time. The two guys as usual, but today they got a woman with them. Not a broad, not a bitch, not a bimbo. She's standing between and a little behind them, looking at me the way women always look at me when I happen to cross their path—chin lifted up a little, one hand holding her coat together at the neck in a fist, eyes real cold, like, "Touch me and die horribly, I wish," standing straight fuckin' up, like they're Superman, and the fear coming off them like heat waves from an open furnace.

They all come in and stand around and I wish I'd straightened the sheets out on the mattress so it wouldn't look so messy, but then they'd see the sheets ain't clean, so six of one, you know. And I got nothing for anyone to sit on, except that mattress, so they just keep standing around.

The one guy, Steener, says, "Are you feeling all right, Mr. Soames?" looking around like there's puke and snot all over the floor. Steener don't bother me. He's a pretty man who probably was a pretty boy and a pretty baby before that, and thinks the world oughta be a pretty place. Or he wants to prove pretty guys are tougher and better and more man than guys like me, because he's afraid it's vice versa, you know. Maybe even both, depending on how he got up this morning.

The other guy, Villanueva, I could almost respect him. He didn't put on no face to look at me, and he didn't have no power fantasies about who he was to me or vice versa. I think Villanueva probably knows me better than anyone in the world. But then, he was the one took my statement when they caught up with me. He was a cop then. If he'd still been a cop, I'd probably respect him. So I look right at the woman and I say, "So, what's this, you brought me a date?" I know this will get them because they know what I do to dates.

"You speak when spoken to, Mr. Soames," Steener says, kinda barking like a dog that wishes it was bigger.

"You spoke to me," I point out.

Villanueva takes a few steps in the direction of the bathroom—he knows what I got in there and how I don't want Company to see it, so this is supposed to distract me, and it does a little. The woman steps back, clutching her light coat tighter around her throat, not sure who to hide behind. Villanueva's the better bet, but she doesn't want to get any further into my stinky little apartment, so she edges toward Steener.

And it comes to me in a two second flash-movie just how to do it. Steener'd be easy to take out. He's a rusher, don't know dick about fighting. He'd just go for me and I'd just whip my hand up between his arms and crunch goes the windpipe. Villanueva'd be trouble, but I'd probably end up doing him, too. Villanueva's smart enough to know that. First, though, I'd bop the woman, just bop her to keep her right there—punch in the stomach does it for most people, man or woman—and then I'd do Villanueva, break his neck.

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Then the woman. I'd do it all, pound one end, pound the other, switching off before either one of us got too used to one thing or the other. Most people, man or woman, black out about then. Can't face it, you know, so after that, it's free-for-fuckin'-all. You can do just any old thing you want to a person in shock, they just don't believe it's happening by then. This one I would rip up sloppy, I would send her to hell and then kill her. I can see how it would look, the way her body would be moving, how her flesh would jounce flabby—

But I won't. I can't look at a woman without the flash-movie kicking in, but it's only a movie, you know. This is Company, they got something else for me.

"Do you feel like working?" Villanueva asks. He's caught it just now, what I was thinking about, he knows, because I told him how it was when I gave him my statement after I got caught.

"Sure," I say, "what else have I got to do?"

He nods to Steener, who passes me a little slip of paper. The name and address. "It's nothing you haven't done before," he says. "There are two of them. You do as you like, but you *must* follow the procedure as it has been described to you—"

"I know how to do it. I've studied on it, got it all right up here." I tap my head "Second nature to me now."

"I don't want to hear the word *nature* out of *you*," Steener sneers. "You've got nothing to do with nature."

"That's right," I agree. I'm mild-mannered because it's just come to me what is Steener's problem here. It is that he is like me. He enjoys doing to me what he does the way I enjoy doing what I do, and the fact that he's wearing a white hat and I'm not is just a whatchamacallit, a technicality. Deep down at heart, it's the same fuckin' feeling and he's going between loving it and refusing to admit he's like me, boing-boing, boing-boing. And if he ever gets stuck in the loving-it side, well, son of a bitch will there be trouble.

I look over at Villanueva and point at the woman, raising my eyebrows. I don't know exactly what words to use for a question about her, and anything I say is gonna upset everybody.

"This person is with us as an observer," Villanueva says quietly, which means I can just mind my own fuckin' business and don't ask questions unless it's about the job. I look back at the woman and she looks me right in the face. The hand clenched high up on her coat relaxes just a little and I see the purple-black bruises on the side of her neck before she clutches up again real fast. She's still holding herself the same way, but it's like she spoke to me. The lines of communication, like the shrinks say, are open, which is not the safest thing to do with me. She's gotta be a nurse or a teacher or a social worker, I think, because those are the ones that can't help opening up to someone. It's what they're trained to do, reach out. Or hell, maybe she's just somebody's mother. She don't look too motherly, but that don't mean dick these days.

"When?" I say to Steener.

"As soon as you can pack your stuff and get to the airport. There's a cab downstairs and your ticket is waiting at the airline counter, in your name."

"You mean the Soames name," I say, because that's not my name for real.

"Just get ready, get going, get it done, and get back here," Steener says. "No side trips, or it's finished." He starts to turn toward the door and then stops. "And you know that if you're caught in or after the act—"

"Yeah, yeah, I'm on my own and you don't know dick about squat, and nobody ever hearda me, case closed." I keep myself from smiling, he watched too much *Mission: Impossible* when he was a kid. Like everyone else in his outfit. I think it's where they got the idea, kind of, some of it anyway.

Villanueva tosses me a fat roll of bills in a rubber band just as he's following Steener and the woman out the door. "Expenses," he says. "You have a rental car on the other end, which you'll have to use cash for. You can only carry cash, so don't get mugged and robbed. You know the drill."

"Drill?" I say, acting perked up, like I'm thinking, *Wow, what a good idea*.

Villanueva refuses to turn green for me, but he shuts the door behind him a little too hard.

I don't waste no time; I go to the closet and pull out my traveling bag. Everything's in it, but I always take a little inventory anyway, just to be on the safe side. Heiluva thing to come up empty-handed at the wrong moment, you know. Really, though, I just like to handle the stuff: hacksaw, mallet, boning blade, iodized salt, lighter fluid, matches, spray bottle of holy water, four pieces of wood pointed sharp on one end, half a dozen rosaries, all blessed, and two full place settings of silverware, not stainless, mind you, but real silver. And the shirts I don't never put in the tub. What do they make of this at airport security? Not a fuckin' thing. Ain't no gun. Guns don't work for this.

The flight is fine. It's always fine because they always put me in first class and nobody next to me if possible. On the night flights, it's generally possible, and tonight, I have the whole first-class section to myself, hot and cold running stews, who are (I can tell) forcing themselves to be nice to me. I don't know what it is, and I don't mind it, but it makes me wonder all the same. Is it a smell, or just the way my eyes look? Villanueva told me once, it was just something about me gave everyone the creeps. I lean back, watch the flash movies, don't bother nobody, and everybody's happy to see me go when the plane finally lands. I get my car, nice midsize job with a phone, and head right into the city. I know this city real good, I been here before for them.

Do an easy fifty-five into the city and go to the address on the paper. Midtown, two blocks east of dead center, medium-sized Victorian. I can see the area's starting to get a whatchamacallit, like a facelift, the rich ones coming in and fixing up the houses because the magazines and TV told them it's time to love old houses and fix them up.

I think about the other houses all up and down the street of the one I gotta go to, what's in them, what I could do. I sure feel like it, but I made me a deal of my own free will and I will stick to it as long as they do, Steener and Villanueva and the people behind them. But if they bust it up somehow, if they fuck me, that will be real different, and they will be real sorry.

I call the house, nobody home. That's about right. I got to wait, which don't bother me none, because there's the flash-movies to watch. I can think on what I want to do after I get through what I have to do, and those things are not so different from each other. What Steener calls the procedure I call a new way to play. Only not so new, because I thought of some of those things all on my own when I was whatchamacallit, freelance so to say, and done some of them, kind of, which I guess is what made them take me on for this stuff, instead of letting me take a quick shot in a quiet room and no funeral after.

So, it gets to be four in the morning and here we come. Somehow, I know as soon as I see the figure coming up the sidewalk across the street that this is the one in the house. I can always tell them, and I don't know what it is, except maybe it takes a human monster to know an inhuman monster. And I don't feel nothing except a little nervous about getting into the house, which is always easier than you'd think it would be, but I get nervous on it anyway.

Figure comes into the light and I see it's a man, and I see it's not alone, and then I get pissed, because that fucking Steener, that fucking Villanueva, they didn't say nothing about no kid. And then I settle some, because I can tell

the kid is one, too. Ten, maybe twelve from the way he walks. I take the razor and I give myself a little one just inside my hairline, squeeze the blood out to get it running down my face, and then I get out of the car just as they put their feet on the first step up to the house.

"Please, you gotta help me," I call not too loud, just so they can hear, "they robbed me, they took all my ID, my credit cards, my cash—"

They stop and look at me running across the street at them and the first thing they see is the blood, of course. This would scare anybody but them (or me, naturally). I trip myself on the curb and collapse practically at their feet. "Can I use your phone? Please? I'm scared to stay out here, my car won't start, they might still be around—"

The man leans down and pulls me up under my arm. "Of course, come in, we'll call the police. I'm a doctor."

I have to bite my lip to keep from laughing at that one. He's an operator maybe but no fucking doctor. Then I taste blood, so I let it run out of my mouth and the man and the kid get so hot they can't get me in the house fast enough.

Nice house. All the Victorian shit restored, even the fuzzy stuff on the wallpaper, whatchamacallit, flocked wallpaper. Then the guy's rushing me upstairs, saying he's got his medical bag up there. I just bet he does, and I got mine right in my hand, which they do not bother wondering about what with all this blood and this guy with no ID and out at four in the morning, must be a criminal anyway. I used to ask Villanueva, don't they ever get full, like they can't drink another drop, but Villanueva told me no, they always had room for one more, it was time they were pressed for. Dawn. I'd be through long before then, but even if I wasn't, dawn would take care of the rest of it for me. They're getting so excited it's getting me even more excited. I look at the kid and if I'd been anyone else, I woulda started screaming and trying to get away, because he's all gone. I mean, the kid part is all gone and just this fucking hungry thing from hell. So I stop feeling funny about there being a kid, because like I said, there ain't no kid, just a short one along with the tall one. And shit if he don't twig, right there on the stairs. I musta looked like I recognized him.

"We're burned! We're burned!" he yells and tries to elbow me in the face. I dip and he goes right the fuck over my head and down, ka-boom, ka-boom. Guess what, they can't fly. It don't do him, but they can feel pain, and if you break their legs, they can't walk for a while until they can get extra blood to heal them up. The kid's fucking neck is broke, you can see it plain as anything.

But I don't get no chance to study on it because the big one growls like a fucking attack dog and grabs me up from behind around the waist. They really are stronger than normal, and you better believe it hurt like a motherfucker. He squeezes and there go two ribs and the soft drinks I had on the plane, like a fucking fountain.

"You'll go slow for that," he says, "you'll go for days, and you'll beg to die."

Obviously, he don't know me. I'm hurting all right, but it takes a lot more than a couple of ribs to put me down and I never had to beg for nothing, but these guys get all their dialogue off the late show anyway and they ain't thinking of nothing except sticking it to you and drinking you dry. Fucking undead got a, a whatchamacallit, a narrow perspective, and they think everyone's scared of them. That's why they send me, because I don't see no undead and I don't see no human being, I just see something to play with. I got a narrow perspective, too, I guess.

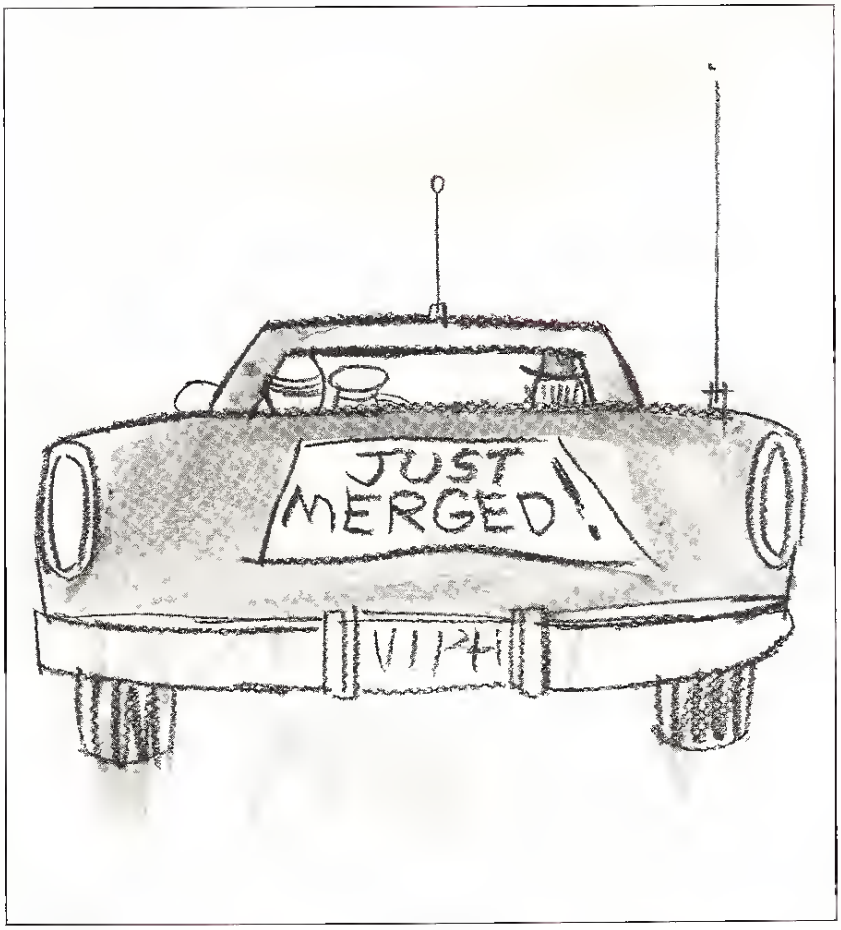
But then everything is not so good because he tears the bag outta my hand and flings it away. Then he carries me the rest of the way upstairs and down the opposite end and tosses me into a dark room and slams the door and locks it. I hold still until I can figure out how to move and cause myself the least pain, and I start taking off my shirts. I'm wearing a corduroy shirt with a pure linen lining sewn into the front and two heavy one hundred percent cotton T-shirts underneath. I have to tear one of the T-shirts off, biting through the neck, and I bite through the neck of the other one but leave it on (thinking about the guy biting through necks while I do it) and put the corduroy shirt back on, keeping it open. Ready to go.

The guy has gone downstairs. I hear the kid scream and then muffle it, and I hear footsteps coming back up the stairs. There's a pause, and then I see his feet at the bottom of the door in the light, and he unlocks the door and opens it. "Whoever you think you are," he says, "you're about to find out what you really are."

I give a little whimper, which makes him sure enough to grab me by one leg and start dragging me out into the hallway, where the kid is lying on his back. When we're out in the light, he stops and stands over me, one leg on each side, and looks down at my crotch. I know what he's thinking, because I'm looking up at his and thinking something not too different. He squats on my thighs, and I rip my shirts open.

It's like an invisible giant hand hit him in the face, he goes backwards with a scream, still bent at the knees, on top of my legs. I heave him off quick. He's so fucked I have time to get to him, roll him over on his back, and give him a nice full frontal while I sit on his stomach.

It is a truly def tattoo. This is not like



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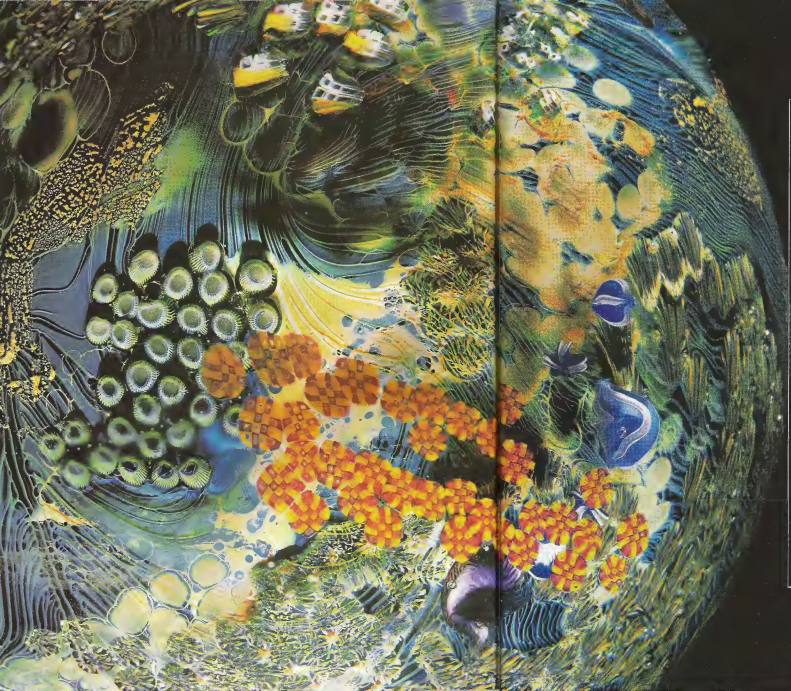


A combination of earthly elements and heavenly inspiration fuels these

GREAT BALLS OF FIRE

GLASSWORK BY JOSH SIMPSON

In a rural town in western Massachusetts glassblower Josh Simpson demonstrated how to create small, perfect marbles to a group of curious children. While showing the kids his craft, the piped piper became intrigued with the idea of making more intricate spheres with blown glass. And so his series of glasswork called Planets was born. Imitating the Almighty's

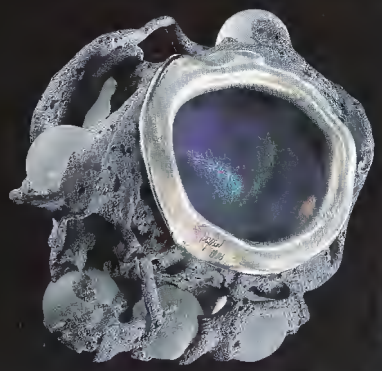
handiwork with his renditions of various planets, Simpson uses his blowpipe to conjure fantasy worlds ranging in diameter from two to ten inches. Using a library of satellite photos, Simpson often starts with a technical drawing. His ethereal lands and seas are laid out on paper, sketched in his skies are satellites and isolated meteorites. Throughout this planning stage, settings evolve and grow. Seemingly active volcanoes burst through the landscapes, and oceans abut the sculpted continents.

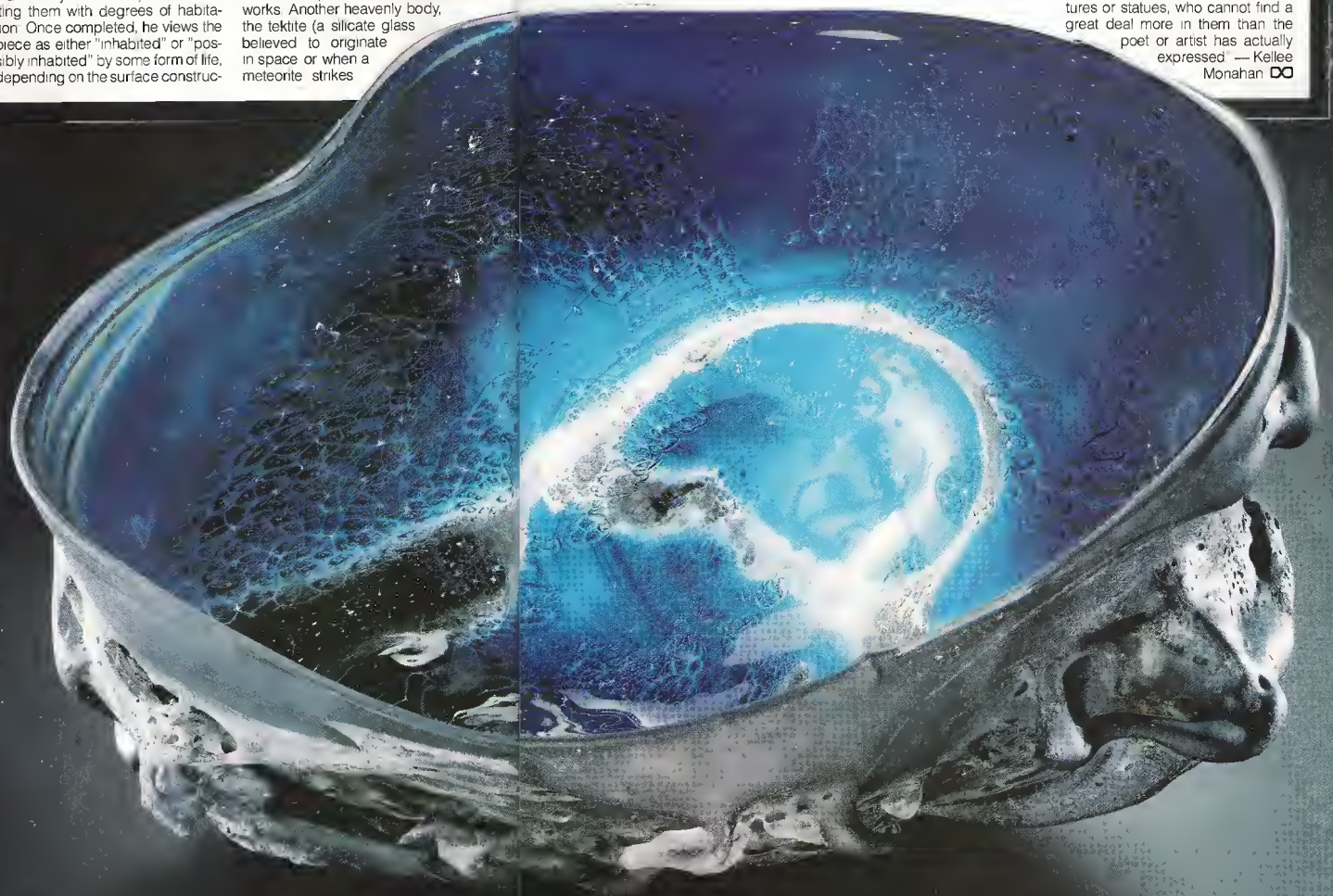
The first step in bringing his worlds to life is forming a core to support the planet's surface. Completing the globe that houses his creation takes only a few hours, but he labors for days over the detailed interiors. Creating the three-dimensional effects requires patient and skillful use of traditional glassmaker's tools. Finally, by adding mica, gold, and silver, shimmering city lights and rich terrains burst into being.

Simpson doesn't name his Planets individually but rather prefers crediting them with degrees of habitation. Once completed, he views the piece as either "inhabited" or "possibly inhabited" by some form of life, depending on the surface construction. If the world's appearance is rigid and systematic, he likes to believe it's the independent workings of intelligent life. The more elaborate larger works, "megaworlds," he describes by saying, "Some seem a terrible place to live—so dry and arid, while others are warm and lush, washed with huge blue oceans and gold mountain ranges."

Simpson's fascination with the universe inspired a second series of works. Another heavenly body, the tektite (a silicate glass believed to originate in space or when a meteorite strikes Earth), appealed to Simpson: What if he were to form his own version of this meteor? Simpson discovered tektites composition through chemical analysis. Combining various elements, such as the metallic oxides iron and manganese, in his "hellfire furnace," Simpson created a succession of glasswork titled simply Tektites.

These works take on a freer form than the methodically designed Planets. Simpson considers himself merely a partner in the tektite process—the molten liquid has a mind of its own. During the firing, the gray, crusty exteriors form and bubble into individual shapes. While the sculptures are still hot, he glazes the interior with a silver glass, which results in a "glowing iridescent world within." The artist likes to imagine that his objects have blasted through space, arriving on the earth roughly pitted and abraded. Despite their harsh journey, the Tektites survive, their mysterious and precious interiors unscathed. "I want the viewer to experience my work in every way possible," states Simpson, "and to experience life's fragility." Each viewer brings a world of meaning to Simpson's creations, reflecting Nathaniel Hawthorne's sentiments in *The Marble Faun*: "Nobody, I think, ought to read poetry, or look at pictures or statues, who cannot find a great deal more in them than the poet or artist has actually expressed." — Kellee Monahan





On pages 58 and 59: A closeup view of the "Inhabited Megaworld," a piece in a series of glass planets, each with satellites, cities, and landscapes. Using a delicate technique, Simpson created this detailed glass vase (inset). This page: The exterior of the Tektite above appears to have been sculpted during its travels through the solar system; each of Simpson's Tektites exudes a mysterious aura. Right: The Tektite's interior reveals a spectrum of color that varies with the light as it enters the iridescent core.

ARTICLE

ROAD WARRIOR

BY BOB BERGER

道

They say a journey of a thousand miles begins with a single step. My journey begins with a kick. This is a wonderfully strange assignment: Criss-cross the country, visiting different masters of centuries-old martial and mystical arts. I'm a little nervous about the prospect of 50 centuries of consciousness awakening squashed into a one-week marathon. It could easily turn my mind—and body—to mush. I seek the invisible essence of energy called *ch'i*, *ki*, or *prana* (literally "vital breath")—and to know how

PHOTOGRAPH BY JOHN BENNETT

these spiritual practices can help us cope with the future shock of the Nineties. Besides an open mind, I'm bringing a tube of Ben-Gay—I'm to participate in more than a dozen classes.

So I start, like a child in the womb, with an innocent kick.

TAE KWON DO, NEW YORK CITY

The kick is from tae kwon do (the Korean words roughly translate into "kick-punch-art"), and the master is sixty-seven-year-old Duk Sung Son, a ninth-degree black belt who has taught the ROK Army of South Korea as well as cadets at West Point.

Tae kwon do is a martial art more than 2,000 years old. An assortment of kicks and punches that focus power with deadly effectiveness, it's a so-called hard style. Hard style? I ask Master Son. "Punch, side kick, roundhouse," Son replies. "One kick, fight finished."

I dress for class. I pray the threat of bad press, like the proverbial mark of Cain, will protect me.

First we race around the dojo, doing laps at breakneck speed. Ten minutes later we bow to the master, then snap into a fighting stance at Son's thunderous bellow. Drill sergeants would do well to study here.

We quickly perform ten sets of tae kwon do's 15 "basics" (arm blocks, punches, and kicks), speed through all the *hyungs*, or forms, then furiously fight "no contact" (this I watch), two people against one, one against one—exhausting just to watch.

Two hours later we "warm down" by, fantastically, throwing a dozen more vigorous punches and kicks. We bow to the master and, if extremely lucky, find the strength to crawl to the showers and then to bed to sleep for several weeks.

I understand now about "hard style."

Obviously, tae kwon do is blue-collar, with enlightenment the by-product of the work ethic. But what about *ki*? I ask Son before I go. He looks at me blankly. "Energy," I say, "mystical force."

"Ah!" Son cries. He jumps up and, hand on his stomach (to indicate the center of the body's *ki*), throws a punch above my head. I swear I feel the air shake. The explanation, like tae kwon do, is unadorned, direct, and powerful.

NINJITSU, GERMANTOWN, OHIO

There is a sound like a bee whizzing past my ear, and then a *shuriken* (throwing star) bites into the foam target against which I'm pressed, spread-eagled like a Dürer ink sketch. The ninjitsu, whose origins are seventh- or eighth-century Japan, are the world's best human fighting machines. With a philosophy based on *The Art of War* by Sun Tzu, circa 400 B.C., ninja fight with silence, exile, and cunning (to quote that Irish ninja, James Joyce). They are, says Stephen K. Hayes, their spiritual leader, "prepared for the worst while anonymously enjoying the best."

I'm just a bit nervous. I'm inside a re-created Japanese ninja training hall—barren wood on wood, and on the walls a collection of exotic chains, knives, swords, whips, staffs, and other sadistic tools that would make a hardened dominatrix blush.

Hayes assures me I'm okay. He's more or less a glorified yoga teacher, he swears. Even so, this isn't yoga or tae kwon do, with its proud show of power. This is the martial art of expediency.

I practice movements to distract and fool my opponent. I slip punches rather than block them. When my opponent is thoroughly confused, I have the opportunity to finish him off with kicks to the knees and groin—or flee. It is self-preservation by cleverness and stealth.

Hayes exemplifies this philosophy. When not in his ninja black right down to his split-toed *tabi* (special ninja shoes that remind me of cloven hooves), he blends without a trace into small-town USA. "I'm an average American guy," he says, a grin spreading over his pleasant all-American looks. "I con-

The character on page 62 signifies the Tao, or path. Photograph (pages 62 and 63) is of Dan Furuya, fifth-degree aikido black belt and Zen priest. Clockwise from right: A practitioner of Wushu perfects his balance on poles planted loosely in the ground; Wushu artists in the shadow of Shaolin Temple; Duk Sung Son, ninth-degree tae kwon do black belt; Wushu masters battle each other atop poles.

form to the ordinary. So does my ki."

"Do you carry ninja stars or weapons?" I ask.

"I have a toolbox in my car, with chain, rope. Ordinary things."

That you can use as weapons if you get in trouble?"

Hayes shrugs and smiles. He won't say yes. It's hard to pin a ninja down.

WING CHUN, TUCSON, ARIZONA

If you've seen Bruce Lee in action (and he was a real martial artist), you know that at least once during each of his "hoodlet" flicks there occurs a stylized exchange of rapid arm blocks and attacks. It may look like Moe and Curly—you know, whack, bam, poke in the eye—but when Lee did it, it was authentic, deadly Wing Chun.

Wing Chun was developed at the famous Shaolin Temple, a Chinese Buddhist monastery and martial arts training center founded 2,500 years ago and still in existence today. Tai chi and the flamboyant Wushu (best known for its spectacular high kicks and leaps) also evolved from forms created there. More recently, Wushu has moved away from its fighting heritage. Throughout China, and in many other places around the world, Wushu practitioners compete with each other in meets that resemble gymnastic contests—with judging based on style and form, rather than combat. Legend has it that a Buddhist nun, Ng Mui, created Wing Chun after she observed a small animal overcoming a larger, more dangerous one. From this example she developed Wing Chun, a style of martial arts in which you fight at extremely close range—practitioners stand almost toe-to-toe—and make small, circular movements with your arms to catch and deflect approaching blows. A so-called soft art, it favors the use of suppleness to overcome force.

Or as Augustine Fong, the unlikely master, keeps insisting, with a giggle, "Too stiff, too strong." In Wing Chun these are no-nos. You fight with feeling, sensitivity, even kindness; it's the martial art of self-deprecation.

Fong fits this philosophy. Looking almost docile, he moves around his dojo like a stand-up comic working a tough room. He giggles at his own comments, but like poor Rodney Dangerfield, he don't get much respect.

"Come on, Si-fu," a student complains. *Si-fu* means "father" or "teacher" in Cantonese. "What can you show me?" He and Fong are doing "sticky hands," simulated fighting in which your hands touch or stick to your partner's. Si-fu invites the student to try to punch him. Humbly Fong deflects each blow by turning just slightly here, moving there. The student huffs and puffs. Fong giggles. "No need even to fight," he says placidly to me, while continuing to humiliate the young man. "Only stupid man has to use strength," he adds and, using his hand, touches the student's arm and the guy falls over backward. "Too strong," Fong says and giggles. "Oh, much too strong!" and he starts to laugh.

We all nervously laugh with him.

TAO MASTER, LOS ANGELES

Today I'm to meet the seventy-fourth generation of Tao masters—a lineage extending back before the Han Dynasty, 216 B.C. The Tao (pronounced *dow*) is an ancient Chinese science more than 6,000 years old. Its goal, ostensibly, is to achieve eternal life (a happy, healthy life, I might add). But taoists are practical. If you don't live forever, happy and healthy still apply. How do you achieve this contented longevity? A Tao master combines the wisdom of all Chinese esoteric teachings, including herbs, the works of Lao-tzu, martial arts, and even sexual practices.

I mention this because the master, Ni Hua-ching, is supposed to be in his eighties. When I enter his home, a Chinese gentleman of forty greets me. "I'm sorry," I say, "I'm to meet your father."

Facing page: A Shaolin priest jumps in a cornfield outside his temple. This page (clockwise from above): On the steps of Shaolin monastery a group of Zen Buddhist priests demonstrate their favorite martial arts maneuvers; a specially prepared brew is one part of the Japanese Zen tea ceremony; a participant in the tea ritual partakes of her drink as if engaging in a meditative exercise.

"I am sorry," the man says with a thick accent, "Father is dead."

When I say the man looks forty, well, go for fifty. Even fifty. But eighty?

This is Ni Hua-ching! We sit, I stare. His skin is as smooth as a baby's. I stare at his fingers. Not a wrinkle. I'm not talking sunspots or veins, wrinkles.

He starts to talk about the Tao with the enthusiasm of a young man—yet something is wrong. I can't understand. Ni's accent is too heavy.

Deep inside I start to giggle hysterically. I am sitting next to a man intimately connected to the knowledge of Lao-tzu, of the secrets of the Tao and eternal life, and I can't understand a word. Yes, I'm taping this, but I can't follow up with pertinent questions.

After listening repeatedly to the tape, I realize this is what Ni said:

Don't think about age. See life from a distance of a hundred years and act as if you're going to get there. Do all the Chinese exercises and meditations, including martial arts, yet know they're not important. Stop believing in God; it's bad for you. Don't go to doctors. Be natural like a baby, natural vitality is your gift.

I wish I had asked Ni more questions. But would the answers have helped me fathom his wisdom? Despite Taoism's practicality, it is also mystical. Lao-tzu said, "The Tao that can be told of is not the eternal Tao." Perhaps, following Lao-tzu, he had shown me the practical steps to reach the Tao, figuring the mystical side would take care of itself.

ZEN, DOWNTOWN LOS ANGELES

Today is Zen day. I'm looking forward to this, getting up at the crack of dawn to do zazen (sitting Zen meditation). When I ask why so early, Reverend Kensho (Dan) Furuya, who is a Zen priest as well as a fifth-degree black belt in aikido, says, "They've been doing it this way for eight hundred years."

But now it's zazen time. I enter the zazen room. Ten people sit like zombies, facing the wall. I get a big fat cushion on which to elevate my posterior, cross my legs, and we're off! Forty minutes to go. Mmmm. Thirty-eight. Thirty-six. Thirty-three, my leg falls asleep. Thirty-one, I fall asleep. Thirty, I wake up from the pain in my leg. With five minutes left, my mind finally quits shouting abuse at me for torturing my limb—and, miraculously, I don't have a limb. I'm floating in silence, legless, armless. I feel great.

Afterward we sit down to the traditional breakfast they've been eating for about 800 years: rice gruel garnished with a pickled plum and two slices of a pickled radish. As I've worked up quite an appetite, I gulp down both slices of radish and am severely reprimanded. You're supposed to save a slice to use as a dishrag to clean your bowl. Waste not, want not may be a lesson of Zen.

Furuya introduces me to the head monk, Reverend Bishop Kenko Yamashita, who's in his eighties. Furuya asks if I have a question. I ask the master how we can better face the Nineties, with its exponentially mounting future shock. Silence. "I don't know," Yamashita finally says. Suddenly he breaks out laughing. "I don't know!" he cries. I look at Furuya, who laughs politely. I start laughing. The three of us can't stop laughing.

Is this Zen? Did I just ask a koan and get the enlightened answer? Is laughter the answer—our sharing that laughter?

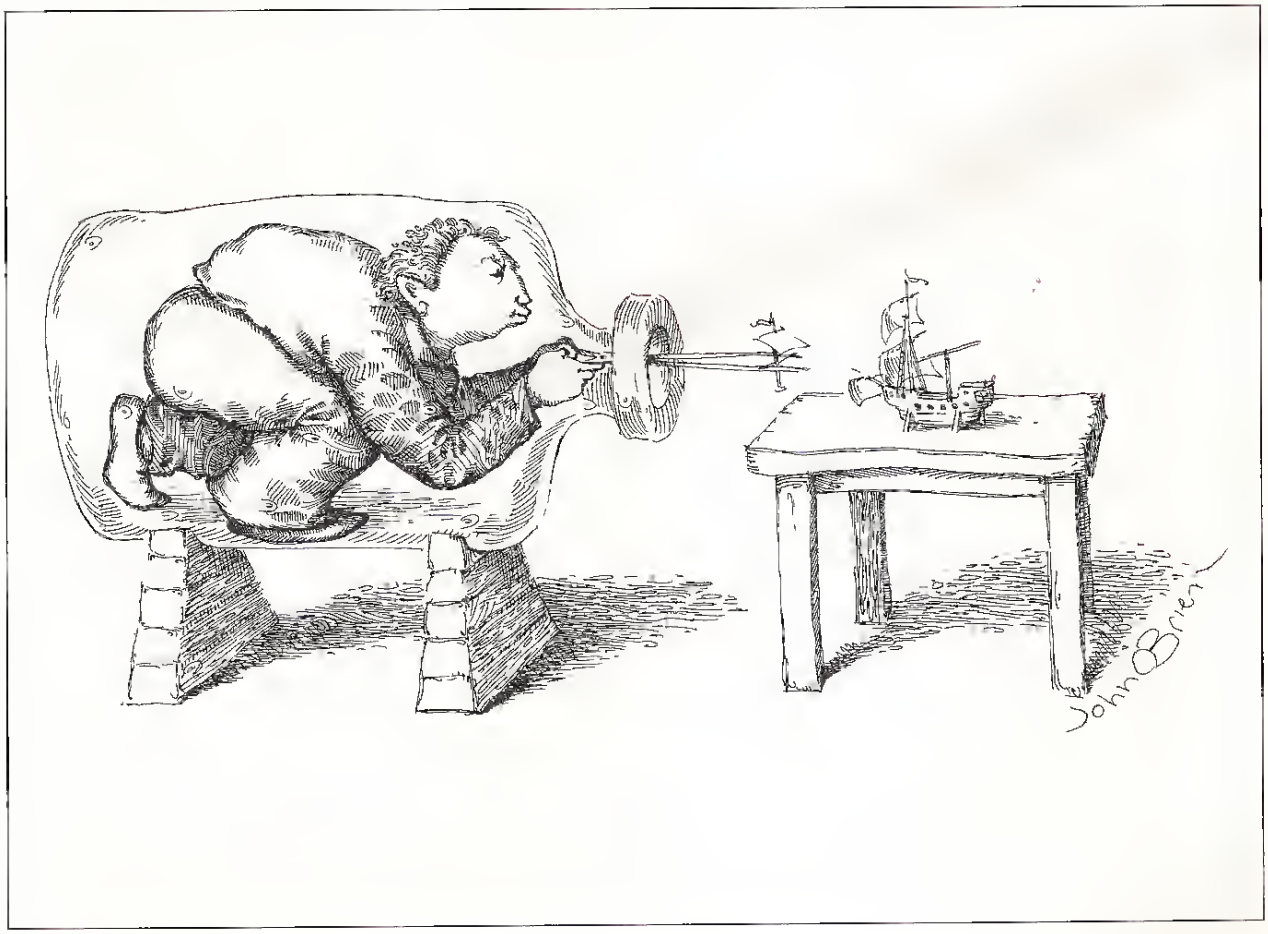
I think of sailing into the future, without answers, laughing courageously.

AIKIDO, LOS ANGELES

After Zen we go back to Furuya's school of aikido—a relatively new martial art invented by Japanese master Morihei Ueshiba in the Thirties.

Although Furuya advises the LAPD on controlling violent criminals, he stresses aikido's meditative aspects more than its martial nature. He is short, rotund, wears a crew cut and a merry smile like the laughing Buddha, and looks quite harmless—that is, until he puts on his black pleated trousers to lead a class of 40 respectful students.

I take the class. A white belt (there are only white and the more advanced



black belts in aikido) is invited to *charge. Furuya grabs his wrist, guides* him here and there, then puts his arm out and the guy flies onto the mat. It looks like bullfighting with Furuya as the matador—and the bull doesn't have a chance. The class pairs off to play bull and bullfighter. Furuya says, "When we define the world, we make assumptions that limit us." Apparently I'm defining my opponent, too; he's flipping me right and left. The white belt defines the situation as a contest between opponents and charges, according to Furuya. By changing that definition, Furuya can harmonize with the man's movements and neutralize the attack.

"I am open-minded, I do not define," he says with a smile. "I destroy the gap or distinction between myself and my partner." Furuya's graceful aikido is proof of the freedom and power that come from this absence of limits.

JUJITSU, ALAMEDA, CALIFORNIA

Jujitsu is a Japanese system of pressure points and joint locks based on acupuncture meridians and transferring *ki*. According to seventy-two-year-old Wally Jay (Jay's a tenth-degree black belt, as high as you get), it's the grandpa of judo and aikido. Those disciplines just took the bad parts out.

In his Island Jujitsu Club, this kind and gracious senior citizen takes hold of my wrist. "Watch," he says, "no effort."

Wham, I'm slammed to my knees. Jay takes my finger and turns it slightly. "Nooooo!" I hear myself screaming.

Jay helps me to my feet. "There's got to be pain or you escape," he explains. I want to escape. Luckily, his thirty-four-year-old son walks in. Through the air he flies, joints cracking, body twisting. He's screaming, too.

Jay invites me to try jujitsu on his son. I experiment with a wrist lock. WHACK, and the son goes down like a sack of cement. A thumb lock. BAM, he's moaning on his back. All my frustrations are sadistically given vent, but I stop. The effectiveness of the techniques makes excess violence embarrassing. That is enlightening. "It's not how much you can hurt," Jay says, "but how little. You can control a man by altering his *ki*—with just a touch. I'll show you."

"That's okay!" I cry, hiding my hands and moving away. Jay laughs. "What's so funny?" I ask.

"That's the best way—to control without even a touch," he says. "That's the power of jujitsu."

T'AI CHI, SAN FRANCISCO

It's time for the slow motion of self-defense, t'ai chi ch'uan, literally "Supreme Ultimate Fist."

Everyone's seen this sort of ballet of slow, graceful hand movements and turns—hundreds of millions of Chinese perform it every morning in parks and villages—but not everyone knows it's a *fighting form. According to Doc-Fai* Wong, the forty-one-year old grandmaster of the art, 1,500 years back this lethal form was slowed down to a snail's pace. Why? You should go slow before you go fast. This slowness makes it hard to believe it's a martial art and hard to convince your average crackazoid mugger that by doing Crane Cools Its Wings or Step Back and Repulse Monkey (these are fanciful names for the different motions), you're going to keep him from cutting your heart out.

I begin class with standing meditation. Wrenched gently into the pose of a stringless marionette, I close my eyes. Master Wong's soft hands force me into a *stranger posture. After ten minutes I'm* absolutely ready to Step Back and Repulse Monkey.

Which is what I do, but so excruciatingly slowly that what seems easy becomes impossible. I fall off balance, try again, trip—while the form inexorably grinds along. When, finally, Step Back and Repulse Monkey ends, Master Wong demonstrates. Sped up, that gesture breaks your opponent's fibula, and this one smacks him right in the head. So that's how the monkey gets repulsed.

The health benefits, according to Wong, have more to do with unblocking your *ch'i* than with cardiovascular

work. "*Ch'i* flows through us from birth," Wong says. "*Ch'i* makes us strong, not muscles and sweating."

"What if I don't feel it?" I ask. Wong stares at me. "The *ch'i*."

"It's there. Do t'ai chi." I stare back. "It's who you are," Wong says. "Relax. Go slow. You'll feel it."

CH'I-KUNG, SAN FRANCISCO

I'm looking for a garage door. Only by special invitation can I observe (not participate in, sorry) a class in Ch'i-kung, taught by the eighty-three-year-old mistress of the art, Min Ouyang.

Ch'i-kung is a system of medicine and meditation that's been a Chinese secret for thousands of years. Acupuncture is one of its inventions, just one; for Ch'i-kung is the study of *ch'i*, and for the Chinese, *ch'i* is everything. The exercises done by a Ch'i-kung practitioner look a lot like t'ai chi. About the only difference is that Ch'i-kung postures have no obvious martial arts application. They relax mind and body and permit the circulation of *ch'i* through the body.

Sort of like a Chinese system of yoga, I think, mellow and noncombative. Then something happens that I'll try to just describe. But it won't be easy.

Inside the garage about ten people are hopping like bunnies and then suddenly tumbling backward, head over heels. I am told that Min is repelling them with *ch'i*. With a wave of her hand she throws her *ch'i* and back they go.

Can I believe this? I ask if Min can do this to me. No, she says, my *ch'i* isn't ready. If she zapped me now, I'd get sick, my organs would bleed internally. I take her word for it.

Her translator keeps saying, "Nobody will ever believe this." The folks bouncing backward seem normal and sane. Min's ambivalence about publicity and repeated questioning of my intentions are not the behavior of a charlatan.

Several of the participants laugh nervously at—I imagine, if it's possibly true—the energy directed at them. Apparently, they're absorbing *ch'i*. They're becoming more powerful, more alive. Why don't I feel it? And what am I missing? The Tao master says longevity. The t'ai chi master says health. The tae kwon do master says power. How do I find the *ch'i* in me? According to Min, it could take years of study.

I walk out into the fog, a fitting metaphor for my mental state. Sea gulls chatter overhead. I drive down to the Pacific and stare at this immense body of water that stretches blessedly toward the East. Where is my *ch'i*? Is it really all around me and I'm just blind to this subtle power, as the waves are to the wind driving them toward the shore?

YOGA, THE CATSKILLS, NEW YORK

I'm going to the borscht belt to find a swami. Past the Concord Hotel, in what are affectionately called the Jewish Alps, stands a yoga ashram.

Yoga is the source of consciousness-raising. The real goal, according to Swami Vishnu Devananda (this ranch is one of his domains), is to realize that earthly matters are Maya, or illusion, and that our true essence is bodiless awareness, or what yogis call Perfect Peace and Absolute Bliss.

Inside this former hotel—not far, I imagine, from where overfed guests laughed themselves into apoplexy at the antics of Sid Caesar and Uncle Miltie—we do yoga asanas, or postures, with names like the Cobra, the Locust, the Fish. These open paths for the illusory *prana* (*prana* is Sanskrit for *ch'i*)—at least illusory to me.

At a vegetarian supper, complete with borscht, I meet Swami Sankarananda, a forty-year-old South African disciple of Vishnu Devananda. We talk of *prana* and I ask about *ch'i*. "All these names describe the same thing," he says. "Their goal is the same. To feel the universal force moving through us. Through you, too."

It's dark outside as we chant in Sanskrit and then meditate for half an hour. Afterward we sing Indian songs. We sing the words in English. "I am not this body, this body is not me." Singing the words makes me nervous. If our essence is awareness, as the yogis say, who is this body? Who is the "me" seeking this *prana* or *ch'i*?

MY APARTMENT, NEW YORK CITY

I can't sleep. There's only one more class and then that terror, the deadline. Not only have I not found the *ch'i*, but my mind is mush. My skepticism has weakened to the point of collapse, yet nothing's replaced it.

When I asked the Tao master why he came to this country, he said, "Someone asked me." Had he no will of his own? Are we leaves on the wind? Do these leaves think they're flying?

Okay, I groan, give it a try. Give in.

I have no responsibility. I'm as vital and guided and free as a leaf in the wind. I feel the *ch'i*.

I think it's the *ch'i*. But when I think, this subtle feeling moving through my body disappears. It's an awareness or a sensitivity that I can't direct. Finally I stop trying and just watch.

I watch throughout the night.

If we are part of the energy that surrounds us, why shouldn't we feel connected to the world and ourselves? I don't mean thinking, I mean experiencing this. Can we be in touch with ourselves through feelings, not just faith?

ZEN TEA CEREMONY, NEW YORK CITY

A journey of a thousand miles also ends with a single step.

After a battle samurai warriors would sheathe their swords (which they considered their souls) and crawl humbly through the narrow opening of a tearoom. There they'd entreat the master to make them tea.

My journey's been sort of a battle, with illusions and false beliefs falling like enemies before me.

The Zen tea ceremony might seem one of the stranger ways to raise your consciousness. *What's wrong with tea bags?* I can hear Aunt Ida ask, and tea master Hisashi Yamada, a youthful sixty-one-year-old gentleman, would probably agree. You see, it's not the tea that makes the ceremony; it is our appreciation of the ceremony.

Furuya told me that the Japanese sutra "Form is emptiness, and emptiness form" is the basis for Zen. I think my appreciation makes the form. To really appreciate the *ki*, myself, my eyes must open. I must appreciate.

I enter the tearoom, four and a half tatami mats in size. This one, according to Yamada, is completely authentic—sort of the standard model for the past 500 years. Its stones and wood all came from Japan. Water boils in a sunken metal pot. A scroll hangs on a wall, and below it a vase with flowers rests on a shelf. We kneel on the mats, they're hard as ice. I get a sweet, a rice cracker with bean paste on it. "Eat it," says Yamada, "as if it is the most important thing in your life, enjoying this sweet." I look at him. He's quite serious. I stare at the cracker. I put it to my lips.

I understand.

Should I describe the rest? The details seem superfluous, yet they're not. The hour in the tearoom is my journey. The tea—whisked to a froth, green as algae in a pond, floating in this glazed bowl—is, like a pond, alive and dead, changing, unchanged. The silence in the room, broken only by my sipping and a final noisy sluuuurp (you're supposed to), is the living silence of earth and sky, of *ki*, *ch'i*, or *prana*, moving through us. I receive this knowledge as casually as this sip of tea, for both are meaningless except for my appreciation.

How do we face the Nineties, we warriors of the West? The past was once the future, but life is now, Yamada says. This cup of tea, this moment we share, is its perfect essence. Understanding this and knowing that someday the future will be this moment, too, why should we fear? ⊠

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The Quebec Conference. From left to right, in the foreground: Mackenzie King, prime minister of Canada; Franklin Roosevelt and Winston Churchill.

It was a desperate plight in which the 14th Regiment of the Line found itself, the french square harshly pressed.

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British ships of the line after Nelson's triumph at Absolute Bay.

A French hussar and a dragoon talk with their sentries posted nearby.

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The tapestry of these struggles was dark to its creators, its final outcome obscure and inevitably the result of a panoply of individual efforts. For example, the French were unclear in Spain by Napoleon's inability to personally supervise the campaign.

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Strategic/Political Commander	Navy

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Austrian
Russian
Prussian

GM-3

For a noted anthropologist and scholar of his own Tewa Pueblo tribe, the remaining Native American cosmologies offer the best blueprints for environmental, and even spiritual, rebirth for future generations

INTERVIEW

ALFONSO ORTIZ

The wide Southwestern sky stretches out over the mountains in all directions. Among the tall peaks lie winter fields, and off beyond them, past scrubby piñon and cedar trees that speckle the landscape, run the great Rio Grande and Rio Chama rivers, lifelines to a dry and dusty earth. As we drive along the dirt road into San Juan Pueblo, New Mexico, the largest village of six Native American communities known collectively as the Tewa Pueblos, anthropologist Alfonso Ortiz slows the car and nods toward a small brown adobe home with a pickup truck parked behind it. A beehive oven, also made of adobe, can be seen off to one side. "This is the house I was born in," he says. It is also where, in spirit, he still lives.

As a boy, Ortiz could walk out of this three-room home, which he shared with two sisters, his parents and grandparents, and see Tsikomo (meaning Obsidian Covered Mountain), the sacred Tewa mountain to the west.

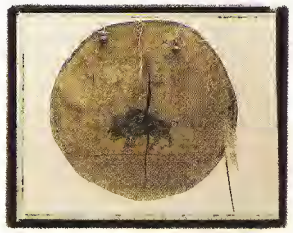
PHOTOGRAPHS BY DAVID MICHAEL KENNEDY

To the south is Oku Pin (Turtle Mountain), to the east Ku Sehn Pin (Stone Man Mountain), and to the north the great Tse Shu Pin (Hazy or Shimmering Mountain). These are the sacred mountains from which his ancestors arose and to which they returned, as all Tewa will when their faces become like the craggy land on which they live. "It's impossible to think of people here without thinking of a particular mountain that they have a special relationship with," Ortiz says. "They look to it for all sorts of things: portents of the weather immediately ahead, signs for the kind of winter they will have; they look to it for evergreens and eagle feathers, which they use in dances, and for pigments and other materials to use for their ceremonies. That's why it can be fairly stated that you cannot think of any Pueblo group without also thinking of a mountain with which it has a special relationship."

It was from his small home, bordered by other such homes in the pueblo of San Juan, that Ortiz would borrow a pony and ride off to the Rio Grande to swim on hot summer days, where he danced in ceremonial garb, and where he sat and listened to his grandfather and other tribal elders as they wove oral histories with the skill and color a master weaver uses to create a rug.

As we drive toward another Tewa village, we pass a young Tewa man and woman riding paints on the dirt road. Ortiz waves, as he does to everyone he sees along the way. He points out the Black Mesa, another sacred mountain with long, deep fissures running down its sides. "The uninitiated," he says, "are told to stay away from those fissures because the winds can suck you deep into the underworld, where the spirits live, and you don't want to be caught near there. It's also said that singing emanates from the fissures and that the winds come from them, too."

It is clear that in the Tewa world, the land is imbued with spiritual meaning. And it is from this land and the rich tribal culture that worships it that Ortiz, the anthropologist, was born. After leaving San Juan Pueblo as a young man in order to, in his words, "get as much education as I could," he considered becoming a lawyer, because he felt that would be a good way to help his people. But he was unable to find any role models to help him. It was then he discovered anthropology, a field in which Native Americans had made a mark. "I almost couldn't believe it at first," he says. "Society will pay me for learning as much as I can about things Indian! What could be better?"



Clockwise from top left: Detail from a Hopi Hemis *(homecoming) doll, celebrating the last dance of the year, in July, circa 1930; Comanche dance shield, fashioned from painted antelope hide, circa 1890; Apache Gan dance headdress, circa 1900.*

At the University of Chicago, he also found a mentor: anthropologist Fred Eggan. "Fred considered it a totally stupid bugaboo that an anthropologist had to go off to a totally new place, learn a totally new language, and learn a new culture," Ortiz explains. Eggan encouraged him to build on what he was and what he already had experienced. "I had grown up in one culture," Ortiz says, "learned to engage in another when I went to high school and college, and yet another when I moved away from the reservation. I didn't need any lessons in cultural sensitivity."

After receiving his doctorate from the University of Chicago, Ortiz taught at Pitzer College in Claremont, California, and then at Princeton for seven years. He won a MacArthur fellowship and published a plethora of respected papers and several books, including *Tewa World*, an ethnographic study of his own culture. At the same time he served for 15 years as president of the Association on American Indian Affairs. But he returned to his native land in 1974. Today he lives in Santa Fe—within 30 miles of San Juan Pueblo—and teaches anthropology at the University of New Mexico in Albuquerque.

Although Ortiz, now fifty, is a respected member of the anthropological community, he remains a Tewa, cultivating the same close ties with his tribe that he had as a boy. For instance, he is a strong supporter of the New Moon Alcohol and Drug Rehabilitation Center on his reservation. He views himself as an advocate for Native American traditions. "My role," he says, "is to prick people's consciences, to keep on goading them." The cultural legacy of Native American tribes, he believes, should never be forgotten. Americans may celebrate the European conquest and brag about the suburbs they established in the New World, but they should remember, Ortiz points out, the many things they learned from the indigenous peoples: the foods Native Americans taught Europeans to grow (corn, squash, potatoes, avocados, chilies, tomatoes); the herbal medicines they had developed; the principles of social behavior that formed the bases for their cultures. Ortiz explains that the leaders of the Iroquois nations, for example, repeatedly told "the ever-bickering leaders of the thirteen colonies, 'Look, be like us. Do not fall out among yourselves. Be of one heart, one mind, one body. Act together, act in concert.'"

As we spoke the day after we toured the pueblos, a heavy white snow descended on Ortiz's large adobe home set in the foothills of Santa Fe. Sitting on a comfortable chair in his living room, he talked of what could have been the greatest of all cultural exchanges between the white man and the Indian, if the white man had been open to it, namely, Native American spirituality. Although each tribe had developed its own views, they shared—and still do share—many common beliefs. It is those teachings, Ortiz believes, that have much to offer an America in environmental and spiritual crisis.—Jane Bosveld

Omni: How do you counter the argument that Native American tribes are less evolved than the European cultures that conquered them?

Ortiz: What may be fine for butterflies is not fine for cultures, especially when you raise such unsettling questions as, Do souls evolve, or did the soul just come into being way back when? Does the idea of God evolve by degrees? No. The idea of a "spirit being" is *found*. Sure it varies, but not along dimensions of greater or lesser complexity.

I say spirit rather than supernatural, because Indian tribes put nothing above nature. Their gods are part of nature, on the level of nature, not supra-anything. Conversely, there's nothing that is religious, versus something else that is secular. Native American religion pervades, informs all of life. A well brought up Pueblo Indian is taught that when you go to work among the corn and other plants, you sing, because if you don't have good thoughts and a good heart the plants will not grow well and you will not get a good harvest.

Omni: What themes do Native American religions have in common?

Ortiz: Most sacred stories have the gods interfering in the affairs of ordinary people, where they have no business interfering, so they have to be put in their place. They're not high gods in some heaven, they're more like Greek gods who insinuate themselves in human affairs and sometimes make a mess of things as a consequence. Not even the gods are supernatural. Native American religions depend on direct experience for their credibility and perpetuation. They are *experienced*, rather than revealed, religions. In the dances, one is either renewed or not. And one is always renewed if one has the proper attitude—if the heart and spirit are in it.

You're not expected to believe in something that happened two thousand years ago in the Near East for the credibility of the religion. Rather, the religion is based on where the people live, the creation or emergence from the earth, and the migrations that took place close by. Often those migrations are retraced in pilgrimages. These are religions of place rather than of history. For that reason, they can't be easily transported. Nor do they make universalist claims. They aren't proselytizing; they don't try to convert.

Each religion represents more power we can add on. The Pueblo response to the Spanish missionaries with all their saints was, "Oh, great, more religious things." That's why, down through the millennia, Native American tribes have borrowed songs and dances. They were happy to incorporate new things into the tradition—adding powers to their repertoire of powers. They never could understand the Spanish Franciscans' stance of "My way or no way at all. I have religion; you have superstition." The English colonialists on the other side of the continent said, "I am civilized; you are savage. I have religion; you have the devil, devil worship, idolatry, and superstition. I have law and order; you have anarchy. We have government; you have nothing," and so on. Just erect a frontier, put all the good guys on the east side of it, and all that's bad and wild and uncivilized on the other side. The New World was called such because it was not known to Mediterranean mapmakers. Because it was not known, it remained threatening until it was colonized, until every square mile was explored and mapped.

Omni: You've written of the transforming power of song and dance, of the old Hopi man who seemed to grow younger as he danced.

Ortiz: In 1964 a fellow graduate student at the University of Chicago was spending the summer in New Mexico, working with the Pueblos. He was a Brahman from India, and it was his first time out here, and I took him to a Hopi kachina [ancestral spirit] dance. We stood on the bare sandstone with our backs against the wall of a house. There were multiple performances. In the kachina they dance, go rest, stop to eat, and dance again. Just after we sat down we noticed a little girl leading a man, probably her grandfather, out of the house we were sitting against. The old man, obviously blind, was bent with age. As the kachinas danced and sang their sacred songs, he sang with them. And on the bare sandstone of the mesa he danced, just gestures, calling the clouds to form and the rain to come. With each succeeding performance, he seemed to glow more with a power. As he drew energy up from the earth, sky, and clouds, the years seemed to roll off him. To us, in our early twenties, he looked to be Old Man Time at eighty. But by the end of the afternoon, when the dance was over, he looked not more than sixty.

When we were boys, after we'd participated in dances and rituals, the elders would tell us to go to the river, even in January, to wash the paint off. We'd sit in the river and knock ice floes from

us as they floated by. Despite the cold, no one ever caught a cold or pneumonia. Our bodies seemed suspended in space and time, not really susceptible to cold and heat as were those of people who had not danced all day. Even though we'd often stayed up late the night before, putting finishing touches on our costumes, we were often more tired at the beginning of the dance than at the end. The hypnotic concordance of dancing feet, beating drums, shaken rattles, bells around our belts or knees, and the choreography, the moving in great unison, had a rejuvenating effect.

Omni: Native American traditions extend kinship to include the animal world—would you talk about that?

Ortiz: The late Irving Hallowell, a distinguished anthropologist at the University of Pennsylvania, wrote numerous papers showing the different tribes' kin terms for beavers, moose, deer, elk, eagles. how tribes see in them analogs of human relationships. They know them as brother, sister, and uncle. Not just the human but the entire biotic community is related.

Native Americans show a great feeling of respect even for their prey. You don't just go out and shoot a deer. Usually you make an offering at a hunter shrine and pray to the deer, asking its permission to take its life so that you may sustain your own. When you bring it home, you treat it with utmost reverence. Then and only then is it butchered, and everyone gets a portion of the meat. The remains of game that can't be used are deposited at a shrine for game animals. Again, at these consecrated spots, a prayer is offered, asking the spirit of the animal to come back. It's a very different behavior from that of sportsmen.

Native Americans are much concerned with found things. The roadrunner is among the most sacred birds among the tribes of the Southwest. Elders tell me if you ever see a roadrunner [*ogowi*] killed on the side of the road, pick it up and bring it home. The feathers are potent. Indians revere the roadrunner and think it has great magic, great medicine. It leaves tracks that form an X, so you can't trace it unless it's kicking up dirt. Also it's believed to be absolutely fearless. It'll take on a rattlesnake that's hissing at it.

If you perceive things about creatures, then you can honor them. The butterfly embodies the principle of elusiveness. Before going on a war party or raid, warriors paint themselves with butterfly symbols to invoke the power of elusiveness. If you ever try to catch a butterfly with your bare hands, you know it will always elude your grasp. In the desert country where the Hopi live, there's a beetle that has the ability to obliterate its tracks as it moves along the desert sand. If you saw it here an hour ago, it'll be over there now, but it leaves no tracks. The Hopi celebrate that little bug during young men's initiation ceremonies because for warriors the ability to obliterate tracks is important.

But there never was an effort to manipulate the creatures. The question most persistently asked was, What place does this being have in the scheme of things? You accept the Creator's wisdom in placing that creature there. You don't ask, How can I use it? Most peoples believe they may use anything of the earth for their own benefit. In Native American religions, kinship with nature is the postulate.

Omni: You have said your grandfather told you to "look to the mountaintop." What did he mean by that?

Ortiz: In the late Forties, when I was a boy, we used to run relays on a regular basis to give strength to the sun as he journeys across the sky. In spring and summer, when day and night are close to being equal, the relay was run east to west, west to east, over a track in those directions. After the autumnal equinox, when the sun begins to descend to "the south corner of time," as the Hopi term it, the track was usually from north to south to lend the sun strength for descent and to slow it down so it won't get cold too soon and too fast. Here's an audacious belief that human actions could affect the sun, an extreme instance of extending kinship and the community of causation—from Earth and lone individuals and their running feet—to the condition of the sun itself.

"Each religion represents more power we can add on. The Pueblo response to the Spanish missionaries with all their saints was, "Oh, good more religious things."

The mountains, like the sun, are looked to as a source of so many blessings: rain, evergreens, eagles, hawk feathers. Mountain tobacco from a certain elevation is used to send clouds of smoke up to meet the clouds of the sky as a prayer and appeal for rain.

So it should come as no surprise that very early on, elders teach about the mountaintop. On the day of one race my grandfather told me, "Keep your eye on the mountaintop as you run, and in time you'll feel as if you can jump over houses and treetops and across a river." Just a few months later, he died. I think he knew his trail was coming to an end and that if I remembered his words and thought about them in the process of growing up, my understanding would grow with time. He was really saying, "Take the largest view of life that you can." Of course, the largest vistas are those you see from a mountaintop, but keeping your eye on the mountaintop also means not being distracted by lesser goals. It was a matter of unfurling meanings, because as a metaphor it could sum up life, mean everything.

Omni: Is the Great Spirit of Native Americans similar to the Judeo-Christian concept of God?

Ortiz: The term *Great Spirit* is designed to address the white man's questions about the ultimate ground of being, as it were. It's known by various names: Wakontonka in Lakota; Manatu in the Algonquin languages of the East; Hojo in Navaho, and so on. Every tribe has its own name for it, but it really adds up to the great power or unknown, that which animates the world. It's seen as an energy that you can tap through prayer, dances, pilgrimage, self denial, fasting, acts of humility such as giving everything you own away. In these acts you open yourself up to that power. Religious leaders in Native American communities often say that he who will be rich in the things of the otherworld must be poor in the things of this world. This still holds true. The most respected people are the poorest in the material things but who expend their energies in tapping into the power of the otherworld on behalf of their fellows.

Omni: Do Native Americans have ideas or perceptions of an afterlife?

Ortiz: It is very differently postulated from the Europeans'. There's no concept of hell, a place of everlasting damnation. There is no prince of evil. The Devil provides great fun for native humorists. They think nothing else in Christianity is so much fun as the Devil. They like to imitate and parody him, he is such an unlikely character. The closest you'd come in Native American religions is the Trickster, who is both positive and negative at once. But the Devil has no analogs in the indigenous religions. Second, there is no concept of original sin: that humans are tainted as they come into life. To religions that honor and cherish human life, the very idea that one could be tainted is just abhorrent. All life is sacred from the beginning.

An old friend who's long since gone to his reward was a religious leader of the Northern Cheyenne people in Montana. He liked to tell this story of how, when he was a boy, many different missionaries came to the Northern Cheyenne to try to convert them. Catholic priests saying one thing, Episcopal priests another, and the Presbyterians something else. The people became

frightened, anxious, and insecure with all these men of the cloth making different claims, all basically ending up with "If you don't do it my way, if you don't come to my church and listen to me, the one true voice of God, you'll go to hell." The people kept coming to the Cheyenne Council and saying "You've got to resolve these issues. What is a devil? Hell? Isn't there somewhere in our traditions that accounts for the Devil and hell?" and so on, including other concepts they found problematic as represented by these missionaries. So the Cheyenne Council met all night hashing these things out. Examining Cheyenne traditions, they tried to find something analogous to the Devil that could help the people understand.

Finally some remarkable early Cheyenne Henry Kissinger came up with a comforting conclusion. The council sent out the white plume of smoke to indicate that they had a consensus. The people came to hear, at long last, what the council of elders had to say. And out came the pronouncement that "you people are not to worry about the Devil. He came across in the boat with Columbus. He wasn't here before white people came. As for hell, it's a place the white man created for himself. Cheyenne don't go there. Don't worry about hell. There's no Cheyenne there." That story could have been repeated three or four hundred times over in any tribe in any corner of North America.

Omni: In terms of religion, what effect did losing their land have on the tribes? What happened, for instance, to the Sioux when they lost the Black Hills, their spiritual land?

Ortiz: On the Plains, losing the buffalo did more harm than losing the Black Hills. The Black Hills were important, don't get me wrong. But the buffalo dominated not just their subsistence but their social life, political organization, ritual, and religion. In the great sun dance, a buffalo skull must be mounted on top of the sun dance pole. The great gift they got came from White Buffalo Woman. For a long time they couldn't get fresh buffalo skulls for their sun dances, and they were discouraged—or actively forbidden by the federal government—from doing the sun dance. But for vision quests, young men did go to such places as Bear Butte and the Black Hills. So the loss of the Black Hills was, of course, a very crippling thing. So the Sioux suffered both loss of land and loss of their life pursuits.

Let me tell you a story. Some years ago a NASA team of scientists and technicians were conducting experiments on a particularly isolated, thinly populated area of the Navaho reservation. They chose that spot in the desert in order to conduct these experiments in secrecy. You could see forever in every direction, so you'd know if anyone was spying on you. From the first week on, they spotted a lone figure sitting on a small hill in the distance. As days went by, the figure came closer and closer. One day he strolled somewhat hesitantly into camp, hand in hand with a nine- or ten-year old boy. This man in his late sixties or seventies told the NASA workers that he was a Navaho medicine man. He spoke no English and so spoke through his grandson.

After getting acquainted and looking around, he asked them what they were doing. The scientists responded, "We're conducting experiments in preparation for going into space, out there." The old man had seen television, and his relatives had explained how Neil Armstrong walked on the moon. So he grew thoughtful and said, "Ah, are you going beyond the moon this time?" And they said, "Yes, that's why all these experiments are necessary." The old man said, "Will you take a message out there for me? We Navaho people have relatives among the stars." They considered it a silly, rather mystical request of an old man. The old man's feelings were, of course, very hurt, because he was serious. From the standpoint of Navaho re-

CONTINUED ON PAGE 94

'TREAT members provide therapy for those who say they've been abducted by aliens or plagued by ghosts.'

ANTI-MATTER

UFO UPDATE

Have the nation's UFO abductees *really* been kidnapped by aliens, or are they reporting mysterious *inner* experiences played out across the movie screens of their minds? The answer doesn't matter to participants in TREAT (Treatment and Research on Experienced Anomalous Trauma), a project devoted to the treatment of mental health problems resulting from alleged experiences with aliens, psychic visions, or ghosts.

"It is not my job to be either a believer or a skeptic," says New York psychiatrist Rima F. Laibow, founder and director of TREAT. "My job is to know as much as I can about the phenomenon so I can treat it."

According to Cleveland State University psychologist Robert N. Sollod, who has worked with anomalous experience patients for several years, his clients usually fear ridicule. "They are reluctant to share their experiences and are usually isolated," he says. "It's because of the isolation that they often interpret their experiences incorrectly. They need nonjudgmental support. I try to help them make sense of their experiences."

Sollod got involved with TREAT after finding that few therapists were willing to deal with anomalous trauma patients. To help educate the profession, in fact, TREAT held its second national conference last month at Virginia Polytechnic Institute and State University in Blacksburg. Attendees learned how the pros treat anomalous trauma. They also met with UFOlogists and parapsychologists who presented the latest data on alien abductions and psi and explained their methods for eliciting and interpreting witness information.

To assist conference participants in networking, Toronto therapist David Gotlib is even producing a monthly newsletter on anomalous trauma. "The newsletter will conduct ongoing dialogues and present professionals with a regular forum for discussion," Gotlib explains.

But not everyone thinks that TREAT is such a great idea. Psychologist James Alcock, the author of *Parapsychology, Science or Magic?*, says that any therapist worth his salt doesn't need to be told that "if somebody says that they have been in a flying saucer, not to laugh at them." Alcock also suspects that underneath all the talk about educating therapists, many TREAT members "believe these phenomena have some objective reality." Finally, he does not like the idea of the therapist "checking out" the reality of the experience by studying data on psi. "You don't take that approach with someone who is paranoid," Alcock says. "Instead, you start dealing with the patient's reaction to the experience. As the patient speaks, he or she may realize that his or her original evaluation and memory were incorrect."

Sollod, however, thinks we must look beyond conventional psychiatry to treat anomalous trauma. "Those who suffer from anomalous trauma are much like those who suffer from posttraumatic stress disorder," he explains. The trauma results when the patient's experience "does not fit into society's model of reality."—*PAUL McCARTHY*

WHO YA GONNA CALL?

When strange phenomena make headlines, two groups usually show up to investigate: those who want to prove it's true and those who want to debunk it. Now there's a third category, says Mark Chorvinsky, who recently cofounded Strange Research & Investigations.

"We are neither rationalists nor believers — we are archivists who collect and collate information," says Chorvinsky, who with his partner Mark Opsasnick studies both new and old sightings of such creatures as Bigfoot, the Goatman, and South Carolina humanoid monsters.

The team's detective work often starts with a call from an interested TV editor or producer in need of expert advice. To aid their clients, the team culls newspaper files, tracks down eyewitnesses, and even consults experts ranging from cryptozoologists to biochemists to museum curators. Chorvinsky and Opsasnick solve about eight out of ten cases. But Chorvinsky notes, "Eighty percent of the solved cases turn out to be hoaxes or misperceptions of normal things."

Whatever the results, the information amassed by the dynamic duo during such investigations goes into what they call the Strange Archive. "It is fast becoming a major repository of anomalous data and is open to serious researchers," says Chorvinsky, also the editor of *Strange Magazine*. In fact, more than 50 scientists and organizations like Time Inc., Columbia Pictures, and *PM Magazine* have used the files in the past year alone.

"Building up a good information base is important," notes Marcello Truzzi, director of the Center for Scientific Anomalies Research in Ann Arbor, Michigan. "Chorvinsky and Opsasnick have a fairly agnostic approach, and they keep many divergent viewpoints on store."

—Beth Livermore

"Millionaires don't use astrologers, but billionaires do."

—J. P. Morgan

"She stood in tears amid the alien corn."

—John Keats

"I don't do it for the money."

—Donald Trump

MYSTERY EAGLE

When a bald eagle turned up in County Kerry, Ireland, in 1987, it became an instant avian celebrity. Found by an Irish wildlife ranger, the starving, exhausted bird soon made local headlines as the first American eagle to fly the Atlantic. Dubbed Iolar, Gaelic for *wanderer*, the bird was even returned to the United States in true star fashion. The prime minister of Ireland was on hand to place the eagle aboard a transatlantic jet for the ride back home.

But American eagle experts think Iolar was not the amazing traveler he seemed at first. In fact, according to Maurice LeFranc, director of the National Wildlife Federation's Institute for Wildlife Research, the bird was more likely the victim of smuggling. "The fact that eagles don't occur outside North America makes them attractive to some collectors of wildlife in other countries," he notes. "My guess is that he may have been illegally brought over to Ireland and escaped."

LeFranc explains that eagles are nonmigratory birds and until they are 10 to 20 weeks old stay close to their nests. "The bird found in Ireland was only six months old. So it's very hard to believe that an eagle who only a few weeks before stayed near a small radius around his nest suddenly flew off across the Atlantic."

Brad Blodget, the state ornithologist of Massachusetts, took custody of Iolar when the bird returned to the

United S tes "He [the eagle] was quarantined for a while, examined, and then put through our program to enable birds to return to the wild," he notes "When we deemed he was releasable, we turned him free in Quabbin Reservation"

Although the bird was banded and observed feeding with other birds in the winter of 1988, no one has seen it since "At least he hasn't turned up in trouble He's probably out there someplace" Blodget says, "One thing I'm sure of is that he didn't fly off to Ireland"

—Sherry Baker

"Some people are afraid of leaving the world forever Others are afraid of ever coming back"

—Ashleigh Brilliant

MIND CURES

While visiting Maharishi Mahesh Yogi several years ago in India endocrinologist Deepak Chopra (bottom right) was surprised when the Transcendental Meditation guru revealed long-lost healing techniques from the ancient Indian medical tradition known as Ayurveda Maharishi claimed the therapies could be used to trigger the mind to influence the body and even cure disease "This knowledge is extremely powerful," he told Chopra "By comparison the drugs and surgery you are used to using are very crude"

The techniques recommended by Maharishi—including sensory modulation with music, touch, and smell, massage, diets based on biological rhythms, and "primordial sound" meditation to guide the body into deep states of awareness—have been used by Chopra on thousands of patients at the Ayurveda Health Center in Lancaster, Massachusetts, since the mid-Eighties Chopra is convinced that they work "In my own practice, several cancer patients have recovered completely after having been given only a few months to live. These aren't miracles but proof that ancient Indian doctors who believed that the body is created out of consciousness were right The mind can go deep enough to wipe off mistakes in the body and destroy any disease that has disturbed it"

Chopra, who writes about his experiences with Ayurvedic therapies in *Quantum Healing Exploring the Frontiers of Mind-Body Medicine* (Bantam), says the techniques work by helping patients communicate with the intelligence that pervades the body. "A thought is a quantum unit of mind We have thinking bodies," he says "Every cell has evolved to a state of formidable intelligence The mental techniques used by Ayurveda allow us to go deep enough inside to contact the hidden blueprint of intelligence and change it."

Loma Linda University health education professor William Jarvis however doubts that Ayurvedic therapies offer any new hope for the seriously ill "Chopra is a missionary for Maharishi Mahesh Yogi, and when you have that kind of strong philosophical orientation, you tend to selectively choose cases to talk about that support your wishful thinking," he notes "I think it's very strange that Chopra uses the term *quantum* from modern physics and juxtaposes it with the very c de, five-thousand-year-old belief system of Ay rveda Trying to pass this stuff off as scientific is a disse ce"

Sherry Baker

he tendency of modern science is to reduce proof to absurdity by continually reducing absurdity to proof."

—Samuel Butler

"The scientific theory I like best is that the rings of Saturn are composed entirely of lost airline luggage"

—Mark Russell

"When I drive a cab I am moved by strange whistles and wear a hat"

—Lew Welch

FEAR-OF-DEATH EXPERIENCE

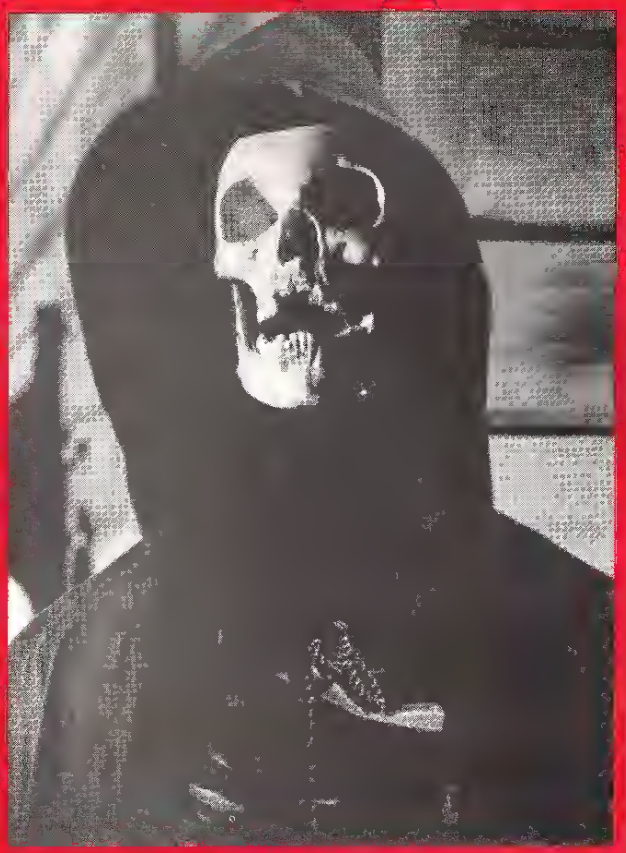
The near-death experience (NDE), in which people report leaving their bodies while near death, may have to make room for the fear-of-death experience, or FDE. It seems that some of those reporting NDEs are not near death at all.

Psychologist Emily Williams Cook along with colleagues Ian Stevenson and Nicholas McClean-Rice at the University of Virginia examined the medical records of 40 people who reported seeing their bodies from a different position in space while purportedly near death. Cook says that only 18 subjects actually experienced a life-threatening illness or injury, even though 33 of the 40 thought that they were dead or near death.

Cook admits that a few of the medical records could have failed to include how ill the patients really were, but she adds, this would account for only a few cases she has studied.

Apprehension or fear, she says, may explain why some patients mistakenly thought they were near death. Some may also have been convinced by the NDE that they were worse off than they actually were. In either case, Cook feels it may be the perceived threat of death that brings on the NDE and not the actual physical condition of the patient. These findings, says Cook, "do not lessen the credibility of the NDE. They just suggest an alternate interpretation."

—Paul McCarthy



SHAMAN'S DRUM

The first shamans are said to have roamed the earth more than 30,000 years ago, give or take a millennium. Today, practicing as Native American medicine men, Tibetan lamas and Jingpo spiritual journeyers in China, shamans are still potent forces in tribal life.

But in order to succeed, twentieth century shamans must master a vast array of techniques. To accumulate knowledge and power they must first learn spiritual trekking—the ability to transcend the ordinary and travel throughout the netherworld and Nirvana. And to reach these mystical locales some shamans require psychedelic drugs, ritual drumming and chanting, or even a *shvitz* in a sweatlodge.

Enter *Shaman's Drum*, a Berkeley, California-based quarterly devoted to shamanism. Published by the Cross-Cultural Shamanism Network, the publication covers events (such as this fall's Transpersonal Conference in Santa Rosa, California), shamanic art and poetry, and first-person accounts of the modern shamanic experience.

For example, in "Welcoming Lost Souls Back Home," writer and shamanic counselor Sandra Ingerman describes using fast, repetitive drum sounds to enter an altered state of consciousness and then, during her shamanic voyage, searching for the lost parts of her patients' souls. The process is complete, according to Ingerman's story, when her spirit returns from the otherworldly dimension and she reintegrates the missing soul fragments into her patients.

According to editor in chief Timothy White, few of the magazine's nearly 20,000 readers come from a shamanic tradition. Instead, the well-educated readership, many with master's degrees or doctorates, approaches *Shaman's Drum* with a curiosity born of the New Age.

White acknowledges that shamanism is often confused with other traditions that use altered states purely for escapism. But, he notes, "shamanism is oriented to moving out of the altered state and bringing that information back for survival and healing on this planet."

For more information write to *Shaman's Drum*, Box 2636, Berkeley, CA 94702.

—Joan Greenberg

"We have said that the Duende loves ledges and wounds, that he enters only those areas where form dissolves in a passion transcending any of its visible expressions."

—Federico García Lorca

MASTERS

CONTINUED FROM PAGE 46

that her husband was in the hospital dying. He was in and out of consciousness. Nonetheless, whenever his eyes were open and he was slightly conscious, he called for me.

"I said, 'He calls for me? That seems very strange; we only met once.'

"She said, 'I know, that's what's so remarkable. He'll open his eyes and say, "Sammy!" '

"I said, 'I'm not a healer, and I don't have any special qualities, and I don't know what I would be able to do.'

"Nonetheless I went. When I was alone with him in the hospital room, I sat down and took his right hand in mine. I bowed my head and I called to The Divine Mother, and I said, 'Mother Dear, if at all this child can be helped, please bring your presence to help this child.' I opened my eyes, and there on the other side of the bed was The Mother, manifest—completely! And she said to me, 'Tell him he will be well.' I can't express that more deeply. She was there!

"I turned back to this man in great happiness. 'Arthur,' I said, 'you will be well! You will be well!' With this, he opened his eyes and he said, 'Sammy!' I turned back to The Mother—she had disappeared. Then I left.

"Half an hour later, the doctor came up to the man's wife and he said, 'Madam, there's been a slight change.' We stayed another hour, and again, the doctor came and he said, 'Well, it's quite remarkable, but there's some improvement.' That man not only improved, he lived. He lives to this day."

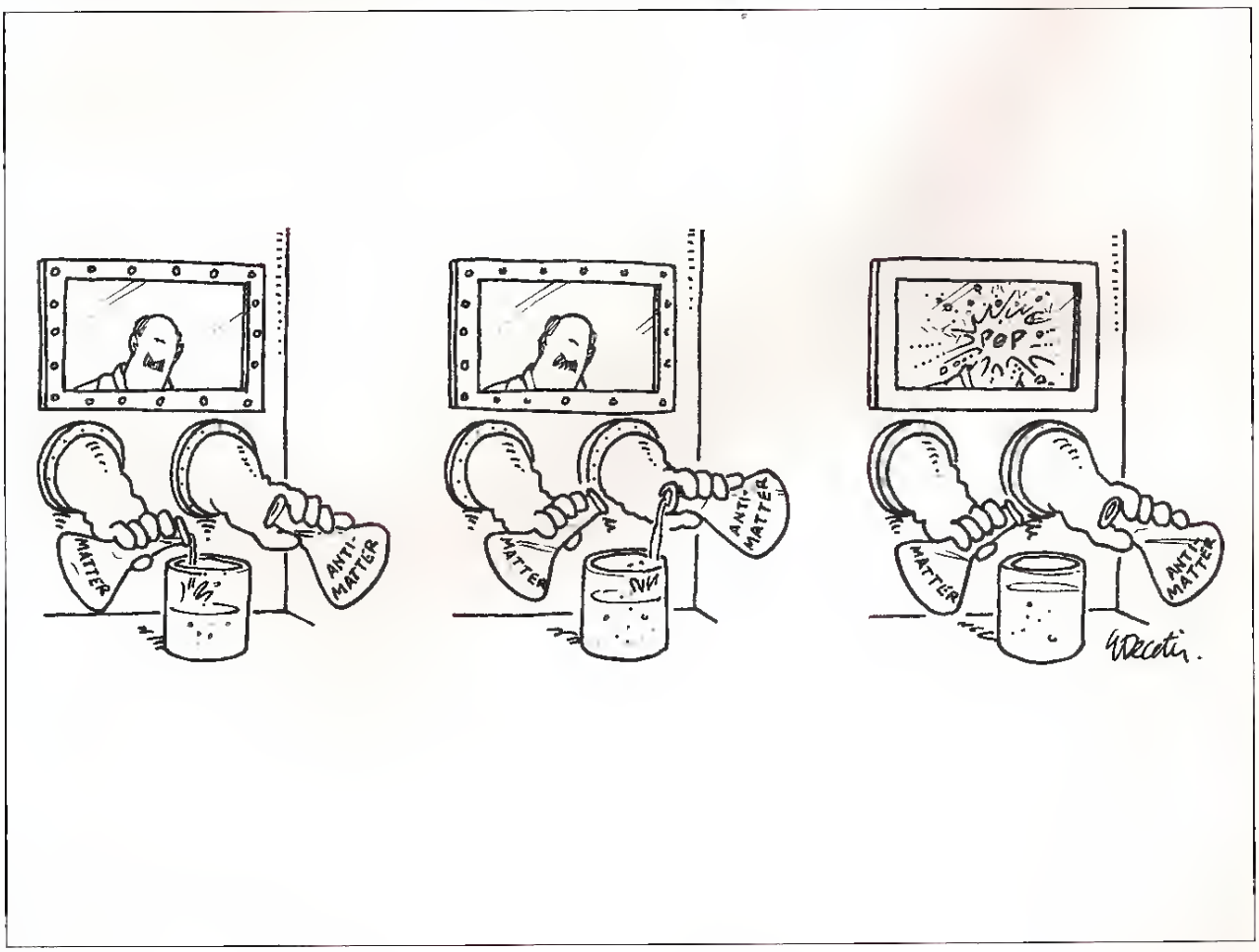
Other masters seem a bit more human to disciples. They are perceived not as wizards or gods but rather as parents, sometimes loving and sometimes stern. Take the experience of Visnu Jayson, manager of the Integral Yoga Uptown Teaching Center in New York. The center is headed by Swami Satchidananda, who also directs the Satchidananda Ashram Yogaville Virginia in Buckingham, Virginia, and is considered one of the foremost Yogis in the West.

Sometimes the parent/guru needs only a few words to convey the pertinent message, as Jayson recalls. "The day we laid the cornerstone for a shrine at Satchidananda's ashram in Virginia, disciples came from around the world with treasures, which were to be put in the earth to form a foundation—soil from holy places like the Wailing Wall, gems and jewels, even a moon rock. A large hole had been dug in the ground for the ceremony, and Swami Satchidananda was squatting beside it.

"I was filled with self-importance, watching everybody watching me, the first in line, as I picked up the biggest rock I could find and threw it in the hole. As I walked away, I looked at Swami Satchidananda. He said quietly, 'Too much getting is going on here.' I was supposed to be contributing by giving, and instead I was feeding my ego."

Sri Daya Mata (Faye Wright) had a similar experience when her parentlike guru put her in her place. Her master, Paramahansa Yogananda, who came from India during the Twenties to introduce the Kriya form of yoga, in which practitioners focus by slowing down bodily functions.

"When I first came to his ashram as a young woman, I was very sensitive and shy," Wright, now president of the Self-Realization Fellowship, Yogananda's headquarters and teaching center in Los Angeles, explains. "One evening he had a group of devotees come to his sitting room, where he talked informally about spiritual matters. As he talked I noticed that he was folding up a newspaper into a dunce cap, and when he finished, he looked at me and said, 'Come here.' I shook my head no. I didn't mind his meddling, his driving and disciplining me to help me change, but to make fun of me in front of others wasn't right. I didn't give him that permission. He



coaxed me several times, and the more he coaxed me, the more determined I became that he was not going to put that hat on my head. Finally, after everyone's laughter quieted down, he dismissed the others and asked me to remain behind.

"So I sat down, and he said 'Why are you so sensitive? Does it matter whether you are made fun of? Of what value are the opinions of others?' I realized he was trying to teach me that my sensitivity was something I had to overcome, because it would affect any success I might have in life. I apologized and told him he could put the cap on my head now, but he said 'No. I just want you to learn and remember, never be affected by how people treat you, never be affected by their criticism and unkindness. Learn to be strong.' I replied that I'd never admired tough people, but he said 'Don't misunderstand me. I mean be strong as steel inwardly, so that nothing can touch you. It doesn't matter what people think of us; what matters is how we look at ourselves and how God thinks of us.' "

Some masters choose to reject the parental role. Instead, they teach disciples techniques through which they may find the answers themselves. This is just what computer programmer Ben Spector found upon encountering the Indian-born Sri Chinmoy, a New York City guru. "The minute I saw him I felt this inner peace and I thought he would be a good person to answer all my outer problems," Spector explains. "So I asked him, 'I'm in law school, I don't really like it. Should I stay in law school? Or should I go into computer science or statistics? Or should I become a teacher? Should I stay in Montreal or move somewhere else? Should I continue trying to save the world, or should I settle down?' I mean, I had all these questions, and after the meeting I just walked straight up to him and asked him like twenty questions right away. He looked at me, smiled, and said 'Meditate, meditate, meditate. And all the answers will come from meditation.' "

Renowned British physicist/philosopher David Bohm learned to look inward with a *specific* meditative technique during a dialogue he had with Krishnamurti shortly before the great man's death. Bohm was particularly moved because, as it turns out, Krishnamurti's Eastern perspective corresponded with physical laws. Bohm explains: "In quantum physics, the observer and the observed cannot be separated. Therefore, a person measuring the results of an experiment is actually influencing the outcome. In physics, you can get around this by removing yourself and relying on an instrument to do the observing.

"Better get rid of the body."

"But how do you get around this problem when trying to understand your own emotions? How do you come to terms with anger, say, or violence, when simply by observing such emotions you alter them?

"Krishnamurti said that if we want to bring order to our emotions, we won't do it by thinking. Instead, we must acknowledge that we *are* the anger, that we *are* the violence. If we can stay with this perception long enough, the whole structure of thought and feeling will collapse like a house of cards. We will no longer sense the thinking part of the mind as a separate entity that can comprehend—and perhaps control—the emotional part. Instead, we will see the emergence of a different kind of mind, in which thought and feeling—the observer and the observed—are one."

This practical, essentially scientific bent is also embodied by Gejong Tenzin Gyatsho, the fourteenth Dalai Lama and winner of last year's Nobel peace prize. The Dalai Lama is the "supreme teacher" of Tibetan Buddhism and the leader in exile of the people of Tibet.

Born one of sixteen children in a farming family in eastern Tibet, the Dalai Lama was just two and a half when Tibetan monks identified him as the reincarnation of the previous Dalai Lama, who had died a few years before. On February 22, 1940—at age four—he was enthroned and installed in the 1,000-room Potala Palace in Lhasa. In 1959 he fled into exile following a failed uprising against Chinese troops.

Ever since, the Dalai Lama has worked to free 6 million Tibetans from Communist Chinese rule. But if he succeeds, he says, he may not advocate continuing the line of Tibet's god-kings, of which he is the latest. "I'm trying to develop the democratic practice," he says, and has even suggested that he himself might step down from political power and be replaced by a popularly elected prime minister.

The Dalai Lama's desire to demystify himself was recently illustrated by Robert Thurman, the Jey Tsong-kha-pa professor of Indo-Tibetan Buddhist studies at Columbia University and a former Buddhist monk. "Legions of people swear they have experienced manifestations of the Dalai Lama," Thurman explains, "but he says he doesn't know anything about it, so he doesn't make any claims.

"In one example, he described some Tibetan who had been coming to see him and missed his appointment. Then that Tibetan had to go to Nepal and do business. When he came back to the Dalai Lama, he was so grateful that the Dalai Lama had given him just the right advice.

"His Holiness didn't know what he was talking about and said, 'Well, what do you mean?' And the man said, 'The

night after the time when I couldn't meet you, you visited me in my dream and told me to go to Nepal. "You'll see me when you come back," you told me. "But now just go and make sure you get there on time."'

"His Holiness said, 'Boy, it's very lucky you didn't meet me because if you'd come and asked me this question, I probably would not have given you such good advice. So I guess I'm more efficient in the dream than I am in real life.' He denied consciously doing anything, being an active manipulating agent in any way, but he didn't deny that the dream had some validity for the man. The Dalai Lama joked and said, 'It would really lighten my schedule if people would simply lie down and consult me in their dreams.'"

This pragmatic view keeps the Dalai Lama in touch with the world. One of his current missions: forging a link between traditional Tibetan Buddhist philosophy and modern science and concerns. In April 1988, for instance, he participated in the Global Survival Conference, held at Oxford's Christ Church College in England. Along with Mother Teresa, the Archbishop of Canterbury, Carl Sagan, and Yevgeny Velikhov (Gorbachev's chief adviser on disarmament), the Dalai Lama discussed ecological breakdown, the threat of nuclear war, and the importance of the human mind. "Our mother planet," he told the group, "is telling us, 'My dear children, behave in a more harmonious way. Please take more care of me.'"

At a second conference held recently in Newport Beach, California, he met with neuroscientists to discuss the roots of compassion, the causes of child abuse, and the connection between ancient notions of consciousness and Western theories of the brain. The Dalai Lama filled scientists in on Tibetan meditation and dreaming techniques. And he was eager to learn from *them*. "If there's good, strong evidence from science that such and such is the case, and this is contrary to Buddhism," he said, "then we will change."

Ram Dass has become a bit of an activist as well. In his latest incarnation, he is a cofounder of the Seva Foundation, a Chelsea, Michigan-based group that funds charitable causes worldwide. Seva (Sanskrit for "service") has thus far helped fight blindness in India and Nepal, sponsored reforestation projects in South America, and funded health education programs for American Indians. Ram Dass, who also teaches volunteers to help AIDS patients, says, "My intention is to enter places that exacerbate suffering. In the Sixties I began to learn how to be. In the Eighties I learned how to express that being in doing."

A similar call to action has gripped thirty-five-year-old Tai Situ Rinpoche. "You can't just pray for peace," Tai says. "It won't grow like the trees or fall like rain. To have peace on Earth people must act to create it."

It is this philosophy that inspired Tai's Pilgrimage for Active Peace, undertaken last year to overcome conflict and unite the cultures and religions of the world. According to Dhondup Namgyal Khorko, a board member of Tai's U.S.-based Palpung Foundation, the master's global—and technically sophisticated—approach was particularly effective in communicating his ideas. "When Tai came to America in 1985," says Khorko, "he was already talking about modern electronics and communications satellites. And once he initiated his peace mission he hired Daniel Edelman, a big public relations firm, to handle his account. Since one of his philosophies is to communicate to as many people as possible, he thinks public relations is a wonderful thing. 'If you count yourself, the number is always one,' he once told me, 'but if you count others, the number is infinity.'"

"If you're hungry, then you're interested in food. If you're lost in a spiritual wasteland, then you may find yourself interested in a master."

The number of Americans following Eastern masters and philosophies may not be infinite, but according to some estimates, there are 3 million Buddhists in this country. Why the powerful trend?

William George Roll, a Danish professor of psychology and psychic research at West Georgia College, says part of the reason is America's frontier mentality. "You can't explore the land anymore," he says, "but you *can* explore the spiritual landscape. There is an openness in the American psyche. We all came here to find new opportunities and openings for ourselves."

Adds Marilyn Ferguson, "There's been an awakening of the American unconscious. The attraction to the spiritual indicates we're willing to admit we don't understand certain things."

The rise of the masters may also be a reaction to technology. "There's got to be something more in life than the newest invention or technique," says H. Newton Malony, a professor in the graduate school of psychology at Fuller Theological Seminary. "People are seeking some meaning that goes beyond secular survival. Many find the late twentieth century so unbearable that they continue to find appeal in these groups."

Joel Kramer, a onetime spiritual teacher now at odds with some aspects of Eastern philosophy, says the masters hold sway partly because people feel lost. "Our traditional support systems—family, religion, community—have fragmented," he says, "and people find themselves awash. When human beings are awash, they will grab on to something that gives them a sense of belonging. Our society has pushed materialism to the limit, and people are jaded. If you're hungry, then you're interested in food. If you're lost in a spiritual wasteland, you may find yourself interested in a spiritual master or group."

Kramer, coauthor with Alstad of *The Guru Papers: Masks of Authoritarian Power*, sees "incredible danger" in the rising tide of Eastern religions in the West. One major complaint is the position of authority often granted a guru. For instance, he notes, disciples blindly following a leader may lose their critical faculties, finding themselves in situations that are dangerous at best. "Some of the more radical groups," Kramer says, "stockpile weapons, and a disciple could find himself using them. Then there's the case of the big-time guru who had AIDS and homosexual relationships with his disciples. He passed the AIDS virus on to them.

"Gurus," Kramer adds, "are interested in power. And there's no one more powerful than the person saving your soul. But the unequal nature of the relationship between guru and disciple may cripple the disciple's psyche. And the relationship is equally destructive to the guru; there's no way he can't end up totally isolated from other human beings. With no equality in the relationship, it's simply got to be limited."

Alstad adds that the "hidden authority" intrinsic to the master–disciple relationship "can easily become a power manipulation under the guise of love. Disciples may ultimately become so cynical they can't open up to other people or establish a sense of trust."

Kramer and Alstad also say that Eastern philosophies, "like all religions, tend to be renunciative." That is, they emphasize enlightenment through *detachment* from the world. "Detachment can reduce conflict," Alstad says, "but it can also engender more callousness. It will not help the species survive."

While others concede these pitfalls, they believe they can be overcome. Roll, for instance, admits that the masters "*seem* to belie our democratic tradition. But," he says, "in a certain way, perhaps separateness is our problem. We have become so separate that we forget we are all connected to the phys-

ical environment, the social environment, and each other. We need to feel connected to solve problems such as the destruction of the environment, poverty, and drugs."

Not all masters are autocrats, Roll adds. Some are merely teachers. "If you place yourself completely at the disposal of a guru, you have problems," he says. "But if your master is simply your teacher, then once you have been taught, you can go your own way. Buddhism has always contended that if you know yourself, you know the world."

And Rick Fields, author of *How the Swans Came to the Lake. A Narrative History of Buddhism in America*, agrees that despite the dangers, the American brand of Buddhism is essentially good. "There's danger in getting married," he says, "but people still do it. There's danger in anything worthwhile. The important thing is that students proceed slowly, that they sit down by themselves and look into their own minds. More and more, people are understanding that the point is not to follow somebody but to explore your inner self. The spiritual journey is ultimately personal, and you must make it on your own."

"A good master," concludes Don Morreale, "is one who constantly throws you back on your own devices and says, 'You figure it out yourself.'"

That's the lesson John Daido Loori learned from Hakuyu Taizan Roshi, head of the Los Angeles Zen Center, on the day they met. "Maezumi Roshi was staying down the hall from me at the Naropa Institute," Loori explains, "so I went to his room to pay my respects. We talked for about half an hour, and I left. Later that evening there was a knock on my door. When I opened it, two of his monks were standing there with a bucket of Kentucky Fried Chicken, and they invited me to join Maezumi Roshi for some fried chicken and sake. The evening turned into a party, people came and went, but he kept me sitting next to him the whole time. And every so often he'd lean over and whisper, 'Daido, tell me.' I'd look at him and say, 'Tell you what?' And he'd look off the other way. A short time later, he'd tap me on the shoulder again, lean close, and say, 'Daido, ask me.' 'Ask you what?' I'd reply, and he'd turn away.

"He did this several times, so I figured, 'Okay, this is dharma combat,' and when he said, 'Daido, tell me,' I picked up a glass, drank deeply, and went, 'Ahhhhhh!' He looked at me, held his nose between his fingers, and turned away. This exchange continued from five in the afternoon until three in the morning. Finally, all the guests had left, the monks had gone to sleep, and I got up and started cleaning the apartment. He said, 'It's okay. We'll do it tomorrow.' Well, it's not at all like a Zen teacher, especially a Japanese Zen teacher, to leave a mess and go to bed, but he insisted and shoved me out the door.

"About an hour later, there was a gentle knock on my door. It was Roshi. He'd changed his clothes to more formal robes, and he said, 'Come with me.' The playfulness was gone, this was a command. So we went back to his apartment. And it was spotless. He'd cleaned it, washed every dish, bathed himself, shaved his head, and set a table with four bowls and the other implements for the tea ceremony. He invited me to join him. I asked who the other places were for. He said one was for Yasatani Roshi, one of his teachers, the other was for Soen Roshi, my teacher at the time. Then he prepared the tea according to the Zen ceremony and served it. As I touched the tea to my lips I started crying. I didn't feel sad, but there were tears flowing from my eyes into the tea. I glanced at Roshi, and he was crying, too. I was flabbergasted and tried ineffectually to express my gratitude, but he covered my mouth with his hand and showed me the door." ∞

Reported by Jane Bosveld, Jeff Goldberg, Shari Rudavsky

THE POWER

CONTINUED FROM PAGE 56

bragging, because I didn't do it, though I did name it The Power and The Passion. A madwoman with a mean needle in Coney did it, one-handed with her hair standing on end, fingering her rosary beads with the other hand, and when I saw it finished, with the name I had given it on a banner above it, I knew she was the best tattoo artist in the whole world and so I did not do her, I did *not*. It was some very ignorant asshole who musta come in after I did that split her open and nailed her to the wall with a stud gun, but I caught the beef on it, and the tattoo that saved her from me saved me from the quick shot and gave me to Steener's people, courtesy of Villanueva who is, I should mention, also Catholic.

So it's a tattoo that means a lot to me in many ways, you see, but mostly I love it because it is so perfect. It runs from just below where my shirt collars are to my navel, and full across my chest, and if you saw it, you would swear it had been done by someone who had been there to see what happened.

The cross is not just two boards, but a tree trunk and a crossbar, and the spikes are driven into the wrists where the two bones make a natural holder for that kind of thing—you couldn't hang on a cross from spikes driven through your palms like a lot of people think. They'd rip through. The crown of thorns had driven into the flesh to the bone, and the blood drips from the matted beard *distinctly*—the madwoman was careful and skilled so that the different shades of red didn't muddy up. Nothing muddied up, you can see the face clear as you can see where the whips came down, as clear as the wound in his side (which is not some wimpy slit but the best whatchamacallit, rendering of a stab wound I have seen outside of real life), as clear as you can see how the arms have pulled out of the sockets and how the legs are broken.

You just can't find no better picture of slow murder. I know, I seen photos of all kinds, I seen some righteous private art, and I seen the inside of plenty of churches, and ain't nobody done justice to nothing anybody ever done to someone, including the Crucifixion. Especially the Crucifixion, I guess.

Because, you see, you cannot take a vamp out with a cross, that don't mean dick to them, a fucking plus sign, that's all. It's the Crucifixion that gets them, you gotta have a good crucifix, or some other representation of the Crucifixion, and it has to be sacred in some way, to inflict the agony of the real thing on them. Mine is sacred—that madwoman mumbling her rosary all the way through the work, don't it just figure that she was a runaway nun? I wouldn't a thought it would matter, but I guess when you take them vows, you can't give them back. Sorta like a tattoo.

Well, that's what that madwoman believed, anyway, and I believe it, too, because I like believing that picture happened, and the vamp I'm sitting on, it don't mean shit if he believes or not, because I got him and he don't understand how I could even get close to him. So while I go get my bag (giving a good flash to the kid, who goes into shock), I explain about pure fibers found in nature like the linen they say they wrapped that man on the cross in (I think that's horseshit myself, but it's all in it being natural and not whatchamacallit, synthetic, so that don't matter), and how it keeps the power from getting out till I need it to.

And then it's showtime.

I have a little fun with the silver for a while, just laying it against his skin here and there, and it crosses my mind not for the first time how a doctor could do some interesting research on burns, before I start getting serious. Like a hot knife through butter, you can put it that way and be dead on. Or undead on, ha-ha. You know what they got for insides? Me neither, but it's as bad for them as anyone. And I wouldn't call *that* a heart, but if you drive a pure wood stake through it, it's lights out.

It lasts forever for him, but not half long enough for me. Come dawn, it's pretty much over. Them whatchamacallits, UV rays, they're all over the place. Skin cancer on fast forward, you can put it that way. I leave myself half an hour for the kid, who is not really a kid because if he was, he'd be the first kid I ever killed, and I ain't no fucking kid killer, because I seen what *they* get in prison and I said, whoa, not *my* ass.

I stake both hearts at the same time, a stake in each hand, sending them to hell together. Call me sentimental. Set their two heads to burning in the cellar and hang in just long enough to make sure we got a good fire going before I'm outta there.

I'm halfway to the airport when I realize my ribs ain't bothered me for a long time. Healed up, just like that. Hallelujah, gimme that old-time religion.

"As usual," Steener says, snotty as all get-out, "the bulk of the fee has been divided up among your victims' families. Your share is three hundred." Nasty grin. "Check's in the mail."

"Yeah," I say, "you're from the government and you're here to help me. Well, don't worry, Steener, I won't come in your *mouth*."

He actually cocks a fist and Villanueva steps in front of him. The woman with them gives Steener a really sharp look, like she's gonna come to my de-

The Artist

fense, which don't make sense. Villanueva starts to rag my ass about pushing Steener's hot button, but I'm feeling important enough to wave a hand at him.

"Fuck that," I say, "it's time to tell me who *she* is."

Villanueva looks to the woman like he's asking her permission, but she steps forward and lets go of her coat, and I see the marks on her neck are all gone. "I'm the mother. And the wife. They tried to—" She bites her lips together and makes a stiff little motion at her throat. "I got away. I tried to go to church, but I was . . . tainted. The priest told me about—" She dips her head at Villanueva and Steener, who still wants a piece a me. "You really . . . put them away?"

The way she says it, it's like she's talking about a couple of rabid dogs. "Yeah," I say, smiling. "They're all gone."

"I want to see the picture," she says, and for a moment, I can't figure out what she's talking about. Then I get it.

"Sure," I say, and start to raise my undershirt.

Villanueva starts up. "I don't think you *really* want—"

"Yeah, she does," I say. "It's the only way she can tell she's all right now."

"The marks disappeared," Villanueva snaps. "She's fine. You're fine," he adds to her, almost polite.

She feels the side of her neck.

"No, he's right. It *is* the only way I'll know for sure." I'm shaking my head as I raise the shirt slowly.

"You guys didn't think to sprinkle any holy water on her or nothing?"

"I wouldn't take the chance," she says, "it might have—"

But that's as far as she gets, because she's looking at my chest now, and her face—oh, man, I start thinking I'm in love, because that's the look, that's the look on my own face when I stand before the mirror and stare, and stare, and stare. It's so fucking *there*. Villanueva and Steener are looking off in the opposite direction. I give it a full two-minute count before I lower my shirt. The look on her face goes away and she's just another character for a flash-movie again. Easy come, easy go. But now I know why she was so scared when she was here before. Guess they didn't think to tell her about pure natural fibers.

"You're perfect," she says, and turns to Steener and Villanueva. "He's perfect, isn't he? He couldn't join them if he wanted to."

"Fuckin' A," I tell her.

Villanueva says, "Shut up," to me and looks at her like he's kinda sick. "You don't know what you're talking to. You don't know what's standing in this room with us. I couldn't bring myself to tell you, and I was a cop for sixteen years—"

"You told me what would have to be done with my husband and son," she says, looking him straight in the eye, and I start thinking maybe I'm in love after all. "You spelled that out easily enough. The agony of the Crucifixion, the burning and the cutting open of the bodies with silver knives, the stakes through the hearts, the beheadings, the fire. That didn't bother you, telling me what was going to happen to my family—"

"That's because they're the white hats," I say to her, and I can't help smiling, smiling, smiling. "If they had to do it, they'd do it because they're on the side of Good and Right."

Suddenly Steener and Villanueva are falling all over each other to hustle her out, and she don't resist, but she don't cooperate, either. The last thing I see before the door closes is her face looking at me, and what I see in that face is not understanding, because she couldn't go that far, but acceptance. Which is one fucking helluva lot more than I'll ever get from Steener or Villanueva or anybody the fuck else.

And Steener and Villanueva, they don't even get it. It went right by them, what I told her. They'd do it because they're on the side of Good and Right.

I do it because I like to.

And I don't pretend like I ain't no monster, not for Good and Right and not for Bad and Wrong. I know what I am, and the madwoman who put The Power and The Passion on my chest, she knew, too, and I think now she did it so the vamps would never get me, because God help you all if they had.

Just a coincidence, I guess, that it's my kind of picture. ∞

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$$= \frac{1}{2\pi^2}\left(\frac{2|m^*|}{\hbar^2}\right)$$

CONTINUED FROM PAGE 79

ligion, holy people have been journeying to the sun and stars on a regular basis since the Navaho world began. They stop off on the moon on their way to the sun. In Navaho religion the sun is not seen as a burning ball of superhot magma but as a deity. Given the postulates of his culture, he was asking a perfectly reasonable and serious question.

After talking it over, the scientists decided that given his premises, maybe the old man did have relatives out there. Feeling badly at the reception they gave his question, they kept scanning the hills to see if he would reappear. One day he did. Overjoyed, they waved him in, making him feel welcome. The next day he came back with his grandson. The scientists told him they were sorry they'd laughed at him. "Please forgive our bad manners. We will be glad to take any message you care to give to your relatives out there." They ceremoniously hauled out a little tape recorder, turned it on, and told the boy to tell his grandfather that "he may speak whatever message he has into the machine, and his words will be recorded." The old man cleared his throat and very solemnly began speaking in Navaho. Abruptly, after a minute and a half, he was through. The NASA workers were set for about a thirty-minute harangue, because if they had relatives they'd never seen they'd have a long message for them.

The scientists asked the boy to tell them what his grandfather said. The boy just looked at his feet, blushed, and wouldn't respond. They couldn't get him to talk and couldn't get the old man to give the grandson permission to tell them what he'd said. So they brooded over why the message was so short. Then someone remembered there was a Navaho physicist, Fred Begay, at the Los Alamos National Laboratory. They took the tape to Los Alamos and asked Fred to translate it. When Fred heard it, he doubled over with laughter. They couldn't get him to calm down for several minutes. Finally Fred told them what the old man said. "Greetings, brothers. Greetings, sisters. Whoever you may be, wherever you may be, watch out for these guys. They'll steal your land."

This is just a story. There is a nuclear physicist named Fred Begay, a Navaho at Los Alamos. The rest is made up. But it has the right moral punch.

Omni: If current efforts to reclaim the Black Hills and other sacred Indian sites by the tribes who were dispossessed were successful, would that revitalize the tribal religions?

Ortiz: There is a national effort to return the sacred Black Hills to the Lakota–Dakota tribes, although they don't always stand together on what they want. But if they are successful, it would be a tremendous force for revitalizing long-lapsed ceremonies, especially the vision quests by the young males. Those Black Hills mean to them what the individual mountains and other high holy places here mean to particular Pueblo peoples. It's important for them to have these lands as free and as pristine as possible so that they can go truly into nature for the kind of religious and spiritual encounters they need to make themselves whole. They have to make sure people don't live within the lands, because they are not sacred if people are building cabins and so on. From a religious perspective, the Sioux leaders would want the Black Hills to be restored to a pristine condition. Let the presidents' faces get worn away. Yes, I'm sorry, but it's the answer I think they'd give. Now whether the Black Hills will be returned or not is another matter. Because, well, Mount Rushmore is seen as what? "The Citadel of Democracy"? But it's a fight worth fighting.

"From a religious perspective, the Sioux leaders would want the Black Hills to be restored to a pristine condition: Let the presidents' faces become worn away."

Omni: Hypothetically, what would the landscape of America look like if Europeans had never conquered it, if Native Americans still had dominion?

Ortiz: That question's a minefield! I'd say fewer species—perhaps none—would have been rendered extinct, or even endangered. Hunting was carefully regulated. Here among the Tewa tribes, a hunt priest and his assistants, including women, regulate hunting. When the mating calls of the bull elk thunder through the mountains in the late winter, he sends word out: "No more hunting, because the females will be with young, and you're endangering two generations if you kill a pregnant doe, elk mule, and so on." You have to take your meat before mating season.

Native Americans did not have an ideology of overrunning, of mindless expansion across an invented wilderness using "pushing back the frontier" as an excuse. They didn't have these notions. So they could conserve and not take any more than would be renewed. From that point of view, nature would have been much more bountiful. Particularly, the land would have been without acid rain, polluted rivers and air, without vast tracts of strip-mined earth. The land ethic was so different—and is still, with the surviving Native American cultures. Of course theirs was a technologically simple society. If the Europeans had never come, it would have guaranteed that things like strip mining wouldn't have happened because the Native Americans wouldn't have had the means to rip open the earth and carry out coal by the millions of tons.

Omni: Why are certain cultures so expansionist, always pushing beyond their borders, while others seem content to stay within their territories?

Ortiz: Evolutionists would jump on this one and say that the tribes were not expansionist because they hadn't evolved enough to form the requisite complex societies—political organization, control mechanisms for exacting labor, tribute, and so on. Conditions were ripe for such evolution to take place in several places in North America, including the north Pacific Coast and the lower Mississippi Valley. But people there never seemed to want to go that route. Who is to say that European, or Near Eastern, or Old World models of cultural evolution should be followed by New World peoples? That's one of the great failures of scholars. They try to impose models developed in the Old World to explain cultural activities in the New World. Until we stop doing that we won't be able to understand on its own terms what was going on here.

Omni: Would you talk about the peculiarly Native American view of time?

Ortiz: Earlier we mentioned that Native American religions are set more in place and space than in time. Native cultures also live more in place than time. Western cultures are driven by history, a sense of linear, irreversible time. They're driven by unique events, piled on by competing ideologies.

This reliance on historical time is of little importance in Native American communities. They're caught up in many aspects of history because they're a part of larger, sociopolitical, economic groupings, like the United States of America. They can't avoid that. But the driving force in their communities—the thing that regulates their ceremonies, communal life, political institutions, and once even their economic activities—was a sense of time being cyclical. The unfolding of the seasons and the adjustment of activities to fit different seasonal requirements are the best model. Economically that has broken down, because nowhere is the subsistence economy fully operative. Native Americans are caught up in the cash economy.

Even in the oral histories, Native Americans tend to try to re-create that origi-

nal time in rituals, retreats, pilgrimages. They try to reenact migrations and repeat important events in the—not history—but remembrance of their coming of age, of consciousness as a people. It's not historical time dominating. That which is remembered is that which finds ritual repetition.

Omni: Why, to such a large degree, have contemporary Americans forgotten about Native Americans, their religions, and spiritual traditions?

Ortiz: They came from another place, Europe, and they needed their own traditions to sustain them because they found so much of the New World threatening. Look at the Puritans at the beginning of their experiment in Massachusetts. They were absolutely intolerant. They were going to unfold their vision of the "city upon a hill," conquer, and colonize on their own terms, pushing both the forest—representing darkness—and the Indians—representing children of the Devil—farther and farther back into the interior. They were almost hermetically sealed off from considering what the native inhabitants had.

Nowhere were the colonizers open to learning about the cultures of the New World peoples. The Portuguese were not interested in Brazil, the Spaniards everywhere else in South and Central America, the English on the East Coast of North America—they were not interested. The early European settlers never realized that had they affirmed the native peoples of the hemisphere and entered their worldview, accepted them as teachers, they could have benefited enormously. How vastly different would have been the histories of any of the countries carved out of the European colonies and the peoples' imaginations. Instead, they learned selectively: how to adapt Indian tactics of warfare such as marching silently in moccasined feet, single file, rather than British-style to bagpipes and bugles, hiding in ambush in the woods, and so on.

They never learned a responsibility to nature. Take the great auk. The earliest explorers reported seeing rock outcroppings off the coast of Newfoundland and all over northern New England just covered with them. The rocks looked white because there were so many great auks. But they were ungainly, nonflying birds that could easily be clubbed to death. Fishing, trading, adventuring expeditions saw they could load their holds with smoked fowl meat. So these plump flightless birds became prime prey. The expeditions smoked auk meat, stored it in their holds, and off they went. By the 1840's the great auk, which once covered islands by the millions, was extinct. And we could repeat that story for many other species.

Omni: What can we learn *now* from the Native Americans?

Ortiz: Europeans originally did not so much come to live in the Americas as to plunder them. This plundering attitude still remains. The overuse, overexploitation, irresponsible environmentalism, or lack of an environmental ethic in the earliest centuries led to the kinds of imbalances we now, belatedly, have to turn our attention to. That's one of the great challenges of the future.

The remaining Native American cosmological worldviews are models for responsibility in the future. I'm not advocating that everyone become Indian in outlook—although that certainly wouldn't hurt. I'm saying that there are inspirational models still to be found among us. Our first task is to understand them and not sort them out only in terms of a priori categories. Evolutionism is one of the most harmful of those a priori categories. If you label something a tribe, you detract from living reality—that the tribes of America are among the most resilient, enduring political entities there are. Rather than taking the evolutionist view that the tribe is an inherently fragile institution, a mere steppingstone along the way to the state, instead see the tribe as a device for avoiding the state altogether. Tribes, where they survive, represent that. By remaining as such, tribes avoid the problems of the state as much as possible. So evolution can be stood on its head and sent spinning down the road. This "up from darkness" toward an inevitable progress, or change toward more complex forms, is an impoverished explanatory device. Evolution may be fine for natural selection. But natural selection does not de-

pend on will, consciousness, intellect, love, moral choices. Those peculiarly human things are operational in a human society at any given time.

The United States might not have gone from the *Mayflower* to the moon in less than four centuries if the Europeans had affirmed the worldview of the tribes and made themselves one with the land. If they had, there might not be a United States of America, because the kinds of political organizations that forged this country out of thirteen quarrelsome colonies might not have occurred. Adopting tenets of an Indian worldview would have been a very healthy thing for this country—at any time in its history.

Omni: Is it too late?

Ortiz: No, not for a moment. I'd despair if I thought it was too late. It's not too late to turn around the ecological catastrophe. But to do that, we're going to have to draw on the arsenal of everything we've got. You don't use technology alone to clean up the mess technology created. We were talking about new ways of perceiving relationships among human beings—a troublesome species—and the earth. Those ways are already there in Indian teachings, as is the idea of sharing the earth with other life forms and developing new forms of respect in order to develop new relationships with them.

I'd like to tell you one final story, which I heard in 1970 at an American Anthropological Association meeting in San Diego. A group of Canadian engineers were looking for a place on a Chippewa reserve to construct an earthen dam. These engineers are analogous to the Army Corps of Engineers, who always want to find an Indian reserve on which to construct this or that. They thought they'd found a spot, but a medicine man who was watching their activities told them, "Not here. The dam won't hold. The earth is not right." They laughed, but they humored the medicine man and sent a sample of the soil to Ottawa to have it tested. When the analysis came back, it vindicated the old Chippewa's judgment. The scientists and engineers were mystified as to how this unschooled old man could know something they hadn't even suspected. The Chippewa explained, "The beaver will not use earth from this area. And if the beaver will not use it, that means it's not good for damming up water."

He trusted the beaver to make impeccably correct decisions, because building dams is a beaver's way of life. To trust the judgment of beavers, one must concede that creatures "down the food chain" can teach you something. If Americans can look to beetles and bugs and butterflies for lessons or perceive the qualities that native peoples have always perceived, even in the roadrunner, there is hope yet. ∞

Passing the buck: Entertain yourself with a few dollars—and you don't even have to part with them

GAMES

By Scot Morris

You don't have to spend money in order to have fun with it. This month's Games column involves tricks, trivia, and optical illusions with U.S. paper money. Take out your crispest $1 bill and create a weird new view of George Washington. Get your hands on a brand new five-spot and see what's hidden in the Lincoln Memorial.

We'll start with an amusing optical trick you can play with a $1 bill. The stunt appeared in Harry Lorayne's *Apocalypse*, a newsletter on magic. Although this was probably the first time this trick was published, Lorayne told me he doesn't know who originated the idea but has heard it started in Japan.

Vertically fold a new, crisp dollar so that the crease goes through the center of George Washington's left eye. Sharpen the crease by running a fingernail over it. Now open the bill and make another sharp crease, parallel to the first, through Washington's right eye. Holding the bill with the two creases toward you, carefully pinch the folds together, pushing the quarter-inch strip downward. The center of Washington's mouth is now halfway between the eye folds. Make all three creases permanent by pressing them with a fingernail.

Open the bill, and loosely hold both ends so you can clearly see the portrait. If you look straight at him, George looks fairly normal.

Driving force behind money. There's a wealth of little-known trivia on the back of your bills

But tilt the top of the bill slightly away from you and you'll see him smiling. Slant the top of the bill toward you, and George will frown. Tilt the bill back and forth rapidly to see Washington's expression change.

Here are 16 other money stunts and challenges:

1. OUT FROM UNDER. Place a bill flat on the table, stand an empty drinking glass on it, and balance a quarter horizontally on the curved rim of the glass. The challenge: Without touching the glass with anything, remove the bill so that the quarter remains perched on the edge. Can you do it?

2. NUMBER COUNT. The numeral 1 appears in 11 spots on a dollar bill. This doesn't include the serial number or those numbers that vary from bill to bill, but it does include the 1 starting the year of the series, and the Roman numeral I at the base of the pyramid on the back. The rest are fairly easy to find, except for the eleventh. Where is it located?

3. WORD COUNT. How many times does a word for 1 appear on a dollar?

4. TENS. How many times does *ten* appear on a $10 bill? (Count carefully.)

5. HARDWARE. Where is the picture of a key on a $1 bill?

6. REVOLUTIONARY DATE. Can you find the date 1776 on a $1 bill?

7. BILL BUG. Where on a $1 bill is there a spiderlike creature hiding?

8. SEAL. In the circle with the eagle in it, representing the back of the Great Seal, can you find six ways in which the number 13 is represented?

9. HOW MANY EYES? Martin Gardner recently noted that each end of the back of a dollar bill can be folded (at tk) to show "the face of a Martian." This suggests a new answer to the trivia question, How many eyes are on a dollar bill? The two Martians on the back now bring the total to eight eyes. Can you find the other four?

10. "SECRET" NUMBER. On a $5 bill, find the number 172.

11. STATE. Can you find where NORTH DAKOTA is printed on a $5 bill?

12. CHANCE. If you toss a $5 bill into the air and

let it flutter to the ground, what is the probability that it will land with Lincoln's picture on top?

13. AUTO. On the back of a $10 bill (see photograph), what kind of car is in front of the U.S. Treasury?

14. OPTICS. It may be hard measuring the Lincoln Memorial etched on the back of a $5 bill, but this Washington, DC, landmark is not built to perfect rectangular proportions. The monument's columns are not quite parallel to one another but in fact tilt slightly inward. Why is this, and what does the Lincoln Memorial have in common with the French flag?

15. FUNGUS. Can you create a picture of a mushroom by making two folds in a dollar?

16. LEVITATION. Place two wineglasses about four inches apart on a table. The challenge: Support a third glass, using only a dollar bill stretched across the rims between the other two glasses.

ANSWERS

1. OUT. You aren't allowed to touch the glass with "anything," but because the dollar is already there, the bill is obviously not included in that restriction. Carefully roll up the bill until it touches the glass. Continue rolling the bill, pushing the glass off with the center of the rolled-up cylinder.

2. COUNT. The other 1 is in the date 1787 at the base of the green Treasury seal on the front.

3. WORD. There are nine words for *one*. Did you miss the Latin *unum* in the Great Seal? A tenth representation, if you allow some wordplay, is *one* spelled backward in RESERVE NOTE.

4. TENS. The word *ten* can be found 12 times on a $10 bill. Most people miss counting its appearance in the word TENDER.

5. HARDWARE. The key is in the green Treasury seal on the face of the bill.

6. DATE. At the bottom of the pyramid, 1776 appears in Roman numerals.

7. BUG. On the face of the bill, look at the shield around the "1" in the top right corner. In the top left notch of this shield sits what looks like a tiny bug. It wasn't necessarily intended, but I like to think it is the spider responsible for spinning the intricate "cobweb" design all around the borders on both sides of the dollar bill.

8. SEAL. Thirteen stars are arranged in a pattern above the eagle's head. There are 13 vertical stripes on the shield, 13 olives, and 13 leaves on the olive branch of peace in the eagle's right talon, 13 war arrows in the eagle's left talon, and 13 letters in the motto E PLURIBUS UNUM.

9. EYES. George Washington has two, the eagle has one, and the big eye at the top of the pyramid makes four. Attributed to Benjamin Franklin, this "Eye of Providence" represents the eye of God watching over the Union, symbolized by the pyramid's 13 steps. In Masonic tradition the truncated pyramid symbolizes the unfinished Temple of Solomon, and the eye represents "the grand Architect of the Universe."

10. SECRET. In the shrubbery to the left of the steps leading up to the Lincoln Memorial, dark shadows seem to outline the number 172. Some people see the "secret number" as 372 or 3172. The U.S. Treasury reportedly insists it's all an illusion—an unintentional result of engraving.

11. STATE. You'll need a crisp $5 bill and excellent eyesight (or a magnifying glass) to see the two rows of states printed in tiny type at the top of the Lincoln Memorial. The clearest row lists 11 states (in order of admission to the Union) from Delaware to New York. Above that is an even finer row of type listing 15 states. The last state in the row is North Dakota.

12. CHANCE. It's a sure bet that Lincoln will be on top. Even on the bill's

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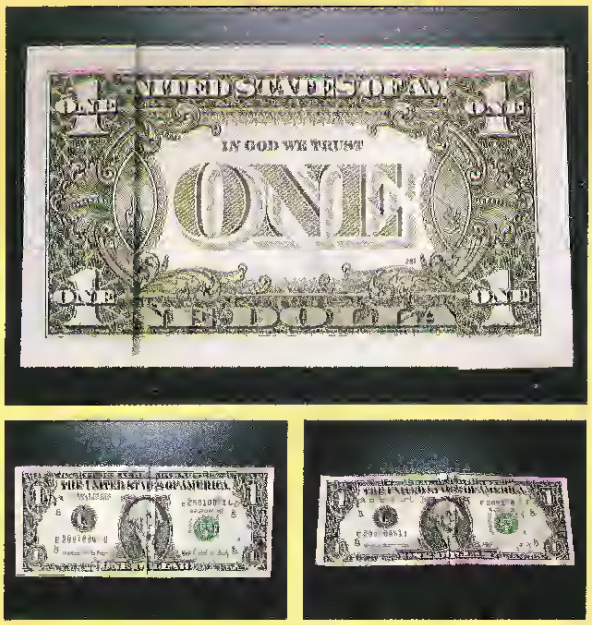
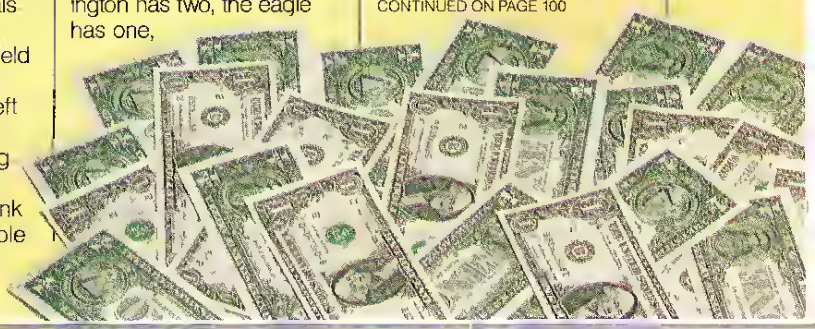


Bill folds. Optical tricks that will leave you smiling.



EARTH

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a software bank containing data collected by Advanced Very High Resolution Radiometer (AVHRR) satellites which are operated by the National Oceanic and Atmospheric Administration. AVHRR satellites have been monitoring the earth's surface temperatures, vegetation, and a variety of other factors every day since 1976. Most of this information is stored on magnetic tapes. "We have warehouse after warehouse full of these tapes," Warren says.

Last December Warren completed a 4,000- by 8,000-pixel image of the earth. (Each pixel is a colored dot on the screen; there are 16 million possible colors.) This is perhaps the largest computer image of the earth to date—that is, one containing more dots on the screen, and thus more information, than any previously done on a graphics computer. This year Warren will produce an image with much greater resolution—16,000 by 32,000 pixels, or half a billion pixels altogether. (A typical 19-inch TV screen, by comparison, has only about 10,000 pixels.)

Because 60 percent of the earth is normally covered by clouds at any given moment, Warren has to combine numerous satellite pictures in order to get a cloud-free image of the surface. When he has a clear image of the entire planet, the digital data on file in his computer are transferred onto magnetic tape. The magnetic tape in turn is loaded into the computer of a digital camera and photographed directly. The film is developed and blown up into 36 gore sections—curved strips, like the peel of an orange that has been sliced into 36 equal pieces. The strips are then pasted onto the surface of the GeoSphere.

A larger, and more elaborate, 21-foot-diameter sphere will be completed later this year. This globe will reveal even more detail. Surface features of less than one kilometer will be discernible.

To create relief features, Van Sant will fashion mountain ranges, using sculpting tools and hypodermic needles filled with caulk. The finished globe will rotate synchronously with the earth, and city lights will appear as seen from space. The atmosphere will be simulated with a clear Lexan sphere extending three quarters of an inch beyond the GeoSphere's surface. Real-time weather patterns will be projected onto this "atmosphere" as the information is transmitted by Geostationary Operational Environmental Satellites. Van Sant is also exploring the possibility of using gases or liquid crystals to mimic the atmosphere and clouds. All these characteristics, he says, will make the globe a "live Earth."

After the GeoSphere is completed, Van Sant plans to build an "Earth situation room" and video studio where people can observe the globe and run various simulations. He and his colleagues are devising a new technique to display images on a spherical screen. Under this arrangement the GeoSphere will be surrounded by four or five projectors that can display patterns such as deforestation in the Amazon, desertification in northern Africa, or whale migrations in the Pacific. The projectors will draw this information from an extensive research database. "We can also project national boundaries, but people have to get used to seeing the earth without artificial boundaries," Van Sant says.

Groups such as the Sierra Club could use the studio to program specific environmental simulations. The GeoSphere, according to Van Sant, will also be an educational tool, traveling to museums for kids and adults to view. And it could be a powerful instrument for scientific research, taking information about the earth off a flat screen and showing what it looks like on a sphere. Also, a "Venus-Sphere" could be made to visualize data collected by the Magellan mission. A spherical 3-D display system might even be used by football teams to view plays from all possible angles.

Van Sant hopes to use his studio to make programs—what he calls Earth Spots—for TV news. Several networks have already expressed interest. The GeoSphere's zoom capability should be particularly useful. A video camera could photograph the GeoSphere, zooming down to an area of one square kilometer. To move in closer for even greater resolution, images could be produced from Landsat data and from aerial photographs stored in a computer. The technique would allow news shows to go from a shot of the entire earth down to a smaller region and then down to a person standing at a particular site.

The zoom feature could put every story in a global context, Van Sant says, adding that the GeoSphere may give viewers a leg up on geography. "Eighty-four percent of Americans don't know where Nicaragua is," he notes, "and ninety-two percent don't know where Iran is."

Information displayed on the GeoSphere could also be used to beef up news stories. Van Sant points to the *Exxon Valdez* oil spill as an example. "You couldn't learn anything from the news coverage," he says. "You just got mad about it."

The GeoSphere, however, could show international tanker routes, the locations of ships, the number of barrels of oil floating around, the sites of major spills, and the points of greatest jeopardy. "We can take the basic recommendations—such as using double-hulled tankers, storing oil in numerous compartments, and radar control of routes—and project how much they'd reduce oil spills," Van Sant says. "All these data are available. They're easy to program. But no one has bothered to put them together." ∞

GAMES

CONTINUED FROM PAGE 99

back, there's the statue of Lincoln inside the memorial.

13. AUTO. It isn't any specific make of car. Features of several autos were combined to create a generic car.

14. OPTICS. Both the Lincoln Memorial and the French flag are carefully designed illusions. Perfectly vertical columns will look as if they are tilting outward at the top. To compensate for this illusion, the columns lean inward somewhat so that they appear to be straight.

The French flag, too, is an illusion designed to compensate for an illusion. Because different wavelengths of light are perceived differently, three stripes of exactly the same width but varying color would not look equal. The stripes of the French flag are made in the proportions of 30 percent for the blue, 33 percent for the white, and 37 percent for the red.

15. FUNGUS. Two horizontal folds, at slightly different angles, turn the top of Washington's head and the front of his shirt into a mushroom. (See illustration.)

16. LEVITATION. Pleat the bill like an accordion, with six to eight folds running the length of the bill. This will strengthen the paper enough to support the weight of the third glass. ∞

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STAR TECH

ACCESSING THE FUTURE

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Charge your car battery with the BatteryMate solar panel (right). It plugs into a cigarette lighter socket and can turn sunlight into as much as 100 milliamperes of current. Price: $39.95. Contact: Solarex, Rockville, MD; (800) 321-SOLA.

MUSIC BOX

Connect an electronic keyboard and an IBM-compatible computer to the MRS-2000 Studio Box (above) and you can turn out 64-track recordings that sound professional. Price: $369. Contact: PC MusicWorks, Richardson, TX; (800) 456-6434.

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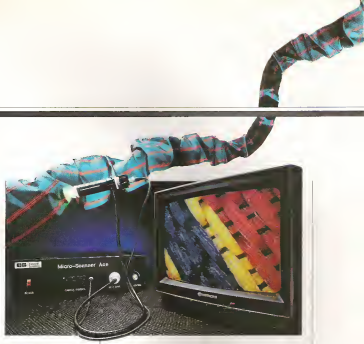
Weighing only three pounds, NEC's Intersect CD-ROM drive (below) connects to any personal computer to offer access to the growing collection of disk-based reference materials. Price: $599. Contact: NEC, Wood Dale, IL; (708) 860-9500.

LEAN MACHINE

Measuring body fat and body gauge fitness. The Futrex-1000 (above) uses infrared beams to analyze fat content of body tissue. Price: $299. Contact: Futrex, Hagerstown, MD; (800) 545-1950.

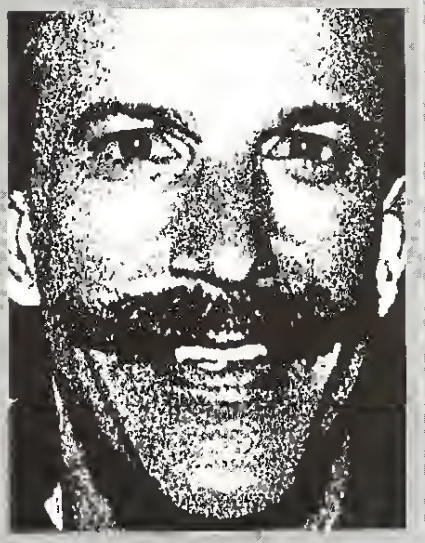


DECENT EXPOSURE

This microscanner (above) combines video with a high-powered microscope to provide close-ups of surface detail. Price: $8,900. Contact: Edmund Scientific, Barrington, NJ; (609) 573-6259.

NEW WAVE

This multiband radio receiver (below) not only receives audio signals, it also has a built-in printer that allows it to make hard copies of Teletype messages, weather charts, reports from news bureaus, or economic information transmitted over radio frequencies. Price: $6,500. Contact: Sony, New York; (800) 222-SONY.



LAST WORD

By Neil Bennett

"Viruses excluded from labor markets may file discrimination suits. And domestic enzymes could pressure Congress to tighten the quotas for alien bacteria stowing away in French cheese."

Cleaning up America's toxic waste is a top national priority—second only to liberating humanity from housework. Researchers now believe that native bacteria can be engineered to gobble up bathtub scum and vacuum cleaner dirt. Domestic fungi may be the most profound technical breakthrough since the FryDaddy.

Industry is already enlisting famished microbes to consume deadly chemicals from waste dumps, oil spills, and TV dinners. The process is called bioremediation. CEOs are signing on these biological Pac-Men without having to offer maternity leave benefits or group dental insurance. As the proud president of a New Jersey refuse disposal company recently said, "Antibodies are not only good business, but they also qualify as minorities under federal affirmative action statutes."

Imagine if tomorrow's kids were to adopt a school of vegetarian spirilla instead of goldfish. They could avoid lima beans, saving their stomachs for Oreo pizza. Even a nerd would gladly swap a year's allowance for a pet bacillus willing to consume cod-liver oil.

Since bacteria are not finicky—plus they work evenings, weekends, and holidays—scientists hope to sic micro-munchers on a host of domestic filth. Made-to-order enzymes might inhale cigarette smoke and intestinal gas. Tabletop bacteria could gulp furniture dust. Puritanical smut gluttons would purge four-letter words from magazines and rock videos. Biotechnologists speculate that no taste will be too exotic.

Lower-metabolism bugs could hang out in dirty clothes hampers. Those on the Scarsdale fabric diet would smooth wrinkles from dress shirts and eliminate static cling. Ring around the collar will become as obsolete as the one-car garage.

Natural antibodies may also be the key to better health. A pint of cholesterol-starved enzymes (the high-fiber equivalent of 4 million bowls of Raisin Bran) dissolved in Chicago's municipal water supply could cleanse plaque buildup from the arteries of the entire urban population.

Hallelujah.

Dermatologists foresee personal hygiene organisms bred to deodorize armpits and scarf up navel lint. Future generations might never know the heartbreak of dandruff.

The Occupational Safety and Health Administration, Washington's watchdog in the factory, is optimistic that organic products such as Fastidious Fungus, Bacteria in a Drum, and Mr. Microbe will replace noxious detergents in industrial cleaners and diet bologna.

Contract talks may start before year's end. Labor leaders predict that streptococcus Jimmy Hoffus will abdicate sore throat duty to represent their germ union in labor-management negotiations.

Opposition is expected to the microbes' possible demands for $10.50 a day and carfare. Antibody spokesmen are quick to respond: "Household bacteria don't do windows but they'll earn their keep. Who else can a family call at six A.M. when they find the electricity off and the freezer stocked with catfish ripe as a dump-truck load of spoiled anchovies?"

In-home bioremediation will likely stir controversy. If viruses are excluded from local labor markets, they may file discrimination suits. Equally troublesome, domestic enzymes could pressure Congress to tighten immigration quotas for alien bacteria stowing away in French cheese.

Industry concedes the risks of drafting cannibalistic fungi for domestic and personal hygiene work. Though New York City would never again be held hostage by the Sanitation Workers of America, the public could face walkouts by in-sink-erators and bag ladies. Worse, citizens might wake up one morning to find the family dog missing.

The federal government is already drafting contingency plans should domestic microbes become a national menace or go on welfare. The EPA would then call out Superbugs to consume troublemakers. (Superbugs are mutant microbes genetically engineered in a top secret government lab disguised as a taco stand in Brooklyn.) These microscopic soldiers of fortune take no prisoners. They live by the coccus credo: "I have seen the enemy, and he is lunch."

This solution could backfire, too, of course, like those killer bees transported to Kansas to kill head lice. As backup, the Army Corps of Engineers might be called in to sanitize homes with atomic radiation and to dip the citizenry into scalding water.

Though elected officials publicly laud organism labor as a bitchin' innovation for the advancement of our nation's health and cosmic consciousness, privately they are more cautious. As one political observer recently quipped, "Politicians will never put the full faith and backing of the United States government behind any force that could consume their voters."

Neil Bennett is a freelance writer and part-time ski instructor living in a condo-miniumized refrigerator carton in Aspen, Colorado. He doesn't do windows—or floors or dishes.