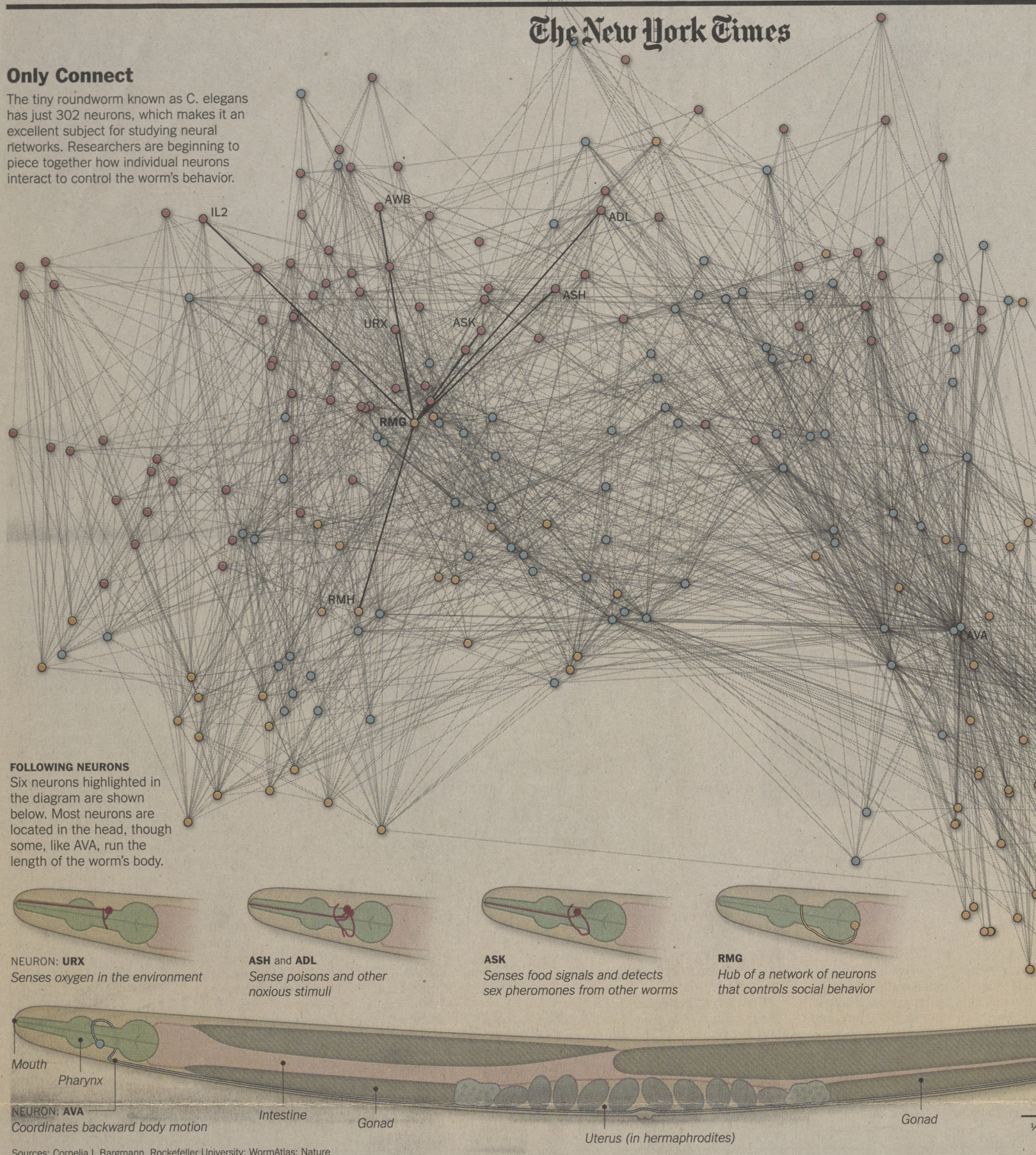
The New York Times

Only Connect

The tiny roundworm known as C. elegans has just 302 neurons, which makes it an excellent subject for studying neural networks. Researchers are beginning to piece together how individual neurons interact to control the worm's behavior.



NEURONS AND SYNAPSES
This wiring diagram shows more than 4,500 of the 8,000 neuron-to-neuron connections, or synapses, in the worm's nervous system. Each dot represents a single neuron:

- SENSORY NEURONS detect external stimuli
- CONNECTOR NEURONS relay signals
- MOTOR NEURONS control muscle movement

SOCIAL AND SOLITARY WORMS
Most worms in nature congregate in clumps, a behavior controlled by two neurons called RMG, one of which is highlighted at left.

RMG combines information from several sensory neurons, also highlighted, and then signals the worm's muscles to move toward nearby worms if conditions are right.

But if a specific gene in RMG is activated, as it is in many laboratory worms, the worm will switch to more solitary behavior.

FOLLOWING NEURONS
Six neurons highlighted in the diagram are shown below. Most neurons are located in the head, though some, like AVA, run the length of the worm's body.

NEURON: **URX**
Senses oxygen in the environment

ASH and **ADL**
Sense poisons and other noxious stimuli

ASK
Senses food signals and detects sex pheromones from other worms

RMG
Hub of a network of neurons that controls social behavior

Sources: Cornelia I. Bargmann, Rockefeller University; WormAtlas; Nature

JONATHAN CORUM/THE NEW YORK TIMES

In Tiny Worm, Unlocking Secrets of the Brain

By NICHOLAS WADE

In an eighth-floor laboratory overlooking the East River, Cornelia I. Bargmann watches two colleagues manipulate a microscopic roundworm. They have trapped it in a tiny groove on a clear plastic chip, with just its nose sticking into a channel. Pheromones — signaling chemicals produced by other worms — are being pumped through the channel, and the researchers have genetically engineered two neurons in the worm's head to glow bright green if a neuron responds.

These ingenious techniques for exploring a tiny animal's behavior are the fruit of many years' work by Dr. Bargmann's and other labs. Despite the roundworm's lowliness on the scale of intellectual achievement, the study of its nervous system offers one of the most promising approaches for understanding the human brain, since it uses much the same working parts but is around a million times less complex.

Caenorhabditis elegans, as the roundworm is properly known, is a tiny, transparent animal just a millimeter long. In nature, it feeds on the bacteria that thrive in rotting plants and animals. It is a favorite laboratory organism for several reasons, including the comparative simplicity of its brain, which has just 302 neurons and 8,000 synapses, or neuron-to-neuron connections. These connections are pretty much the same from one individual to another, meaning that in all worms the brain is wired up in essentially the same way. Such a system should be considerably easier to understand than the human brain, a structure with billions of neurons, 100,000 miles of biological wiring and 100 trillion synapses.



FRED R. CONRAD/THE NEW YORK TIMES

CASE STUDY Cornelia I. Bargmann is decoding how the brain of the roundworm functions.

The biologist Sydney Brenner chose the roundworm as an experimental animal in 1974 with this goal in mind. He figured that once someone provided him with the wiring diagram of how 302 neurons were connected, he could then compute the

Continued on Page 4

Recomposing Life's Details From Scraps

By DAVID STOUT

PHILADELPHIA — For decades, Frank Bender has stared at human skulls, handled them, even boiled scraps of flesh off them. He has done this to shape clay busts in the hope of giving names to rotting corpses and skeletons found in woods or alleys or abandoned houses.

He has also studied old photographs of fugitive killers, then sculptured busts embodying how they might look years later. His work has helped the authorities capture several notorious criminals who may have thought they were safe in their new lives.

Now Mr. Bender, one of the most respected of a small breed of forensic sculptors, is completing one more case — trying to help investigators identify a woman whose decomposed remains were found by a deer hunter in the woods of eastern Pennsylvania in December 2001.

"Every time I work on one, it's my favorite," Mr. Bender said recently in his Philadelphia studio, a converted butcher shop. But this one is special.



SABINA LOUISE PIERCE FOR THE NEW YORK TIMES

LAST CASE Frank Bender in Philadelphia with his bust of a missing woman.

It will be his last, and his 70th birthday, last Thursday, was almost surely his last. Mr. Bender entered hospice care this month for pleural mesothelioma, a terminal cancer of the chest cavity.

There is no indication how or when the woman died. Thomas A. Crist, an anthropologist who examined the badly decomposed remains for the Northampton County coroner's office in 2001, says she was 25 to 40 years old (most likely 30 to 35) and of European descent, though subtle characteristics of her molars also suggested an African background.

Nationwide computer searches based on dental records and the woman's DNA failed to turn up a match. A search of missing-reports also went nowhere.

"This case has perplexed me for years," said the county coroner, Zach-

Continued on Page 3



CHARLES TAYLOR

ON VIEW

Spoonfuls of Medicine, Marketed for Centuries

By ABIGAIL ZUGER

Everyone knows you can't buy health, but that has never stopped anyone from trying to sell it to you. As a small, gorgeous and fiercely funny exhibition of posters at the Philadelphia Museum of Art makes clear, the marketing of this particular noncommodity is an enduring art in every sense of the word.

The basic gambit has probably not changed since the Stone Age: a concerned stranger presents you with a vision of the future, starring either a happier, better you with the use of a certain product, or a sadder-but-wiser, considerably more miserable you without it. For centuries all was word of mouth, but with the birth of the modern poster in the late 19th century the visions suddenly became visual, flowering in large and colorful profusion all over the world.

Early adopters straddled the Atlantic. In the United States they included Prof. P. H. van der Weyde, M.D., inventor of the genuine German Electro Galvanic Belt for ailments including liver, stomach and kidney diseases ("beware of imitations"), and M. K. Paine, a pharmacist in Windsor, Vt., who compounded Green Mountain Balm of Gilead from the resins of local

Continued on Page 2



SNAKE OIL? The familiar verbal effluvia of the patent medicine industry clutter early posters.

Science

WELL-FEATHERED NESTS
The remarkable and varied constructions of avian builders.
HENRY FOUNTAIN PAGE 3

Health

TAKING YOUR MEDICINE?
Well: A credit-score company tracks patient compliance.
TARA PARKER-POPE PAGE 5

BEACH READING
Personal Health: SPF? UVB? Do's and don'ts of sunscreen.
JANE E. BRODY PAGE 7

Online

A Michigan State scientist posts from Kenya, where she's studying spotted hyenas.
nytimes.com/science

Spoonfuls of Medicine, Marketed for Centuries

From First Science Page

evergreens.

In France, the famous Dr. Guillaume Dupuytren, having devised an operation for a hand condition that still bears his name, moved on to the presumably more lucrative problem of baldness before he died in 1835. His hair-strengthening pomade was still going strong in the 1860s, celebrated in respectful neoclassical style against a hot pink background.

The familiar verbal effluvia of the patent medicine industry clutter some early posters. The Green Mountain balm is "universally acknowledged to be the best Plaster ever known," with an entire paragraph in small print enumerating its target ills, from pain and internal inflammation through lameness, boils and corns. Dr. Trikos, purveyor of an eponymous lotion for irritations of the skin and baldness, summarized it all eloquently: "I have cured myself, I have

Promises of a happier, better you with the use of a certain product.

cured my friends, and I wish to cure all who suffer."

The words eventually fell away, though, and the images took center stage, helped along by some of the best-known poster artists of the time.

Jules Chéret, the master of Belle Époque poster art, dispatched two of his vivacious gauze-clad young women to the cause of Vin Mariani, the wine that refreshes body and brain and restores health and vivacity. Each demoiselle gaily pours herself a glass; for neither, clearly, is it her first. Leonetto Cappiello, the Italian-born French artist called "father of modern advertising," created an ecstatic senior citizen dancing in dressing gown and slippers after Uricure repaired his joints.

Drinking buddies every bit as unforgettable as the glorious Parisiennes were sketched by an anonymous Hungarian artist, but here the tall guy in charge of the bottle has a black robe and a skull's head, while his small, flushed companion in baggy work clothes and a large droopy mustache is clearly headed for trouble. (A temperance philanthropy was behind that one.) Skulls are deployed elsewhere to make dire points about syphilis, while a gigantic black spider does the honors for TB.

But the star of the show may be the single image intended neither to cajole nor to terrify but to educate and amuse. The five-volume anatomy and physiology textbook that the German physician Fritz Kahn brought out in the 1920s was illustrated with a poster-size folding color plate depicting "Man as Industrial Palace," a work that combines the Lilliputian charms of "Where's Waldo?," Willy Wonka's factory, the world's best dollhouse and a really good pinball game.

Up in the chambers of the brain, two groups of tiny men in suits and ties deliberate around small conference tables: they are, of course, Will and Reason. Nearby a lone fellow in shirtsleeves and headphones operates a telegraph: he is Hearing, while the photographer one cubicle over is Sight.

Gears move particles of food along the alimentary tract, aided by tiny workers with rakes and cauldrons of digestive enzymes. Down in Bone Marrow a solitary artisan stamps out red blood cells.

It is an image begging to be animated, and the contemporary German designer Henning M. Lederer has done just that, in a short film looping alongside the actual lithograph. There is no need to travel to Philadelphia for this particular pleasure, though; Mr. Lederer's utterly irresistible creation is online at http://www.vimeo.com/6505158.

Any immersion in medical history is likely to produce a stereotyped set of reflections on the remarkably short lifespan of most good medical advice and the remarkably enduring nature of the motivations behind it. Altruism and the hard sell have always been intertwined. In fact, William H. Helfand, a retired Merck executive and collector of medical memorabilia whose many donations to the museum include the 50-odd items in the show, goes on record in the catalog ruefully acknowledging patent medicine salesmen as his "figurative ancestors."

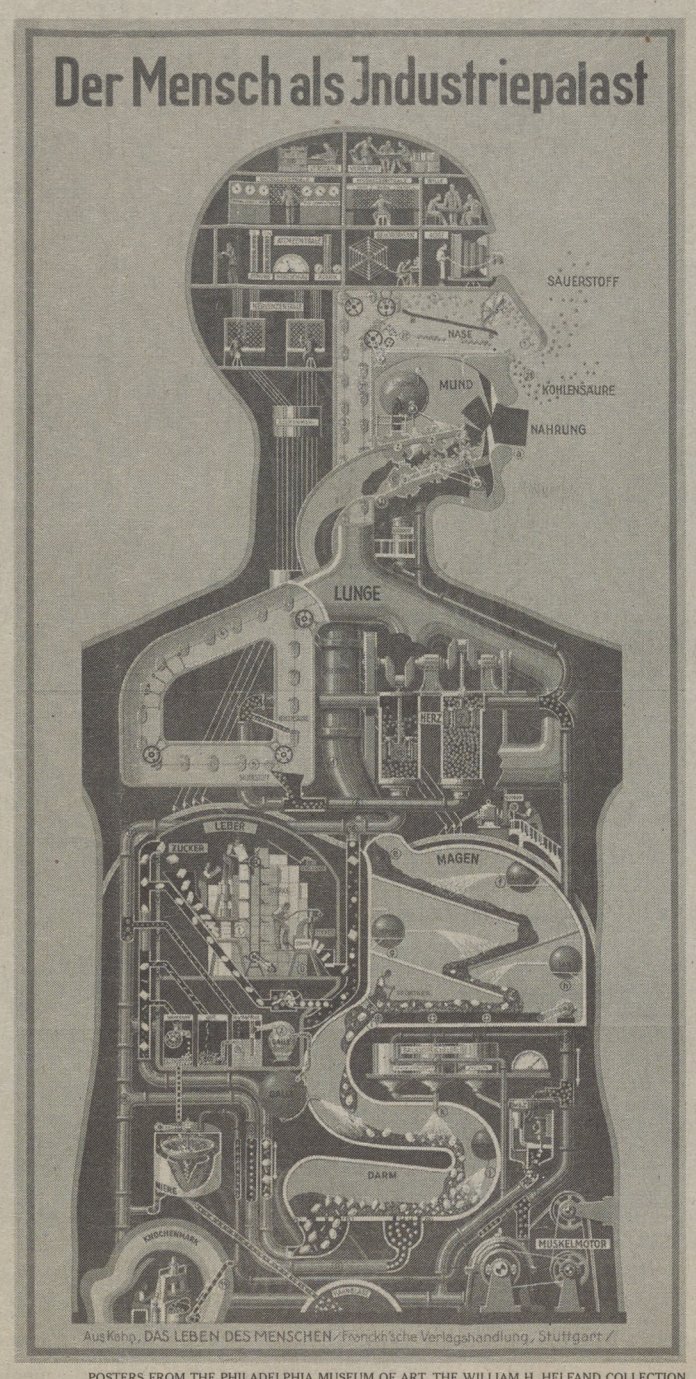
The bold images on display here prompt one more reflection. As our technical understanding of health becomes ever more pixilated in dull shades of gray, muted by risk and benefit and by statistical slicing and dicing, the giant assertions splashed over these gallery walls are more appealing than ever.

Just tell me what to do, they say. Give me something that will work. No doctor today can do either one, not without a lot of disclaimers, but that doesn't mean anyone has stopped asking.





HARD SELL When images overtook text in patent medicine advertisements, 19th century visions of health flowered in profusion all over the world.



POSTERS FROM THE PHILADELPHIA MUSEUM OF ART, THE WILLIAM H. HELFAND COLLECTION



STAR OF THE SHOW "Man as Industrial Palace," left, is a work that combines the Lilliputian charms of "Where's Waldo?," Willy Wonka's factory, the world's best dollhouse and a fun pinball game.

ONLINE: MIRACLE ELIXIRS

A slide show of posters from the exhibition "Health for Sale":
nytimes.com/health

"Health for Sale: Posters From the William H. Helfand Collection" is at the Philadelphia Museum of Art through July 31.

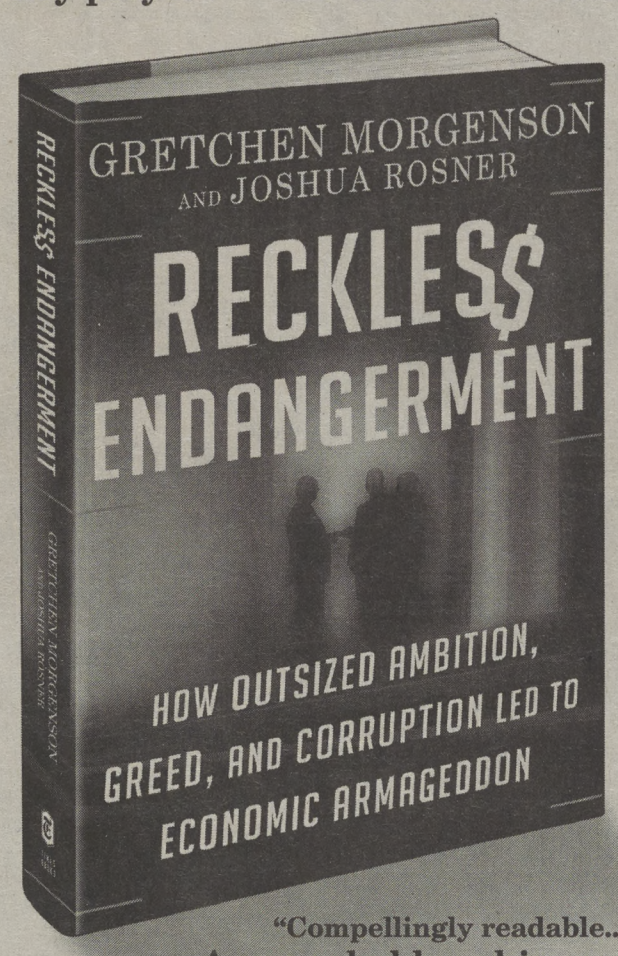
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ANDREW SHURTLEFF FOR THE NEW YORK TIMES

Jessica Pigza, an assistant curator at the New York Library's Rare Book Division, examines the leather used on a book cover at a course in Rare Book School at the University of Virginia.

Peering Into the Exquisite Life of Rare Books

For Bibliophiles, a Gathering Like No Other

By JENNIFER SCHUESSLER

CHARLOTTESVILLE, Va. — On a steamy morning last week Mark Dimunation, the chief of the rare book and special collections division at the Library of Congress, was in a windowless basement room here at the University of Virginia, leading a dozen people in a bibliophile's version of the wave.

He lined up the group and handed each person a sheet of copier paper with a syllable written on it. After a few halting practice runs — "Hip-na-rah-toe . . . " — the group successfully shouted out, "'Hypnerotomachia Poliphili,' 1499!"

The phrase wasn't an incantation ripped from the pages of a lost Dan Brown novel, but the title and publication date of a long erotic love poem printed in Venice by Aldus Manutius and often described as one of the weirdest and most beautiful books every produced.

And the occasion was just an ordinary class meeting at Rare Book School, an institution whose football team, if it existed, might well take "Hypnerotomachia Poliphili!" as its official rallying cry.

For five weeks each summer Rare Book School brings some 300 librarians, conservators, scholars, dealers, collectors and random book-mad civilians together for weeklong intensive courses in an atmosphere that combines the intensity of the seminar room, the nerdiness of a "Star Trek" convention and the camaraderie of a summer camp where people come back year after year.

Vic Zoschak, a retired Coast Guard pilot turned antiquarian bookseller from Alameda, Calif., took his first class in 1998 and has returned for 14 more. "Flying search-and-rescue missions was satisfying work," he said. "But

Continued on Page 6

More Than An Escape For the Elite

ZACHARY WOOLFE
CRITIC'S NOTEBOOK

AIX-EN-PROVENCE, France — Summer classical music festivals tend to exist as escapes. Generally situated in leafy, wealthy enclaves and requiring expensive tickets, expensive flights and expensive hotels, they attract audiences even more well heeled than do opera houses and concert halls during the regular season.

The grandly named Festival International d'Art Lyrique d'Aix-en-Provence, now in its 64th year, is no exception. The mood here is one of relaxed poshness. The performances usually take place on balmy, starry evenings under cloudless skies amid noble stone buildings of the 17th and 18th centuries.

The performance spaces are picturesque. This year the offerings included a run of Mozart's youthful opera "La Finta Giardiniera," put on a few miles north of Aix in an open-air theater adjoining a Renaissance chateau, with fields rolling out behind the stage as the sun set. Back in town there was a darkly enchanting chamber adaptation of Ravel's "Enfant

Continued on Page 6



P. BERGER/ARTCOMART

Clémence Tilquin in "L'Enfant et les Sortilèges" at the Aix-en-Provence festival.



ANDREW TESTA FOR THE NEW YORK TIMES

Danny DeVito at the Savoy Theater in London on the set of "The Sunshine Boys," the 1972 Neil Simon comedy.

Danny DeVito, Alone in London

By PATRICK HEALY

LONDON — Danny DeVito never wanted to be a stage star. He took acting classes in 1960s New York on a lark while studying to be a makeup artist and then used Off Broadway plays like "One Flew Over the Cuckoo's Nest" as a stepping-stone to Hollywood. He wanted to be famous in the movies, and he also suspected that his looks — five feet tall and fleshy, a New Jersey Italian in a fun-house mirror — would be most memorable there.

But this summer Mr. DeVito is deploying his body mass to buzz-worthy advantage in a revival of "The Sunshine Boys," Neil Simon's 1972 comedy, and on the turf of classically trained actors no less. The 67-year-old Mr. DeVito, best known for portraying coarse connivers on television shows like "Taxi" and "It's Always Sunny in Philadelphia," has become a darling of critics and audiences here in the West End as Willie Clark, a sharp-tongued curmudgeon who has a bittersweet reunion with his former vaudeville partner, Al Lewis (played by Richard Griffiths, a Tony Award winner in 2006 for "The History Boys").

The play's popularity has producers considering a move to New York, which would be Mr. DeVito's Broadway debut but only the latest in a life of intriguing career turns. After shifting in the 1990s more to directing ("Hoffa," "Matilda") and producing ("Pulp Fiction"), Mr. DeVito veered back to full-time acting in 2006 on "Sunny." He has developed a rabid following among younger fans as the outrageously amoral Frank

Continued on Page 5

Dirty or Clean, It's the Fight That Matters

Warrior Class
McGinn/Cazale Theater

CHARLES ISHERWOOD
THEATER REVIEW

A restaurant in Baltimore or a sleek New York apartment: It's all one big back room, where political horse trading is conducted with ruthless intensity and oily smiles in "Warrior Class," an absorbing new play by Kenneth Lin that opened on Monday night at the McGinn/Cazale Theater as part of the Second Stage's Uptown season.

Mr. Lin's streamlined, three-character drama, highlighted by a superb performance from David Rasche as a Republican Party operator, focuses on the vetting process being undertaken on behalf of a potentially hot new politician from New York. Assemblyman Julius Lee (Louis Ozawa Changchien) has exploded onto the scene with a big speech that has caused a sensation and has the party apparatchiks excited about putting him forward as a congressional candidate.

Young and attractive, he's got a lot of marketable angles. He's both a practicing Christian and a former Marine, with a Harvard Law Review credit on his ample résumé. "The Republican Obama," he's been called by Sean Hannity, and the party senses an opportunity to take

Continued on Page 5

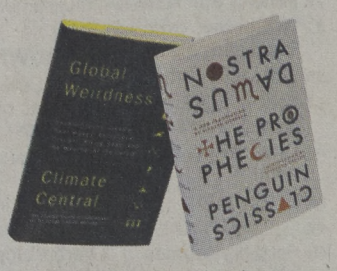
Of Signs, Wonders, Shock And Awe

DWIGHT GARNER
BOOKS OF THE TIMES

"The premonition of apocalypse," the critic Irving Kristol wrote, "springs eternal in the human breast." Some summers, like this one, that premonition hangs in the air like haze.

Drought, fires and appalling heat, as well as omens like a Maya calendar that predicts end times, have us rattled. This summer's hit literary debut from Karen Thompson Walker, "Age of Miracles," adds kindling to the emotional pyre. It's about what happens when Earth's rotation slows and the planet begins to scorch like a marshmallow dangled over a campfire.

As if riding shotgun down the avalanche of these nightmares, here comes a scholarly and freshly translated edition of "The Prophecies," by Nostradamus, this time stamped with the approval of the editors of the venerable Penguin Classics series. Never mind the Weather Chan-



nel. If the Penguin Classics people are telling me to be afraid, then I am prepared to be very afraid indeed.

Michel de Nostradame (1503-66) was a prosperous and well-educated French doctor whose cures, like those of most of the medical men of his time, paid heed to the workings of the stars and planets. At night, alone in his study, like Carl Sagan on peyote, he plugged more fully in to the cosmos. His pen name: Nostradamus.

Working with what he called "natural instinct" and "poetic furor," and wearing laurel crowns

Continued on Page 4

Hints of the Past In a Garden Of New Quartets

ALLAN KOZINN
MUSIC REVIEW

The Museum of Modern Art's Summergarden concert series was once one of the joys of New York's summer music, with expansive thematic programming performed by students from the Juilliard School on Friday and Saturday evenings in the Abby Aldrich Rockefeller Sculpture Garden through July and August. In recent years the series has shrunk to four Sunday concerts, two played by the New Juilliard Ensemble and two by groups presented by Jazz at Lincoln Center — hardly enough for the fans of either discipline, and forget about exploring themes. The concerts are thoughtfully arranged, expertly played and free, so it may seem churlish to complain. But it is worth remembering what Summergarden once was.

The second and last of the Juilliard concerts, on Sunday evening, was devoted to string quartets written in the last decade and chosen by Joel Sachs, who directs Juilliard's contributions to the series. Benet Casablancas, from Spain, had the first word with "Encore for Arditti" (2004): a piece written, if the title is to be taken literally, to be a concert's final word.

Mr. Casablancas looks briefly to the past in the work's introduction, which couches a thoroughly Schubertian chordal gesture in astringent modern harmonies, and the fast-slow-fast structure of his concise, three-movement score also relies on an old model.

He was not alone in glancing backward: Jukka Tiensuu, the Finnish composer, quotes directly from the opening movement of Bach's "Brandenburg" Concerto No. 3 in his "Rack" (2008). But both composers quickly slip the bonds of music history and settle into a thoroughly up-to-date style.

In Mr. Casablancas's case that means a slightly brash (if never truly harsh) language, offset by exuberant gestures that give his piece a celebratory spirit. Mr. Tiensuu's style of modernism is more complex: Brief passages use the glassy timbres of artificial harmonics to create a haunting, music-box-like sound; others are scored to suggest an eerie electronic effect, although the performance (though amplified) did not seem to involve sound-processing devices.

The two remaining works shared some of Mr. Tiensuu's otherworldliness, but only in passing, on the way to more sober explorations of energy, both bright and dark. In "Mosaics" (2002) Marta Ptaszynska, a Polish composer who has lived in the United States since 1972, uses repeated chord figures and intense tremolando bowing to keep the tension level high, and when she veers off, briefly, toward a light, dreamy passage, she is merely setting up a taut, pressured return to a more visceral, high-impact style.

A rumbling cello line and angular violin melodies give "From the Beginning" (2005), by the American composer Richard Festinger, a sense of mystery, but that evaporates in the fast second movement, which builds on tremolando figures and driven rhythms to create a bright, lively finale.

The performers — Elizabeth Derham and Heidi Schaul-Yoder, violinists; Kim Mai Nguyen, violist; and Avery Waite, cellist — gave colorful, committed readings that illuminated the variety of styles offered.

The final Summergarden concert is a performance by the Vijay Iyer Trio on Sunday at the Abby Aldrich Rockefeller Sculpture Garden, Museum of Modern Art; (212) 708-9400, moma.org.



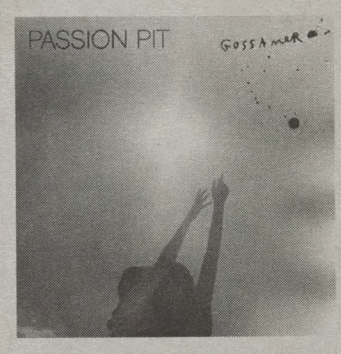
HIROYUKI ITO FOR THE NEW YORK TIMES

The New Juilliard Ensemble *played in the Summergarden series on Sunday in the Abby Aldrich Rockefeller Sculpture Garden at the Museum of Modern Art.*

New Music

Passion Pit

"Gossamer" (Columbia)



Shiny, happy sounds define the music of Passion Pit. On "Manners," its debut full-length album, released in 2010, synthesizers shimmered and pealed with lustrous timbres, while dance beats pulsed with tireless programmed jubilation behind Michael Angelakos's falsetto voice. "Gossamer," the second Passion Pit album, adds both new gizmos and a more human touch: dizzying electronic stutters, wavery manipulated voices, chiming glockenspiels, stately pianos, female backup singers, twittering woodwinds and elegiac string sections. It's larger and much cleaner than life — that is, until Mr. Angelakos's lyrics sink in.

Then it turns out that things aren't so euphoric after all. The songs on "Gossamer" — which Mr. Angelakos has described as autobiographical — revolve around a romance besieged by the singer's own cynicism, insecurity, obsessiveness, abusive behavior and heavy drinking. Take "I'll Be Alright," which arrives like a flashy Kanye West production running (even more) amok. It's full of digitally splintered chipmunk voices and bursts of drum sounds — like blasts of a confetti cannon — with a galloping beat and that reassuring refrain, "I'll be alright." But the singer is actually giving his partner permission to leave him. "I know we've had enough," he admits. "Just go find someone new."

Or consider "Constant Conversations," a falsetto ballad like something Prince would use for a leisurely seduction; instead, it depicts a bitter domestic scene: "Well you're standing in the kitchen and you're pouring out my drink/Well there's a very obvious difference, and it's that one of us can think."

Mr. Angelakos — Passion Pit's songwriter, singer and all-around instrumentalist — has dropped the notion that Passion Pit is a band. He made "Gossamer" with his producer and drummer, Chris Zane, aided on some songs by the arranger Nico Muhly and the Swedish vocal trio Erato. "Gossamer" is a studio extravaganza, updating the grandeur of groups like Abba and the Beach Boys to the 21st century — especially in "On My Way," an ornately orchestrated marriage proposal that offers, "I'll buy a ring and then we'll consecrate this messy love" and promises, "All these demons, I can beat them."

Although Mr. Angelakos played nearly all the instruments, the results don't sound solitary. On "Manners" Passion Pit was gleaming yet opaque; Mr. Angelakos's voice was buried amid the synthesizers, the arrangements thumped along with little change from start to finish, and the net effect was — to be blunt — monotonous. "Gossamer" opens up the music and lets it breathe. For all the artificial splendor, there's clearly a very human, very troubled voice at the center of these songs.

JON PARELES

Micachu & the Shapes

"Never" (Rough Trade)



Mica Levi's pop music, played with her three-piece band Micachu & the Shapes, sprints past quickly, with abrupt digital dropouts of sound built in. Every element in the band — including a small acoustic guitar with objects stuck between strings and fretboard, keyboards, drums, and various homemade instruments, percussive and plucked — arrives masked with echo, distortion and warping.

It's as if these tracks were trying to get away from you. They're tender, awkward, a bit abrasive and suddenly gone. And then you miss them, because your ears retain an afterimage of a powerful chord change, a smart arrangement of dynamics or repetition, a good groove. (If her songs at first sound stiff, listen closer: they're meticulous about rhythm.) "Never" is her second studio album, after "Jewellery," from 2009; in between was "Chopped and Screwed," a live collaboration with the London Sinfonietta, an inessential stopgap. Her songs are small, and she writes to the scale of her little band.

It's the usual second record for someone with ideas this original and controlled: not quite as powerful as the first. If she played down some of the thrills in her songs before, she's doing so even better now; in "Sick," which is under three minutes long, the good stuff finally arrives with a harmonized chorus and an unexpected harmonic shift nearly a minute in, its charm quickly neutralized by a pause and a series of robotic noises. Those looking for less cloudy rewards — songs as bright and bewitching as "Golden Phone" and "Calculator," from "Jewellery" — might feel frustrated.

But "Never" has another second-album quality: a slower burn, and a downhearted mood. "Top Floor" wonders about the void: "I want to jump into the white sky/but I never try." And the refrain of "OK," over polyrhythmic hammering that eventually coheres into a fine mesh of dragging beats, re-enacts a conversation that every depressed person dreads:

Are you sure you're O.K.?
Couldn't be better.
If you're not, you should say.
Couldn't be better.

This is an art-school record; Ms. Levi's work resists easy pleasure and traditional beauty. (And sometimes her resistance feels cheap, like the staged phone conversation in "Glamour," between two bubble-headed women.) But she's got a backward version of the mercantile pop intelligence. Her songs hook you near the end, not the beginning.

BEN RATLIFF

Hafez Modirzadeh

"Post-Chromodal Out!" (Pi)

It may take the ear a moment to adjust to "Post-Chromodal Out!," an intrepid new album by the Iranian-American saxophonist, composer and ethnomusicologist Hafez Modirzadeh. A collection of pieces largely for an improvising quintet, it borrows the syntax of modern jazz, but pointedly alters the inflection. At times the album's sonic effect can suggest a slightly warped vinyl LP playing at a wavering r.p.m., though its guiding mission makes you aware of the cultural biases that call such an image to mind.

Mr. Modirzadeh, 50, has devoted much of his creative life to what he calls "chromodality," a concept blending the dialectical strategies of post-bop with the dastgah, or modal systems, of Persian art music. He has refined this concept in his capacity as a professor at San Francisco State University, where he directs the world music and dance program. And on a 2010 album, "Radif Suite" (Pi), he explored its precepts with a small group jointly led by the Iraqi-American trumpeter Amir ElSaffar. The new album once again features Mr. Modirzadeh and Mr. ElSaffar in the foreground, blending or abrading their timbres in ways that shrug off the Western scale. But here there's also a piano custom tuned to incorporate an array of quarter-tone variations, inspired by non-Western temperaments. The painstaking effort behind the retuning serves an extra-musical agenda: "to split open and decolonize/the sacred 88," as Mr. Modirzadeh describes it in a poem printed on the album's inside flap.

It's the sound of the piano, played with dauntless enterprise by Vijay Iyer, that gives "Post-Chromodal Out!" its strongest pull of disorientation. The band otherwise features Ken Filiano on bass and Royal Hartigan on drums, along with the occasional reinforcement: Danongan Kalanduyan on kulintang, or Filipino gongs; Faraz Minooei on santur, a Persian hammered dulcimer; Tim Volpicella on guitar. The full expanded lineup appears on just one track, the final reprise of a body of work titled "Weft Facets," which picks up where "Radif Suite" left off, and takes up the first two-thirds of the CD.

There's a lot of Ornette Coleman in Mr. Modirzadeh's approach to small-group polyphony, and a lot of Don Cherry in his notions of a hybridized language. At times, as on the variation titled "Facet Twenty-two," there's even a direct echo of the Coleman-Cherry front line. But this music — including a suite called "Wolf & Warp," composed for the group by James Norton, on commission — urges apprehension on its own terms. There's heady discipline at work here, along with the stirrings of a hard-fought individualism.

NATE CHINEN



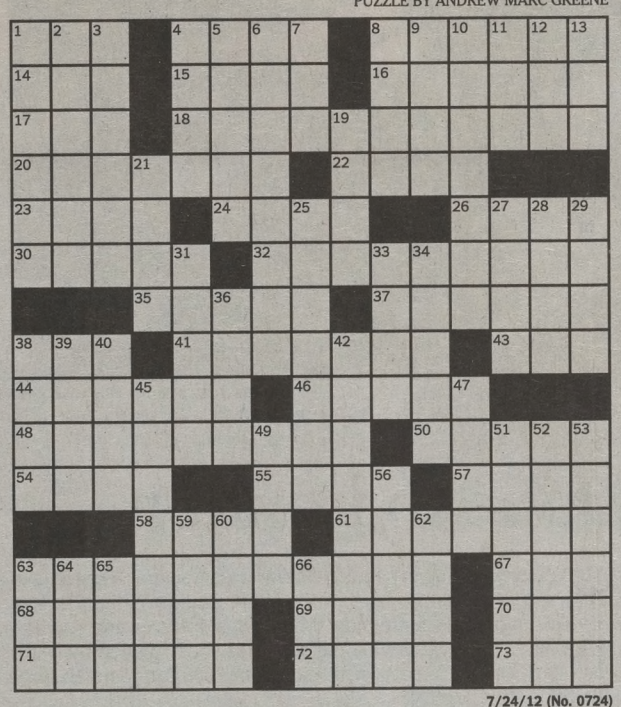
CHAD BATKA FOR THE NEW YORK TIMES

Michael Angelakos of Passion Pit sings autobiographical songs.

Crossword

Edited by Will Shortz

PUZZLE BY ANDREW MARC GREENE



7/24/12 (No. 0724)

ACROSS

1 Web site help section, for short
4 Doorframe part
8 William Tell, for one
14 Mich. rival in the Big Ten
15 "Peek-___!"
16 Historian Will or Ariel
17 Ipanema's city, for short
18 A.T.M. printout
20 "La Danse" painter Henri
22 Some loaves
23 Golden ___ (senior)
24 ___ Park (F.D.R.'s home)
26 Get well
30 Scroll in the ark
32 Joe Six-Pack's overhang
35 Persian Gulf state
37 War heroes from Tuskegee, e.g.
38 Actress Thurman
41 Yellow "Sesame Street" character
43 Driver's license datum
44 Hang on to
46 "___ a vacation!"
48 Portable sources of music
50 Big wheel
54 Do the crawl, say
55 "Now it makes sense!"
57 Marat's counterpart in a Peter Weiss title
58 Word before rack or mitt
61 Galvanic cell component
63 It appeared before Moses on Mount Horeb
67 Fell for a come-on, say
68 Caught sight of
69 One-half base x height, for a triangle
70 Peach State capital: Abbr.
71 Ones without permanent addresses
72 Lab job
73 Bit of scheduling luck at a tournament

DOWN

1 Adjust the margins of, for example
2 Hard Italian cheese
3 One reciting others' lines
4 Verbal zingers
5 Make red-faced
6 Container in an armored car
7 ___ choy (Chinese cabbage)
8 Forever and ___
9 Announce a decision
10 Uninvited partygoer
11 ___ Solo of "Star Wars"
12 Britannica, for one: Abbr.
13 Road map abbr.
19 "Desperate Housewives" role
21 One side in a 1980s war
25 Headgear for Laurel and Hardy
27 O'Neill title trees
28 Sheltered, at sea
29 Wildcat with tufted ears
31 Diplomat Philip
33 "Still mooing," as burgers go
34 Ex-senator known as "Amtrak Joe"
36 Ex-Yankee Martinez
38 Cities, informally
39 Feline's "feed me"
40 Yours, in Ypres
42 Lacking confidence
45 Strong-smelling cleaning ingredient
47 Imprecise recipe amount
49 Ped ___
51 Thick-trunked African tree
52 Item fit for "Ripley's Believe It or Not!"
53 Classic VW
56 Makes more bearable
59 Went head to head
60 Means justifier, for some
62 "Not ___!"
63 Stiller of film
64 G.I. entertainers
65 Letters after 33 or 45
66 Echolocation-using mammal

ANSWER TO PREVIOUS PUZZLE

A	P	S	E		H	A	S	T	E		A	W	E	D
L	I	T	E		E	R	N	I	E		C	O	V	E
O	X	Y	G	E	N	T	A	N	K		C	R	E	W
H	A	L		A	S	I	F			V	E	R	N	E
A	R	E	A	S		S	U	C	H	A	P	I	T	Y
			C	E	R	T		H	U	N	T	S		
S	O	R	T	I	E		D	A	B			O	V	A
T	H	E	I	N	V	I	S	I	B	L	E	M	A	N
P	O	D			A	L	L		L	A	T	E	L	Y
		P	A	L	M	S		S	E	C	T			
F	E	L	L	A	P	A	R	T		K	E	A	T	S
S	C	A	L	P			A	O	N	E		B	O	A
T	O	N	E		H	I	N	D	U	D	E	I	T	Y
O	L	E	G		A	S	I	G	N		O	D	E	S
P	E	T	E		T	O	N	Y	S		N	E	M	O

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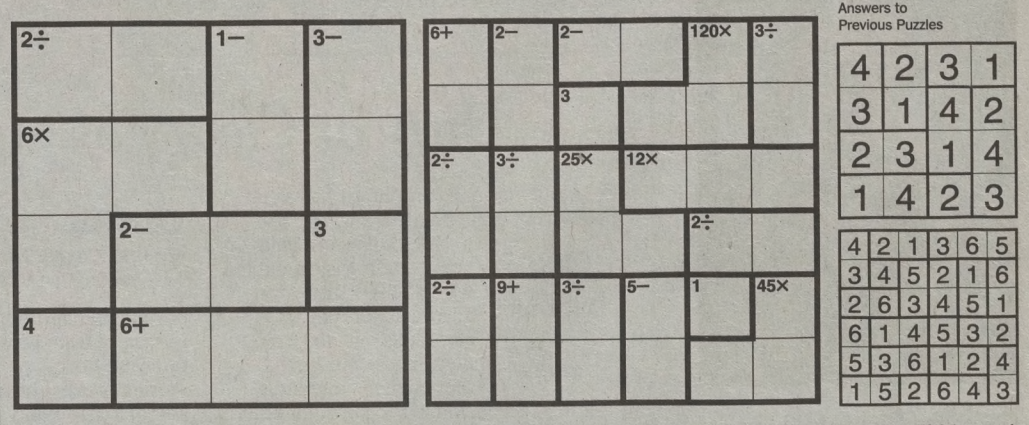
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KenKen



Answers to Previous Puzzles

4	2	3	1
3	1	4	2
2	3	1	4
1	4	2	3

4	2	1	3	6	5
3	4	5	2	1	6
2	6	3	4	5	1
6	1	4	5	3	2
5	3	6	1	2	4
1	5	2	6	4	3

Fill the grid with digits so as not to repeat a digit in any row or column, and so that the digits within each heavily outlined box will produce the target number shown, by using addition, subtraction, multiplication or division, as indicated in the box. A 4x4 grid will use the digits 1-4. A 6x6 grid will use 1-6.

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A Singer With Many Musical Identities



KARSTEN MORAN FOR THE NEW YORK TIMES

Alice Ripley *The singer-songwriter (with guitar) at the Metropolitan Room, accompanied by, from left, Christopher Schelling, Lauren Molina, Nick Cearley and Shannon Ford.*

STEPHEN HOLDEN

MUSIC REVIEW

Alice Ripley occupies that treacherous no man's land where Broadway, rock and folk overlap, and tricky questions of musical identity arise. Ms. Ripley, who may be best known for her bravely unstrung portrayal of Diana Goodman, a bipolar suburban mother in "Next to Normal," has several artistic personalities, and on Sunday evening at the Metropolitan Room they collided in a game of musical bumper car.

There's a wholesome, all-American side to Ms. Ripley, as well as a subversive, mouthy rebel and a reflective folk-pop crooner. Her harder-rock side can be heard on the 2006 album "Outtasite" in which she performs with her band, Ripley, singing zany original songs, some of which have punk-rock roots. Three of those made it into Sunday's set.

Her most musically developed personality is showcased on her 2001 album, "Everything's Fine," from which she sang five numbers. Its best song, heard late in the evening, is "Drive," a searching, piano-based ballad of wanderlust and uncertainty with a familiar message: You can't go home again.

For all the talent on display, the show was unfocused and at times chaotic. A basic problem was Ms. Ripley's rudimentary guitar. In the too many numbers on which she accompanied herself while singing, a feeling of sameness quickly set in. She made up for her lack of dexterity by strumming the instrument with an intensity that bordered on the destructive; early in the set she broke a guitar string. The aggressiveness of her playing drove her to shout, and in her middle-upper register she frequently lost control and sang wildly out of tune.

The arrival of her band helped somewhat. But when she tried to harmonize with the cello played by Lauren Molina in an ensemble whose other members included Shannon Ford on drums, Nick Cearley on melodica and glockenspiel and Christopher Schelling on piano, her singing remained unsteady.

Ms. Ripley may have chosen to sacrifice musical discipline to pursue emotional extremes. If so, it was the wrong choice.

Alice Ripley performs on Sunday, and Aug. 1 and 3 at the Metropolitan Room, 34 West 22nd Street, Flatiron district; (212) 206-0440.

Danny DeVito, Alone in London

From First Arts Page

Reynolds on the FX series, a black comedy about a barroom gang of five scheming narcissists.

Both "Sunny" and "The Sunshine Boys" were hardly safe bets for his reputation; the television show had low ratings when he joined, and he hadn't acted in a play in nearly 40 years. But Mr. DeVito quickly said yes to each role for the same reason, he recalled: They are the kind of darkly comic characters that "allow me to follow my bliss."

"I've always tried to pick roles — big roles, very small roles — where the characters have an edgy view of the world, are full of life, give off a so-crazy-I-can't-believe-it vibe," Mr. DeVito said as he leaned back in an easy chair in his dressing room, which he has adorned with posters of Janis Joplin, Bruce Springsteen and Bob Marley.

"Some of my friends couldn't believe I was going back to television on an FX show — a blip on the radar, they said — and then they really couldn't believe that I was going back to theater," he added. "But at this point in my life I don't want to overthink things. I know when a role is a good fit for me."

That fit seems particularly snug in "The Sunshine Boys," which starred Jack Albertson as Willie Clark in its original 16-month run on Broadway; Walter Matthau was nominated for a best actor Academy Award as Clark in the 1975 film adaptation, while George Burns won a supporting Oscar as Lewis. Along with Mr. Simon's irascible dialogue, the play is also a physical comedian's dream. Mr. DeVito draws laughs even when he is simply fidgeting in a chair onstage, albeit in Willie's red-and-white striped pajamas and thick eyeglasses.

The production offers a variation on the unlikely visuals that made a success of Mr. DeVito's 1988 movie "Twins," in which he and Arnold Schwarzenegger appeared as brothers. In "The Sunshine Boys," Mr. DeVito's head reaches the chin of Mr. Griffiths (who is 5 foot 9), and their respective bellies are often like a moon and a planet in uncomfortably close orbit.

Mr. Griffiths, a veteran British actor, said he didn't know what to expect from his co-star when rehearsals began, noting that Mr. DeVito "exudes casually perfect technique on screen that could come across as a little safe, a little wrong in theater." Instead he created a persona for Willie that reminded Mr. Griffiths of the film version of "Cuckoo's Nest," in which Mr. DeVito played the mostly silent, gently infantile patient in a mental ward. (He played the same role, Mr. Martini, Off Broadway in the early 1970s.)

"Danny created a whole world of life for Mr. Martini that had nothing to do with words, and that's what he's done as Willie," Mr. Griffiths said. "He's crackling even when he stands still, and he's so comfortable improvising lovely little gestures at any moment."

Several theater critics have praised Mr. DeVito's spirited performance, including Ben Brantley of The New York Times, who wrote last month that Mr. DeVito's "fire and fury" reminded him of the Tasmanian devil of Looney Tunes fame. "Even immobile, he seems to be spinning and shooting off sparks," Mr. Brantley wrote. (The production runs here through Saturday.)

Mr. DeVito was offered the role without an audition after Sonia Friedman, the London theater producer, and Mr. Griffiths began discussing the project. Ms. Friedman had met Mr. DeVito years earlier when his wife, Rhea Perlman ("Cheers"), was acting in London and remembered thinking, "It would be wonderful to get Danny's energy onstage."

"While the mental picture of Danny and Richard facing off was irresistible," she said, "it was Danny's willingness to do anything in shows like 'Sunny in Philadelphia' that made me really curious."



JOHAN PERSSON

"I know when a role is a good fit for me."

DANNY DeVITO,

right, with Richard Griffiths in "The Sunshine Boys" in London.

Mr. DeVito's lack of vanity reached a high point in the Christmas episode of "Sunny" in 2010, when his character hid inside a leather couch to overhear others talking about him. Overheated, he stripped naked and finally burst out and rolled onto the floor grunting in a sustained camera shot.

"We push the boundaries of good taste, but I never thought Danny would go for it," said Rob McElhenney, the show's creator and co-star. "But he said instantly, 'I want to do that.' He just wants to show up and have the most fun possible."

Rehearsals for "The Sunshine Boys" were a bit more subdued. Mr. DeVito said he mostly avoided socializing in London, preferring to stay inside his apartment and inhabit the world of a shut-in like Willie. He purposely discouraged his family from visiting; while he felt lonely — even choking up about it in the interview — he said the isolation shaped Willie's passive-aggressive responses when other characters appear onstage.

"I was nervous about not having been onstage since the '70s and came here wanting to be totally in my own space, for total concentration," he said. "Sitting alone in my apartment helped me see how desperate Willie is, which is what I wanted to find, because I thought the play was both very funny and very sad. The downside was, I became a little sad myself."

With "Sunny" scheduled to film new episodes from August to November, any New York transfer of "The Sunshine Boys" wouldn't happen until at least later this year, Ms. Friedman said. Mr. DeVito said he was eager to play Broadway, feeling as if he has a role that makes sense for him there.

"I wouldn't want to come to New York in something frivolous, just doing shtick," he said. "There's a sadness in the relationship between these two men that really got to me, and I think it'd surprise American audiences who might have a certain expectation about a Neil Simon comedy — and about me."

It's All About the Fight, Whether Dirty or Clean

From First Arts Page

back a seat in the House of Representatives, which has long been Democratic.

Mr. Rasche's Nathan Berkshire has befriended the young tyro and is informally involved in the inevitable process of shaking out any skeletons that may be hiding in his closet. When Nathan heads down to Baltimore to interview Julius's old college girlfriend, a skeleton comes tumbling forth pretty quickly.

Holly Eames (Katharine Powell) at first responds with cordially noncommittal replies to Nathan's questions about their relationship. But when he pulls out a daunting stack of papers for her to sign, attesting that they had "a relationship typical of the relationships that many young people have," she grows restive and refuses.

When she is pressed, her poise cracks open, and she reveals that Julius didn't take kindly to her decision to end the relationship, that in fact he became a menace.

"He scared the hell out of us," she says. "My family. My dorm. We didn't know what he was going to do. It was the worst time of my entire life."

Suddenly the eminently upstanding politician seems a more dubious quantity — unless Holly can be persuaded to keep quiet about the episode, which has apparently been expunged from the college records and never became a matter for the police.

Mr. Lin is clearly a political addict who has been watching the increasingly cutthroat intersection of politics, media and morality with an interested eye. His dialogue sometimes dives a little too deeply into the machinations of state party politics — Nathan and Julius conduct a long back-and-forth about which committees it will behoove him to serve on, and which big-money players he will be obliged to get in bed with — but the dialogue throughout crackles with authenticity.

In the character of Nathan, Mr. Lin has created a professionally cynical but nevertheless sympathetic figure. As portrayed with great finesse by Mr. Rasche, Nathan oozes sincere interest in Julius as both a man and a politician, but establishes a comfortable rapport with the prickly Holly almost as quickly, trying to convince her that it will be in nobody's interest for her to reveal the story of Julius's threatening behavior.

It seems slightly out of character when we learn that the seemingly honorable Holly has decided to work her own angle, asking that Nathan arrange a New York job for her husband in exchange for her silence. But later Mr. Lin makes us understand how deeply Holly has felt her life to be damaged by her early experience with sexual harassment.

"I was the one that was supposed to move to New York or D.C.," she tells Julius when a meeting between the two is arranged. "I was the one who had dreams that were going to turn into something."

Ms. Powell's quietly charged performance renders her character's somewhat obscure motivations believable. Mr. Changchien exudes the telegenic charm of a potential political star while at the same time emphasizing Julius's reluctance to get his hands dirty by entering into the kind of quid pro quo deal making that he is realizing even a budding political career requires.

But there are also hints of a steely ruthlessness that suggest that he is willing to bend as far as his Christian principles will allow to make his way: When Nathan suggests that they play hardball with Holly, ferreting out her own secrets so that they have some leverage in their negotiations with her, Julius coolly agrees.

"Warrior Class," skillfully directed by Evan Cabnet ("Outside People" at the Vineyard), will be most enjoyed by close watchers of the political scene. The title refers to a line of Nathan's in which he confesses that he's neglected his personal life — he has a troubled daughter who will barely speak to him — because he's so comfortably at home in the trenches, where hardball politics are played. The blood sport has gotten into his bloodstream, and he recognizes in Julius a fellow member of the "warrior class" who will not give up the war just because a battle has been lost.

Mr. Lin's incisive drama seems to suggest that American politics has become a game that has as its ends not so much the improvement of the civic sphere but the vicious thrill of the sport itself. Its players have withdrawn into their own virtual world, not unlike teenagers hunched over video game consoles mowing down their enemies by the dozens, gleefully racking up kills with little thought of the world outside the digital battlefield.



RUBY WASHINGTON/THE NEW YORK TIMES.

Louis Ozawa Changchien plays an aspiring political candidate in "Warrior Class."

Warrior Class

By Kenneth Lin; directed by Evan Cabnet; sets by Andromache Chalfant; costumes by Jessica Pabst; lighting by Japhy Weideman; sound by Jill B C Du Boff; production stage manager, Lori Ann Zepp; stage manager, Ashley J. Nelson; associate artistic director, Christopher Burney; production manager, Robert G. Mahon III; general manager, Dean Carpenter. Presented by Second Stage Theater Uptown, Carole Rothman, artistic director; Casey Reitz, executive director. At the McGinn/Cazale Theater, 2162 Broadway, at 76th Street, (212) 246-4422, 2st.com. Through Aug. 11. Running time: 1 hour 30 minutes.

WITH: Louis Ozawa Changchien (Julius), Katharine Powell (Holly) and David Rasche (Nathan).

French Opera Festival That's More Than an Escape for the Elite

From First Arts Page

et les Sortilèges" in the jewel-box Théâtre du Jeu de Paume, with a sky-blue dome over 493 red seats.

It is an environment conducive to relaxation and disengagement, to forgetting the cares of the real world over glasses of rosé. (What euro crisis?) Yet there are encouraging signs that the festival and Bernard Foccroulle, its general director since 2007, aspire to change that sedate mood, or at least challenge it. New works are consistently programmed. The productions, even of repertory standards, are searching. The festival's Académie Européenne de Musique is active in training and supporting young artists.

Aix's presence has accordingly grown on the international scene, and co-productions with the festival have grown more common in New York: two of them — Patrice Chéreau's stark take on Janacek's "From the House of the Dead" and William Kentridge's raucous version of Shostakovich's "Nose" — have been among the Metropolitan Opera's most successful shows in recent seasons.

This year's festival, which ends on Friday, brought a clean, fluid production of Charpentier's wrenching "David et Jonathas," directed by Andreas Homoki with William Christie conducting Les Arts Florissants, that will arrive at the Brooklyn Academy of Music next April. Even in the outdoor Théâtre de l'Archevêché, with the impact of the Arts Florissants' tangy bite necessarily somewhat dissipated, the ensemble plays the French Baroque repertory with a sensuality and passionate rigor that is simply astonishing.

Telling the biblical story of the close — really close — friendship between David and Jonathan, the son of the paranoid, jealous King Saul, Charpentier's 1688 opera is, at its core, a radical love triangle simultaneously homosexual, incestuous and intergenerational.

In Mr. Homoki's production, the relationship between David and Jonathas, sealed with long kisses, is no metaphor, but neither is it salacious; it is, as Charpentier may well have intended, at once profane and sacred. The show is set in a timeless yet modern, vaguely North African milieu; Paul Zoller's stylish set is a large wooden box with shifting walls that keep literally closing in on the tortured, ill-fated characters. Curtains swiftly open and close to give a convincingly cinematic sense of fading in and out of scenes, providing "David et Jonathas" — whose sections in its original incarnation were interspersed among the acts of a nonmusical play — with inexorable continuity.

As David, Pascal Charbonneau pushed his light tenor to its limits but performed with expressionistic intensity. Ana Quintans was a poignant, clear Jonathas, and Neal Davies a Saül of agonized restraint. The chorus sang with tightly massed focus, particularly in the final scene celebrating David's victory, a triumph that he is unable to savor because his beloved Jonathas has died in the battle. Yet from the overture's relentless fugue to that crushing ending, the performance's glory was Les Arts Florissants.

It was instructive to compare it to Le Cercle d'Harmonie, another early-music ensemble, formed in 2005. In Mozart's "Nozze di Figaro" Jérémie Rhorer, one of that group's founders, conducted with precision but also a weightlessness that verged on the insubstantial, far from Les Arts Florissants's fearsome strength. This "Figaro" passed innocuously, like nonalcoholic champagne: all fizz and no buzz.

Mozart and his librettist, Lorenzo Da Ponte, removed certain elements from the Beaumarchais play on which the opera is based, one of which is a trial for Figaro, who is being sued by Marcellina, the aged housekeeper whom the dashing Figaro had once promised to marry in order to secure a loan. The director of the production here, Richard Brunel, brought back this specter of civil action by setting the opera in a bustling law office. The Count seems to be head partner, getting uncomfortably close to the secretaries; Figaro, Susanna and the rest are members of the staff; Cherubino is, perhaps, a paralegal.

The concept is clever, as is Chantal Thomas's set, constantly turning and deconstructing as the professional sphere seeps into the domestic one. But despite Kate Lindsey's elegant Cherubino and Patricia Petibon's acute Susanna, the orchestra and an underpowered cast merely skimmed the work's musical and emotional surfaces. With the opera stripped of many of its lighter trappings but not complicated with intriguing darknesses, the result was colorless.

It was a telling sign that the following evening's performance of "La Finta Giardiniera," an opera Mozart wrote when he was just a teenager and in no way the equal of "Le Nozze di Figaro," was more interesting and affecting. Here, conducted by Andreas Spering, Le Cercle d'Harmonie played with both more muscle and more tenderness, and the youthful cast seemed more committed to the alternately riotous and sober story of the love tangles that ensue when a noblewoman disguises herself as a gardener to escape a violent lover.

Even if Aix's repertory remains focused on older works like these, new operas are now a consistent and welcome presence. I arrived at the festival after the world-premiere run of George Benjamin's "Written on Skin" had ended, but I was able to watch an archived simulcast that will remain online (at Medici.tv) through Oct. 12. Directed with creativity and force by Katie Mitchell, the opera is a bracing, beautiful mixture of the ancient and contemporary that brings a medieval legend about an illuminated book and a troubled marriage provocatively into our time. It is an easily rectified shame that there are no plans to present it in America.

This summer's most unclassifiable offering also involved a short trip outside the city center — not, this time, to a Renaissance chateau, but to a public housing complex in the ethnically mixed neighborhood of Jas de Bouffan. Billed as an opera but actually part teach-in, part installation and part semi-musical performance, Jean Michel Bruyère's "Situation Huey P. Newton" spilled from a labyrinthine auditorium building into a nearby park, full of enigmatic insights into the Black Panther movement and its resonances today.

Many festivalgoers didn't make the journey to see it. Those who did might not have seen an opera. They might not even have seen something entirely successful. But they saw an experiment: an example of art that at least tried to live in the real world, to be the "mirror of the world" that Mr. Foccroulle, in his program note, names as the goal of opera and of his festival.



PASCAL VICTOR/ARTCOMART

Patricia Petibon, in veil, as Susanna in Le Cercle d'Harmonie's "Nozze di Figaro" at the Festival International d'Art Lyrique d'Aix-en-Provence, in France.



P. BERGER/ARTCOMART

Sabine Devieilhe as the jealous Serpetta in "La Finta Giardiniera," another Cercle d'Harmonie production of a Mozart opera at the festival.

The Exquisite Life of Books, From a Bibliophile's View

From First Arts Page

here, I found my people."

For many Rare Book School is an important networking opportunity, not to mention a chance to bunk in the Thomas Jefferson-designed lodgings that ring the university's famous central Lawn, with their appropriately antiquarian lack of indoor toilets. But it also fills an important intellectual niche, teaching skills and knowledge that have been orphaned by increasingly technology-minded library schools and theory-oriented literature departments.

Bringing an understanding of the materiality of the book back into literary studies is something that Michael Suarez, an Oxford-trained specialist in 18th-century British literature and Jesuit priest who took over as the school's director in 2009, speaks of with an almost missionary zeal.

"A book is a coalescence of human intentions," he said in a phrase often repeated around the school. "We think we know how to read it because we can read the language. But there's a lot more to reading than just the language in the book."

The atmosphere at Rare Books School, which was founded at Columbia University in 1983 by the scholar Terry Belanger and transplanted to Charlottesville in 1992, is casual and egalitarian, despite the presence on the faculty of some of the world's leading experts in the history of the book. But woe to those outsiders who take casual liberties with the basics. Younger staff members admit to playing a drinking game based on the howlers in "The Ninth Gate," a biblio-thriller starring Johnny Depp as a rakish rare-book scout given to carelessly cracking spines and looking up 17th-century hand-press books in Books in Print.

And don't get anyone started on Umberto Eco's "Name of the Rose."

"It's a great story," Jan Storm van Leeuwen, the retired keeper of the binding collection at the Dutch Royal Library in The Hague, said when the subject came up one night at dinner. "But his description of the library is full of mistakes."

Initiation into the devilishly complex particulars of book history is acquired in the school's lectures and lab sessions, where students learn to look past the words on the page to recover the moment when ink met paper. In a Hogwarts-worthy reading room on an upper floor of the university's Alderman Library one morning, students in Advanced Descriptive Bibliography were bent over books with tape measures and mini light sabers called Zelcos, scanning the pages for watermarks, lines and other clues that can potentially trace a given sheet back to a specific paper mold in a specific mill.

The goal of Advanced Des Bib — or advanced "boot camp," as students put it — is to reverse engineer precisely how the pages of the book were folded, cut, printed and gathered. The whole process is then described in a string of symbols that, to the newcomer, can look less like a reconstruction of an ordinary day's work in an 18th-century print shop than like instructions for building a small nuclear reactor.

Downstairs in a seminar room Richard Noble, a rare-book cataloger from Brown University, quoted a warning against writing formulas — as the descriptions, which are published in scholarly catalogs, are known — that were "hirsute with commas."

"You want the important information to jump right out at you," he said.

Other courses allowed students to linger over the more frankly sensual properties of old books. In Mr. Storm van Leeuwen's class on the history of bookbinding, a session was dedicated to passing around felt-lined baskets filled with exquisite hand-marbled papers from the 18th century to the present, many drawn from his own collection.

In History of the Book, 200 to 2000, Mr. Dimunation of the Library of Congress and his co-teacher, John Buchtel, the head of special collections at Georgetown University, raided the University of Virginia's vaults to stage a parade of precious objects that was like a slide show come miraculously to life: a loose leaf from a Gutenberg Bible; a copy of the first printed edition of Euclid's geometry, from 1482; a 1493 Nuremberg Chronicle.

But Rare Book School isn't just about pondering jaw-dropping masterpieces of printing. What makes the experience unique, students say, is the chance to see — and touch — a huge variety of objects from the school's own 80,000-item teaching collection, including many that have been folded, stained, waterlogged, written in, worm-eaten or sometimes completely disemboweled.

"We're very interested in ways books are marked over time," said Barbara Heritage, the school's assistant director and curator of the collection.

And rare books aren't just a matter of leather and fine paper. Mr. Suarez has added a number of classes about digitization and likes to begin his own course, Teaching the History of the Book, by passing around a box of Harlequins. Romance novels, he notes, are the biggest part of the publishing industry, and the part that has been most radically transformed by e-books.

"I tell my students to follow the money," he said. "If you don't understand the money, you don't understand the book."

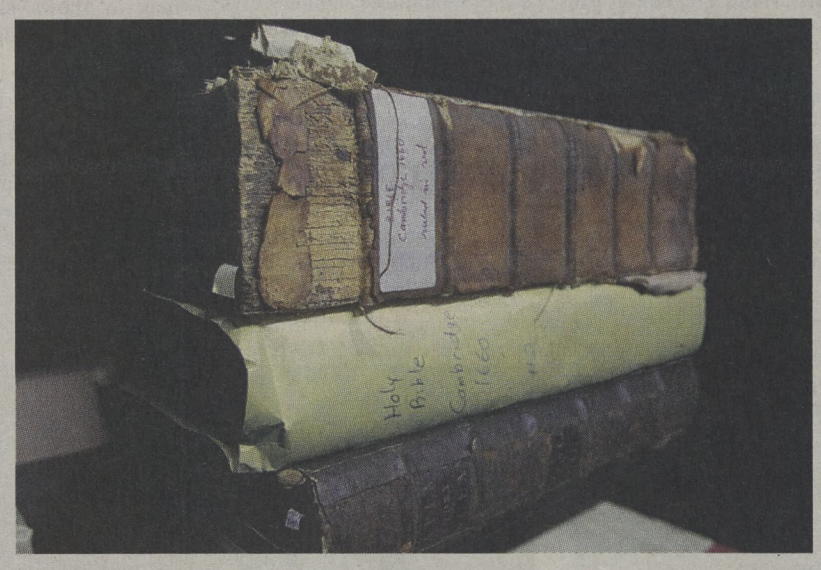
Mr. Zoschak, the bookseller from California, said he tried to cover the several thousand dollars it costs him to attend each year by book hunting in Charlottesville's many antiquarian bookshops. Academics, whose freight is often paid by their home institutions, say that immersion in what Mr. Suarez calls "archaeology of the book" yields big intellectual dividends.

"Before I came here, I had been picking up knowledge piecemeal in libraries," said Meredith Neuman, an assistant professor of English at Clark University enrolled in the bookbinding class. "Once you start looking at books this way, it can be kind of addictive."

In his opening remarks each week Mr. Suarez tells students that the purpose of Rare Book School is to acquire knowledge that will lead to wonder, which may then "incline toward love."

The books themselves, however, sometimes have less lofty ideas. After Mr. Dimunation led his class in the "Hypnerotomachia" cheer, an assistant brought out a copy from the first printing of the book and began turning the pages, which promptly opened on a woodcut a figure with an extravagant erection.

"There's a truism about teaching with books," Mr. Dimunation said as the class erupted in titters. "The first thing that shows up is the one thing you don't want to find."





PHOTOGRAPHS BY ANDREW SHURTLEFF FOR THE NEW YORK TIMES

Top, a 1660 Bible from Cambridge that is part of the teaching tools at the Rare Book School. Above, an authors card game from around 1890.

A school where scholars learn to look past the words on the page.

CAMPAIGN STOPS KEVIN BAKER

The Outsourced Party



Who speaks for the Republican Party? The answer is that everyone does — and therefore, no one does.

What accounts for the division, rancor and lethargy that have beset the party's nominating campaign? It's no great mystery. Republicans have fallen prey to one of the favorite tactics of the heedless, improvident, 21st-century-style capitalism they revere. Their party has been outsourced.

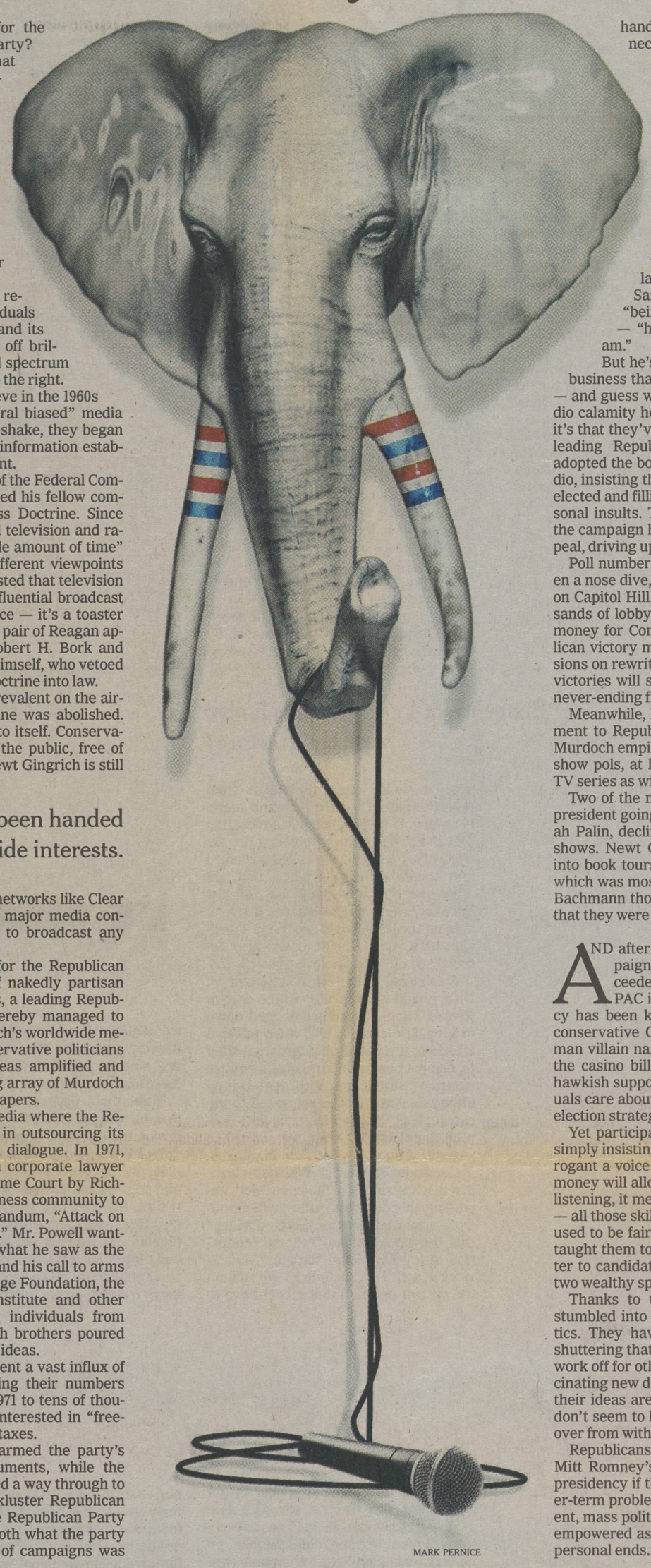
For decades, Republicans have recruited outside groups and individuals to amplify their party's message and its influence. They have carried this off brilliantly, helping to shift the political spectrum in the United States significantly to the right.

When Republicans came to believe in the 1960s that they were up against a "liberal biased" media that would never give them a fair shake, they began the long march to build their own information establishment and to make it predominant.

In 1987, Mark Fowler, chairman of the Federal Communications Commission, persuaded his fellow commissioners to abolish the Fairness Doctrine. Since 1949, the commission had required television and radio stations to "devote a reasonable amount of time" to public issues and to present different viewpoints on said issues. But Mr. Fowler insisted that television was not a finite and supremely influential broadcast medium but "just another appliance — it's a toaster with pictures." He was backed by a pair of Reagan appointees on the federal bench, Robert H. Bork and Antonin Scalia, and the president himself, who vetoed a Democratic effort to codify the doctrine into law.

Right-wing radio was already prevalent on the airwaves before the Fairness Doctrine was abolished. But now it had the field virtually to itself. Conservatives gained a direct outreach to the public, free of any intercession by the "elites" Newt Gingrich is still denouncing. Right-leaning media networks like Clear Channel Communications became major media conglomerates — with no obligation to broadcast any conflicting views.

Kevin Baker is the author of the "City of Fire" series of historical novels, "Dreamland," "Paradise Alley" and "Strivers Row." This is a shortened version of an essay that appears in full at nytimes.com/campaignstops.



MARK PERNICE

The G.O.P.'s heart and soul have been handed over to radio hosts and other outside interests.

The biggest media coup of all for the Republican Party, though, was the advent of nakedly partisan Fox News, created by Roger Ailes, a leading Republican media adviser. Mr. Ailes thereby managed to throw the weight of Rupert Murdoch's worldwide media empire behind the party. Conservative politicians and advocates saw both their ideas amplified and their wallets fattened by a dizzying array of Murdoch television shows, books and newspapers.

But it wasn't just in the daily media where the Republican Party proved ingenious in outsourcing its rhetoric and shifting the national dialogue. In 1971, Lewis F. Powell Jr., a Republican corporate lawyer soon to be appointed to the Supreme Court by Richard M. Nixon, summoned the business community to the cause with his famous memorandum, "Attack on American Free Enterprise System." Mr. Powell wanted business to fight back against what he saw as the many enemies of free enterprise, and his call to arms inspired the founding of the Heritage Foundation, the Cato Institute, the Manhattan Institute and other think tanks. Wealthy, right-wing individuals from Richard Mellon Scaife to the Koch brothers poured millions of dollars into the battle of ideas.

The Powell memorandum also sent a vast influx of lobbyists to Washington, increasing their numbers from, at most, a few hundred in 1971 to tens of thousands today — a great majority interested in "freeing" business from regulation and taxes.

Conservative policy institutes armed the party's candidates with intellectual arguments, while the conservative media barrage blasted a way through to high office for even the most lackluster Republican nominees. Yet this meant that the Republican Party was outsourcing body and soul. Both what the party believed in and the heavy lifting of campaigns was handed over to outside interests that did not necessarily share the party's wider goals.

This has become suddenly and painfully evident this year. Party leaders may not have liked Rush Limbaugh's calling a Georgetown law student a "slut" and a "prostitute" for daring to disagree with him on birth control — but what does he care? A Republican loss will most likely mean more angry conservatives tuning in and driving up ratings. The most that the garrulous Republican front-runner, Mitt Romney, would allow himself to say about the controversy was that "it's not the language I would have used," while Rick Santorum averred that Mr. Limbaugh was "being absurd" but implied that it was O.K. — "he's in a very different business than I am."

But he's not. Mr. Limbaugh is in the very same business that Mr. Santorum and Mr. Romney are in — and guess who's in charge? It's not just that the radio calamity howlers have cowed the party leaders — it's that they've remade them in their own image. The leading Republican candidates for president have adopted the bombastic, apocalyptic rhetoric of talk radio, insisting that we will "lose America" if they aren't elected and filling their speeches and debates with personal insults. The results are in the poll numbers, as the campaign has steadily driven down the party's appeal, driving up the candidates' negative ratings.

Poll numbers for Republicans in Congress have taken a nose dive, too, thanks to the party's intransigence on Capitol Hill. But what does that matter to the thousands of lobbyists who provide more and more of the money for Congressional campaigns? Sure, a Republican victory might afford them more closed-door sessions on rewriting federal regulations. But Democratic victories will serve their purpose, too, affirming their never-ending fight against "job-killing regulations."

Meanwhile, Fox News has become a special impediment to Republican order. All the enticements of the Murdoch empire have produced a generation of reality show pols, at least as interested in landing their own TV series as winning office.

Two of the most popular Republican candidates for president going into the race, Mike Huckabee and Sarah Palin, declined to run rather than jeopardize their shows. Newt Gingrich turned much of his campaign into book tours for himself and his wife. Ask yourself which was most likely: that Herman Cain and Michele Bachmann thought they could be elected president or that they were looking to improve their "brand."

AND after decades of trying to undo federal campaign-finance laws, Republicans at last succeeded — only to watch the rise of the super PAC in their place. Rick Santorum's candidacy has been kept alive largely by Foster Friess, the conservative Christian multimillionaire with the Batman villain name. Mr. Gingrich has his own sponsors, the casino billionaires Sheldon and Miriam Adelson, hawkish supporters of Israel. Does what these individuals care about most fit in with the Republican Party's election strategy? So what?

Yet participating in a democracy means more than simply insisting, over and over again, in as loud and arrogant a voice as possible, in as many venues as your money will allow, on what it is that you want. It means listening, it means convincing, it means compromising — all those skills that political parties and their leaders used to be fairly good at, and that political campaigns taught them to be good at. But that doesn't much matter to candidates who owe their first loyalty to one or two wealthy sponsors.

Thanks to their inventiveness, Republicans have stumbled into the brave new world of American politics. They have achieved the political equivalent of shuttering that foul old steel mill and shipping the hard work off for others to do while they dabble in these fascinating new derivatives. But now their candidates and their ideas are seen as so many junk bonds, and they don't seem to have the wherewithal to make the party over from within.

Republicans seem to be finally coalescing around Mitt Romney's candidacy, and he could well win the presidency if the economy slumps again. But the longer-term problem will remain: how to maintain a coherent, mass political party when so many individuals are empowered as never before to redirect it to their own, personal ends.

A Boy to Be Sacrificed

OPINION

BY ABDELLAH TAÏA

The author of the novel "An Arab Melancholia." This essay was translated by Edward Gauvin from the French.

PARIS

IN the Morocco of the 1980s, where homosexuality did not, of course, exist, I was an effeminate little boy, a boy to be sacrificed, a humiliated body who bore upon himself every hypocrisy, everything left unsaid. By the time I was 10, though no one spoke of it, I knew what happened to boys like me in our impoverished society; they were designated victims, to be used, with everyone's blessing, as easy sexual objects by frustrated men. And I knew that no one would save me — not even my parents, who surely loved me. For them too, I was shame, filth. A "zamel."

Like everyone else, they urged me into a terrible, definitive silence, there to die a little more each day.

How is a child who loves his parents, his many siblings, his working-class culture, his religion — Islam — how is he to survive this trauma? To be hurt and harassed because of something others saw in me — something in the way I moved my hands, my inflections. A way of walking, my carriage. An easy intimacy with women, my mother and my many sisters. To be categorized for victimhood like those "emo" boys with long hair and skinny jeans who have recently been turning up dead in the streets of Iraq, their skulls crushed in.

The truth is, I don't know how I survived. All I have left is a taste for silence. And the dream, never to be realized, that someone would save me. Now I am 38 years old, and I can state without fanfare: no one saved me.

I no longer remember the child, the teenager, I was. I know I was effeminate and aware that being so obviously "like that" was wrong. God did not love me. I had strayed from the path. Or so I was made to understand. Not only by my family, but also by the entire neighborhood. And I learned my lesson perfectly. So deep down, I tell myself they won. This is what happened.

I was barely 12, and in my neighborhood they called me "the little girl." Even those I persisted in playing soccer with used that nickname, that insult. Even the teenagers who'd once taken part with me in the same sexual games. I was no kid anymore. My body was changing, stretching out, becoming a man's. But others did not see me as a man. The image of myself they reflected back at me was strange and incomprehensible. Attempts at rape and abuse multiplied.

I knew it wasn't good to be as I was. But what was I going to do? Change? Speak to my mother, my big brother? And tell them what, exactly?

It all came to a head one summer night in 1985. It was too hot. Everyone was trying in vain to fall asleep. I, too, lay awake, on the floor beside my sisters, my mother close by. Suddenly, the familiar voices of drunken men reached us. We all heard them. The whole family. The whole neighborhood. The whole world. These men, whom we all knew quite well, cried out: "Abdellah, little girl, come down. Come down. Wake up and come down. We all want you. Come down, Abdellah. Don't be afraid. We won't hurt you. We just want to have sex with you."

They kept yelling for a long time. My nickname.



CHEMA MOYA/EUROPEAN PRESSPHOTO AGENCY

Homosexuality didn't exist, and yet boys like me were sometimes raped.

Their desire. Their crime. They said everything that went unsaid in the too-silent, too-respectful world where I lived. But I was far, then, from any such analysis, from understanding that the problem wasn't me. I was simply afraid. Very afraid. And I hoped my big brother, my hero, would rise and answer them. That he would protect me, at least with words. I didn't want him to fight them — no. All I wanted him to say were these few little words: "Go away! Leave my little brother alone."

But my brother, the absolute monarch of our family, did nothing. Everyone turned their back on me. Everyone killed me that night. I don't know where I found the strength, but I didn't cry. I just squeezed my eyes shut a bit more tightly. And shut, with the same motion, everything else in me. Everything. I was never the same Abdellah Taïa after that night. To save my skin, I killed myself. And that was how I did it.

I began by keeping my head low all the time. I cut all ties with the children in the neighborhood. I altered my behavior. I kept myself in check: no more feminine gestures, no more honeyed voice, no more hanging around women. No more anything. I had to invent a whole new Abdellah. I bent myself to the task with great determination, and with the realization that this world was no longer my world. Sooner or later, I would leave it behind. I would grow up and find freedom somewhere else. But in the meantime I would become hard. Very hard.

TODAY I grow nostalgic for little effeminate Abdellah. He and I share a body, but I no longer remember him. He was innocence. Now I am only intellect. He was naïve. I am clever. He was spontaneous. I am locked in a constant struggle with myself.

In 2006, seven years after I moved to France, and after my second book, "Le rouge du tarbouche" (the red of the fez), came out in Morocco, I, too, came out to the Moroccan press, in Arabic and French. Scandal, and support. Then, faced with my brother's silence and my mother's tears on the telephone, I published in TelQuel, the very brave Moroccan magazine, an open letter called "Homosexuality Explained to My Mother." My mother died the next year.

I don't know where I found the courage to become a writer and use my books to impose my homosexuality on the world of my youth. To do justice to little Abdellah. To never forget the trauma he and every Arab homosexual like him suffered.

Now, over a year after the Arab Spring began, we must again remember homosexuals. Arabs have finally become aware that they have to invent a new, free Arab individual, without the support of their megalomaniacal leaders. Arab homosexuals are also taking part in this revolution, whether they live in Egypt, Iraq or Morocco. They, too, are part of this desperately needed process of political and individual liberation. And the world must support and protect them.

The Brain On Love

From Page 1

and longs for its adult equivalent.

As the most social apes, we inhabit a mirror-world in which every important relationship, whether with spouse, friend or child, shapes the brain, which in turn shapes our relationships. Daniel J. Siegel and Allan N. Schore, colleagues at the University of California, Los Angeles, recently discussed groundbreaking work in the field at a conference on the school's campus. It's not that caregiving changes genes; it influences how the genes express themselves as the child grows. Dr. Siegel, a neuropsychiatrist, refers to the indelible sense of "feeling felt" that we learn as infants and seek in romantic love, a reciprocity that remodels the brain's architecture and functions.

Does it also promote physical well-being? "Scientific studies of longevity, medical and mental health, happiness and even wisdom," Dr. Siegel says, "point to supportive relationships as the most robust predictor of these positive attributes in our lives across the life span."

The supportive part is crucial. Loving relationships alter the brain the most significantly.

Just consider how much learning happens when you choose a mate. Along with thrilling dépendency comes glimpsing the world through another's eyes; forsaking some habits and adopting others (good or bad); tasting new ideas, rituals, foods or landscapes; a slew of added friends and family; a tapestry of physical intimacy and affection; and many other catalysts, including a tornadic blast of attraction and attachment hormones — all of which revamp the brain.

When two people become a couple, the brain extends its idea of self to include the other; instead of the slender pronoun "I," a plural self emerges who can borrow some of the other's assets and strengths. The brain knows who we are. The immune system knows who we're not, and it stores pieces of invaders as memory aids. Through lovemaking, or when we pass along a flu or a cold sore, we trade bits of identity with loved ones, and in time we become a sort of chimera. We don't just get under a mate's skin, we absorb him or her.

Love is the best school, but the tuition is high and the homework can be painful. As imaging studies by the U.C.L.A. neuroscientist Naomi Eisenberger show, the same areas of the brain that register physical pain are active when someone feels socially rejected. That's why being spurned by a lover hurts all over the body, but in no place you can point to. Or rather, you'd need to point to the dorsal anterior cingulate cortex in the brain, the front of a collar wrapped around the corpus callosum, the bundle of nerve fibers zinging messages between the hemispheres that register both rejection and physical assault.

Whether they speak Armenian or Mandarin, people around the world use the same images of physical pain to describe a broken heart, which they perceive as crushing and crippling. It's not just a metaphor for an emotional punch. Social pain can trigger the same sort of distress as a stomachache or a broken bone.

Pictures of a beloved spouse light up the reward centers of the brain.

But a loving touch is enough to change everything. James Coan, a neuroscientist at the University of Virginia, conducted experiments in 2006 in which he gave an electric shock to the ankles of women in happy, committed relationships. Tests registered their anxiety before, and pain level during, the shocks.

Then they were shocked again, this time holding their loving partner's hand. The same level of electricity produced a significantly lower neural response throughout the brain. In troubled relationships, this protective effect didn't occur. If you're in a healthy relationship, holding your partner's hand is enough to subdue your blood pressure, ease your response to stress, improve your health and soften physical pain. We alter one another's physiology and neural functions.

However, it's not all sub rosa. One can decide to be a more attentive and compassionate partner, mindful of the other's motives, hurts and longings. Breaking old habits isn't easy, since habits are deeply ingrained neural shortcuts, a way of slurring over details without having to dwell on them. Couples often choose to rewire their brains on purpose, sometimes with a therapist's help, to ease conflicts and strengthen their at-one-ness.

While they were both in the psychology department of Stony Brook University, Bianca Acevedo and Arthur Aron scanned the brains of long-married couples who described themselves as still "madly in love." Staring at a picture of a spouse lit up their reward centers as expected; the same happened with those newly in love (and also with cocaine users). But, in contrast to new sweethearts and cocaine addicts, long-married couples displayed calm in sites associated with fear and anxiety. Also, in the opiate-rich sites linked to pleasure and pain relief, and those affiliated with maternal love, the home fires glowed brightly.

A happy marriage relieves stress and makes one feel as safe as an adored baby. Small wonder "Baby" is a favorite adult endearment. Not that romantic love is an exact copy of the infant bond. One needn't consciously regard a lover as momlike to profit from the parallels. The body remembers, the brain recycles and restages.

So how does this play out beyond the lab? I saw the healing process up close after my 74-year-old husband, who is also a writer, suffered a left-hemisphere stroke that wiped out a lifetime of language. All he could utter was "mem." Mourning the loss of our duet of decades, I began exploring new ways to communicate, through caring gestures, pantomime, facial expressions, humor, play, empathy and tons of affection — the brain's epitome of a safe attachment. That, plus the admittedly eccentric home schooling I provided, and his diligent practice, helped rewire his brain to a startling degree, and in time we were able to talk again, he returned to writing books, and even his vision improved. The brain changes with experience throughout our lives; it's in loving relationships of all sorts — partners, children, close friends — that brain and body really thrive.

During idylls of safety, when your brain knows you're with someone you can trust, it needn't waste precious resources coping with stressors or menace. Instead it may spend its lifeblood learning new things or fine-tuning the process of healing. Its doors of perception swing wide open. The flip side is that, given how vulnerable one then is, love lessons — sweet or villainous — can make a deep impression. Wedded hearts change everything, even the brain.

Art Has Legs

OPINION

BY BARBARA GOLDSMITH

A former art writer for The New York Herald Tribune and New York magazine and the author of books including "Obsessive Genius: The Inner World of Marie Curie."



LLOYD ZIFF FOR THE NEW YORK TIMES

Larry Rivers's mixed-media construction, "Legs," in Sag Harbor, on Long Island.

IT may seem an insignificant power spat in the small village of Sag Harbor, on Long Island. It isn't. It is a quintessential example of a continuing, centuries-old battle over what can be deemed art, what can't and who can rightfully judge the difference. I should say who among the living, for time has a way of sorting it all out.

For about four years, close to the side of their white clapboard home, the gallery owners Ruth Vered and Janet Lehr displayed a Larry Rivers mixed-media construction of a pair of attenuated fiberglass legs, 16 feet tall, modeled on a 1969 work called "40 Feet of Fashion." Rivers, the provocative painter, sculptor and filmmaker, died in 2002. By 2010, a Rivers painting had sold for $1,142,500; that year, Fred W. Thiele Jr., the Sag Harbor village attorney and a state assemblyman, decided that Rivers' "Legs" — which had long been established and exhibited as a work of art — was, in fact, a "structure." As such, it was not a "conforming use," according to the village code. (Mr. Thiele dug in his heels and told a Times reporter, "It's a structure, and a structure is a structure is a structure.")

Gayle Pickering, chairwoman of the Zoning Board of Appeals, tried to deflect the issue by saying: "This is not a decision about art. It's about setting a precedent for building structures." Try to get your head around that bit of specious reasoning.

Last month there was a public meeting to decide for or against removal. By this time, the board had received so many e-mails, letters and faxes from museum experts, art critics and members of the general public advocating that the Rivers sculpture was a proven work of art and not a so-called structure and should remain in place, that another meeting was scheduled for last Tuesday, when the board voted not to vote on the issue but to postpone a decision until April 17. The board also decreed an end to all public input.

Sixteen-foot-long fiberglass limbs: Art? Or structure?

Flashback: Often the judgment of what is and is not art, as in the case of Rivers' "Legs," becomes bogged down in a legal process. In 1926 when Edward Steichen, the noted photographer, tried to bring Constantin Brancusi's bronze abstract "Bird in Space" through United States Customs, it was relegated to the category of "Kitchen Utensils and Hospital Supplies." Steichen was forced to pay a $240 duty.

Gertrude Vanderbilt Whitney subsidized a lawsuit Mr. Steichen filed appealing the decision. After a 13-month trial, a forward-looking judge declared that the piece was an "original production of a professional sculptor" and "a work of art." He concluded, "We sustain the protest and find that it is entitled to free entry." Brancusi ended up making several versions of "Bird in Space," and one sold in 2005 for $27,456,000. Time has caught up with aesthetics.

Throughout history, self-styled arbiters have taken it upon themselves to decide the question of what can or cannot be the legitimate purview of art. In 1966, the Stephen Radich Gallery displayed a Marc Morrel sculpture protesting the Vietnam War of an American flag wrapped around a drooping phallus. Mr. Radich was charged with violating a law that stated, "No person shall publicly mutilate, deface, defile or defy, trample upon or cast contempt upon" the American flag. A seven-year legal battle followed. In his testimony, Mr. Radich gave other examples of protest art including Goya's "Disasters of War" and Picasso's "Guernica." The prosecutor, however, declared that Mr. Morrel's work was, in fact, a non-art object. A 60-day jail sentence or maximum fine of $500 was imposed.

And here's one for absurdity: In 1959, Robert Rauschenberg created an assemblage, "Canyon" which featured a taxidermy-treated bald eagle. The work belonged to the estate of the art dealer Ileana Sonnabend, where it was valued at zero dollars because, under a federal law that prohibits the possession of bald eagles (dead or alive), the work can never be sold. Nevertheless, the I.R.S. valued "Canyon" at $65 million and taxed it at that price. (Ms. Sonnabend's estate had already paid more than $450 million in taxes connected to the sales of some of her other art.) A Catch-22 if ever there was one.

I am guilty of using dollar signs as proof of a work of art's longevity. In January, the financial advisory firm Alternative Asset Analysis declared art a better investment than equities. Is this a proper criterion leading to judgment? Absolutely not.

What is? That's a question that perhaps our great-grandchildren may be able to answer. Even then, they may answer it only for their own time. Today's controversial art might be tomorrow's masterpiece, the once reviled now revered. The Sag Harbor board that decides whether to let Larry Rivers' "Legs" stand in place would be wise to remember what Hippocrates wrote around 400 B.C.:

Life is short,
Art long,
Opportunity fleeting,
Experience treacherous,
Judgment difficult.

The Electric Car, Unplugged

NEWS ANALYSIS

BY JOHN BRODER

A reporter on energy and the environment for The New York Times.



TYRONE SIU/REUTERS

THE future would appear bright for the electric car. Gasoline prices are high. The government is spending billions on battery technology. Auto companies are preparing to roll out a dozen new electrified models. Concern is growing about the climate impacts of burning oil. And tough new fuel economy standards are looming.

Yet the state of the electric car is dismal, the victim of hyped expectations, technological flops, high costs and a hostile political climate. General Motors has temporarily suspended production of the plug-in electric Chevy Volt because of low sales. Nissan's all-electric Leaf is struggling in the market. A number of start-up electric vehicle and battery companies have folded. And the federal government has slowed its multibillion-dollar program of support for advanced technology vehicles in the face of market setbacks and heavy political criticism.

The $41,000 Volt, in particular, has become a target of conservatives. Glenn Beck called the Volt "crappy." Rush Limbaugh accused General Motors of "trying to kill its customers" by selling an unsafe car. Former House Speaker Newt Gingrich said while campaigning for president in Georgia last month that the Volt was too small to handle a gun rack (a claim proved wrong repeatedly on YouTube).

Daniel F. Akerson, the chairman of General Motors, defended the Volt before Congress earlier this year after revelations that the battery pack in one Volt caught fire three weeks after a federal crash test. Federal authorities eventually declared the car no more flammable than regular gasoline-fueled vehicles.

"Unfortunately, there's one thing we did not engineer," Mr. Akerson said. "Although we loaded the Volt with state-of-the-art safety features, we did not engineer the Volt to be a political punching bag. And that, sadly, is what it's become."

Is this the beginning of the end of the latest experiment in the electric car, whose checkered history goes back to the dawn of the automobile age? Can the electric car survive only with heavy government subsidies and big consumer rebates? Are the Teslas and Fiskers and ActiveEs and Volts and Leafs destined to be the playthings of only rich technophiles with a couple of spare gas-powered cars at home?

Or is this what an emergent technology looks like before it crosses the valley of death?

"Face it, this is not an easy task," said Brett Smith, assistant research director at the Center for Automotive Research in Ann Arbor, Mich. "You still have an energy storage device that's not ready for prime time. You still have the chicken and egg problem with the charging infrastructure. That's not to say it's not viable over the long run. But the hype is gone and the challenges are still there."

The market for all-electric and plug-in electric cars in the United States is tiny, amounting to fewer than 20,000 sales last year out of total light-vehicle sales of 12.8 million. Even in optimistic forecasts, plug-in vehicles will account for less than 5 percent of the global market by 2025.

Hybrids that do not require external charging, however, like today's Toyota Prius and many others already in showrooms, are a growing segment. Forecasters say they could represent as much as 6 percent of the market by 2015 and 25 percent by 2025, in part because they are among the few vehicles currently on track to meet the government's proposed new fuel economy standard of roughly 50 miles per gallon by 2025.

Other propulsion technologies, like natural gas and fuel cells, are more likely to be seen first in heavy trucks and local delivery vans because of limited refueling options.

Jon Bereisa is a former G.M. systems engineer who helped design the Volt and was among the lead developers of the company's mid-1990s experiment in electric vehicles, the ill-fated EV1. He says that the prospects for the electric car are much better today than they were then, but technical development, cost reduction and consumer acceptance are going to take far longer than most people expect.

"There is much more political support for it today, for a variety of reasons," he said. "Global warming, energy security, petroleum prices, all these vectors are aligned to support the electrification of the automobile, whether it's hybrid, plug-in, extended-range hybrid or full battery-electric."

But he added that the Volt was an incredibly complicated device in the early stages of development. "When you push the start button, you've got 10 million lines of code. You're really driving a modern data center, and a lot can go wrong."

He noted that the current Volt was the first generation and predicted that its third version, which will come between 2020 and 2025, will gain wide acceptance, as long as G.M. does not end the project and the government backs a nationwide infrastructure of charging stations.

The buzz is over. Cost and range are still serious obstacles.

PRESIDENT OBAMA, who has been a strong supporter of alternative vehicle and fuel technologies, proposed this month spending more than $4 billion to encourage purchases of electric and natural gas vehicles and to speed construction of charging and fueling stations. He is seeking to raise the current $7,500 purchase incentive for electric and plug-in electric vehicles to $10,000, and to make it a point-of-sale rebate rather than a credit to be claimed on a tax return.

David B. Sandalow, the assistant secretary of energy for policy and international affairs, said that the Obama administration was fully committed to nurturing this technology, and he is persuaded that, eventually, it will catch on.

"It is the future of transportation," said Mr. Sandalow, who saves money on gas by commuting to work in a Prius converted to run 30 miles on battery power alone. "The only question is how fast and how soon."

He said that China, Germany, Israel, South Africa and other nations were racing ahead with electric vehicle programs and maintained that President Obama's goal of putting one million electric vehicles on the road by 2015 was achievable if Congress fully financed his rebate and infrastructure proposals.

Most analysts doubt the million-car goal is achievable, as the enthusiasm over electrification in the industry has begun to flicker and the price of battery technology remains stubbornly high.

At the recent auto show in Geneva, for example, Peter Schwarzenbauer, a top executive at Audi, said of electric vehicles, which generated considerable buzz at previous shows, "Reality is phasing in."

And Dieter Zetsche, the chief executive of the German automaker Daimler, said that cost, range and consumer rates remained serious problems for the electric car. Still, he said, the company would continue work on such vehicles, as well as those powered by gasoline, diesel and hydrogen.

"There is no alternative," Mr. Zetsche told reporters. "We believe it is our responsibility to push this technology forward and make it marketable."

The fate of the electric car remains hazy, with technical, economic and political forces working both for and against it. Chris Paine, who made the 2006 documentary "Who Killed the Electric Car?" about the demise of G.M.'s EV1 at the hands of the car company, government regulators and the oil industry, said he was alarmed at how quickly the political climate had turned against the Chevy Volt and other electric vehicles, and offered a theory as to why.

"The attacks leave me a bit stunned," he said in an e-mail message. He said the Volt had been more successful in the marketplace than the early Prius was and that today, unlike in the late 1990s, the government and the auto industry are fully behind electric vehicle programs.

But one possible culprit still stands to gain if the electric car is killed yet again, Mr. Paine suggested.

"Not too hard to guess," he said. "With Americans paying $250 a month to fill up on gasoline when electricity can do the job in a Volt for $50 a month, why are we being told electric cars are failures? Who could possibly be behind this?"

NATO's Secrecy Stance

NEWS ANALYSIS

BY C. J. CHIVERS

A reporter in Iraq, Afghanistan and Libya for The New York Times.

SOMETIME late last Aug. 8, NATO warplanes flying from Europe arrived over the Libyan farming village of Majer, where forces loyal to Col. Muammar el-Qaddafi were withdrawing and anti-Qaddafi forces were claiming ground. Civilians were in motion, too — seeking pockets of safety away from the roaming sides, neither of which fought with precision or clear rules. This is the type of situation in which air support can be especially risky and in which, even with a careful calculus of modern target planning, mistakes are likely.

The aircraft that night have never been publicly identified by NATO, which has treated their origins and nationalities as strict military secrets.

From the standpoint of public accountability and civilian control of the military, this position serves as a kind of case study in the costs of withholding unpleasant facts, effectively denying civilians and taxpayers of NATO's member nations their responsibility to assess their military services' performance — a task that is difficult enough in an allied operation, under which the roles and responsibilities of each nation's forces can be hard to map.

Shortly before midnight, those as yet unidentified aviators released several laser-guided 500-pound bombs. The first bombs destroyed a house crowded with families. The next bombs destroyed two more. Then the aircraft struck again, survivors and local doctors say, dropping high-explosive ordnance on Libyans who had rushed to the victims' aid.

The results, by the available evidence, were a horror. By the time NATO's planes departed, at least 34 people had been killed, many of them women and small children, according to investigations by journalists, human-rights organizations and the United Nations. At least three dozen more people were wounded.

IN a report quietly made public early this month, a United Nations commission pointedly noted that after examining the destruction in Majer, interviewing survivors, reviewing documents and conducting an analysis of satellite imagery from before and after the attack, it found no evidence that "the site had a military purpose."

It added that "it seems clear that those killed were all civilians."

The commission recommended that NATO investigate this bloody occurrence (and several others that have been ferreted out in the face of repeated official denials) and follow its own practices in Afghanistan for taking responsibility for civilian casualties and making compensation payments.

Then a well-established pattern repeated itself. NATO's secretary general, Anders Fogh Rasmussen, said the alliance had examined the allegations of civilian casualties and, essentially, had nothing to account for. "This review process has confirmed that the targets we struck were legitimate military targets," he said.

NATO presented no evidence supporting this claim. Instead, it has declined repeated requests — including from survivors — to release weapons-systems video or other material demonstrating that anyone but civilians was present where and when the bombs struck.

In previous statements, Mr. Rasmussen had said that there were no "confirmed" civilian casualties caused by NATO in the entire war. That ringing denial overlooked two points: NATO's definition of a "confirmed casualty" is a casualty that has been investigated by NATO; and because the alliance has refused to look into credible allegations of the scores of civilian deaths that independent investigations have found it caused, it is impossible for the official tally to rise above zero.

Keeping mum on the nationalities of aircraft used in a Libya raid.

The questions surrounding NATO's attacks in Majer — the worst known case of the alliance's causing civilian casualties in its campaign to protect civilians — are not just at the center of the struggle for a more complete sense of a complicated air campaign.

As more voices, including that of Senator John McCain, call for airstrikes against government forces in Syria, extending the principle of Responsibility to Protect to include another conflict, here is a straightforward matter of tactical importance. Learning from the mistakes in Libya could save lives in the next war and do much to help air forces fine-tune their training ahead of future campaigns.

In this context, it is important to remember that the United Nations did not cast the killings in Majer as war crimes, as it did many of the killings in Libya by pro- and anti-Qaddafi forces. Rather, impartial investigators largely agree that NATO painstakingly tried, within the limits of a war where almost all of the airstrikes were made without the help of tactical air controllers on the ground, to minimize risks to civilians.

The violence that killed civilians seems to have stemmed from assumptions, not intent. NATO statements make it clear it believed that the buildings leveled that night housed a loyalist command node. What led to such assumptions? What might have prevented these assumptions or tested them more fully before the ordnance was released? These are grounds for thoughtful reflection and study.

Was this a case of pilot error? Did one arm of the alliance's effort — say, the intelligence analysts in Italy — select a target that aircraft from another nation were then sent, unaware of the analysts' mistake, to destroy?

And this is where the questions run deeper. At issue is the commitment to an idea central to Western military thought: civilian control of the military. NATO's refusal to identify the member state behind the Majer strikes has reduced the public's ability to wrestle with difficult matters of the efficacy and limits of modern air power or to examine how it might be applied more carefully.

Among the alliance's members, no one seriously questions the theory that military forces should fall under civilian political control. But in practice, it is difficult for the public of each member state to engage with these questions when NATO and the military forces that operate under its umbrella have refused to identify which countries' forces were involved in any particular operation. (And yet in Afghanistan, NATO routinely identifies the nationality of forces participating in operations.)

The practice, when asked, is to refer enquirers to each participating nation's military command, which, almost invariably, refers enquirers back to NATO — a loop that leads nowhere.

This means there is limited public review of, and even awareness of, lethal occurrences, even one as bloody as the strikes in Majer.



PHOTOGRAPHS COURTESY LISE SARFATI AND ROSE GALLERY, LOS ANGELES

Emily, 2860 Sunset Boulevard, 2010

ONLINE: THE WOMEN OF HOLLYWOOD

More photographs in this series can be found at **nytimes.com/opinion**

EXPOSURES LISE SARFATI

On Hollywood

I began with the concept of psychogeographical dérive, an approach analyzed by the French writer Guy Debord.

He defined psychogeography as the study of the precise effects of geographical surroundings on the emotions and behavior of individuals.

This dérive is the process I used to experience brief stays in a variety of atmospheres. In Los Angeles I drifted through Hollywood, staying several months. I did not scout locations like a director of photography or an artist hungry for new surroundings. I strove to find places where I would feel good physically, places that would affect me emotionally.

These places were street corners, sidewalk strips, recesses. Nothing extraordinary; on the contrary, very often quite banal.

My series "On Hollywood" shows women who really live in Los Angeles. They probably came to project themselves in the Hollywood landscape and to take advantage of the possibilities of success in this landscape. Hollywood interested me more for the concept of landscape as fantasy.

They are very real, and in different ways they seem to be the targets of a strange fatality. They shine in a very peculiar way. Like Pier Paolo Pasolini's fireflies.

Lise Sarfati is a French-born photographer who lives in the United States. Her upcoming exhibitions "On Hollywood" and "She" will be at the Rose Gallery in Los Angeles.



Meghan, Pool #7, 2009



Malaika #13, North Sunset Boulevard, 2010



Ajibike, 6433 Hollywood Boulevard, 2010



Elisabeth, Northwest Corner Sunset and Poinsettia, 2010

BILL KELLER

The Entitled Generation



R.O. BLECHMAN

IF you were born before 1946 or after 1964, you are free to go. Kindly close the door on your way out. I need a private moment with my fellow baby boomers.

So. I imagine you're all feeling a little unappreciated these days. We seem to have entered one of our periodic seasons of boomer-bashing. In rapid Op-Ed succession, we children of the postwar demographic bulge have been blamed for turning religion into an indulgent free-for-all, for giving elites a bad name and for making greed respectable, or at least acceptable. That's just this month, and *just on this page*. And it's not only conservatives beating us with the Woodstock whip. Kurt Andersen, a confessed liberal and one of our more prolific cultural omnivores, started the latest thumping July 4 with an argument that amoral self-gratification is just the flip side of social liberation: "Thanks to the '60s, we are all shamelessly selfish."

The notion that our generation has been spoiled rotten is not a terribly new thought. A dozen years ago Paul Begala (of Bill Clinton and CNN fame) published in Esquire the classic of boomer-loathing, "The Worst Generation." "The Baby Boomers are the most self-centered, self-seeking, self-interested, self-absorbed, self-indulgent, self-aggrandizing generation in American history," he declared. It's a sturdy genre. Perhaps

> How boomers can earn back a little respect.

while Googling yourself you have come across the blog Boomer Deathwatch ("Because one day, they'll all be dead"), a checklist of famous boomers who hit their actuarial sell-by dates. Even Barack Obama, who styles himself post-boomer though he was born in 1961, complained in "The Audacity of Hope" that today's hyperpolarized political discourse began with the "psychodrama of the baby boom generation."

Yes, yes, this criticism is glib. We didn't start the war in Vietnam, but members of our generation fought both in it and against it, demonstrating some of the spirit of sacrifice we are not famous for. Our ranks include the outsourcers of Bain and the wizards of the Wall Street casino, but also the entrepreneurial genius of Steve Jobs and Bill Gates. The Bill Clinton of Monicagate was the first boomer president, but so was the Bill Clinton of relative peace and prosperity. Our record-buying dollars gave the world disco — so sorry about that — but also Motown and Springsteen. I'd say the argument will continue forever if that didn't sound like such an all-about-us, boomer thing to say.

But even though the caricature is way too easy, it has stuck, and we all know that it contains more than a nugget of truth. We are an entitled bunch.

This brings me to a soon-to-be released study by the incorrigible pragmatists at Third Way, the centrist Democratic think tank. The study takes a familiar refrain and presents it with a graphic wallop. Though it was intended as a wake-up call, not an indictment of a generation, it can be read as both.

The authors examined two categories of federal spending over the past 50 years, representing two of government's fundamental missions. One was "investments," which includes maintaining our national infrastructure, keeping our military equipped, helping assure that our work force is educated to a high standard, and underwriting the kind of basic scientific research that is too risky or long-term to attract private money. The report calls this the legacy of President Kennedy's New Frontier, though the largest infrastructure project in our history, the interstate highway system, was Eisenhower's baby, a reminder of the days when Republicans still believed in that stuff. The other category was "entitlements," a catchall word for the safety-net programs that provide a measure of economic stability for the aging and poor: Social Security, Medicare, Medicaid, etc.

You will not be surprised to hear that the red line tracking entitlements goes up while the blue line reflecting investments goes down. What is alarming is the trajectory.

In 1962, we were laying down the foundations of prosperity. About 32 cents of every federal dollar, excluding interest payments, was spent on investments, only 14 percent on entitlements. In the mid-70s the lines crossed. Today we spend less than 15 cents on investment and 46 cents on entitlements. And it gets worse. By 2030, when the last of us boomers have surged onto the Social Security rolls, entitlements will consume 61 cents of every federal dollar, starving our already neglected investment and leaving us, in the words of the study, with "a less-skilled work force, lower rates of job creation, and an infrastructure unfit for a 21st century economy."

Some of the entitlement bloat comes from the addition of new programs — notably the prescription drug benefit espoused by our second boomer president, George W. Bush, and the Affordable Care Act, though at least that law sets in motion offsetting measures aimed at containing the soaring cost of health care. Some of the growth is built into formulas that increase benefits faster than inflation or G.D.P. And a lot of it is us: boomers, aging into Social Security and Medicare. "We've reached the point where our working-age population over the next 30 years grows by one-fifth, and our elderly population grows 100 percent," said Jim Kessler, the senior vice president for policy at Third Way.

Indignant readers are already revving up to tell me that Social Security and Medicare are sacred promises, that cutting them would be stone-hearted Republicanism. A.A.R.P., the lobby for people we used to call senior citizens until we realized that meant us, got hammered by the left earlier this year when its C.E.O. dared to convene a meeting of Washington insiders to even *discuss* the subject. No wonder A.A.R.P. shies away from supporting any entitlement reform.

But the traditional liberal alternatives — raise taxes on the well-to-do, cut military spending — are not nearly enough by themselves. The arithmetic simply doesn't work, unless we face the fact that entitlements are a bargain we can't afford to keep, not in full.

So the question is not whether entitlements have to be brought under control, but how. The Republican plan espoused by Mitt Romney and his fiscal lodestar Paul Ryan would cut the cost of entitlements largely by moving toward privatization: personal investment accounts for Social Security, vouchers for Medicare. And it's not at all clear the Republicans would assign any of the savings to investing in our future.

At least the Republicans have a plan. The Democrats generally recoil from the subject of entitlements. Centrists like those at Third Way and the bipartisan authors of the Simpson-Bowles report endorse a menu of incremental cuts and reforms that would bring down costs without hitting the needy or snatching away the security blanket from those nearing retirement. They include gradually raising the retirement age to compensate for the fact that we now live, on average, 14 years longer than when F.D.R. signed Social Security into law. They include obliging those of us who can really afford it to pay a larger share. They also include technical fixes like aligning the automatic cost-of-living formula with reality. To curtail the raging inflation of health costs, the government could better use its market clout to hasten electronic record-keeping, replace the fee-for-service model, reform medical malpractice laws and promote living wills. (A quarter of health care spending comes in the last year of life.) But you won't hear much of that on the campaign trail.

FELLOW boomers, we have done more than our share to make this mess. It's not our fault that there are a lot of us, but we have resisted any move to fix the system. We should make a sensible reform of entitlements our generation's cause. We should stiffen the spines of our politicians, and push lobby groups like A.A.R.P. to climb out of the bunker and lead. (And, by the way, we should resist the boomer temptation to take every cent of the reform from the pockets of our kids.) We should keep the heat on Congress and the president to double down on the cost-saving provisions in Obamacare.

We may not be the greatest generation, but we are the largest — and we vote. We throw our weight around. What if we threw some of it in the right direction? □

PAUL KRUGMAN

Crash Of the Bumblebee

Last week Mario Draghi, the president of the European Central Bank, declared that his institution "is ready to do whatever it takes to preserve the euro" — and markets celebrated. In particular, interest rates on Spanish bonds fell sharply, and stock markets soared everywhere.

But will the euro really be saved? That remains very much in doubt.

First of all, Europe's single currency is a deeply flawed construction. And Mr. Draghi, to his credit, actually acknowledged that. "The euro is like a bumblebee," he declared. "This is a mystery of nature because it shouldn't fly but instead it does. So the euro was a bumblebee that flew very well for several years." But now it has stopped flying. What can be done? The answer, he suggested, is "to graduate to a real bee."

Never mind the dubious biology, we get the point. In the long run, the euro will be workable only if the European Union becomes much more like a unified country.

Consider, for example, the comparison between Spain and Florida. Both had huge housing bubbles followed by dramatic crashes. But Spain is in crisis in a way Florida isn't. Why? Because when the slump hit, Florida could count on Washington to keep paying for Social Security and Medicare, to guarantee the solvency of its banks, to provide emergency aid to its unemployed, and more. Spain had no such safety net, and in the long run, that has to be fixed.

But the creation of a United States of Europe won't happen soon, if ever, while the crisis of the euro is now. So what can be done to save the currency?

Well, why was the bumblebee able to fly for a while? Why did the euro seem to work for its first eight or so years? Because the structure's flaws were papered over by a boom in southern Europe. The creation of the euro convinced investors that it was safe to lend to countries like Greece and Spain that had previously been considered risky, so money poured into these countries —

> Will the euro really be saved?

mainly, by the way, to finance private rather than public borrowing, with Greece the exception.

And for a while everyone was happy. In southern Europe, huge housing bubbles led to a surge in construction employment, even as manufacturing became increasingly uncompetitive. Meanwhile, the German economy, which had been languishing, perked up thanks to rapidly rising exports to those bubble economies in the south. The euro, it seemed, was working.

Then the bubbles burst. The construction jobs vanished, and unemployment in the south soared; it's now well above 20 percent in both Spain and Greece. At the same time, revenues plunged; for the most part, big budget deficits are a result, not a cause, of the crisis. Nonetheless, investors took flight, driving up borrowing costs. In an attempt to soothe the financial markets, the afflicted countries imposed harsh austerity measures that deepened their slumps. And the euro as a whole is looking dangerously shaky.

What could turn this dangerous situation around? The answer is fairly clear: policy makers would have to (a) do something to bring southern Europe's borrowing costs down and (b) give Europe's debtors the same kind of opportunity to export their way out of trouble that Germany received during the good years — that is, create a boom in Germany that mirrors the boom in southern Europe between 1999 and 2007. (And yes, that would mean a temporary rise in German inflation.) The trouble is that Europe's policy makers seem reluctant to do (a), and completely unwilling to do (b).

In his remarks, Mr. Draghi — who I suspect understands all of this — basically floated the idea of having the central bank buy lots of southern European bonds to bring those borrowing costs down. But over the next two days German officials appeared to throw cold water on that idea. In principle, Mr. Draghi could just overrule German objections, but would he really be willing to do that?

And bond purchases are the easy part. The euro can't be saved unless Germany is also willing to accept substantially higher inflation over the next few years — and so far I have seen no sign that German officials are even willing to discuss this issue, let alone accept what's necessary. Instead, they're still insisting, despite failure after failure — remember when Ireland was supposedly on the road to rapid recovery? — that everything will be fine if debtors just stick to their austerity programs.

So could the euro be saved? Yes, probably. Should it be saved? Yes, even though its creation now looks like a huge mistake. For failure of the euro wouldn't just cause economic disruption; it would be a giant blow to the wider European project, which has brought peace and democracy to a continent with a tragic history.

But will it actually be saved? Despite Mr. Draghi's show of determination, that is, as I said, very much in doubt. □

The Conversion of a Climate-Change Skeptic

By Richard A. Muller

BERKELEY, Calif.

CALL me a converted skeptic. Three years ago I identified problems in previous climate studies that, in my mind, threw doubt on the very existence of global warming. Last year, following an intensive research effort involving a dozen scientists, I concluded that global warming was real and that the prior estimates of the rate of warming were correct. I'm now going a step further: Humans are almost entirely the cause.

My total turnaround, in such a short time, is the result of careful and objective analysis by the Berkeley Earth Surface Temperature project, which I founded with my daughter Elizabeth. Our results show that the average temperature of the earth's land has risen by two and a half degrees Fahrenheit over the past 250 years, including an increase of one and a half degrees over the most recent 50 years. Moreover, it appears likely that essentially all of this increase results from the human emission of greenhouse gases.

These findings are stronger than those of the Intergovernmental Panel on Climate Change, the United Nations group that defines the scientific and diplomatic consensus on global warming. In its 2007 report, the I.P.C.C. concluded only that most of the warming of the prior 50 years could be attributed to humans. It was possible, according to the I.P.C.C. consensus statement, that the warming before 1956 could be because of changes in solar activity, and that even a substantial part of the more recent warming could be natural.

Our Berkeley Earth approach used sophisticated statistical methods developed largely by our lead scientist, Robert Rohde, which allowed us to determine earth land temperature much further back in time. We carefully studied issues raised by skeptics: biases from urban heating (we duplicated our results using rural data alone), from data selection (prior groups selected fewer than 20 percent of the available temperature stations; we used virtually 100 percent), from poor station quality (we separately analyzed good stations and poor ones) and from human intervention and data adjustment (our work is completely automated and hands-off). In our papers we demonstrate that none of these potentially troublesome effects unduly biased our conclusions.

The historic temperature pattern we observed has abrupt dips that match the emissions of known explosive volcanic eruptions; the particulates from such events reflect sunlight, make for beautiful sunsets and cool the earth's surface for a few years. There are small, rapid variations attributable to El Niño and other ocean currents such as the Gulf Stream; because of such oscillations, the "flattening" of the recent temperature rise that some people claim is not, in our view, statistically significant. What has caused the gradual but systematic rise of two and a half degrees? We tried fitting the shape to simple math functions (exponentials, polynomials), to solar activity and even to rising functions like world population. By far the best match was to the record of atmospheric carbon dioxide, measured from atmospheric samples and air trapped in polar ice.

Just as important, our record is long enough that we could search for the fingerprint of solar variability, based on the historical record of sunspots. That fingerprint is absent. Although the I.P.C.C. allowed for the possibility that variations in sunlight could have ended the "Little Ice Age," a period of cooling from the 14th century to about 1850, our data argues strongly that the temperature rise of the past 250 years cannot be attributed to solar changes. This conclusion is, in retrospect, not too surprising; we've learned from satellite measurements that solar activity changes the brightness of the sun very little.

How definite is the attribution to humans? The carbon dioxide curve gives a better match than anything else we've tried. Its magnitude is consistent with the calculated greenhouse effect — extra warming from trapped heat radiation. These facts don't prove causality and they shouldn't end skepticism, but they raise the bar: to be considered seriously, an alternative explanation must match the data at least as well as carbon dioxide does. Adding methane, a second greenhouse gas, to our analysis doesn't change the results. Moreover, our analysis does not depend on large, complex global climate models, the huge computer programs that are notorious for their hidden assumptions and adjustable parameters. Our result is based simply on the close agreement between the shape of the observed temperature rise and the known greenhouse gas increase.

> As our carbon dioxide emissions rise, so will the temperature.

It's a scientist's duty to be properly skeptical. I still find that much, if not most, of what is attributed to climate change is speculative, exaggerated or just plain wrong. I've analyzed some of the most alarmist claims, and my skepticism about them hasn't changed.

Hurricane Katrina cannot be attributed to global warming. The number of hurricanes hitting the United States has been going down, not up; likewise for intense tornadoes. Polar bears aren't dying from receding ice, and the Himalayan glaciers aren't going to melt by 2035. And it's possible that we are currently no warmer than we were a thousand years ago, during the "Medieval Warm Period" or "Medieval Optimum," an interval of warm conditions known from historical records and indirect evidence like tree rings. And the recent warm spell in the United States happens to be more than offset by cooling elsewhere in the world, so its link to "global" warming is weaker than tenuous.

The careful analysis by our team is laid out in five scientific papers now online at BerkeleyEarth.org. That site also shows our chart of temperature from 1753 to the present, with its clear fingerprint of volcanoes and carbon dioxide, but containing no component that matches solar activity. Four of our papers have undergone extensive scrutiny by the scientific community, and the newest, a paper with the analysis of the human component, is now posted, along with the data and computer programs used. Such transparency is the heart of the scientific method; if you find our conclusions implausible, tell us of any errors of data or analysis.

What about the future? As carbon dioxide emissions increase, the temperature should continue to rise. I expect the rate of warming to proceed at a steady pace, about one and a half degrees over land in the next 50 years, less if the oceans are included. But if China continues its rapid economic growth (it has averaged 10 percent per year over the last 20 years) and its vast use of coal (it typically adds one new gigawatt per month), then that same warming could take place in less than 20 years.

Science is that narrow realm of knowledge that, in principle, is universally accepted. I embarked on this analysis to answer questions that, to my mind, had not been answered. I hope that the Berkeley Earth analysis will help settle the scientific debate regarding global warming and its human causes. Then comes the difficult part: agreeing across the political and diplomatic spectrum about what can and should be done. □

Richard A. Muller, a professor of physics at the University of California, Berkeley, and a former MacArthur Foundation fellow, is the author, most recently, of "Energy for Future Presidents: The Science Behind the Headlines."

ONLINE: MORE OP-ED

Sanford I. Weill's change of heart about the value of huge banks doesn't excuse the damage Citigroup did on his watch, Jeff Madrick writes.

nytimes.com/opinion

Miriam Ben-Porat, 94, Israeli Judge and Watchdog

By ISABEL KERSHNER

JERUSALEM — Miriam Ben-Porat, the first woman to serve as a justice on Israel's Supreme Court and to hold the post of state comptroller, the government's watchdog, died on Thursday at her home in Jerusalem. She was 94.

Her death was confirmed by a spokeswoman for the Israeli courts administration.

Prime Minister Benjamin Netanyahu described Mrs. Ben-Porat as "a trailblazer" who "sanctified the values of integrity and transparency."

Mrs. Ben-Porat began working at Israel's Ministry of Justice soon after the establishment of the state in 1948. Within two years she was promoted to deputy to the state attorney. After serving as a judge and president of the district court, she was appointed a permanent justice of the Supreme Court in 1977. She retired from the bench in 1988.

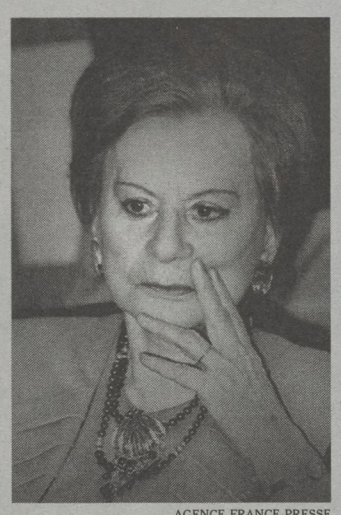
In the decade that followed, as the state comptroller, Mrs. Ben-Porat, charged with auditing government agencies and their affiliates, aggressively exposed government failings. Her role earned her widespread public respect and national prominence.

The first woman to serve on the Supreme Court and as state comptroller.

In one report, she chastised the government for flaws in its planning for absorbing the first waves of Soviet Jews who immigrated in the early 1990s. In another, she warned of an impending water shortage because of what she described as a quarter-century of irresponsible mismanagement by the water authorities. That led to the dismissal of the water commissioner.

During the Persian Gulf war, as Iraqi missiles rained down on Israel, Mrs. Ben-Porat found that many of the gas masks that the military had distributed to the population would have been largely ineffective in a gas attack.

The state comptroller has a staff of 500 and the authority to study any issue and examine any document, but no mechanism to enforce the office's recommendations other than public pressure. The authorities responded to some of Mrs. Ben-Porat's reports with personal attacks.



AGENCE FRANCE-PRESSE

Miriam Ben-Porat in 1992.

"I don't like it; I think it's wrong," she told The New York Times in 1991. "It's dangerous. It even hurts. Maybe not personally, but it hurts."

That year she was awarded the prestigious Israel Prize "for her special contribution to society and the state."

Miriam Shinezon was born on April 26, 1918, in Vitebsk, in what is now Belarus, the youngest of seven siblings, and grew up in Kovno, a city in Lithuania that is now known as Kaunas. She immigrated to the British Mandate of Palestine at age 18. A few years later, her parents and a brother died in the Holocaust. In 1946 she married Joseph Ben-Porat, and they had one daughter, Ronit.

She is survived by her daughter, three grandchildren and six great-grandchildren.

In an interview with the newspaper Yedioth Ahronoth about two years ago, Mrs. Ben-Porat spoke of her reputation for toughness on the bench.

"Inside I was always soft," she said. "On the outside, I put on a pretense, I took on a stronger countenance. The toughness you knew was the judge."

ONLINE: NOTABLE DEATHS

A slide show highlighting the lives of some of those who died in 2012.

nytimes.com/obituaries

Irvin Faust, Author and Guidance Counselor, Dies at 88

By DOUGLAS MARTIN

Irvin Faust, who as a high school guidance counselor found time to write novels and short stories that critics likened to the magic realist fiction of South America, died on Tuesday in Manhattan. He was 88.

The cause was pneumonia following a series of strokes, his wife, Jean, said.

Even after Mr. Faust became a successful novelist, he continued to help Long Island high school students get into college, retiring in 1996. Beyond the pleasure he found in working with young adults, he thought the experience helped his writing.

"I guess I belong to the European tradition of the writer who has to be involved with reality, rather than contemplating his navel and just being a confessional writer over and over and over again," he said in an interview with Newsday in 1980. "I find that this doesn't necessarily give me material that I use, but it keeps me in touch with what's going on in the world."

Mr. Faust burst onto the literary scene in 1965 with a collection of short stories, "Roar Lion Roar and Other Stories." Stanley Kauffmann said in The New Republic that opening the book was "like clicking on a switch: at once we hear the electric hum of talent."

Writing in The New York Times Book Review, Webster Schott said most of the stories "rise from Manhattan, isle of illusions, and all deal with the consequences of placing faith in fantasies."

The title story, which draws its name from the fight song of Columbia University, chronicles the tragedy of a Puerto Rican high school dropout who becomes a janitor at the university and strives to be part of the Ivy League world. After the Columbia Lions are beaten, and he prepares to commit suicide by leaping from a cliff above the Hudson, he says his last words, "Les Go Li-yons. We number one in the Ivory Leak."

Six years later, in a review of Mr. Faust's novel "Willy Remembers" (1971) in The New York Times Book Review, the novelist R. V. Cassill called the "Lion" book "one of the best short-story collections of the 1960s." But he said the new book, Mr. Faust's third novel, was masterful, citing its "Joycean complexity of ambivalences, portmanteau images and concentric legends."

A successful novelist who enjoyed helping high school students.

The novel's story is told in the voice of the title character, one of the few remaining veterans of the Spanish-American War who mentally conflates past, present and imagined events. He remembers Dec. 7, 1941, when the attack on Pearl Harbor occurred, as the day his secretary had an abortion. His fogbound memory has Oswald shooting almost every American president who was ever assassinated.

The crime novelist Elmore Leonard, in an introduction to the paperback edition of the book in 1983, wrote, "There is more sustained energy in the telling of what he remembered than in any novel I've ever read."

Mr. Faust mixed advertising jingles, legends, old songs and dances with precision and abandon. In a review of "Jim Dandy" (1994), a historical novel about Italy's conquest of Ethiopia in 1936, in The Times Book Review, Eddy L. Harris likened the way Mr. Faust slid around time periods to the imaginative confabulations of South American writers that came to be termed "magical realism." Another novel, "The Steagle" (1966) got its name from the National Football League combining the Philadelphia Eagles and the Pittsburgh Steelers into one team during World War II. It told of a professor who slips into a fantasy world during the Cuban missile crisis and travels the country seeking amorous adventures.

Paul Sylbert directed a movie based on the book, "The Steagle," in 1971. It starred Richard Benjamin, Chill Wills and Cloris Leachman.

In all Mr. Faust wrote seven novels, two books of short stories and a number of uncollected short stories for various publications. His ill health reduced his writing in recent years, but he published a short story as recently as 2008.

Irvin Faust was born in Brooklyn on June 11, 1924, and grew up in Queens. He served in the Army infantry during World War II in both the Pacific and European theaters and helped liberate Nazi concentration camps. He first pursued acting after the war, before enrolling in Teachers College of Columbia University on the G.I. Bill, where he earned two master's degrees and a Ph.D.



JERRY BAUER

Irvin Faust in 1967.

His Ph.D. dissertation was a case study of children's lives. He received permission to write it in a literary format, and it was published in 1963 under the title "Entering Angel's World: A Student-Centered Casebook." That success prompted him to take a creative writing course, and he soon sold his first short story, "Into the Green Night."

He first taught in New York City schools, then became director of guidance and counseling at Garden City High School on Long Island. Before and after work, he wrote, said his wife, the former Jean Satterthwaite, his only immediate survivor.

Suzy Gershman, 64, Writer Of 16 'Born to Shop' Guides

By DENNIS HEVESI

"My heart goes pitter-patter every time I walk into this closet-size store; I've never seen so many handbags that I couldn't live without," Suzy Gershman wrote of one of the hidden gems she discovered in her research for "Born to Shop Hong Kong." "These bags are not copies, they just coincidentally look a lot like the handbags in fashion magazines."

Of another find, revealed in "Born to Shop New York," she wrote, "This is the kind of small Madison Avenue boutique that you might pass without ever knowing that it is the 'in' place for Upper East Side ladies who like the Euro-Asian-artsy-hippie-boho look."

Ms. Gershman was the author of 16 "Born to Shop" guides, published over 26 years and compiled during hundreds of thousands of miles of worldwide wandering and, very often, backstreet meandering. Six became standards that have been revised every other year — for New York, London, Paris, Hong Kong, France and Italy. In all, more than four million copies of "Born to Shop" books, first published by Bantam and then Frommer's, have been sold.

Ms. Gershman died of cancer last Wednesday in San Antonio at 64, said Sarah Lahey, who for the last eight years helped Ms. Gershman research and write the books.

The guides point shoppers toward local markets, specialty boutiques and out-of-the-way shops with merchandise by artisans. They recommend affordable hotels and offer shopping tips. Among Ms. Gershman's Ten Commandments for International Shopping:

¶ "Shop in local grocery stores, not only for inexpensive gifts but for locally made items that bring home the flavor of the destination; i.e., mustard from France, BBQ sauce from Texas."

¶ "Don't buy expensive goods abroad, especially if it's an item you cannot return."

¶ "Don't buy into the national craze; i.e., a country's national flag made into a head scarf. I mean, really. . . ."

"The basic idea of the book," Ms. Gershman once said, "is that it should read like we were having lunch and I was telling you about my shopping day."



Suzy Gershman, an enthusiastic shopper, shared her expertise.

In fact, just that kind of encounter inspired the series. "She was living in Beverly Hills, working as the West Coast style editor for People magazine," Ms. Lahey said. "She was having lunch with girlfriends, and they decided to write a shopping guide for Beverly Hills. She was the one who did the writing."

Suzy Kalter was born on April 13, 1948, in San Antonio. She

Guides written as if 'I was telling you about my shopping day.'

"wasn't a kid who had an unlimited allowance," Ms. Lahey said, "but when she traveled with her family she would explore local markets and buy tchotchkes — she always used that word." She was one of three children of Gloria and S. S. Kalter, known as Sy. Her father was a research scientist for the Centers for Disease Control and Prevention in Atlanta and the World Health Organization. Ms. Kalter graduated from the University of Texas in 1969 with a degree in journalism, then moved to New York to work in advertising and public relations. There she met Michael Gershman, whom she married in 1975. He died in 2000. Ms. Gershman is survived by a son, Aaron; her brother, Steven; and a granddaughter.

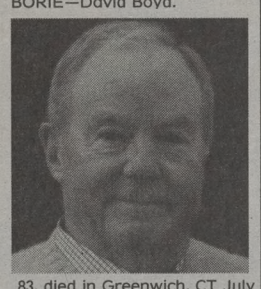
The Gershmans moved to Los Angeles where, while working for People, Ms. Kalter (as she continued to be known) became a regular guest on television talk shows. In 1986, when the "Born to Shop" series started, she changed her name to Gershman. Over the years she wrote for many publications, including Travel Holiday, The New York Times and The Los Angeles Times.

For Ms. Gershman, a bargain was something to be shared. In France, she bought Cils Demasq by the case, at about $5 a bottle. "It's a French eye-makeup remover — cils is French for eyelashes — which she claimed is the best beauty product ever invented," Ms. Lahey said. "She used it herself and gave it to all of her girlfriends."

Deaths

Borie, David
Braverman, Lori
Buitekant, Allan
Carmen, Marvin
Conway, Paul
Faust, Irvin
Hassell, Mildred
Miller, Judith
Rashbaum, Harold
Smith, Gene

BORIE—David Boyd.



83, died in Greenwich, CT July 14 surrounded by his loving family. Born in Philadelphia, Mr Borie was a graduate of Yale, class of '51, varsity football, Chi Psi fraternity. Mr. Borie served as officer in the U.S. Marine Corps during the Korean War, received medals including Bronze Star (Combat V) and Purple Heart. 30 year career at Time-Life, he retired as European Marketing Director in London. Mr. Borie was an active community member and enjoyed shooting sports and fishing. Survived by his beloved wife, Mary Washington Borie and four children, Mary W. Zara of New Canaan, CT, David B. Borie Jr. of Denver, CO, J. Stewart Borie of San Diego, CA and Lyssa B. Righi of Phoenix, AZ, 11 grandchildren and two great-grandchildren. Memorial services will be held at St. Barnabas Church in Greenwich, CT September 22, 11:30 am. Donations in lieu of flowers to Nantucket Conservation Foundation (508) 228-2884 or Marine Corps Scholarship Foundation (866) 496-5462 – Ref: Service # 051997, In Honor of Capt David Boyd Borie

BRAVERMAN—Lori Goldman, 74, passed away on July 17, 2012. The cause was complications from acute myeloid leukemia. Lori was, first and foremost, about her family. She was the devoted wife of Monte Braverman for over fifty years and is survived by her children, Andrea Gross, Harvey Braverman and Janice Kaplan; her son-in-law Cliff Kaplan and daughter-in-law Kiki Braverman; her grandchildren, Corey, Drew and Jordan Gross, Carly, Alex and Jillian Kaplan, and Oliver Braverman; and her brother Mitchell Goldman. Lori was predeceased by her parents Bernard and Ree Goldman of Philadelphia, PA, and her sister Paula Goldman. Lori, a watercolorist, grew up in Bala Cynwyd, PA and was a long-time resident of Tenafly, NJ and Snowmass Village, CO.

BUITEKANT—Allan. At 78, in Asheville, NC, July 14. One of a small group of art directors at the Doyle Dane Bernbach agency in the '60's and 70's who transformed advertising, infusing it with wit, style, and elegance. In his studio in Union Mills, he continued the pursuit of his true vocation, ceramics. Much influenced by the Mashiko tradition, his work was widely collected (visit buitekantpottery.com). He was also a student and disciple of the great bonsai master, Yuji Yoshimura. Devastated by the death of Jane, his beloved wife of 40 years, he had the great good luck to meet and fall in love with Joyce Cunningham, his life partner, who survives him. His renowned collection of bonsai, donated to The Bronx Botanical Garden, also lives on after him.

CARMEN—Captain Marvin, DDS, born September 10, 1919, died July 28, 2012. He was a graduate of Marquette University and served 43 years in the USN Dental Corps, from World War II through Vietnam, where he was Chief of Dental Service on the hospital ship Sanctuary. He retired from the Navy in 1981 and embarked on a second career as a Professor of Dentistry at New York University, where he taught for over 25 years. He passed away peacefully at home surrounded by loved ones. He is survived by wife Claire, two stepchildren, five grandchildren, and three great-grandchildren. The funeral is Monday, July 30, 2012 at 9:30am at Riverside Memorial Chapel, New York City; interment to follow at New Montefiore Cemetery, Long Island. Memorial contributions may be made to Central Synagogue in Dr. Carmen's name.

CARMEN—Dr. Marvin. We note with sorrow the passing of our member Dr. Marvin Carmen and extend sincerest condolences to his bereaved family.
–Rabbi Peter Rubinstein and President David Edelson, Central Synagogue of New York City

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Deaths

CONWAY—Paul Emmanuel.



Born February 24th, 1923 in Cologne, Germany. Paul Conway passed away July 27th at Waveny Care Center in New Canaan, Connecticut surrounded by his family. He was 89 years old. He was born on February 24th, 1923 in Cologne Germany. He was the son of the late Hedwig and Albert Conway of New York City. He is survived by his three children; Andrew J. Conway of Edgemont, NY, his wife Jill Conway. Victoria C. Newman of Greenwich, CT and her husband Peter Newman; Alexandra C. Marks of Riverside, CT and her husband Steven Marks; seven grandchildren who kept him young ranging in age from 1-17. Jonathan and Steven Conway, Talia and Kylie Newman, and William, Sophie and Charlie Marks; He was the husband of Madeleine Adler Conway and brother of Vernon Conway of Cheltenham, England. At a young age Mr. Conway his family moved to Berlin and in 1936 they fled Berlin for the safety of London. Shortly thereafter Mr. Conway enlisted in the British Army and served as a member of the Royal Fusiliers. He was stationed in India and Burma during WW2 and was recruited to the Prisoner of War Interrogation Section under the command of Lt. Col Alexander Scotland which later became the War Crimes Investigation Unit. Mr. Conway interrogated German War Criminals under the command of Mr. Scotland. After the war, Mr. Conway immigrated to the United States. He had a successful career in the Textile Industry, most recently co-owning C&L Sales. He was a founding shareholder in Carlton Woolen Mills and as President of Carltex, he became a major producer and seller of fabrics to retail stores. Mr. Conway was President of the Retail Associates Group, a major trade organization in the 1960's. He also led the Lincoln Square Neighborhood Center in New York City. Mr. Conway was an avid art collector, a lover of German Expressionist Art, classical music, travel and the United States. Mr. Conway was given the keys to the City of Cologne, Germany in 1986. A Memorial Service will be held on Monday, July 30th at 10am at Temple Sholom, 300 East Putnam Avenue in Greenwich, Connecticut. Memorial Contributions may be made to Waveny Care Center c/o Donna Sammarino, or the Norwalk Hospital Foundation, c/o Residents' Fund.

Deaths

FAUST—Irvin, 88, of New York city, died on July 24 succumbing to pneumonia after a long illness. After college he earned two Master's degrees and a Ph.D. He was a teacher, then a counselor; his last job was Director of Guidance at Garden City Long Island. A veteran of World War II, he served in Patton's Army with units that liberated concentration camps. Later he served with the occupation forces in Japan. His sole survivor is his wife of 55 years, Jean Satterthwaite Faust. Much beloved by many friends and professional associates, he will be greatly missed.

HASSELL—Mildred, of W 16th St., Manhattan and formerly of Wallingford, CT died on July 27, 2012. She was a beloved aunt and active with the Jewish Guild for the Blind. Services are at Beth Israel Cemetery, Wallingford, CT at the convenience of the family. www.BCBailey.com

MILLER—Judith Martin, 93, died on July 28. A brilliant actress, director modern dancer, and a founder of The Paper Bag Players. She gave delight to children everywhere, but mostly to her daughter Daisy and her late husband Sol. She is survived by Daisy Miller, Seth Armus and her grandchildren Benjamin and Lilah.

RASHBAUM—Harold (Buddy), beloved husband of Charlotte and devoted father to Dory and Jody and grandfather to Zoe, Eileen and Alex passed away July 27th, 2012. Buddy was a WWII veteran and bombardier. He worked in the textile industry and then co owned a company with his brother-n-law for many years. He passed away peacefully in his home. He will be deeply missed by his family and friends.

SMITH—Gene. Dear good friend will be greatly missed. Love to Jayne and Jessica.
Connie and Bill Greenspan

In Memoriam

DOUGHERTY—Edward.
God's gift to us.
Love everlasting.
Annie and Family

WITENKO—Barbara.
Girlfriend Happy Birthday.
Miss you like crazy.
Love, Diana

ANNOUNCEMENTS OF DEATHS MAY BE TELEPHONED FROM WITHIN N.Y.C. TO (212) 556-3900; OR OUTSIDE N.Y.C. TO TOLL FREE 1-800-458-5522; OR SUBMITTED ONLINE AT ADVERTISING.NYTIMES.COM (SELECT "IN MEMORIAM") FOR THE FOLLOWING EDITIONS:
Until 5:30 P.M. the day before for Tuesday through Saturday editions, until 5:00 P.M. on Friday for Sunday's Nationwide Edition, until 12:45 P.M. Saturday for Sunday's New York Region edition, until 2:00 P.M. Sunday for Monday's editions.Photos must be submitted by noon the day prior to publication Tuesday through Friday. Photos for Saturday, Sunday and Monday must be submitted by 12 noon on Friday.

Ginny Tyler, 86, Mouseketeer And Voice of Disney Animals

By WILLIAM YARDLEY

Ginny Tyler, a Head Mouseketeer in the syndicated version of the "The Mickey Mouse Club" of the 1960s and a voice actor who shifted from Snow White to Cinderella to Bambi as a narrator for Disneyland Records, died on July 13 at a nursing home in Issaquah, Wash. She was 86.

Her death was confirmed by her son, Ty Fenton.

Ms. Tyler, who traced her lineage to the Snoqualmie Tribe of the Puget Sound region, learned to tell stories and simulate animal sounds as a child from listening to her mother, who could play the organ while whistling bird calls. After graduating from the University of Washington, she played Mother Goose on a children's show on KOMO-TV in Seattle in the early 1950s.

She moved to Hollywood in 1957. In the early 1960s she began reading Disney stories for recordings and in time, her vocal work included not just narration but character voices for Disney films and theme park attractions. "Hello, my name is Lady, and I'm a cocker spaniel," Ms. Tyler, crisp and comforting, says in the opening to the recording for "Lady and the Tramp." "I'd like to tell you my story. It all started on Christmas Eve, just a year ago."

She became a Mouseketeer in 1962.

Her films included "Mary Poppins" (1964), in which she sang for the voices of several animals. In 1967, when Polynesia the parrot taught a physician to talk to animals in the film "Doctor Dolittle," the voice of Polynesia belonged to Ms. Tyler.

Merrie Virginia Erlandson was born in Berkeley, Calif., on Aug. 8, 1925. She grew up in Seattle, where her family had lived for generations. Besides her son, survivors include her brothers Donald and Terry Eggers, two grandchildren and one great-grandson.

She changed her name to Tyler to advance her acting career. Mr. Fenton said that for decades her driver's license declared her to be five years younger than she was, another career-enhancing tactic.

As a Mouseketeer, Ms. Tyler worked from a Mickey Mouse Club Headquarters constructed at Disneyland when a repackaged version of the original television show began in 1962. She was host of a live daily segment of the program.

Mr. Fenton recalled trailing his mother around the Disney studios in the 1960s, appearing several times himself on the "The Mickey Mouse Club." (Some saw a striking resemblance between Ms. Tyler and a Mouseketeer from the show's original run in the 1950s, Annette Funicello.)



WALT DISNEY ARCHIVES

Ginny Tyler in 1963 during her stint as a Mouseketeer.

Ms. Tyler dropped into various characters at home and with people she met on the street. A favorite story she acted out involved a cat chasing a mouse. When the cat finally cornered the mouse and all hope seemed lost, the mouse would open its mouth and produce an impressive bark, scaring away the cat.

"Of course, my mom would do the dog bark," Mr. Fenton said. "Then she'd say, 'See, that's the advantage of learning a foreign language.'"

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the West

Very Large Array, w. of Socorro NM: another of the projects that were put in the desert, peaceful opposite of Los Alamos, Hanford etc.
--Patty Limerick once intended a "Troubled Ground" book about the West as nuke dump etc., but told me she dealt with it as much as she wants to in a couple of essays; look up that collection.
--possible title: Our Other Planet

Science Times

The New York Times

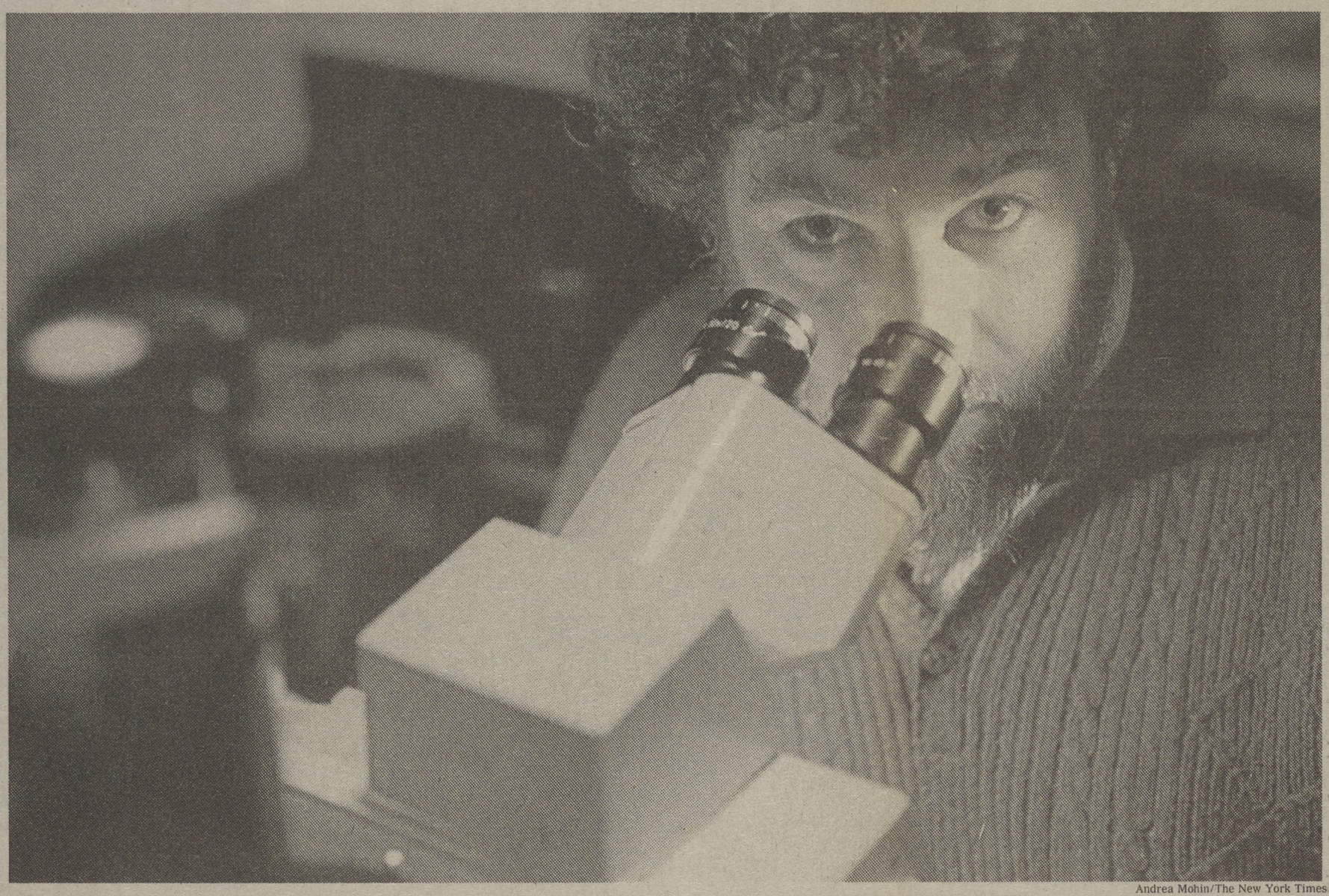
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TUESDAY, MARCH 26, 1996

SCIENTIST AT WORK

Steven Block

A Biomechanic Tweaks Nature's Tiniest Motors

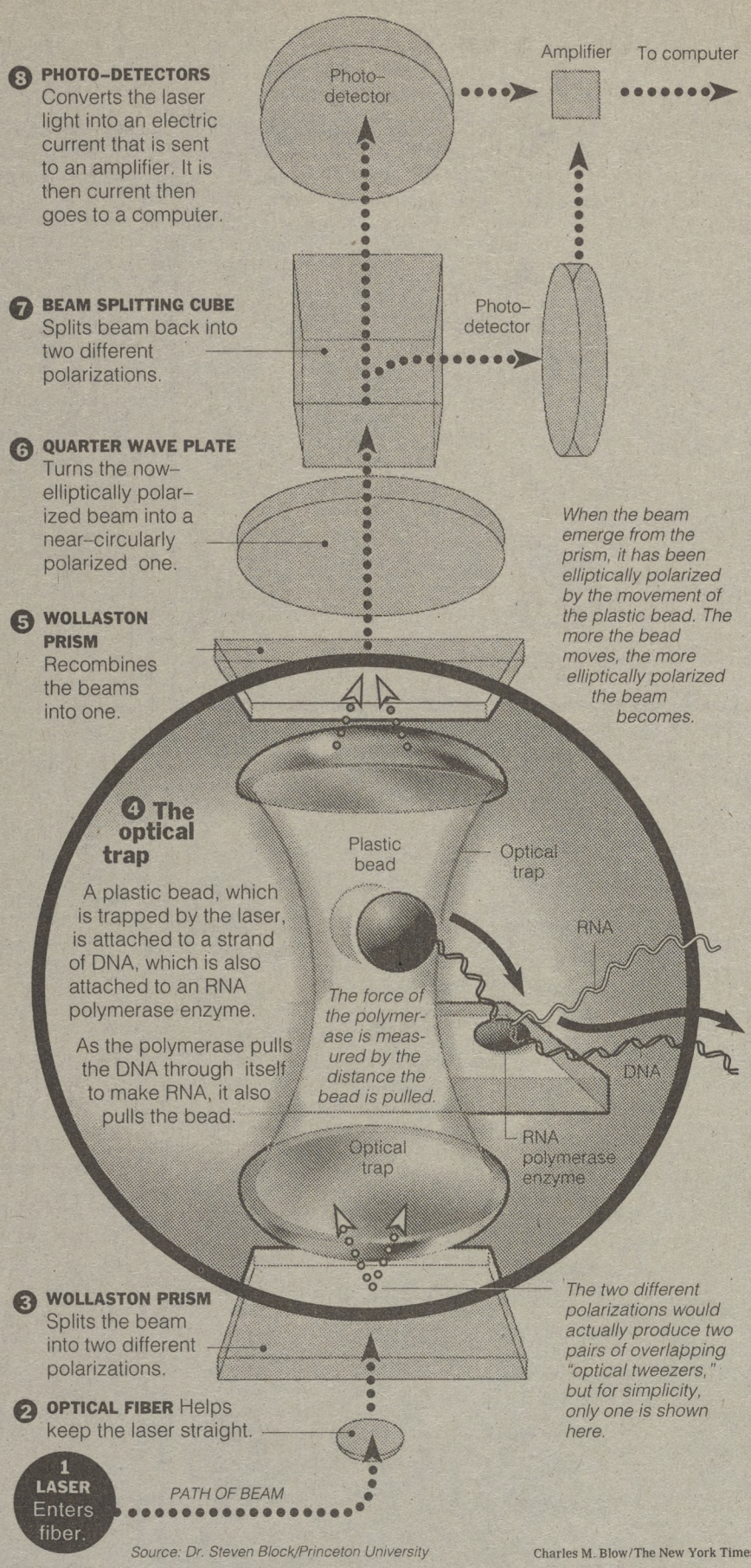


Andrea Mohin/The New York Times

A new understanding of the forces of individual biological molecules is the goal of Dr. Steven Block, shown behind his microscope in his Princeton laboratory.

Measuring Force in a Tiny Game of Tug-of-War Between Laser-Based 'Tweezers' and an Enzyme

Dr. Steven Block, a biophysicist at Princeton University has performed an experiment in which he was able to measure the force with which an enzyme pulls on a strand of DNA. Here is a schematic representation of how the experiment was done, beginning at the bottom of the diagram.

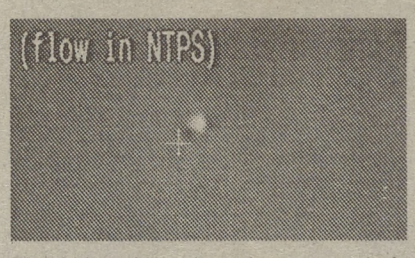


Source: Dr. Steven Block/Princeton University

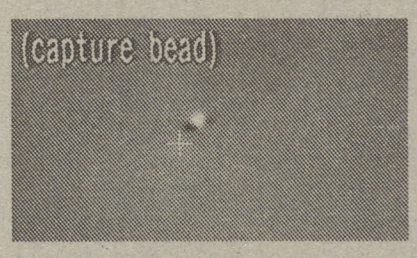
Charles M. Blow/The New York Times

Plastic Bead Game Shows Enzyme Power

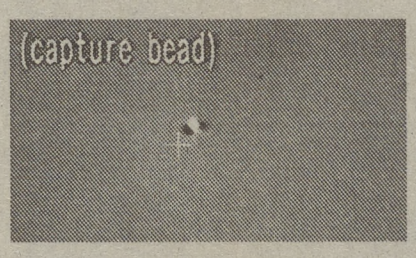
Videotape frames show steps in measuring the movement and forces generated by RNA polymerase as the enzyme transcribes a DNA template to synthesize a strand of RNA, the instructions for building a protein. Both DNA and RNA are too small to see.



Plastic bead is tethered to a strand of DNA. Bead image is fuzzy because of random hits from water molecules.



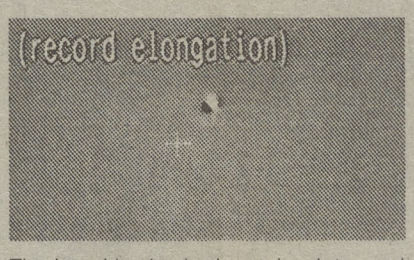
The polymerase enzyme starts to make RNA, walking along the DNA template. Optical trap is turned on.



Optical trap captures the bead and holds it steady. The DNA tether is still slack, however.



The DNA molecule is stretched by moving the laser trap; the polymerase draws its head toward itself.



The bead is slowly drawn back toward the location of the polymerase. The DNA elongation is recorded.

By GINA KOLATA

PRINCETON, N.J.

A drawing outside Dr. Steven Block's office at Princeton University shows a tug of war between a single DNA molecule and an enzyme that is trying to copy it. The DNA molecule is being held in place at one end, and the enzyme is pulling on the other.

The drawing is no flight of fancy; it represents an actual experiment performed by Dr. Block and his colleagues. Using laser-light tweezers to hold a molecule of DNA in place, they set up a tug of war with the enzyme, then measured the force the enzyme exerted in pulling the DNA.

The videotape they made of the interaction shows a ghostly sort of image. The DNA is attached to a microscopic plastic bead, smaller in diameter than the smallest bacterium. The laser tweezers are holding the bead. Since DNA strands and individual enzyme molecules are much too small to be seen under a light microscope, the video shows the bead being tugged at in an invisible game until it finally exerts enough force to win and drifts free.

Dr. Block and his colleagues are at the forefront of a new type of biophysics, a field that involves using optical tweezers to measure the forces exerted by individual molecules when they act as molecular motors. These motors drive virtually all movements in living organisms.

Every living thing has molecular motors, even the simplest cells.

The motor that copies DNA plows through it "like a truck in low gear" to separate its twisted strands, Dr. Block said. Other motors ferry molecules around in cells, make muscle fibers contract, tug chromosomes throughout cell division, propel sperm toward eggs and drive the undulating cilia that line the airways of the lungs.

Some molecular motors have been discovered only recently. One, called kinesin, slides along structures that look for all the world like railroad tracks, pulling other molecules around the cell. The track-like structures, called microtubules, had been seen before but were assumed to be just the cell's scaffolding. One of Dr. Block's goals is to take apart the kinesin motor and understand how it works.

The forces scientists are beginning to measure loom large within the cell, but to humans, Dr. Block said,

Continued on Page B12

Birth Control Might Keep Mustangs From Outgr

By DOUG McINNIS

Even in an age of endangered species, many animals are breeding prolifically, straining their environments and clashing with their human neighbors. One solution, now being tested on wild horses in the West, is birth control.

In January, the Federal Bureau of Land Management rounded up 267 mares in the Nevada desert and vaccinated them with porcine zona pellucida, or P.Z.P., a long-lasting contraceptive made from the membrane that surrounds the ovum of the pig. The same vaccine is being tested on deer in New York, Ohio and Maryland, and on 68 mammal species in zoos. This summer, it will be tried on elephants in South Africa.

Pressure has been building to control animal populations. In some areas, collisions of cars and deer are a serious problem. And a lack of space has forced zoos to euthanize some offspring or sell them to animal dealers. Although African elephants are endangered in some countries, expanding numbers have forced South Africa to cull them.

For some wild species, the best protection could be contraception.

If left unchecked, expanding wild horse herds will damage arid Western rangelands. The Bureau of Land Management has controlled mustang numbers by making thousands of them available each year through an Adopt-a-Horse program, but the effort is costly and new foals quickly replace the horses that have been removed. The bureau has also been stung by accusations that its employees took part in illegal profit-making schemes to divert wild horses in the program to slaughter. A Federal grand jury in Texas is investigating.

Contraception would allow more of the West's 42,000 wild horses and burros to live out their lives in the wild. "This is a whole new approach to managing wildlife," said Jay Kirkpatrick, science director at ZooMontana in Billings and a member of the research team that is testing P.Z.P. on wild horses. The other members are Dr. John Turner, a professor of physiology at the Medical College of Ohio in Toledo, and Dr. Irwin K. M. Liu, a professor of immunology at the University of California at Davis.

In recent trials, helicopters herded mustangs into corrals where mares were separated from the stallions. Initially, each mare got two shots, one with the contraceptive, the other with an equine flu vaccine to prevent disease that might result from the stress of the roundup.

"We can process a horse in four minutes once she's in the processing chute," Dr. Kirkpatrick said. The mares were corralled for another two weeks, then given a second P.Z.P. vaccine. Two inoculations are required the first year. After that an annual booster maintains contraception.

Porcine zona pellucida alters the protein membrane around the female's egg so that sperm cannot penetrate the membrane and fertilize the egg. Normally, molecules on the surface of sperm fit into complementary molecular sites on the membrane, which is called the zona pellucida. Basically, they fit together like a lock and key.

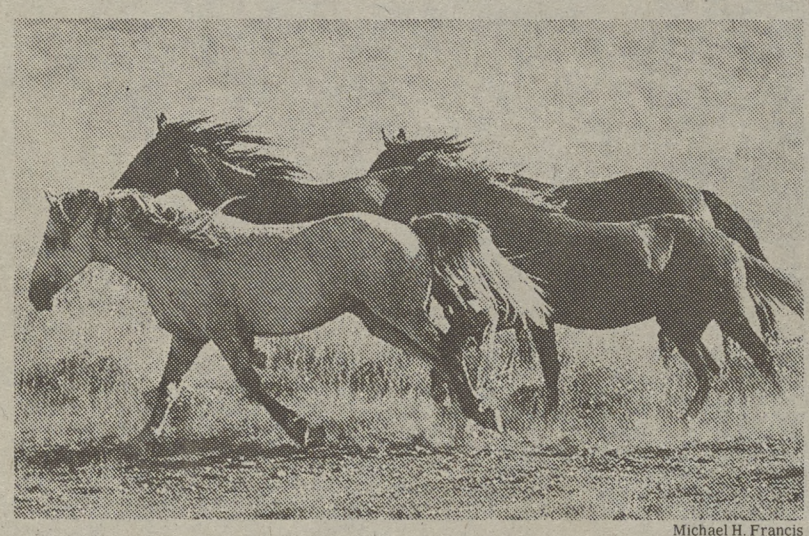
If the lock is altered, the key will not fit and fertilization fails. When the contraceptive is injected into a horse, the foreign substance sets off production of antibodies in the same way polio vaccines created antibodies to attack the polio virus. Some antibodies attach to the biological locks on the zona pellucida and cause the locks to change shape so they will not accommodate the protein keys on sperm.

The pig was selected in part because vaccines made from porcine zona pellucida work on more species than vaccines made from the zona pellucida of other animals.

Porcine zona pellucida is regulated by the Food and Drug Administration, which to date has given only the Humane Society of the United States approval to control wildlife tests. The Humane Society, working with Dr. Kirkpatrick's team, has set strict standards for the tests lest indiscriminate use decimate a species. "One of my greatest fears is mass use of this stuff on coyotes," said John Grandy, the society's vice president for wildlife.

Indiscriminate use could also affect the genetic diversity of a species, which is needed for survival and health. Under the society's guidelines, the vaccine is not used until a wild mare has given birth at least once, Dr. Kirkpatrick said. This preserves genetic diversity within mustang herds, he said.





Michael H. Francis

The vaccine is noteworthy because it does not depend on hormones to prevent conception, as human birth control pills do. Hormonal birth control, which tricks the body so that the female fails to ovulate, is available for animals. But hormonal treatments carry the risk of side effects and have been linked to cancer in lions and other large cat species.

"Any time you manipulate the hormonal system, you're likely to have problems," said Dr. Alex Shivers, a professor of zoology at the University of Tennessee, who helped develop P.Z.P. in the 1970's, potentially as a human contraceptive. The vaccine has not been approved for humans because of concerns that long-term use would cause an irreversible failure to ovulate, but research for human use is continuing.

As wild horse herds like Springs, Wyo., bunch b tiply, contraceptives offe population control. Abo F. Kirkpatrick, science d ZooMontana, darting a v on Assateague Island, V continuing contraceptive the method was first teste

Hormonal systems for h a second drawback; mo frequent treatments. Hor traceptives similar to No long-term human birth c plant, have been tried on they did not work. Porcin lucida works for a year at Dr. Kirkpatrick and his are trying to modify the v will last longer.

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The next year testin white-tailed deer at the National Seashore on

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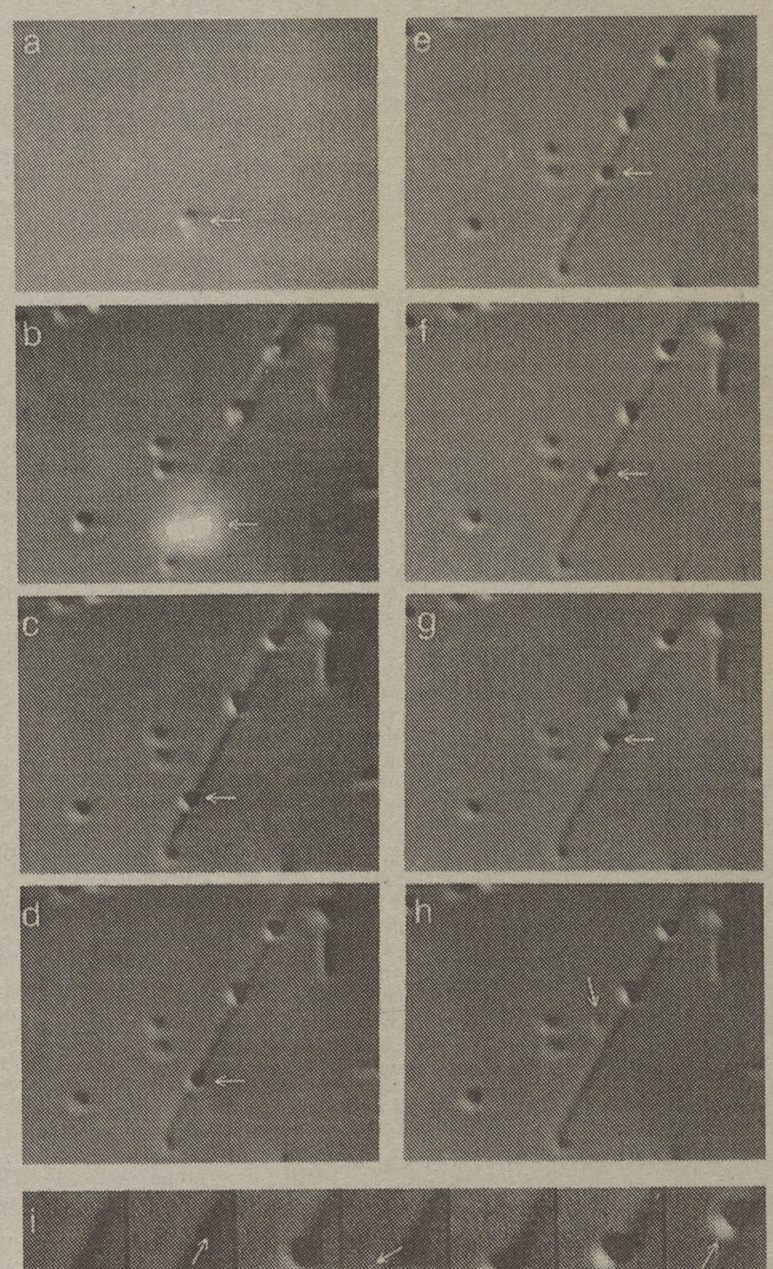
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Molecular Biomechanic at Princeton Tweaks Nature's Tiniest Motors



Andrea Mohin/The New York Times

Dr. Steven Block between two post-doctoral fellows, Dr. Michelle Wang and Dr. Koen Visscher, in biophysics laboratory at Princeton.



Dr. Steven Block/Princeton

A molecular motor called kinesin slides along microscopic tracks in cells, called microtubules. The mechanism transports proteins, just as a microscopic bead is transported in the videotaped experiment shown above. A laser deposits the bead, keeping it on track until it diffuses out.

Continued From Page B7

they "are almost unimaginably small; they are measured in piconewtons." A piconewton, he explained, is roughly the force that a single red blood cell would exert on a scale if it was plucked out of the bloodstream and weighed.

The machinery for measuring these forces is so sensitive that the investigators must work in a double-walled room, insulated from any sounds or vibrations from outside. They cannot talk while they work because vibrations from the human voice could disrupt the measurements.

"This research is not necessarily dedicated toward finding cures for disease, but to answering something that is truly fundamental: how do living things move?" Dr. Block said. "When you ask, Why do we study biology? you are really asking, What does it mean to be alive? What's the difference between us and a rock?" He added that "the answer you learn in high school is that living things respond to stimuli, they reproduce, and they move" — and motion, he said, involves molecular motors.

"Everything that's alive has these motors," Dr. Block said. "Even the simplest cells are capable of motion. Cells divide, but they need motors to split their chromosomes and separate. If you put them on a cover slip, they can crawl around. They can contract." But even though biological motion is central to life itself, it remains an abiding mystery, he said.

To understand a molecular motor, Dr. Block said, "you need to know three things: what does it look like, what reaction is it catalyzing, and what is the physics — what, literally, is it doing?"

His passion is to understand the physics.

In the initial experiments by Dr. Block and his colleagues, they simply measured forces and displacement, asking, for example, how hard must the enzyme that copies DNA push to make its way through the DNA molecule? Now they are measuring the relationship between force and velocity, which, Dr. Block said, "diagnoses the kind of motor you have."

An electric blender starts off at maximum force, but the force diminishes as it proceeds to its maximum speed. That is why, Dr. Block said, "you chop ice cubes by turning your blender on and off." A car motor is very different. Its maximum force is reached at 5,000 to 6,000 revolutions per minute, which is why cars have transmissions, to keep the number of revolutions near the optimal, Dr. Block said.

For the molecular motor that pulls proteins down microtubules, the force-velocity relationship is a straight line, like none of the known motors, Dr. Block said. "In and of itself, that doesn't tell you a lot," he said, "but if you have a model for how it works, it had better predict the force-velocity relationship. That is a very stringent constraint."

At age 43, Dr. Block has found his niche. He lives within walking distance of his lab, and he loves his work so much, he says, that he cannot tear himself away for very long, showing up regularly in the evenings and on weekends. "I go home for dinner, but then I come right back," he said. With no children and a wife who is working most of the time, Dr. Block has few urgent reasons to leave the lab. His wife, Kathleen Beasley, is a librarian, working at two jobs about an hour's drive from home.

Dr. Block says his father, Martin, was a particle physicist, and he grew up as a particle physics brat. Such children move frequently, like military brats, as their parents go from accelerator to accelerator to do their experiments.

"I've lived almost everywhere in the world where there were particle accelerators: Geneva; Brookhaven; Evanston, Ill.; Aspen, Colo.," Dr. Block said. "I grew up with physicists. I grew up in academia.

"In some ways, it was difficult," he said. "I didn't have long-term childhood friends." But he said, "In other respects, it was magnificent."

As an undergraduate at Oxford University in England, Dr. Block studied physics. It seemed a natural choice. But he said, "In my last year there, I knew I didn't want to do physics." As he saw it, he would have had to join one of two groups of physicists: particle physicists, like his father, who work in huge teams of 200 or more, where he would be "a little cog in a big machine," he said, or theoretical physicists, whom he called "prima donnas."

Dr. Block wrote to physicists who had become biologists to ask for advice. One who responded was Dr. Max Delbrück, a developer of quantum mechanics who had switched from theoretical physics to fundamental laboratory studies of bacteria and viruses. He won a Nobel Prize for this work in 1967.

Dr. Block said Dr. Delbrück "was responsible for an entire generation of people getting into molecular biology, especially physicists." So when Dr. Delbrück replied to Dr. Block and suggested that he go to the Cold Spring Harbor Laboratory on Long Island for the summer to "see if you're any good," Dr. Block did not hesitate. "I was excited beyond belief," he said.

After the summer was over, Dr. Delbrück suggested that Dr. Block go to the California Institute of Technology, where Dr. Delbrück was a professor, and work in his lab. But Dr. Delbrück said he did not have any money to support Dr. Block in the lab.

Dr. Block responded that he would gladly support himself out of his savings, but Dr. Delbrück would not hear of it. Instead, he gave a series of lectures in Europe and donated his honorariums to the "Steven Block Fund," which he established to pay for Dr. Block's year in his lab.

Dr. Delbrück urged Dr. Block to go to the University of Colorado to study for a Ph.D. in biology with another eminent biologist and former physicist, Dr. Howard Berg. He wound up following Dr. Berg to Caltech, then to the Rowland Institute for Science in Cambridge, Mass.

It was at the Rowland Institute, almost as soon as they arrived, that Dr. Berg and Dr. Block developed an essential tool of their work, a device for gripping a single molecule in a beam of laser light. They saw a paper by Dr. Arthur Ashkin, a physicist at AT&T Bell Laboratories who had the idea that since light exerts a force, albeit an extremely feeble one, it might be possible to harness that force to trap small particles, like viruses. The force, called a gradient force, pulls objects to areas where light is brighter. Dr. Ashkin found that he could trap viruses and bacteria with his optical tweezers but did not pursue the biological applications.

Dr. Berg realized that he had the perfect opportunity to leap on this discovery. At the Rowland Institute, started by Dr. Edwin Land, the founder and former chairman of the Polaroid Corporation, scientists were encouraged to try wild and unusual experiments. "Land did not allow anyone to have research grants," Dr. Berg said. "He felt that if you can persuade someone else to give you money, then you are working on something that is too easy or too fashionable. He gave us lots of technical support and very little red tape."

So when Dr. Berg said he needed a $5,000 laser to build molecular tweezers, "I got permission in a few hours," he said.

The first experiments by Dr. Berg and Dr. Block were with bacteria, which propel themselves through liquids by twisting their tails. The idea was to stick a bacterium's tail to a glass slide and to grasp the bacterium at its other end with optical tweezers. The investigators wanted to know, Dr. Berg said, "how flexible was the tether — what were the springs like in the machine?" So they twisted the tethered cell and watched to see how it sprang back.

Next Dr. Block moved on to study single molecules of the protein called kinesin, which had been discovered just a few years before, in 1985.

Kinesin was first found in nerve cells, where it was found to fill a crucial need, explained Dr. Jeff Gelles, a biochemist at Brandeis University who collaborates with Dr. Block. "It's very clear that neurons have a problem," Dr. Gelles said. "In your body, the nerve that signals you to wiggle your big toe has one end in your spinal cord and the other end in your foot. The cell is almost a meter long, but it is only about a micrometer wide, so it is a million times longer than it is wide. It's an extremely narrow pipe." The problem, he said, is that all the proteins that are needed to run the cell's metabolism are made at one end, at the spinal cord. But many of these proteins are needed at the other end of the cell.

"So these cells evolved a little transport system," Dr. Gelles said. They wrap a protein up in a membrane, then hook the protein to a kinesin molecule. The kinesin rolls along microtubule tracks, tugging its cargo.

Since then, molecular biologists have found a large family of kinesin-like molecules that move proteins around in all types of cells and that also pull chromosomes apart when cells divide.

Now, Dr. Gelles said, "we'd like to open the hood of this enzyme, which is a little molecular machine that does basically the same thing as the engine in a car: it burns fuel; it hydrolyzes it." He added, "We'd like to understand how this engine works."

Dr. Block realized that he could use optical tweezers to learn how powerful the engine is. Two years ago, he accepted a position at Princeton, where he, Dr. Gelles, Dr. Robert Landick of the University of Wisconsin and their colleagues set up a tug-of-war between a DNA strand and the enzyme, RNA polymerase, that travels along the DNA to copy it.

Kinesin molecules will move tiny plastic beads as well as proteins, so they had a kinesin molecule pull a plastic bead along a microtubule track, then used molecular tweezers to pull the bead in the opposite direction. That enabled them to find out how much force was being exerted by the kinesin engine.

They found that the RNA polymerase motor, with a force approaching 14 piconewtons, was the strongest one ever discovered — three or four times as powerful as kinesin and five times as strong as myosin, which is used in muscle movement.

They also found that the enzyme moved slowly along the DNA. "It's built like a snowplow, not like a Porsche," Dr. Block said. The enzyme deliberately pushes its way along the twisted and coiled DNA, shoving aside proteins that are in its way.

That is only the beginning for Dr. Block, who is working on new experiments with molecular motors as well as a plan to bring the sequencing of DNA to a very small scale: one DNA molecule. The molecule would be held in place at one end with molecular tweezers while enzymes nibbled away at the other.

It is, Dr. Block said, like the stuff of science fiction. He continues to be amazed every time he goes into his lab, and that is what drives him, he said, adding, "You never lose that sense of awe."

A scientist asks a basic question: 'How do living things move?'

60-Foot Gun Makes Hydrogen Into a Metal

Continued From Page B7

Livermore, a Federal laboratory financed by the Department of Energy and originally devoted chiefly to the design of nuclear weapons, conducts high-pressure research partly to further the development of hydrogen fusion as a source of power. The fusion scheme pursued by Livermore entails the shock compression of hydrogen isotopes, deuterium and tritium. The compression is achieved by bombarding tiny hollow spheres with powerful laser beams, vaporizing and imploding them, thereby compressing the hydrogen sealed within their hollow cavities. The goal is to compress the hydrogen to such an extent that its temperature rises to stellar levels and a sustained fusion reaction begins.

Since the late 1970's, scientific teams at the National Bureau of Standards (now the National Institute of Standards and Technology), Cornell and Harvard Universities, the Carnegie Institution's Geophysical Laboratory in Washington and other organizations have sought to metalize various substances by squeezing them in hydraulic presses between the faces of diamond "anvils." Although several laboratories have succeeded in metalizing xenon gas and a few other substances, the metallization of hydrogen remained elusive, even though theorists predicted in 1935 that it might be possible.

Some tentative claims to having metalized hydrogen by using diamond-anvil presses, including one in 1989 by Dr. Ho-kwang (David) Mao and his colleagues at the Carnegie Institution, were judged to be premature because supporting evidence proved to be inconclusive.

But for nearly two decades, scientists at Livermore have been developing a different approach to reaching pressures high enough to metalize hydrogen. They have built various special guns to fire high-speed projectiles at containers of hydrogen, briefly subjecting the hydrogen to pressures several million times as great as the pressure of Earth's atmosphere at sea level.

This time, experts say, the evidence from Livermore is convincing.

"The Livermore experiment is very important work," Dr. Mao said in an interview. "They still lack good measurements of their pressures and temperatures, but it is very interesting."

Livermore's experiments used a powerful device called a two-stage light gas gun. In the first section of the gun, some 30 feet long, a gunpowder explosion blasts a piston from one end to the other. The piston drives hydrogen gas ahead of it, and the hydrogen reaches a very high pressure before bursting a disk at the far end. The pressurized hydrogen then enters a much thinner "launch tube," driving before it a projectile made of plastic and metal. This type of gun has fired projectiles at speeds up to nine miles per second.

The metallization of hydrogen using this gun became possible because of a trick the Livermore team devised for limiting the rise in temperature of hydrogen while it is being shock-compressed. The scientists designed and built a special sandwich that has aluminum plates on the outside, rigid plates of synthetic sapphire within the aluminum plates, and finally, a cavity, chilled to minus 423 degrees Fahrenheit, to hold the liquid hydrogen. The idea was to create an environment in which a shock wave created by the impact of a projectile from the gun would reverberate back and forth in the target cavity some 10 times, raising the pressure with each pass but raising the temperature much less than would be the case with a single shock.

Although the temperature of the hydrogen in the compression cell rose to several thousand degrees, it remained cool enough to hold together in the form of ordinary hydrogen molecules, each with two linked hydrogen atoms, not as isolated hydrogen atoms in an electrically charged plasma.

A disadvantage of shock-compression experiments is that measurements must be lightning fast. Pairs of electrodes must measure the drop in electrical conductivity in a sample of hydrogen in about one ten-millionth of a second. The pressure then falls rapidly, and any new substance created by the shock is likely to disappear instantly.

Dr. Nellis says he has no idea whether it will ever be possible to recover a piece of metallic hydrogen from a shock-compression chamber.

For decades, scientists have speculated that metallic hydrogen might be able to survive at ordinary pressures and that it might have some very useful properties. In particular, it might be a room-temperature superconductor, a substance that could conduct electricity without resistance. Unlike ordinary superconductors, which must be chilled to temperatures near absolute zero (minus 459.67 degrees Fahrenheit), metallic hydrogen might remain a superconductor without the need for an expensive cryogenic apparatus.

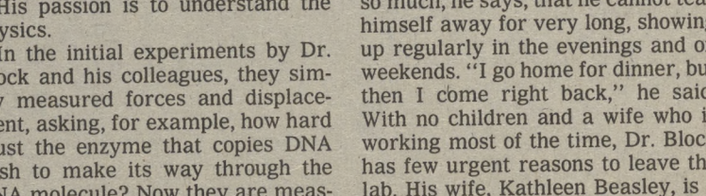
A room-temperature superconductor could lead to loss-free electrical power lines, to storage rings that could contain huge electrical currents until needed and to magnetically levitated and propelled railroad trains.

Metallic hydrogen might be chemically similar to the group of elements called alkali metals, which include lithium, sodium and potassium.

"It might even be silvery," Dr. Nellis said, "but I'm not going to make any guesses about it until I get a piece of it in my hand, and that may be never."

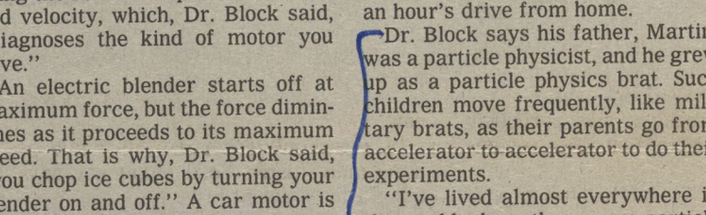
Jupiter and Metallic Hydrogen

Scientists have discovered that they can make hydrogen behave like a metal at a much lower pressure than previously thought.



This finding suggests a new model for the makeup of the planet Jupiter, with much more of the interior composed of metallic hydrogen, helping account for Jupiter's gigantic magnetic field.

A New Way to Make Metallic Hydrogen



In a 60-foot, two-stage gas gun, the piston, driven by gunpowder gas, compresses hydrogen to drive a projectile. For a fraction of a second, hydrogen target becomes metallic and conducts electricity.

Source: Lawrence Livermore Laboratory

The New York Times

PERSONAL COMPUTERS

Spy Vs. Spy Internet Adventures

By STEPHEN MANES

A classified alert, Chief, from your loyal Analyst Second Class: the Internet may indeed be crawling with would-be spies. Spycraft: The Great Game (Activision Inc., about $50), which comes on three CD-ROM's and demands up to 45 megabytes of hard disk space, also includes an optional link to the World Wide Web.

A Macintosh edition should be available this week. The version I tried runs on DOS or Windows 95 only, and installing it is not pretty. The DOS instructions run to 14 pages and include sentences like this: "You might also try disabling SMARTDRV, changing your CONFIG.SYS and AUTOEXEC.BAT so that some of your drivers are loaded into conventional rather than high memory or setting your EMM386 line to NOEMS."

While cryptographers grappled with this impenetrable code, we installed the Windows 95 version. Eight instruction pages urged us to do things like disable the "Always on Top" setting of the Taskbar, thereby rendering it virtually useless.

Mysterious "DirectX video drivers" are required, and many are supplied. Like other products using this Windows 95 technology, Spycraft blithely disabled the video driver we had previously installed, along with other software that runs only with it. I believe, Chief, that this sort of thing is not uncommon in the world of Windows software.

Installing the on-line component was no simpler, but our crack technicians appear to have solved the problems. They inform me that these games are tricky enough without involving the ever-undependable world of on-line communications, but you know how they are always angling for promotions.

•

Publicity materials for the program play up a "historic collaboration between previous adversaries William Colby, former director of the C.I.A., and Oleg Kalugin, former major general of the K.G.B." Mr. Colby makes brief appearances as himself, offering advice like "Trust no one." I did not actually finish the game, but an Activision spokesman insists Mr. Kalugin does appear. Once.

Fortunately, Chief, the game can stand on its own. Spycraft thrusts you into the role of Thorn, a C.I.A. operative destined to deal with more characters and plot twists than you are likely to find in an airport rack of spy novels. On the eve of signing a disarmament treaty with Russia, the President of the United States appears to be the target of an assassination plot that has already claimed a candidate in the Russian presidential race. Nuclear terrorism, high-tech weapons, the Russian Mafia and a cabal of former spies appear to be involved. With the help of several

Appearances by former directors of the C.I.A. and the K.G.B.

C.I.A. operatives, their Russian counterparts and a collection of high-tech tools, you must unravel the mystery and, presumably, save the world. I did not get quite that far.

The program uses just about every technique available to interactive multimedia, from video to animation, along with new wrinkles like using a Web-browser design for much of its user interface. That helps, but Spycraft also uses other interfaces that are often inconsistent internally and with one another, an almost universal failing in the adventure-game world.

Particularly annoying is Intelink, the on-screen Personal Digital Assistant that welcomes you audibly every time you use it. If we actually had anything that lame here, Chief, Congress would be right to defund it. And moving from one location to another involves much time-wasting repetition in a game that may already take longer than a performance of Wagner's Ring Cycle.

But then, the Ring is not interactive, except in avant-garde performances where audiences are encouraged to hurl zucchini thunderbolts at Wotan. Spycraft is intereactive, and is particularly effective with the "tools" you use to gain information. The odiously named Kennedy Assassination Tool (KAT for short) lets you plot a bullet's trajectory backward and digitally enhance a photo of the area where the bullet came from. Other tools can fake photographs, discover patterns in seemingly meaningless data and decode everything but DOS commands. But the poorly designed sound analysis tool can trip you up unnecessarily.

Your interaction can be poignantly uncomfortable, as when you eavesdrop on a series of phone calls that reveal nothing more than one suspect's bad news from his doctor. It can also be humorous, as when you must wade through a series of on-line messages that gently mock the typical newsgroup's blend of sincerity, arrogance and irrelevance. But interactions between you and on-screen characters are limited to choosing among no more than three responses, and sometimes you have no choice at all.

There are also weapons and blood, not to mention lies and expletives. The installation program declares, "The scenes which graphically depict the use of torture may be disturbing to some players," and offers to bypass them. I suspect children raised on horror films will consider this a challenge, not a warning.

Spycraft's on-line features are not meant for head-to-head playing over modems or networks, but can automatically download daily updates of events in its fictional world. Links within the program lead to its Web site, with chats, bulletin boards and conferences, and to real Web sites involving spying and security.

Which brings me to my original point, Chief. With all those amateur spies out there, we might want to double-check our firewalls.

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Author Archie Satterfield, former journalist

OBITUARY |

BY SUSAN GILMORE
Seattle Times staff reporter

When Archie Satterfield decided he wanted to write a book about canoeing on the Yukon River, he packed up his wife and four small children and headed north.

He was "totally fearless about taking us places," said Mr. Satterfield's son, Scott. Scott took the same canoe trip on the Yukon with his father in 2003. "At the time, I was the same age as he was when we did it with him. He had four kids. I had one elderly father."

Mr. Satterfield, a former journalist and author, died Nov. 21 from a stroke after surgery in Bellingham. He was 78.

Mr. Satterfield worked for both The Seattle Times and The Seattle Post-Intelligencer before he retired to write full time. He wrote 40 books,

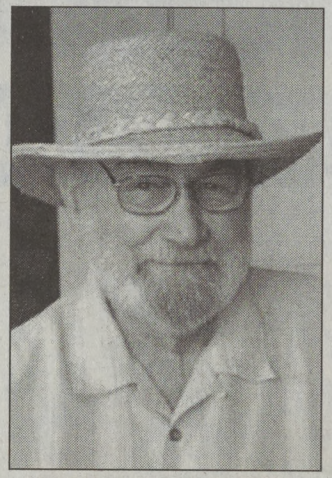


PHOTO COURTESY OF FAMILY

Archie Satterfield died from a stroke after surgery on Nov. 21 in Bellingham. He was 78.

many set in Alaska. They include books on the Chilkoot Pass, Klondike Park, the Yukon River and back roads in Washington state.

In recent years, Mr. Satterfield divided his time between Washington and Arizona. He was living in Oak Harbor at the time of his death.

Mr. Satterfield loved to travel and lived five years in France, his son said. To celebrate his 75th birthday, he rented a villa in the south of France and invited his close friends. About a dozen showed up.

Among them was City Councilwoman Jean Godden, a former journalist and close friend from Mr. Satterfield's days at the P-I. .

She considered Mr. Satterfield her mentor at the newspaper. "He was a marvelous friend," she said. "He had this wanderlust, always off to some strange, outlandish place. He was a great, big guy, but gentle."

Nancy Erickson also met him at the P-I.

"He was one of the most generous kind of friends we ever had, a real special guy," Erickson said. "How many friends rent a villa in the south of France and say, y'all come?"

Mr. Satterfield hosted a party at his house the day before he went in for surgery, she said, but he didn't tell anybody about it, believing it was minor.

Born in Howards Ridge, Mo., Mr. Satterfield joined the Navy in 1952.

After the Navy he attended St. Louis University and the University of Missouri before getting a summer job on a wheat farm in Washtucna in Eastern Washington.

He graduated from the University of Washington with a degree in English and worked for a string of newspapers: the Seaside Signal in Oregon, the Longview Daily News, The Seattle Times and The P-I.

He left the Post-Intelligencer in 1980 to start a new regional magazine, Northwest Living, and in 1987 he became a full-time freelance writer, specializing in history and travel.

Mr. Satterfield also wrote corporate histories for Alaska Airlines, Crescent Foods, Darigold and Tillamook Cheese.

Roy Edenholm knew Mr. Satterfield from his UW days and hired him at The P-I. He said Mr. Satterfield always considered himself a writer.

"I get a job as a copy boy at The P-I and Archie goes to the Seaside Signal. Before I know it, he's written his first book, on the Columbia. Here I am dinking around with carbon paper, and he already has a book published!"

He said Mr. Satterfield also loved bad puns. Once, when he was living in a house on Capitol Hill with small stone lions on the front steps, he told Edenholm that he'd found a newsboy sitting on the top step reading a newspaper.

"So what?" asked Edenholm.

"He was reading between the lions," Mr. Satterfield replied.

In addition to Scott Satterfield, Mr. Satterfield is survived by three daughters, Cassie Sheehan, of Ollala, Kitsap County, Erin Hansen, of Baker City, Ore., and Sarah Archer, of San Diego; and one brother Wayne Satterfield, of Denver.

Scott Satterfield said his father didn't want a funeral service, so a party in his honor is being planned.

In lieu of flowers, the family suggests donations to either the Authors Guild's "Authors League Fund" (*authorsleaguefund.org*) or the Whatcom Hospice Foundation, 2901 Squalicum Parkway, Bellingham, WA 98225.

Susan Gilmore: 206-464-2054 or sgilmore@seattletimes.com

The Seattle Times

seattletimes.com/localnews | NOVEMBER 30, 2011 B

NW WEDNESDAY

RECIPES>SPAGHETTI, MEATBALLS AND MERLOT-MARINARA SAUCE>B9

Late bar hours slowed by transition to I-1183

STATE LIQUOR BOARD SAYS PRIVATIZATION IS PRIORITY

Seattle's request to wait, but late-taxi stands are up

BY LYNN THOMPSON
Seattle Times staff reporter

Seattle Mayor Mike McGinn's proposal to let bars stay open later will be delayed by the state's transition to private liquor sales and distribution.

Speaking at a news conference Tuesday in Fremont to announce the addition of five late-night taxi stands to help bar patrons get home safely, McGinn said the state Liquor Control Board's rule-making process likely would extend beyond the typical 60-day timeline to consider new proposals.

"They've got a big workload now. It's a high priority for them to deal with the new rules" for privatization, McGinn said. But he added that the board assured him it would still take up Seattle's request.

In July, Seattle officials including McGinn, the City Council, City Attorney Pete Holmes and Police Chief John Diaz asked the state to change its policy that requires liquor service to end at 2 a.m. They asked that local jurisdictions have the authority to set their own

See > RIDES HOME, B13



ERIKA SCHULTZ / THE SEATTLE TIMES

Seattle Mayor Mike McGinn, right, and Peter Hanning, owner of the Red Door and president of the Seattle Nightlife and Music Association, discuss the city's late-night taxi stands Tuesday in Fremont.

OBITUARIES

Peter Yates, Filmmaker, Is Dead at 81

By BRUCE WEBER

Peter Yates, a British-born director whose best-known films were well-observed tales of Americana, including the car-chase cop thriller "Bullitt" and the coming-of-age, bike-race comedy "Breaking Away," died on Sunday in London. He was 81.

The cause was heart failure, his wife, Virginia, wrote in an email message forwarded by Mr. Yates's agency, Judy Daish Associates.

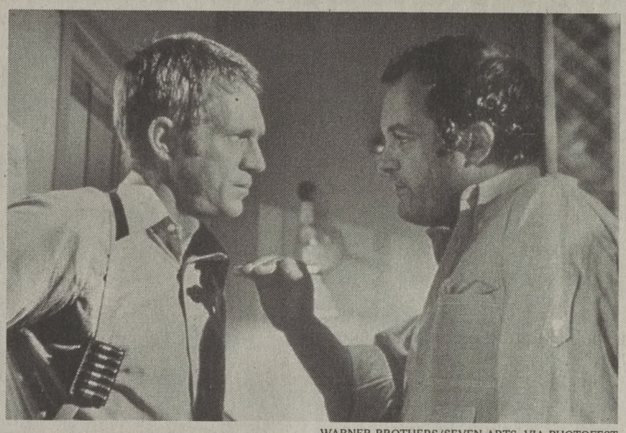
Mr. Yates was nominated for two Academy Awards for directing, for "Breaking Away" (1979), an underdog-triumphs story in which four local teenagers in Bloomington, Ind., take on a privileged team of bicycle racers from Indiana University; and for "The Dresser" (1983), an adaptation of Ronald Harwood's play about an aging theater actor and his long-serving assistant, which starred Albert Finney and Tom Courtenay. (Both films, which Mr. Yates also produced, were nominated for best picture as well.)

Still, Mr. Yates's reputation probably rests most securely on "Bullitt" (1968), his first American film — and indeed, on one particular scene, an extended car chase that instantly became a classic. The film stars Steve McQueen as a conscience-stricken lone-wolf San Francisco detective, and the chase begins with him behind the wheel of a Ford Mustang in a slow, cat-and-mouse pursuit of killers who were in a Dodge Charger. It escalates into high-speed screeches and thuds on city streets and ends in a fiery blast on a highway.

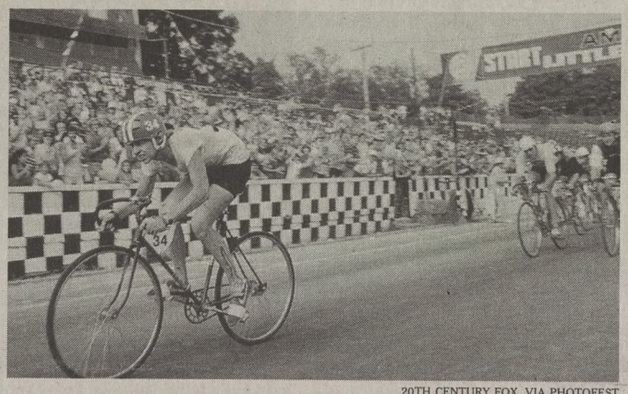
The chase, often paired in discussion with a New York City counterpart from William Friedkin's "French Connection", featured McQueen doing his own driving: a camera placed in the car and peering out the windshield registers the violent shifts in the driver's perspective as the car bounds in chassis-challenging fashion over San Francisco's famous hills.

Mr. Yates's grasp of the American landscape and American characters stretched from coast to coast. He directed Robert Mitchum as a small-time hood desperate to avoid jail time in the low-key crime drama "The Friends of Eddie Coyle" (1973), set in and around Boston; it was especially attentive to the local color and local accents of the George V. Higgins novel on which it was based. Among his New York-based films were "For Pete's Sake" (1974) — a gag-laced farce set in Brooklyn involving the Mafia, a call-girl operation, cattle rustling and the brassy woman (Barbra Streisand) who gets mixed up in it all — and the 1983 suspense thriller "Eyewitness," set in Manhattan, starring Sigourney Weaver as an ambitious television reporter following a murder story and William Hurt as an informant who may or may not be reliable.

"Breaking Away" and "Eyewitness" were both written by Steve Tesich, a Yugoslavian immigrant with whom Mr. Yates shared a shrewd appreciation of details that perhaps only foreigners might determine were peculiarly American. (Mr. Yates also directed an Off Broadway play by Mr. Tesich, "Passing Game," in 1977.)



WARNER BROTHERS/SEVEN ARTS, VIA PHOTOFEST



20TH CENTURY FOX, VIA PHOTOFEST

Above, Dennis Christopher in "Breaking Away" (1979), a movie by Peter Yates that addressed class in America. Top, Mr. Yates, right, on the set of "Bullitt" (1968) with Steve McQueen.

"Breaking Away" starred four actors who were unknown at the time (one was Dennis Quaid). They played local Bloomingtonites — or, as they were disparagingly known, "Cutters" — who lived in resentment of the rich college students annually invading their hometown. Mr. Yates and Mr. Tesich used them to illustrate American attitudes toward class, education, upward mobility, romance and athletic success.

An Englishman who created two American classics, 'Bullitt' and 'Breaking Away.'

The film, wrote Vincent Canby in The New York Times, "is so cheerful it almost hurts, but its cheerfulness is grounded in a true appreciation of certain so-called American values (pluck, perseverance, family ties) which, though idealized more often than honored, are a part of the way we see ourselves."

Peter James Yates was born in England on July 24, 1929. Most sources say his birthplace was Aldershot, Hampshire, about 40 miles southwest of London, although his wife said in an email that it was the village of Ewshot, which is closer to the city. His father was in the military.

He attended the Royal Academy of Dramatic Art in London, and he worked as an assistant director for, among others, Jack Cardiff, on "Sons and Lovers" (1960)and Tony Richardson on "A Taste of Honey" (1961). It was a 1967 film, "Robbery," based on the 1963 English heist known as the Great Train Robbery, that impressed Steve McQueen and earned him the assignment to direct "Bullitt."

Mr. Yates's career was marked by a willingness to skip from genre to genre, and for a director with so many significant hits, he had an up-and-down career. Among his other titles, not all well-received, were "John and Mary" (1969), about an anonymous tryst that leads to love, which starred a youthful Dustin Hoffman and Mia Farrow; "Murphy's War" (1971), a historical drama about a sailor (Peter O'Toole) bent on avenging the sinking of his ship by a German U-boat; "The Deep" (1977), an undersea thriller with Jacqueline Bisset, Robert Shaw and Nick Nolte; "Krull" (1983), a science fiction adventure, and "Eleni" (1985), an adaptation of the memoir by Nicholas Gage about his search for the Communists who executed his mother during the Greek civil war.

Mr. Yates married Virginia Sue Pope, a New Zealander, in 1960. She survives him, as do their son, Toby, of Los Angeles, daughter, Miranda Yates Brassel, of Brooklyn, and two grandchildren.

SHOOTING IN ARIZONA

At Victim's School, Shock, Sorrow and Nigh

By JENNIFER MEDINA

TUCSON — For the children at Mesa Verde Elementary School, the questions are endless. First, they asked, again and again, why would a stranger kill Christina Green, who had attended school here since kindergarten? Then, some asked quietly, would that man come back to try to shoot them, too? And is it still safe to go to the supermarket?

As classes at Mesa Verde resumed for the first time since the shooting on Saturday that killed six people, including 9-year-old Christina, the school grappled with how to talk about the tragedy with the young students here. Many of them have never known anyone who has died. Now, one of their own had been killed — a loss that was difficult for many adults to deal with.

In the two nights since the shooting, nightmares had already interrupted sleep for many of the children — images of puppies suddenly dying, mothers crossing invisible lines and abruptly disappearing, or somebody coming to kidnap their friends in the middle of the day. The impact was raw and deep. Some children screamed and sobbed inconsolably, while others were stoic, promising their mothers that, yes, they understood, and, no, they did not need to talk.

They brought their stuffed owls and friendship bracelets and flowerpots as offerings for the growing memorial to Christina that lined the fence at the school. And her third-grade classmates hugged one another tightly in the yard before classes began.

"Are you sure you're O.K.?" one asked a group of friends. "My mom said it's O.K. to be sad."

Kayley Clark, a classmate who had been friends with Christina for years, said, "I just feel shocked and very, very sad. She was very, very smart and very, very nice. She was such a fun person, and I really wish she could come back."

Many students were already chattering about ways they could honor Christina. Could they name a local park in her memory? Or perhaps a baseball field, a tribute to the game she loved? Could they try to be more helpful to other students, as they had seen her do?

As parents escorted their children to class just after dawn, a few said they were worried about what their children would hear about the attacks, but many more said they felt a sense of relief that somebody else could help their children grieve.

And parents were mourning not only the death of a bright and popular young student, but also a sense of innocence for their children.



Rachel Cooper-Blackmore contributed to a memorial for Christi

A deadly attack that tests the resilience of children.

Tamara Clark, Kayley's mother, said that when she told her daughter that Christina was the young girl killed on Saturday, she immediately burst into tears. Then, there was silence. Hours later came the anger "in a way I have never seen," Ms. Clark said.

"She would say over and over that she hated the guy who did it," Ms. Clark said. "'Hate' is a word I never really heard her use before."

With fewer than 400 students at the school, nearly every child had at least seen Christina on the playground or at student council or with a tutoring program where she volunteered.

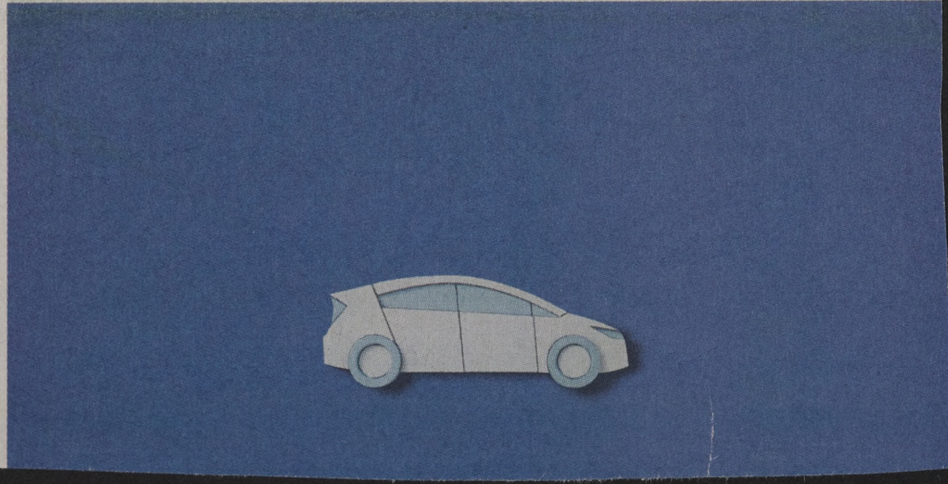
A team of psychologists arrived at the school early Monday, preparing to stay all week. Teachers began the day by telling students that the school was "like one big family, and we are all here to support each other in this time." With that, students were encouraged to share memories of Christina in class.

"They told them it's fine to be happy when you think about Christina and it's fine to feel sad," said Christine Parrish, whose 8- and 9-year-old daughters had known Christina for most of their lives.

School officials were trying to make the day stick to a normal schedule, although the circumstances were anything but.

"This is a multifaceted tragedy for this community," said Vicki Balentine, the superintendent of the Amphitheater Public Schools district. "We want to give them space to do whatever we need to be supportive. And at the same time, we have to move forward."

One class gathered in the



March 14, '11

Joe Morello Is Dead at 82; Brubeck Quartet Drummer

By STEVE SMITH

Joe Morello, a jazz drummer whose elegant, economical playing in the Dave Brubeck Quartet sounded natural and effortless even in unusual time signatures, died on Saturday at his home in Irvington, N.J. He was 82.

His death was announced on his Web site, joemorello.net. No cause was given.

Mr. Morello was most famous for his tenure in Mr. Brubeck's band, in which he was engaged initially for a brief tour in 1955. He became a member in late 1956, and remained until the group disbanded at the end of 1967.

Already popular for its work on college campuses during the 1950s, Mr. Brubeck's group reached new heights with Mr. Morello, who handled with disarming ease the odd meters that Mr. Brubeck began to favor. In June 1959, Mr. Morello participated in a recording session with the quartet — completed by the alto saxophonist Paul Desmond and the bassist Eugene Wright — that yielded "Kathy's Waltz" and "Three to Get Ready," both of which intermingled 3/4 and 4/4 time signatures.

Less than a week later the quartet recorded Mr. Desmond's "Take Five," a breezy composition in 5/4, with an airy solo by Mr. Morello over a rigid vamp on piano and bass. The track became one of the most recognizable themes and most successful singles in jazz, selling more than a million copies and reaching No. 25 on Billboard magazine's Hot 100 chart in 1962. Those pieces, and others like "Blue Rondo à la Turk" and "Strange Meadowlark," were featured on Mr. Brubeck's most famous album, "Time Out."

Before working with Mr. Brubeck, Mr. Morello had played with the guitarist Johnny Smith, the saxophonist Gil Melle and, briefly, Stan Kenton's big band. From 1953 to 1956 he played in the pianist Marian McPartland's trio, which worked frequently at the Hickory House nightclub in New York.

During Mr. Morello's engagement with Ms. McPartland, Mr. Desmond urged Mr. Brubeck to hear the drummer, Mr. Brubeck said in an oral history recorded for the Smithsonian Institution in 2007.

"He was playing brushes," Mr. Brubeck recalled in the interview, "and Paul just loved somebody that played brushes and didn't interrupt with some hard licks with sticks and clashing cymbals." In need of a substitute drummer, Mr. Brubeck approached Mr. Morello.

Mr. Morello's reply, according to Mr. Brubeck: "I'm interested in your group, but your drummer's out to lunch. I want to be featured." By this, Mr. Brubeck said, Mr. Morello meant that he wanted to be allowed to play solos and experiment.

After the quartet disbanded Mr. Morello primarily worked as a drum clinician and teacher. His students included Jerry Granelli and Danny Gottlieb, both notable jazz drummers, and Max Weinberg, the longtime drummer for Bruce Springsteen and the former bandleader for "Late Night With Conan O'Brien."

But Mr. Morello yearned for the bandstand. "I'm tired of saying to some student, 'This is a stick.'" he told The New York Times in 1973. "I want to get out and play again."

A percussionist who wanted to play solos and experiment.

Play again Mr. Morello did. He performed sporadically in the 1970s and '80s, including reunions with Mr. Brubeck in 1976 and 1985. During the 1990s Mr. Morello led his own group, which featured the saxophonist Ralph Lalama.

Joseph A. Morello was born in Springfield, Mass., on July 17, 1928. Sight-impaired from an early age, he took up the violin at 6 and performed Mendelssohn's Violin Concerto in E minor with the Boston Symphony Orchestra three years later. According to a biography on his Web site, Mr. Morello gave up the violin for drums at 15, after meeting his idol, the violinist Jascha Heifetz.

Information on survivors was not immediately available.



The Dave Brubeck Quartet in 1959, from left: Paul Desmond, Eugene Wright, Dave Brubeck and Joe Morello.

Manchester United's

ROB HUGHES
ON SOCCER

LONDON

When the da Silva twins were 11, they watched on television at home when Brazil's captain, Cafú, lifted the 2002 World Cup in Yokohama, Japan.

"One day, it will be you two," their father said. At age 15, Rafael and Fábio da Silva lived and trained with their nearest big club, Fluminense, in the state of Rio de Janeiro. By the time they were 17, the scouts of Real Madrid, Manchester United and Arsenal were seeing what their father saw.

United, the first to make an offer, won the signatures. Now 20 and still difficult to tell apart, the da Silvas tore Arsenal apart in England's oldest competition, the F.A. Cup. They looked, indeed, to be contenders for the World Cup on Brazilian soil in 2014.

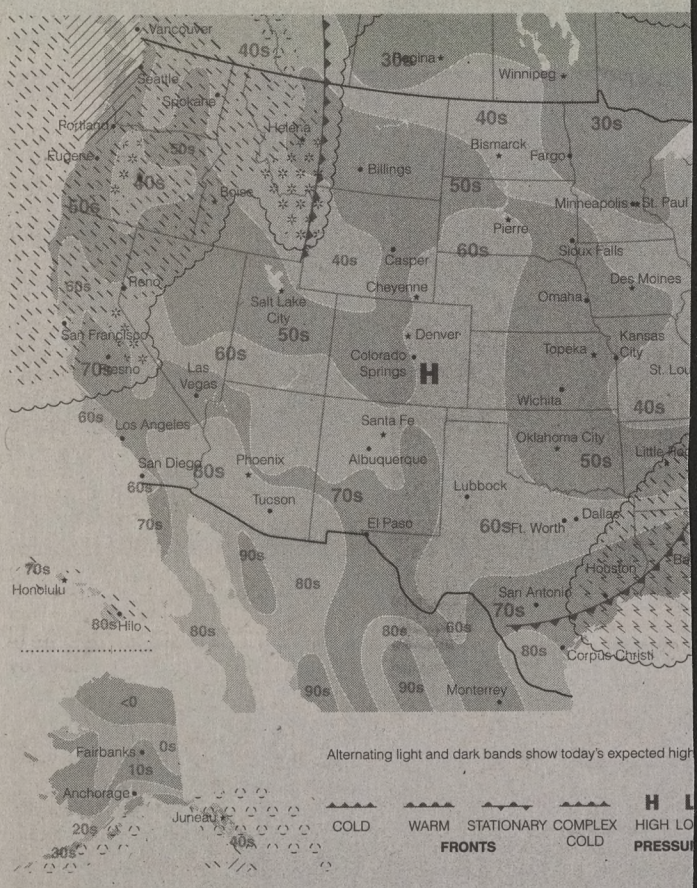
Fábio scored one of the goals in United's 2-0 home victory Saturday, and his brother played a part in both goals. And they did so on the wings, rather than from the fullback positions they are maturing into. With a heavy list of injuries, and with senior players held back for a Champions League match against Marseille on Tuesday, United Manager Alex Ferguson improvised.

"I needed to come up with a plan that gave us energy in midfield," Ferguson said. "The da Silvas are such keen and enthusiastic boys, I felt they could do it."

It took a grasp of history rather than foresight to make the switch. Cafú and Roberto Carlos, the 2002 World Cup fullbacks, were actually wings in disguise, as were many Brazilians before them. The movement, the skill, the soul of the true Brazilian "fullback" automatically makes him at least a wing back — a player who counterattacks by instinct.

But since Manchester United's older players had no inkling of the lineup in advance, how could Arsenal Manager Arsène Wenger prepare for it? Wenger has his own problems. Two weeks ago, he was talking enthusiastically of his squad winning an unprecedented four trophies this season: the Premier League, the F.A. Cup, the English League Cup and the Champions League.

Since then, Wenger's fourfold hope has been cut to one, and even that, the Premier League, is



National Forecast

High pressure will dry out the Northeast today, providing partial sunshine and seasonably cool temperatures. Any flurries or snow showers downwind of the Great Lakes will taper off early.

Across the Southeast, a strengthening storm system will spread some rain from the mid-Mississippi and Tennessee valleys east into North Carolina, while thunderstorms rumble from Nashville to Houston. A few of the thunderstorms could turn strong during the afternoon, producing locally strong winds and hail.

Plenty of sunshine will gree
Spring Break in Florida. Temp
be seasonably warm, general
per 70s and lower 80s.

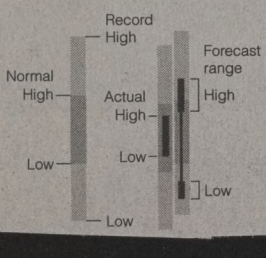
Meanwhile, cold air on the
the storm will allow some light
over parts of eastern Kansas a
Missouri early in the day. Light
tions of 1-3 inches are expecte

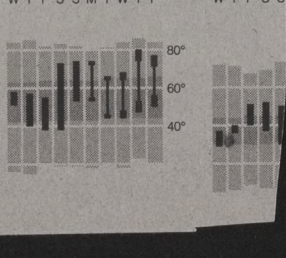
Farther west, high pressure
across the High Plains will mak
day as temperatures become
Highs will reach into the 60s fr

10-Day Temperature Trends

High and low temperatures for the past five days and forecasts for the next five.

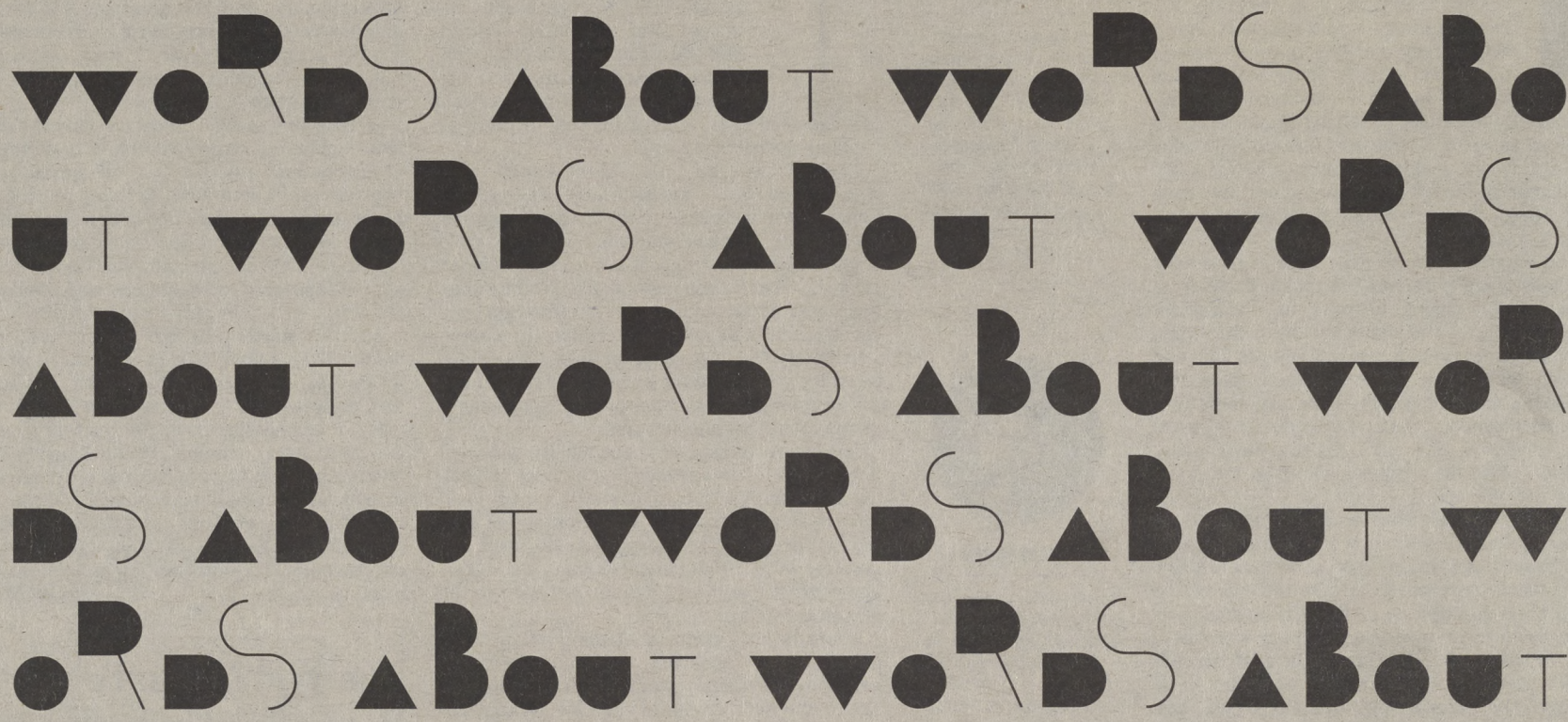
Yesterday's highs and lows are based on preliminary data.





Why Criticism Matters

The following passages are excerpts from longer essays. To read the full versions, visit **nytimes.com/bookreview.**



Beyond the Critic As Cultural Arbiter

Fifty years is a long time in any national literature, but in the extreme environment of American culture, fiction seems to find an incubator for unusually rapid growth. A half-century takes us from the era of formulaic romances and Gothic novels to the metaphysical theater of "Moby-Dick"; from Mark Twain working on his autobiography to John Barth's first novel. Yet across the 50 years since Alfred Kazin lectured about the function of the critic, academic literary criticism in America has arguably changed more than the modern novel, while the kind of critic that preoccupied Kazin — one who writes for the public, "lives in literature" and tries to create standards — now finds her function revised by technological changes that have reconfigured an audience that was once atomized by America's urban sprawl.

"In the lonely pockets of towns and cities," Don DeLillo wrote in the early 1980s, "a thousand minds tick." A decade or so later the commercialization of the Internet wove a network out of those minds, building a kind of massive neural web, a brain by turns conflicted, noisy, urgent. The Internet calls people out of their loneliness to create electronic selves perhaps more naked or strident than the fuzzy, compromised "I" that moves ghostlike through its everyday routines and disagreements. A solitary reader, brooding over an obscure contemporary novel, or slowly puzzling out a page of "Finnegans Wake," is suddenly not so solitary. Amid the network of networks there is always another reader, an improvised community into which she can merge and make visible her invented self. . . .

If in earlier centuries the common reader was for Johnson and Woolf at least partly a rhetorical construction, an imagined nonspecialist that enabled their own work, for the critic at the millennium the audience for literature is not so shadowy. While Kazin could complain in 1960 that "the audience doesn't know what it wants," with the advent of Amazon reviews and other rating sites the audience is abundantly vocal. A sensitive membrane has evolved from the historical transactions between author, critic and reader. Though online reviews inevitably vary in quality and insight, their very existence no longer makes it possible to imagine that there is not an engaged general-interest audience out there consuming and thinking about literary works. The audience now talks to itself.

The critic may not know who these readers are, but their existence seems indisputable, and the crystallization of the common reader changes the function of criticism in precise ways. The age of evaluation, of the Olympian critic as cultural arbiter, is over. While there are still critics, often at prominent publications, who like to issue dogmatic rulings ("The novel exists to _____!") and to chastise writers, their nostalgic efforts merely add to the noise of culture. . . . The electronic footprint of earlier readers and their opinions exerts its tyranny on the solitary transaction between book and reader, and so in mainstream reviewing it's time to hear less of critics talking about themselves, spinning reviews out of their charming memories or using the book under review as little more than a platform to promote themselves and their agendas. The critic ought to be an obscure, marginal figure. But I suspect that the tendency to overpersonalize a review stems from a sense among reviewers that part of their job has been usurped by the muddy aggregate of opinion that is everywhere available on a laptop somewhere near you.

And yet, the loss of a more centralized, univocal criticism is not necessarily a bad thing. . . . While the removal — or more accurately, the redistribution — of the evaluative task is likely to dilute critical standards, it can also free up the critic to engage in more serious tasks that might bleed back into the culture, providing a stronger skeleton for a range of literary activity. . . . Larger frames than the personal might be brought to bear in reviews, with more effort taken to think of genres within less narrow, rigid borders. I sometimes fear that a narrow artistic palette can be mistaken for critical standards, and I believe it's past time to dispense with prejudices about character, emotivity and realism that hardened during the 19th century: a strongly realist character-based novel isn't a bad thing, but it isn't the only thing. A contemporary novel offers an opportunity to measure fiction's mutating forms — to note, perhaps, the dominance of time as a thematic obsession in works of the last 20 years, or the emergence of the family epic, with its generational conflicts, as it becomes perhaps the signature subgenre of the American novel today. ***—Stephen Burn***



STEPHEN BURN

is the author of "David Foster Wallace's 'Infinite Jest': A Reader's Guide" and "Jonathan Franzen at the End of Postmodernism," and an editor of "Intersections: Essays on Richard Powers." An associate professor at Northern Michigan University, he has written for The Paris Review, The Yale Review and The Times Literary Supplement, among other publications. He is writing a book about the novel in the age of neuroscience and is editing a volume of David Foster Wallace's letters about literature.

ILLUSTRATION BY LEONARDO SONNOLI; PHOTOGRAPH BY JULIE BURN

With Clarity and Beauty, The Weight of Authority

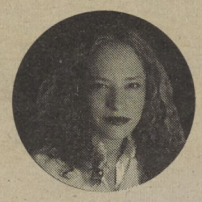
If the critic has to compete with the seductions of Facebook, with shrewdly written television, with culturally relevant movies — with, in short, every bright thing that flies to the surface of the iPhone — that's all the more reason for him to write dramatically, vividly, beautifully, to have, as Alfred Kazin wrote in 1960, a "sense of the age in his bones." The critic could take all of this healthy competition, the challenge of dwindling review pages, the slash in pay, as a sign to be better, to be irreplaceable, to transcend. . . .

It is important for the critic to write gracefully. If she is going to separate excellent books from those merely posing as excellent, the brilliant from the flashy, the real talent from the hyped — if she is going to ferret out what is lazy and merely fashionable, if she is going to hold writers to the standards they have set for themselves in their best work, if she is going to be the ideal reader and thereby prove that the ideal reader exists — then the critic has one important function: to write well.

By this I mean that critics must strive to write stylishly, to concentrate on the excellent sentence. . . . Of course, it is not considered nice or polite or democratic to take the side of the paid critic (though, to be fair, she is paid very little) over the enterprising amateur who would like to shout anonymously on the Internet, but that's precisely what is called for — unless, of course, the enterprising amateur writes better than the paid critic. The answer to the angry Amazon reviewer who mangles sentences in an effort to berate or praise an author is the perfectly constructed old-fashioned essay that holds within its well-formed sentences and graceful rhetoric the values it protects and projects. More than ever, critical authority comes from the power of the critic's prose, the force and clarity of her language; it is in the art of writing itself that information and knowledge are carried, in the sentences themselves that literature is preserved. The secret function of the critic today is to write beautifully, and in so doing protect beautiful writing.

If critics can fulfill this single function, if they can carry the mundane everyday business of literary criticism to the level of art, then they can be ambitious and brash; they can connect books to larger currents in the culture; they can identify movements and waves in fiction; they can provoke discussion; they can carry books back into the middle of conversations at dinner parties. Here I think of James Wood's essay "Hysterical Realism," which skewers the pyrotechnical trendiness of a certain generation of writers; or of Janet Malcolm's "Silent Woman," which exposes the psychological ambiguities at play in the production of biography; or of Virginia Woolf's "Room of One's Own," which is essentially a dazzling novel on the difficulties of writing as a woman; or of Susan Sontag's "Against Interpretation," which takes on the arduous, paradoxical labor of criticism attacking criticism. What separates all of these works from the din of opinion, from the impassioned amateur review, from the grouchy blogged snark or the Facebook status posting, is the beauty in the sentence, the craft itself.

—Katie Roiphe



KATIE ROIPHE

is the author, most recently, of "Uncommon Arrangements: Seven Marriages." She is a professor at the Arthur L. Carter Journalism Institute at New York University and is currently at work on a book about writers' confrontations with mortality.



PANKAJ MISHRA

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ADAM KIRSCH

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The Intellectual at Play In the Wider World

Too many of today's writers — the creative writing graduates, the beneficiaries of generous advances and foundation grants, and the habitués of literary festivals in exotic locations — are enlisted too quickly into society's privileged classes to remain, convincingly or for long, society's critics.

Literary criticism, in its recent American incarnation at least, has faithfully reflected the general writerly retreat from the public sphere, turning into a private language devised to yield a particular knowledge about a self-contained realm of elegant consumption. It is hard to imagine recent American literature provoking a critical response in the way of Alfred Kazin's magnificent study "On Native Grounds" (1942), which sensitively recorded the evolution of many literary sensibilities against a prewar backdrop of continuous crisis and struggle.

So I can recognize, and even feel the poignant anguish, of Kazin's sense of an ending, his feeling that "the great confidence that man could understand his time and build from it, the feeling that provides the energy of modern art, has gone out of us." But I cannot share it, since literary criticism, as Kazin defines it, began to die off some time ago. . . .

There is little point in blaming "New Criticism," which fetishized the uniqueness and autonomy of literary works, or in lashing, yet again, the dead horse of creative writing departments, which prescribe an antihistorical formalism while turning a noble vocation into yet another moneymaking opportunity. For these practices are merely symptoms of a larger phenomenon that, deepening through the cold war, is only more manifest now: mass depoliticization as political and economic arrangements seem depressingly unalterable.

"In our political as in our economic lives," Tony Judt wrote in "Ill Fares the Land," a lament for moral idealism and engaged citizenship, "we have become consumers." A similar docility marks our cultural choices. Most writers as well as readers of literary fiction see it as a refined form of entertainment or instruction.

Deprived of a whole vocabulary of moral concern, which traditionally enlisted it into a humanistic culture, literary criticism was always destined to turn into a kind of competitive connoisseurship — a parlor game for the increasingly professional producers as well as the passive consumers of literature. It can have its intelligent pleasures; but, determinedly asocial, it is far from bringing, as Kazin wanted it to, a "historical sense of what has been, what is now, what must be" into "the immediate confrontation and analysis of works of art."

The previous decade of severe political and economic shocks may end up opening literary criticism and literature to the questions Kazin and his peers asked of them. But then ours is also a much bigger and more various world than the one Kazin knew. We have easy access to knowledge of societies and cultures about which we were previously ignorant; and there is no reason to assume that writing from Europe and America is all that matters, or should matter, to a critic today.

Literatures elsewhere still offer a capacious mode of intellectual inquiry, one that can seamlessly accommodate the insights into human lives offered by history, philosophy and ethnography. To examine the work of Lu Xun, China's foremost modern writer, is to be taken through his anguish deep into Chinese self-perceptions, from the long Confucian past to the weirdly hybrid capitalist-Communist present. It is to understand not only his experiments with many different aesthetic forms and genres, but also his country's tormented recent history, not to mention the implications these developments hold for the rest of the world.

Indeed, the specific historical circumstances that confine the critical reception of literatures in Europe and America to a few specialists do not exist anywhere else. Societies in Asia and Latin America are far from politically static or jaded; the conflicts, exuberance and vulgarity of 19th-century Europe and America have reappeared there in magnified form, and an inquisitive writer-critic can only revel in them.

Both Liu Xiaobo, the 2010 Nobel Peace Prize winner from China, who is a literary critic by profession, and Mario Vargas Llosa, the literature laureate from Peru, testify to the impossibility of considering aesthetic matters in isolation from social and political movements. They confirm that a writer's individual self-awareness is always historically determined, and that one cannot assess a writer's work without examining her particular quarrel with the world, the rage or discontent that took her to writing in the first place.

—Pankaj Mishra

The Will Not to Power, But to Self-Understanding

The serious critic is one who says something true about life and the world, whose will is not to power, but to self-understanding, self-expression, truth. A review by Edmund Wilson in The New Yorker might once have had the power to drive a book's sales up or down, but that's not why we continue to read "The Wound and the Bow." Lionel Trilling never had that kind of concrete power, but that doesn't stop us from continuing to read "The Opposing Self." These books are classics of criticism because they each show a mind working out its own questions — about psychology, society, politics, morals — through reading. . . .

The role of the critic can shade into that of the public intellectual, and of course many great critics have been intellectuals, too. . . . Trilling wrote about Jane Austen, but also about the Kinsey Report; Alfred Kazin wrote about Blake, but also about John F. Kennedy. This kind of widening of the purview of criticism is natural, because thinking about literature eventually means thinking about society and politics. For Matthew Arnold, the inability of his contemporaries to write in what he called the "grand style" led him to a general critique of Victorian society, which he saw as addicted to materialism and utilitarianism.

I'm not sure if anyone is writing this kind of criticism today — certainly, the most admired literary critics aren't — and the reason is probably the one Kazin cited: "the growing assumption that literature cannot affect our future, that the future is in other hands." This development, whose beginnings he saw 50 years ago, has now

PHOTOGRAPHS, FROM TOP: DEBORAH COPAKEN KOGAN; MAYA MISHRA; DON POLLARD

come to pass. It is difficult to recapture the old sense, which Arnold had, that the literary critic is the critic par excellence, that the study of literature gives you the best vantage point from which to understand an entire society.

Perhaps this loss of centrality accounts for my own inclination to put the emphasis in the phrase "literary criticism" on the first word, not the second. If you are primarily interested in writing, then you do not need a definite or immediate sense of your audience: you write for an ideal reader, for yourself, for God, or for a combination of the three. If you want criticism to be a lever to move the world, on the other hand, you need to know exactly where you're standing — that is, how many people are reading, and whether they're the right people. In short, you must worry about reaching a "general audience," with all the associated worries about fragmentation, the decline of print, and the rise of the Internet and its mental groupuscules. . . .

Perhaps the only difference between our situation and Arnold's is that in Victorian England, the niche that cared about literature also happened to constitute the ruling class, while in democratic, mass-media America, the two barely overlap.

What this displacement takes from the critic in terms of confidence and authority, it perhaps restores to him in terms of integrity and freedom. Or maybe it's just that, as a poet, I am all too used to making excuses for the marginality of a kind of writing that I continue to feel is important. Whether I am writing verse or prose, I try to believe that what matters is not exercising influence or force, but writing well — that is, truthfully and beautifully; and that maybe, if you seek truth and beauty, all the rest will be added unto you. ***—Adam Kirsch***



SAM ANDERSON

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ELIF BATUMAN

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Translating the Code Into Everyday Language

In reviewing a book, we respond artfully to a work of art in its own medium. We write words about words — and then, as the conversation progresses, we write words about words about words about words. Our work is a kind of ground zero of textuality, in which one text converges on another text to create a third, hybrid, ultratext. This self-reflexiveness doesn't make critical writing secondary or parasitic, as critics of the critics have said for centuries: it makes it complex and fascinating and exponentially exciting. It reminds me of Aristotle's description of the mind of God, an apparatus so divinely perfect it can think only of itself: "Its thinking is a thinking on thinking."

For book critics, our writing is a writing on writing. We respond to an author's metaphors with countermetaphors; we criticize or praise a story by telling a story about it. My favorite criticism always allows itself to imaginatively intermingle with its source text — to somehow match or channel or negate the energy of the text that inspired it. It can be imitative, competitive or collaborative; it can mimic or mock or scramble or counterbalance the tone of the source. It can be subtle or overt. But it will always have this doubled-over, creative quality: one memorable writer responding, in memorable writing, to another.

Thomas Carlyle, in 1831, warned of what he saw as the increasing self-consciousness of the world of letters: "By and by it will be found that all Literature has become one boundless self-devouring Review." He meant this as a nightmare scenario, but I've always found it exciting. Because isn't that what the greatest works of literature always are? Isn't "Ulysses" a boundless, self-devouring review of the "Odyssey," "Hamlet," "Madame Bovary" and even Carlyle himself? And isn't "Molloy" a boundless, self-devouring review of "Ulysses"? Isn't "Infinite Jest" a boundless, self-devouring review of "Ulysses" and "Molloy" and "JR" and "Gravity's Rainbow" and "White Noise"? The membrane between criticism and art has always been permeable. That's one of the exciting things that books do: they talk to other books.

The critic's job is to help amplify that conversation. We make the whispered parts of it audible; we translate the coded parts into everyday language. But critics also participate actively in that conversation. We put authors who might never have spoken in touch with each other, thereby redefining both. We add our own idiosyncratic life experiences and opinions and modes of expression — and in doing so, fundamentally change the texts themselves. Balzac's "Sarrasine" is a new book, or set of books, now that Barthes has written "S/Z." "A Portrait of the Artist as a Young Man" is radically redefined by Hugh Kenner's "Dublin's Joyce." Updike's career is a different thing in the wake of Nicholson Baker's "U and I." Catullus is a different poet after Anne Carson's "Nox." In the grand game of intertextuality — which is, after all, the dominant and defining game of the Internet era — critics are not just referees: they're equal players. ***—Sam Anderson***

From the Critical Impulse, The Growth of Literature

"Your judgment . . . is true, but not all of it," Tolstoy once wrote to the critic N.N. Strakhov, who had shared with the writer some comments on "Anna Karenina." "That is, it is all true, but what you have expressed does not express all that I meant. . . . It is one of the true things that can be said." . . .

These lines encapsulate the reasons why, in my youth, I did not see the point of criticism. . . . If Tolstoy had wanted to say something about any nonnarrative issue, wouldn't he have found a more straightforward way of doing it than by recounting the parallel love lives of Konstantin Levin and Anna Karenina? I was immediately convinced by Tolstoy's claim that the only accurate interpretation of "Anna Karenina" was a word-for-word retelling; and, since "Anna Karenina" already existed with 100 percent accuracy, what use was Strakhov?

The one text that most changed my opinion on criticism was probably Freud's "Interpretation of Dreams," which I read in college. I was deeply struck by the idea that certain facts about our lives are only ever articulated in the form of fictional stories — stories whose plots are related only in the most complex and unapparent ways to the essentially nonnarrative concerns they express. What if novels worked the same way? What if the story of Levin and Anna was the only possible means for Tolstoy to express some content completely different from, and only elliptically related to, this story? . . .

Freud solved many of the objections I had to criticism, including the problem of beauty. If literature is a vehicle for some other content, I used to wonder, why doesn't it express that content as efficiently as possible? Why the surplus value of beauty? Is beauty just "a spoonful of sugar to help the medicine go down"? If that's what you have to believe to be a critic, then who wants any part of it? Freud shows that the beauty in dreams isn't a surplus value at all. . . . Rather, aesthetic features almost always indicate a hidden level of meaning, a richness of signification, which is itself the very thing that we perceived as beauty to begin with. . . .

I am not proposing a literal equivalence between criticism and psychoanalysis — one of the dangers of "psychoanalytic" criticism. To my mind, a more productive, though less literal, application of Freud's theory to literature may be found in Marxist criticism, which searches the work of art for signs not of the writer's personal sexual history, but of history itself. Literature becomes a multifarious dream produced by a historical moment. The role of the critic is then less to exhaustively explain any single work than to identify, in a group of works, a reflection of some conditioned aspect of reality. . . .

As an example of recent criticism that works in this way, I will mention Marco Roth's "Rise of the Neuronovel," published in n+1. Roth opens with a chronological list of Anglo-American novels with neurological-pathological premises, starting in 1997 — Ian McEwan's "Enduring Love" (de Clérambault's syndrome), Jonathan Lethem's "Motherless Brooklyn" (Tourette's syndrome), Mark Haddon's "Curious Incident of the Dog in the Night-Time" (autism) . . . and so on.

Valuable criticism often takes this form: a pile of literary-historical instances . . . followed by a historical explanation. Roth's explanation is that the neuronovel represents the fate of the psychological novel in an age when psychology has been replaced by cognitive science. Literary language itself now demands a pathologic justification, such that one of McEwan's neuronarrators, having fancily likened silence to paint, adds, "This synesthesia must have been due to my disorientation." . . .

It's as if, having devoured too many books about evolutionary psychobiology and hardwired behaviors, Anglo-American culture fell asleep and dreamed a giant dream that Mrs. Dalloway had Gerstmann's syndrome. This is, according to Roth, a bad dream. The outcome of the neuronovel, being biologically determined, has no meaning in terms of "irony or fate or comeuppance"; it has nothing to teach us, apart from medical-textbook symptoms.

One of the exciting things about criticism is that once limitations are identified, we learn to transcend them. Learning the shortcomings of today's neuronovel, we glimpse the psychological novel of the future: a novel expressive of the problems we have now, including the encroachment of cognitive science into the concept of the self. . . .

The first modern novel was already a product, even an expression, of negative criticism: "Don Quixote" contains a quite explicit critique of the chivalric romance and its insufficiency to account for the way real life feels in 17th-century Spain. Cervantes dreamed a distorted dream of "Amadis of Gaul," in which the giants had all been turned into windmills — and the novel was born. It's to this kind of critical impulse that we owe the growth of literature. ***—Elif Batuman***

TOP PHOTOGRAPH BY SARAH UZELAC



In Aphrodite's Arms

A philosophical terrier narrates this homage to Marilyn Monroe.

BY ROBIN ROMM

MY grandmother was born to Polish immigrants in Brooklyn, the fifth of six children and the first to be born in America. It's safe to say that she struggled with the myth of the American dream. Some of her family succeeded, some did not. "Everyone needs *mazel*," or luck, she'd say in Yiddish by way of explanation. "Even the dog."

Mafia Honey, the fluffy but sharp-eyed Maltese terrier who narrates Andrew O'Hagan's inventive fourth novel, "The Life and Opinions of Maf the Dog, and of His Friend Marilyn Monroe," certainly has mazel to spare. Maf, as he's known, experiences an almost dizzying social ascent. Born on a Scottish tenant farm, he's bought by Vanessa Bell's housekeeper and taken to Bloomsbury. Then, when Frank Sinatra decides that a purebred might soothe Marilyn Monroe after her breakup with Arthur Miller, Christopher Isherwood puts him in touch with the Bells. Natalie Wood's mother travels to England to fetch the young pup and flies him to Los Angeles, where, in the company of her daughter, she hands him off to Frank, who delivers him to Marilyn in New York. I told you it was dizzying.

THE LIFE AND OPINIONS OF MAF THE DOG, AND OF HIS FRIEND MARILYN MONROE
By Andrew O'Hagan.
277 pp. Houghton Mifflin Harcourt. $24.

Maf has no shortage of opinions. He's a devout Trotskyist, a proponent of the working class and — because O'Hagan is too keen a writer to make even a dog pedantic or one-dimensional — a bit of a pompous snob.

On the one hand, he enjoys the company of housekeepers, those "household gods" who "kept the whole thing together" and enabled "those artists to be free." He derides (and even bites) the supercilious Edmund Wilson at a party. He sees himself as a proponent of the undersung and overlooked. "A dog is bound to like footnotes. We spend our lives down here," he explains in one of the many footnotes in his memoir. But he is, perhaps, a less than credible advocate. As appreciative as he is of the underdog, his life is such that he never has to be one.

"When it comes to pedigree," Maf explains, "each dog worth his mutton is a font of expertise." Maltese are "the aristocrats of the canine world." He may occasionally wax poetic about the revolution, but he's also convinced of his superiority. "A great relative of mine was famous as the boon companion to Mary, Queen of Scots; another one gained the ravenous affections of Marie Antoinette. . . . Once I came to know myself, to know that my relatives in art are no smaller than the story of my own cells, I understood at once that I must be a scion of that contemplative muse, the little dog in Vittore Carpaccio's 'Vision of St. Augustine.' "

With his canine acquaintances, Maf debates Aristotle and Plutarch. He knows about all the great novels (and can cite their canine characters). He speaks with ease about art and film. And he's a bit of a literary artist himself; his observations are often strikingly phrased. Of Sinatra, he notes, "Frank's neat row of teeth rhymed perfectly with the white line of handkerchief cresting the top pocket of his suit." And, of Natalie Wood in the presence of Sinatra: "It was as if someone had gently turned up the setting on an icebox, her eyes sparkling a wee bit harder as she turned a few degrees cooler."

How does a Maltese come to be so erudite and articulate? "A dog's biggest talent," Maf explains, "is for absorbing everything of interest — we absorb the best of what is known to our owners and we retain the thoughts of those we meet." And Maf's been surrounded by readers and thinkers since birth; the tenant farmer even introduced him to Trotsky.

Despite his ease with language and his rich turns of phrase, Maf's name-dropping can be slightly overwhelming. It slows the pace of this precise, impressively researched book. But the relentless historical insights and allusions do more than underscore Maf's pretensions. They also reveal an immigrant's anxiety and insecurity with social position and status. No matter that he's Marilyn's aristocratic Maltese, he was still whelped on a tenant farm. No amount of reinvention can truly hide what lies beneath. Some part of Mafia Honey will always remain "Sizzle" or simply "Maltese," just as Natalie Wood will remain Natalia Nikolaevna Zakharenko and Marilyn Monroe will remain Norma Jeane Baker. The old world, with its hints of poverty and earthiness, collides with the new. The clash causes spiritual conflict, and no one struggles more than Marilyn.

By 1962, she's in distress. She's wrestling not only with her divorce from Miller, but also with the world's image of her. "She wanted to learn to take herself seriously," Maf observes. Miller attempted to make a scholar of her, leaving her with Russian novels, but his good intentions have only cemented her feelings of inadequacy. Marilyn attempts to reinvent herself as a serious actress under the tutelage of Lee Strasberg of the Actors Studio. She becomes obsessed with the role of Anna Christie in Eugene O'Neill's play. She craves gravity, it seems, something to tether her. But she's stuck with her old self, the girl Maf describes as "sweet and available," and with the pinup image the studios have fostered.

At times, Maf sees the two of them as victims of the same game. Marilyn tells a bathroom attendant that Maf is "a tiddy biddy little thing who just wants his bed," and he bristles. "That's what humans do. They talk to you. They talk nonsense. They talk to you and they talk *for* you. And so they create a personality for you which is defined by the way they act you out." He's surprised she can't see the parallels: "Come on. . . . You're doing to me what you say those studio bosses do to you."

Studious and perceptive, Maf has rare access to Marilyn. He's with her in the quiet hours before bed. He's there in limousines, at parties, during trysts. He even follows her into her psychoanalytic sessions, where she avoids probing the issue of her absentee father with her problematic shrink. Furthermore, Maf explains that "unlike humans, we can hear what people are saying to themselves." One would imagine, then, that Maf's memoirs would reveal Marilyn's elusive heart for the first time.

BUT Maf's not as good at mind-reading as his confidence suggests. So specific with regard to literature and philosophy, he turns vague in the face of human emotion. "Worries just went round in her mind like those records she played after it got dark," he says. Or, "I had noticed a change in the colors of her thoughts, as if her mind had changed season." And perhaps most conclusively: "I can't pretend that I ever truly understand what ailed my owner; it was the human thing, that burden of self-consciousness that weighs down the day." After Marilyn is admitted to a psychiatric clinic, Maf tells us that she "lay dreaming of her father," but he won't get any more specific. Instead, in that critical moment, he thinks about Virginia Woolf's dislike of Joyce. He's equally tight-lipped about Marilyn's relationship with John F. Kennedy. "Don't hold your breath for stunning revelations," he warns.

In the end, it's Mafia Honey's own mind that is laid bare. And what a mind it is, rich with intellect and humor. It's entertaining to see Carson McCullers, Lillian Hellman, Irving Howe and Allen Ginsberg through the eyes of the luckiest dog in America. But the particular workings of Marilyn's thoughts, dreams and fears — and all they'd tell us about her fabled life and mysterious death — remain as elusive as ever. □

***Robin Romm** is the author, most recently, of the memoir "The Mercy Papers."*

ILLUSTRATION BY ALAIN PILON

The Last Mitford

Memoirs and a collection of letters offer a look at the life of the Dowager Duchess of Devonshire.

BY LIESL SCHILLINGER

HOW do you even begin to write about two of the most storied people alive? One — the Anglo-Irish travel writer Sir Patrick Leigh Fermor, now 95 — infiltrated Crete during World War II, disguised as a shepherd, and captured a German general (an exploit that won him a Distinguished Service Order and inspired a film starring Dirk Bogarde). Fermor's great friend Deborah Vivien Freeman-Mitford Cavendish, known as Debo, the Dowager Duchess of Devonshire, now 90, is the youngest (and last surviving) of the endlessly fascinating Mitford sisters, the six daughters of the eccentric Lord and Lady Redesdale. In 1956, in a letter Fermor wrote to friends after spending a holiday at Lismore, the Devonshires' castle in Ireland, he tried to describe his hostess. She was "funny, touching, ravishing and enslaving," he wrote, which made up for her "engagingly unashamed philistinism." The duchess told Fermor she hated books — with the exception of Beatrix Potter's "Ginger and Pickles," the tale of a dog and cat who run a country grocery. Fermor was utterly charmed, and the visit spurred a correspondence that has spanned six decades.

WAIT FOR ME!
Memoirs.
By Deborah Mitford.
Illustrated. 345 pp.
Farrar, Straus & Giroux. $28.

IN TEARING HASTE
Letters Between Deborah Devonshire and Patrick Leigh Fermor.
Edited by Charlotte Mosley.
Illustrated. 390 pp.
New York Review Books. $30.

Two new books, "In Tearing Haste," a collection of their letters, edited by Mitford's niece by marriage, Charlotte Mosley, and "Wait for Me!," the duchess' latest memoir, teem with memories of love, war, betrayal, heartbreak, housekeeping and frolic. Fermor is the author of nine previous books ("A Time of Gifts," his account of a journey on foot across Europe, is a classic). And a stack of volumes chronicle the doings of Debo, her sisters and their friends and relations in fiction, biography, memoir, letters and even musical comedy. When the play "The Mitford Girls" opened in Chichester in 1981, the duchess saw it ("What a lark") and wrote to Fermor, "It's dotty of course," then added, "How could they be expected to get anything right." How indeed could anyone but a Mitford convincingly play one? In "Wait for Me!" she corrects and extends the record, creating a personal pageant of the last century.

Liesl Schillinger is a regular contributor to the Book Review.



Feeding the hens at Chatsworth.

Mitford begins in the rural idyll of her childhood. "It was a perfect entity," she writes of Asthall, a village in the Cotswolds, "where every element was in proportion to the rest: the manor, the vicarage, the school and pub; the farmhouses with their conveniently placed cowsheds and barns; the cottages, whose occupants supplied the labor for the centuries-old jobs that still existed when we were children; and the pigsties, chicken runs and gardens that belonged to the cottages." Soon the family moved to nearby Swinbrook, where she was enthralled by the village blacksmith, "one of those men with whom animals are calm and the horses stood peacefully to be shod, resting their foot on his leather apron." Her evocation of this feudal paradise is so tantalizing one almost longs to be a serf.

Then again, judging from extant Mitford lore, that experience would have proved testing. The Mitford household was rumbustious. Guests could expect verbal abuse from hot-tempered Lord Redesdale and teasing from the sisters, who conversed in made-up languages and possessed a clashing array of temperaments and opinions. Nancy, the eldest, became the author of arch novels about the upper classes. ("She writes of the heart," one critic noted, "with a most engaging heartlessness.") Pam occupied herself with rustic pursuits and came in for a fair portion of teasing herself. Their brother, Tom, died in action in Burma in 1945, having refused to fight Germany. He shared the Germanophilia of his mother and two of his younger sisters, Diana and Unity. Diana, a ravishing beauty, married Bryan Guinness, heir to a brewing fortune, in 1929, but soon divorced him and took up with the fascist leader Oswald Mosley. Hitler and Goebbels attended their wedding. Unity loved Hitler so intensely that when England declared war on Germany, she shot herself in the head. Jessica became a Communist and moved to America, where she became a muckraking journalist.

'They think because my sisters can write I can too,' Debo wrote. 'Ha ha. They will be sorry soon.'

In 1920, when Debo at last made the scene, the family drama was well advanced, casting her for a time in the role of extra. After the birth, Nancy sent a note to their mother that read, "How disgusting of the poor darling to go and be a girl!" "Life went on," Mitford placidly observes, "as though nothing had happened and all agreed that no one, except Nanny, looked at me till I was three months old and then were not especially pleased by what they saw." However, by 1938, the time of her coming out, her appeal had increased. Two weeks after her debutante dance, Debo met the man who would become her husband, Andrew Cavendish, younger son of the 10th Duke of Devonshire. They courted in wartime London under a hail of German bombs.

THEY married in 1941, and the reception was held at the Mitford family's London mansion in Rutland Gate, two days after a massive air raid blew out all the windows. The groom did not expect to become duke; his elder brother, Billy, was heir to the title. But in 1944, a few months after marrying Katherine Kennedy, nicknamed Kick (the sister of John F. Kennedy), Billy was killed in action. So in 1950, when his father died, Andrew became the 11th Duke of Devonshire, and the couple moved to Chatsworth, the family's vast country estate. With them came their two children, Emma and Peregrine (who became the 12th duke on his father's death in 2004). Three other children died at birth — tragedies that Mitford humbly, feelingly describes. But in 1957 another child, Sophia, was born. Although there was "much rejoicing," Mitford recalls, "I was so apprehensive that I did not buy any new clothes for the baby, and the washed-out woolly things and old-fashioned gowns surprised the nurses in the smart maternity wing." She adds, "I could hardly believe it when they said that she was perfect."

Over half a century, the duke and duchess transformed Chatsworth from a moldering money pit into a prosperous business, with boutiques and restaurants, a farm shop stocked with meat and produce from the estate, and an educational farmyard to teach children country traditions. "Few people realize," Mitford observes, "how a house like Chatsworth, the land and the people who live on it are interdependent." One guest who seemed unfazed by the duchess's rural savoir-faire was Margaret Thatcher, who visited Chatsworth as prime minister. When Thatcher left, Mitford gave her "half a dozen of my best dark brown Welsummer eggs as a thank-you. She looked rather surprised and I wondered if she threw them out of the car window."

Mitford's first book, published in 1982, was a guidebook that also dealt with the restoration of Chatsworth. "They think because my sisters can write I can too," she remarked in a letter to Fermor. "Ha ha. They will be sorry soon." Instead, "The House: A Portrait of Chatsworth" became a hit, as Fermor had anticipated. "You'll do something that's a bloody marvel," he wrote. "Mark my words."

In their lives, Fermor and Mitford have accomplished marvels on and off the page, with seemingly effortless ease. In "Wait for Me!" and "In Tearing Haste," casually yet rivetingly, their words let the rest of us mark them. □

PHOTOGRAPH BY PERMISSION OF BRIDGET FLEMMING (FROM "WAIT FOR ME!")

The Nonconformist

The painter Alice Neel, who specialized in frank portraits when Abstract Expressionism was king, found fame only in her 70s.

BY DEBORAH SOLOMON

ALICE NEEL has never commanded the household-name status of Georgia O'Keeffe or Frida Kahlo, art heroines who have been the subject of multiple biographies. But within the art world, she remains a beloved and influential figure. The pre-eminent painter-chronicler of New York bohemia, Neel specialized in frank, nervy portraits of artists and intellectuals and various other marginalized types, like black children, pregnant women and old men. More often that not, her subjects are shown in minimally decorated apartments, sitting by themselves or with a friend. They make you feel as if you have wandered into a room where they will continue sitting long after you have left. They are not classically attractive, with their shaggy hair and spindly, crooked German Expressionist fingers, but everyone — babies included — has a look of wide-eyed intelligence.

ALICE NEEL
The Art of Not Sitting Pretty.
By Phoebe Hoban.
Illustrated. 500 pp. St. Martin's Press. $35.

Phoebe Hoban's sprawling "Alice Neel: The Art of Not Sitting Pretty" is the first full-length biography of the artist. Hoban, whose previous book was a biography of Jean-Michel Basquiat, wants to vault Neel into the art-heroine pantheon, and her tone is consistently admiring. Neel, who died in 1984, pursued the ancient art of portraiture at a time when Abstract Expressionism was king and wielded its power absolutely; she failed to garner wide attention until she was in her 70s. Her love life, too, was an exercise in noncompliance. She had four children with three different men, one of whom she married. At 500 pages, Hoban's biography furnishes enough anecdotal detail about her lovers to fuel a miniseries. But they were not as interesting as she was — she tended to fall for men who were second-rate artists and first-rate cads — and a shorter, shapelier biography could have better underscored her accomplishments.

A plump, witty woman with a round face and twinkly blue eyes, Neel had none of the gaunt linearity one expects of old-time bohemians. The painter Joseph Solman said she looked like "a dairy maid," an assessment she shared. As she lamented, "I am cursed to be in this Mother Hubbard body. I am a real sexy person."

Her humor could be caustic, which earned her the sobriquet Malice Neel. In 1970, she painted a tender portrait of Andy Warhol — he looks nearly ethereal as he sits without a shirt, displaying his famous scar — yet dismissed his art as overrated and undercooked. "I think he's the greatest advertiser living," she scoffed, "not a great portrait painter."



Alice Neel in 1940. She had to await the advent of "women's lib" before her career took off.

BORN outside Philadelphia in 1900, the daughter of a railroad clerk, Neel grew up in a working-class family haunted by a feeling of lost social eminence. The artist's mother, who claimed to be a descendant of a signer of the Declaration of Independence, suffered from depression and seemed consoled only by sitting in the sun. A therapist later wondered aloud whether Neel became a portraitist on account of the years spent closely observing her mother's face, looking for clues into her moods, never knowing whether affection was about to be bestowed or withdrawn.

After studying art at the Philadelphia School of Design for Women, Neel moved to New York in time to witness the devastations of the Great Depression. Millions of men were jobless, but opportunities for artists actually improved. Living on Cornelia Street in Greenwich Village, Neel earned a steady paycheck in the easel division of the Works Progress Administration — which did not deter her from denouncing capitalism and declaring her adoration of Russia. She joined the Communist Party in the belief that it helped the common man, but in her personal dalliances she far preferred the uncommon man. Among her friends was Joe Gould, the Village legend and author of, well, nothing, other than grandiose claims about his ever-forthcoming, never-written "Oral History of Our Time." Years before he was profiled by Joseph Mitchell in The New Yorker, Gould sat for Neel, whose portrait of him remains outrageous. He is perched on a wooden stool, naked and grinning, a writer-mutant complete with three penises.

Too much of a nonconformist to remain among her fellow nonconformists in the Village, Neel eventually moved way uptown, raising her two sons in a series of apartments in Spanish Harlem and Morningside Heights. When the W.P.A. ended, she went on welfare and shoplifted to make ends meet. In the '50s, the most sustained attention she received came not from power critics like Clement Greenberg or Harold Rosenberg but rather from the F.B.I., which kept a thick file on her Communist activities. One day, two agents showed up at her apartment seeking information. "We were playing in the playroom," Neel's son Hartley recalled. "They came in their trench coats, these two Irish boys." Neel refused to answer their questions, but she invited them into her studio and asked if they would like to pose for her, an offer they declined.

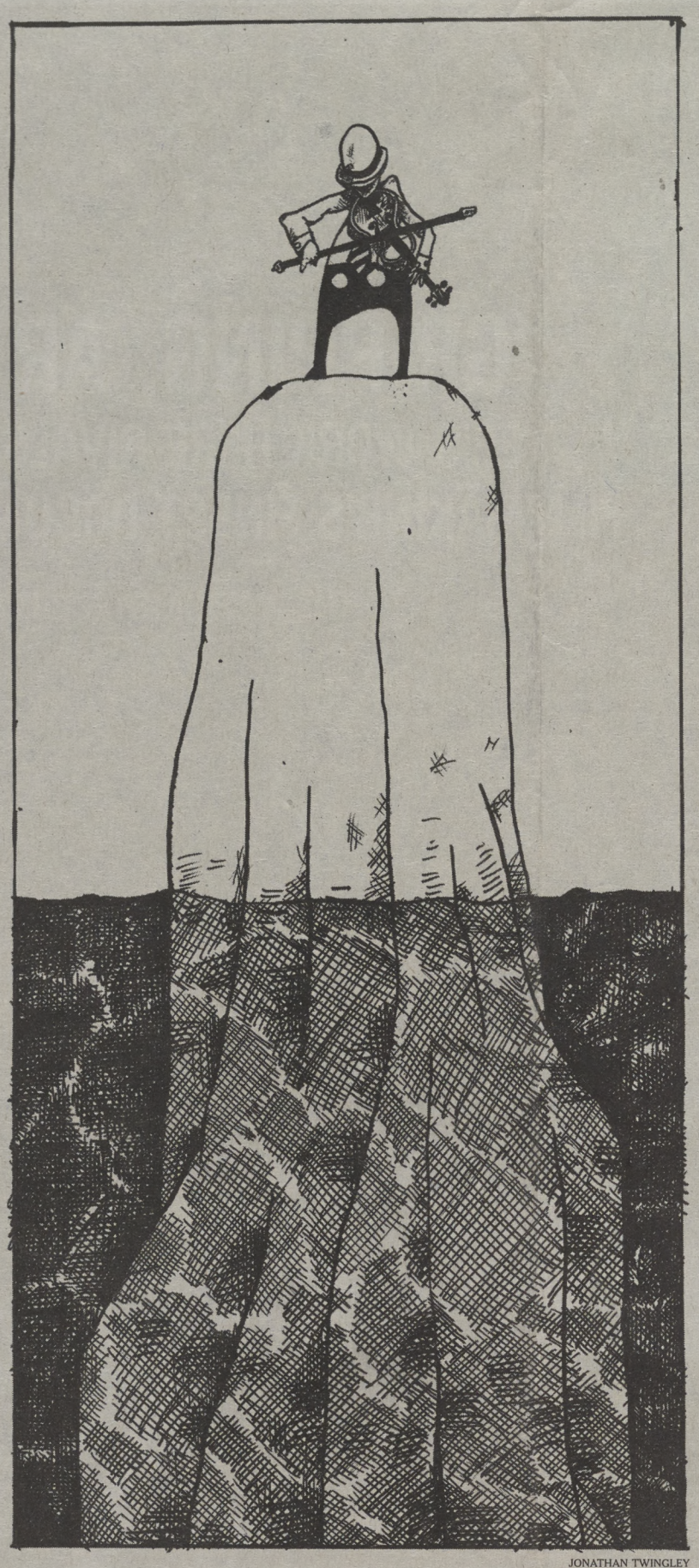
She had to await the advent of "women's lib," as it was then called, before her career took off. In 1970, Time magazine published a cover article on Kate Millett, who was about to accomplish the unlikely feat of turning her Columbia University dissertation into a patriarchy-bashing best seller, "Sexual Politics." Neel was asked by Time to furnish the portrait. When Millett balked at the idea of posing,

***Deborah Solomon,** who writes the "Questions For" column in The Times Magazine, is the author of "Utopia Parkway: The Life and Work of Joseph Cornell" and a forthcoming biography of Norman Rockwell.*

PHOTOGRAPH BY SAM BRODY © THE ESTATE OF ALICE NEEL; COURTESY OF DAVID ZWIRNER, NEW YORK

Disaster at The Top of The World

By Thomas Homer-Dixon



JONATHAN TWINGLEY

ABOARD THE LOUIS S. ST-LAURENT

STANDING on the deck of this floating laboratory for Arctic science, which is part of Canada's Coast Guard fleet and one of the world's most powerful icebreakers, I can see vivid evidence of climate change. Channels through the Canadian Arctic archipelago that were choked with ice at this time of year two decades ago are now expanses of open water or vast patchworks of tiny islands of melting ice.

In 1994, the "Louie," as the crew calls the ship, and a United States Coast Guard icebreaker, the Polar Sea, smashed their way to the North Pole through thousands of miles of pack ice six- to nine-feet thick. "The sea conditions in the Arctic Ocean were rarely an issue for us in those days, because the thick continuous ice kept waves from forming," Marc Rothwell, the Louie's captain, told me. "Now, there's so much open water that we have to account for heavy swells that undulate through the sea ice. It's almost like a dream: the swells move in slow motion, like nothing I've seen elsewhere."

The Arctic is warming twice as fast as the rest of the planet, and this summer its sea ice is melting at a near-record pace. The sun is heating the newly open water, so it will take longer to refreeze this winter, and the resulting thinner ice will melt more easily next summer.

At the same time, warm Pacific Ocean water is pulsing through the Bering Strait into the Arctic basin, helping melt a large area of sea ice between Alaska and eastern Siberia. Scientists are just beginning to learn how this exposed water has changed the movement of heat energy and major air currents across the Arctic basin, in turn producing winds that push remaining sea ice down the coasts of Greenland into the Atlantic.

Globally, 2010 is on track to be the warmest year on record. In regions around the world, indications abound that earth's climate is quickly changing, like the devastating mudslides in China and weeks of searing heat in Russia. But in the world's capitals, movement on climate policy has nearly stopped.

Democrats in the Senate decided last month that they wouldn't push for approval of a climate bill. In Canada, Australia, Japan and countries across Europe, the global economic crisis and other near-term concerns have pushed climate issues to the back burner. For China and India, economic growth and energy security are more vital priorities.

Climate policy is gridlocked, and there's virtually no chance of a breakthrough. Many factors have conspired to produce this situation. Human beings are notoriously poor at responding to problems that develop incrementally. And most of us aren't eager to change our lifestyles by sharply reducing our energy consumption.

But social scientists have identified another major reason: Climate change has become an ideologically polarizing issue.

Thomas Homer-Dixon is a professor of global systems at the Balsillie School of International Affairs in Waterloo, Canada.

It taps into deep personal identities and causes what Dan Kahan of Yale calls "protective cognition" — we judge things in part on whether we see ourselves as rugged individualists mastering nature or as members of interconnected societies who live in harmony with the environment. Powerful special interests like the coal and oil industries have learned how to halt movement on climate policy by exploiting the fear people feel when their identities are threatened.

> Arctic warming may cause a global crisis. Are we prepared?

Given this reality, we'll almost certainly need some kind of devastating climate shock to get effective climate policy. That's the key lesson of the recent financial crisis: when powerful special interests have convinced much of the public that what they're doing isn't dangerous, only a disaster that discredits those interests will provide an opportunity for comprehensive policy change like the Dodd-Frank financial regulations.

It is possible that the changes I'm seeing from the ship deck are the beginning of the climate shock that will awaken us to the danger we face. Scientists aren't sure what will happen when a significant portion of the Arctic Ocean changes from white, sunlight-reflecting ice to dark, sunlight-absorbing open water. But most aren't sanguine.

These experts are especially concerned that new patterns of air movement in the Arctic could disrupt the Northern Hemisphere's jet streams — which are apparently weakening and moving northward. This could alter storm tracks, rainfall patterns and food production far to the south.

The limited slack in the world's food system, particularly its grain production, can amplify the effects of disruptions. Remember that two years ago, when higher oil prices encouraged farmers to shift enormous tracts of cropland from grain to biofuel production, grain prices quickly doubled or tripled. Violence erupted in dozens of countries. Should climate change cause crop failures in major food-producing regions of Europe, North America and East Asia, the consequences would likely be far more severe.

Policy makers need to accept that societies won't make drastic changes to address climate change until such a crisis hits. But that doesn't mean there's nothing for them to do in the meantime. When a crisis does occur, the societies with response plans on the shelf will be far better off than those that are blindsided. The task for national and regional leaders, then, is to develop a set of contingency plans for possible climate shocks — what we might call, collectively, Plan Z.

Some work of this kind is under way at intelligence agencies and research institutions in the United States and Europe. Harvard's Kennedy School of Government has produced one of the best studies, "Responding to Threat of Climate Change Mega-Catastrophes." But for the most part these initiatives are preliminary and uncoordinated.

We need a much more deliberate Plan Z, with detailed scenarios of plausible climate shocks; close analyses of options for emergency response by governments, corporations and nongovernmental groups; and clear specifics about what resources — financial, technological and organizational — we will need to cope with different types of crises.

In the most likely scenarios, climate change would cause some kind of regional or continental disruption, like a major crop failure; this disruption would cascade through the world's tightly connected economic and political systems to produce a global effect. Severe floods dislocating millions of people in a key poor country — as we're seeing right now in Pakistan — could allow radicals to seize power and tip a geopolitically vital region into war. Or drought could cause an economically critical region like the North China plain to exhaust its water reserves, forcing people to leave en masse and precipitating a crisis that reverberates through the world economy.

A climate shock in North America is easy to imagine. Say a prolonged drought causes major cities in the American Southeast or Southwest to run out of water; both regions have large urban populations pushing against upper limits of water supply. The news clips of cars streaming out of Atlanta or Phoenix might finally push our leaders to do something serious about climate change.

If so, a Plan Z for this particular scenario would help us make the most of the opportunity. It would provide guidelines for regional and local leaders on how to respond to the crisis. We would decide in advance where supplies of water would be found and who would get priority allocations; local law enforcement and emergency responders would already have worked out lines of authority with federal agencies and the military.

Then there are the broader steps to mitigate climate change in general. Here, Plan Z would address many critical questions: How fast could carbon emissions from automobiles and energy production be ramped down, and what would be the economic, political and social consequences of different rates of reduction? Where would we find the vast amounts of money needed to overhaul existing energy systems? How quickly could different economic sectors and social groups adapt to different kinds of climate impacts? And if geoengineering to alter earth's climate — for example, injecting sulfates into the high atmosphere — is to be an option, who would make the decision and undertake the operation?

Looking over the endless, empty horizon of the Arctic, I find it hard to imagine this spot being of any importance to global affairs. But it is just one of many places now considered marginal that could be the starting point for a climate shock that plays a central role in the evolution of human civilization. We need to be ready. □

PAUL KRUGMAN

Now That's Rich

We need to pinch pennies these days. Don't you know we have a budget deficit? For months that has been the word from Republicans and conservative Democrats, who have rejected every suggestion that we do more to avoid deep cuts in public services and help the ailing economy.

But these same politicians are eager to cut checks averaging $3 million each to the richest 120,000 people in the country.

What — you haven't heard about this proposal? Actually, you have: I'm talking about demands that we make all of the Bush tax cuts, not just those for the middle class, permanent.

Some background: Back in 2001, when the first set of Bush tax cuts was rammed through Congress, the legislation was written with a peculiar provision — namely, that the whole thing would expire, with tax rates reverting to 2000 levels, on the last day of 2010.

> Three million for me, nothing for thee.

Why the cutoff date? In part, it was used to disguise the fiscal irresponsibility of the tax cuts: lopping off that last year reduced the headline cost of the cuts, because such costs are normally calculated over a 10-year period. It also allowed the Bush administration to pass the tax cuts using reconciliation — yes, the same procedure that Republicans denounced when it was used to enact health reform — while sidestepping rules designed to prevent the use of that procedure to increase long-run budget deficits.

Obviously, the idea was to go back at a later date and make those tax cuts permanent. But things didn't go according to plan. And now the witching hour is upon us.

So what's the choice now? The Obama administration wants to preserve those parts of the original tax cuts that mainly benefit the middle class — which is an expensive proposition in its own right — but to let those provisions benefiting only people with very high incomes expire on schedule. Republicans, with support from some conservative Democrats, want to keep the whole thing.

And there's a real chance that Republicans will get what they want. That's a demonstration, if anyone needed one, that our political culture has become not just dysfunctional but deeply corrupt.

What's at stake here? According to the nonpartisan Tax Policy Center, making all of the Bush tax cuts permanent, as opposed to following the Obama proposal, would cost the federal government $680 billion in revenue over the next 10 years. For the sake of comparison, it took months of hard negotiations to get Congressional approval for a mere $26 billion in desperately needed aid to state and local governments.

And where would this $680 billion go? Nearly all of it would go to the richest 1 percent of Americans, people with incomes of more than $500,000 a year. But that's the least of it: the policy center's estimates say that the majority of the tax cuts would go to the richest one-tenth of 1 percent. Take a group of 1,000 randomly selected Americans, and pick the one with the highest income; he's going to get the majority of that group's tax break. And the average tax break for those lucky few — the poorest members of the group have annual incomes of more than $2 million, and the average member makes more than $7 million a year — would be $3 million over the course of the next decade.

How can this kind of giveaway be justified at a time when politicians claim to care about budget deficits? Well, history is repeating itself. The original campaign for the Bush tax cuts relied on deception and dishonesty. In fact, my first suspicions that we were being misled into invading Iraq were based on the resemblance between the campaign for war and the campaign for tax cuts the previous year. And sure enough, that same trademark deception and dishonesty is being deployed on behalf of tax cuts for the wealthiest Americans.

So, for example, we're told that it's all about helping small business; but only a tiny fraction of small business owners would receive any tax break at all. And how many small-business owners do you know making several million a year?

Or we're told that it's about helping the economy recover. But it's hard to think of a less cost-effective way to help the economy than giving money to people who already have plenty, and aren't likely to spend a windfall.

No, this has nothing to do with sound economic policy. Instead, as I said, it's about a dysfunctional and corrupt political culture, in which Congress won't take action to revive the economy, pleads poverty when it comes to protecting the jobs of schoolteachers and firefighters, but declares cost no object when it comes to sparing the already wealthy even the slightest financial inconvenience.

So far, the Obama administration is standing firm against this outrage. Let's hope that it prevails in its fight. Otherwise, it will be hard not to lose all faith in America's future. □

ROSS DOUTHAT

What Roger Clemens Wants

Bobby Thomson died last week, and Roger Clemens was indicted. No juxtaposition could better capture the way we used to feel about our sports heroes, and the way we feel about them now.

Clemens is just one of the many baseball superstars credibly accused of using performance-enhancing drugs. But the Red Sox-turned-Yankee ace has achieved a particular infamy because he keeps obdurately denying it — to fans, to reporters and finally (and fatefully) to a Congressional committee. Other athletes have apologized, beaten their breasts and tried to move on. But not Clemens. A mercenary figure during his career, in retirement the pitching great has become an icon of celebrity entitlement and public dishonesty: part LeBron James, part Richard Nixon.

If Clemens embodies baseball's decline into sordidness and scandal, Thomson's death is a reminder of the height from which it's fallen. "The shot heard round the world," his pennant-winning home run for the New York Giants in the autumn of 1951, stands as the crowning glory of baseball's golden age.

All the romance of a bygone American era hovered around that day. It was the Dodgers and the Giants, the New York of Frank Sinatra and Marilyn Monroe, the American century at its peak. And then there was the contest itself, thrilling and improbable and perfect. "The art of fiction is dead," Red Smith's famous account began. "Reality has strangled invention. Only the utterly impossible, the inexpressibly fantastic, can ever be plausible again . . . "

That was sports at its best, surely. A day for honorable ballplayers, not corrupt multimillionaires. A day untainted by cheating or dishonesty. A game reduced to a pitcher, a batter, and a single pitch — and the crackle of a radio man shouting "the Giants win the pennant!"

Except that cheating did taint Thomson's famous shot. For decades, it was rumored that the Giants' amazing 1951 stretch run — they made up a 13-game deficit to force the playoff with the Dodgers — had been abetted by a sign-stealing system devised by their manager, Leo Durocher. Finally, the truth leaked out: For the last 10 weeks of the season, and throughout the showdown with the Dodgers, the Giants used a centerfield telescope and a complex system of signals to tell their batters what pitch was coming next.

In Joshua Prager's book on that pennant race, "The Echoing Green," he asks an aging Thomson — the kindest, most modest man imaginable, by all accounts — about the sign-stealing and his immortal three-run blast. The conversations that follow are agonizing. Did he look for the signal on that pitch? "I'd have to say no more than yes," Thomson says. Then: "I don't like to think of something taking away from it." Then, in a later discussion: "It would take a little away from me in my mind if I felt I got help on that pitch." Then, finally: "My answer is no."

And a coda: "I was always proud of that swing."

> Baseball, Bobby Thomson and the benefit of the doubt.

Somewhere, waiting for his day in court, Roger Clemens is probably telling himself similar things. Whatever the truth about the drugs he took or didn't take, he wants to believe — and wants us to believe — that all his achievements, all his wins and strikeouts, belong to him and not to any secret advantage he obtained.

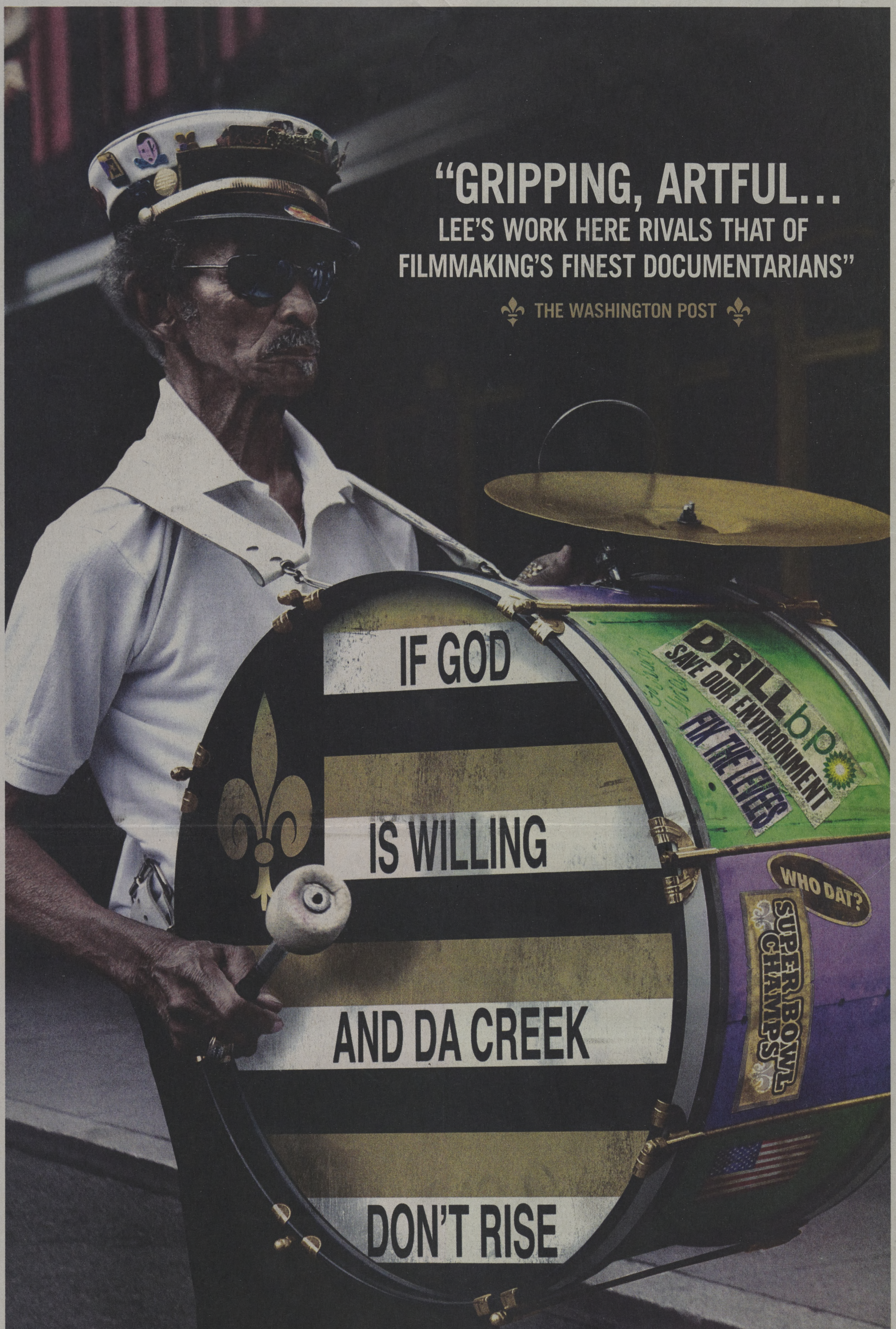
Thomson was caught up in a team-wide escapade, whereas Clemens's drug-related decisions were his and his alone. But when we think about the outcast pitcher — and about the whole steroids scandal — we should keep their parallel stories in mind, and perhaps judge modern athletes more leniently.

Not because the steroids scandal wasn't distinctively ugly, and distinctively devastating. But it's part of a pattern that runs back through all of baseball's past — through the amphetamines that veterans pressed on younger players, the spitballs pitchers boasted about throwing, and every other edge that athletes turned to in duress.

What's more, we know so little, even now, about who used steroids, and how often, and how it shaped the game. And for every Clemens or Barry Bonds or Mark McGwire being held up for public flagellation, there's doubtless a future Hall of Famer — or a scrappy, beloved "gamer" — whose drug use is still as secret as the 1951 Giants' sign-stealing used to be.

What Roger Clemens wants — what he's recklessly pursued, to the point where he's facing perjury charges and possibly jail — is what Bobby Thomson enjoyed. He wants to be judged on what happened on the field, where pitches are thrown and swings are taken, and everything else fades into irrelevance.

We know too much to give him that. But though he hasn't asked for it, maybe we also know enough about baseball history to give him our forgiveness. □



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The Sea and the English Who Tried to Master It

EDWARD ROTHSTEIN

EXHIBITION REVIEW

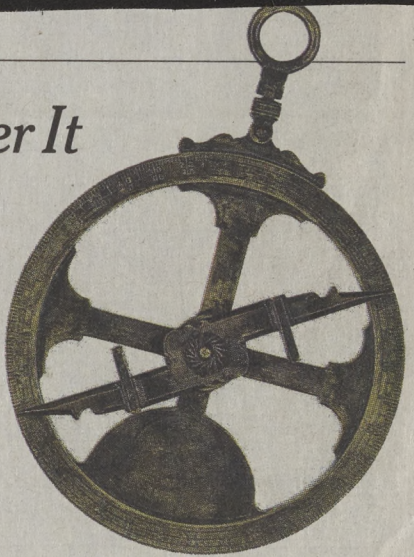
WASHINGTON — We know well the hazards latent in the sea. For months, we have watched millions of barrels of oil erupting from the ocean floor, just after its explosive force claimed the lives of 11 workers who toiled on precarious platforms perched above the waves. We have also, in recent years, watched waters engulf the shores and dwellings of New Orleans, wreaking havoc as in ancient tales.

But it is doubtful that we take the ocean really seriously — as seriously, that is, as the people who wrote the books and pamphlets, drew the maps and learned the ropes and knots on display in an exhibition at the Folger Shakespeare Library here did.

Lost at Sea: The Ocean in the English Imagination, 1550-1750, *at the Folger Shakespeare Library in Washington, includes a reproduction of a mariner's astrolabe.*

Its subtitle, "The Ocean in the English Imagination, 1550-1750," might suggest the lulling drone of academic solemnity, while its main title, "Lost at Sea," might evoke something far more tempestuous. But the show, which draws on the Folger's collection of rare books, a few unusual loans and reproductions of seafaring apparatus, calmly pieces together an alien cosmos: a world that resembles our own in many respects but whose inhabitants, though far more ignorant about many things, can seem far

Continued on Page 5



JULIE AINSWORTH/FOLGER SHAKESPEARE LIBRARY

38 "Calm down, big fella"
39 Want to take back, say

Director nominee of 2009
4 Kind of army or show

salicylic acid
10 Arboreal marker
11 Garage refuse
12 Measure of brainpower
15 Renowned
17 Ballyhoo
21 Hardly measures up
22 Hydrotherapy spot
23 Town outside of Buffalo
33 Abject
34 Laud
35 Hall-of-Famer Sandberg
36 Carriers from northern Manhattan to Far Rockaway
37 Actresses Crain and Tripplehorn
39 Like the last Beatles concert, 1969

Einstein and Yeats
50 Prop for Winston Churchill
51 Banjo site?
55 No man's land, briefly
56 One-named singer of the 1998 hit "It's All About Me"
57 Hwy.

ANSWER TO PREVIOUS PUZZLE

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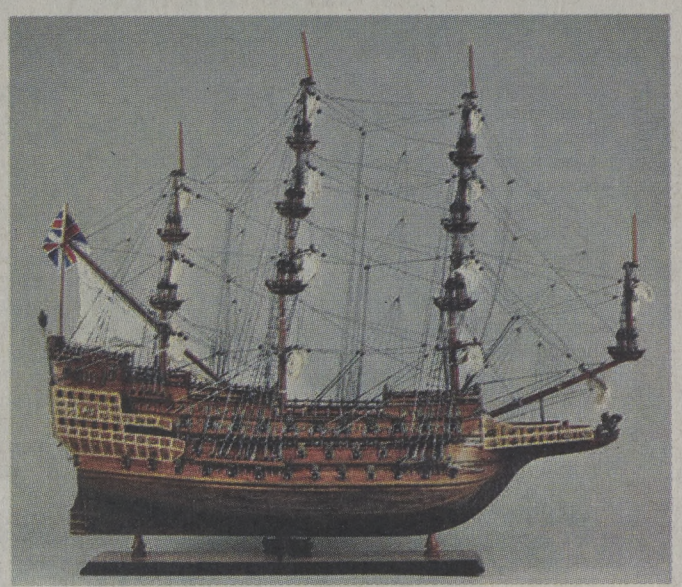
WORKING WITH
ORE OF URANIUM

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Yesterday's Response:
What is Mexico City?

Watch JEOPARDY!

but come next month he's going to have a little competition for that role. Mr. Lewis — the Killer himself — plans to attend the Sept. 10 performance the Nederlander play onstage with special post-show publicists for the on Wednesday. way run, "Millie tet" has had mu **Melissa Etheridge** and **Guy Davis** cast, but this gu unique: Mr. Lew ana-born perfo





PHOTOGRAPHS FROM FOLGER SHAKESPEARE LIBRARY

The Sea and the English Who Tried to Master It: Study of an Alien Cosmos

From First Arts Page

more knowing about others.

There is probably nothing in contemporary life comparable to the role the ocean played in that period. The curator, Steve Mentz, who teaches English at St. John's University in New York, has a keen interest in Shakespeare's images of the sea — something that is particularly helpful for the larger vision he outlines.

At the beginning of the 17th century, the ocean was scarcely understood and riskily charted. It was also the medium for the exercise of international power, the site of exploratory fantasy and the terrain over which Divine Providence exacted mysterious judgments. All strands of human knowledge and experience were associated with the ocean. "Technological know-how and cartographic knowledge were essential," the exhibition tells us, "but so also were narrative understanding and religious faith."

This was particularly true for England, an island nation that could thrive only through mastery of the sea. Many of the 16th-century English books here are translations of volumes from more



established seafaring cultures. A 1596 copy of Martín Cortés's "Arte of Navigation" translated the Spanish reference book into English and provided a model for others. "The Mariners Mirrour" (around 1588) "transformed" a Dutch atlas, but also staked a new claim in its hand-colored frontispiece, which optimistically placed the English nation at the glorious center of the maritime world.

Many 16th-century works about navigation are actually books of mathematics, because the skill required knowledge of both geometry and astronomy. Robert Record's "Castle of Knowledge" (1556), we are told, may be one of the first books of "English vernacular mathematics" teaching geometric principles, though as the exhibition points out, Record's English terminology did not quite displace the Greek: the pentagon never became known as the cinkeangle.

A 1559 book by William Cunningham, a physician and favorite of Queen Elizabeth, is even more ambitious; it is called

"Lost at Sea: The Ocean in the English Imagination, 1550-1750" continues through Sept. 4 at the Folger Shakespeare Library, 201 East Capitol Street SE, Washington; (202) 544-4600, www.folger.edu.

ONLINE: MORE PHOTOS

Additional images from the exhibition:
nytimes.com/design

"The Cosmographical Glasse, Conteinyng the Pleasant Principles of Cosmographie, Geographie, Hydrographie, or Navigation." The book names itself as a "glasse," a mirror, in which the entire cosmos can be discerned and ordered, with the navigator himself at its stable center.

It is with this combined notion of celestial order and navigation that Shakespeare's sonnet on "the marriage of true minds" takes its bearings. In the first 1609 printing shown here, we read that love is like

an ever fixed marke
That looks on tempests and is never shaken;
It is the star to every wandring barke

But against that ideal there was the sea itself, with unpredictable ragings of tempests, foundering ships and watery deaths leaving no bodies behind. An unusual woman's ring here from 1592, made of gold and rock crystal, is called a "memorial poesy ring"; on its inner surface is inscribed, "The cruel seas, remember, took him in November." Imagining such a fate could be as horrifying as the death itself. A 1709 edition of Shakespeare's "Tempest" shows a none-too-steady "wandring barke" overwhelmed by Ariel's terrible storm.

The ocean, the exhibition reminds us, became in Shakespeare's plays both "a literal setting and metaphor for instability." It also implied a spiritual instability, a powerful conception that reached across three centuries into the world of "Moby-Dick."

But in these earlier times, the sailor and the sea were elements of an archetypal religious drama, regularly addressed in sermons. A moral compass was as necessary, many of them taught, as a magnetic one, a divine anchor as steadying as the weighty one on display here. No doubt this message was a warning to sailors about the lives they tended to lead, but it was also a signal to the landbound.

One 1721 image here shows a providential eye peering through the clouds of a storm, beams of light streaming downward to illumine an embattled ship. The sermons on display include John Flavel's 1698 book, "Navigation Spiritualiz'd," which argued, the exhibition notes, that "sailors were unlike other men because their work brought them into intimate contact with their own possible deaths." They have a special status, Flavel argued, "to be Number'd neither with the Living nor the Dead; their Lives hanging continually in suspense before them."

There is also, of course, the sober recognition of the real as opposed to the ideal, as in an admiral's 1691 assessment of captains in the British Royal Navy, evaluating each with such phrases as "a good Man but young," "Good for nothing" and "Turn'd out for a Coward."



ANDREW COUNCILL FOR THE NEW YORK TIMES

Clockwise from top left: A model of the Royal Sovereign, launched in 1637; "The Mariners Mirrour," from around 1588, which staked a new claim in its hand-colored frontispiece by optimistically placing the English nation at the center of the maritime world; Samuel Sturmy's "Mariners Magazine" and a Gunter-type quadrant; and a woman's "memorial poesy ring" from 1592, made of gold and rock crystal. On the ring's inner surface is inscribed, "The cruel seas, remember, took him in November."

There is even a hint here of the satiric mockery that eventually greeted the culture of the sea, aimed at the explorers who claimed uncommon strength and miraculous adventures. Captain John Smith, who gave the English a foothold in Virginia with the settling of Jamestown, is shown here as an armored "Captaine Jones," jousting at a Roman-garbed ruler riding on an elephant, or, again clad in full armor, perched on the back of a giant fish in the ocean.

But seafarers, those marginal men neither living nor dead, also became central to the English national project, to dreams of colonization and the shaping of a new form of civilization. Daniel Defoe's story of "Robinson Crusoe" became a touchstone. A map of Crusoe's fictional voyages is here from 1719, when the book was published. So is Defoe's 1704 pamphlet, "The Storm," which was an account, with statistics, of the most destructive tempest to hit the British Isles. Combining reason and faith, sobriety and courage, Crusoe may have been deeply injured by the sea, but he also showed what could be made despite of it and because of it.

As for the exhibition itself, there are flaws — it needs a much stronger narrative line — and its subject is so, well, oceanic that the show would have been much more effective with a crisper focus.

But it also brought home, at least to this visitor, a sense of how so much of our attention to the recent oil spill in the Gulf of Mexico and the flooding of New Orleans is focused on just one aspect of disasters.

We have, necessarily of course, been preoccupied with issues of blame, responsibility and cause in such disasters, almost as if we were following the examples of 18th-century sermons about the sea, as if catastrophes could be fully understood as the consequences of evil human actions or the violation of some deep principles of contemporary faith.

Such transgressions and liabilities may well exist, but it is worth recalling that reason and preparation also have their limits. The oil spill might seem a completely man-made mess, the result of some careless drilling, but the nature of the enterprise — plumbing the ocean's resources, daring the dangers of the deep, risking lives to fill elemental needs — is unthinkable without taking the sea's powers and promise into account. Perhaps off-shore drilling is a contemporary form of 19th-century whaling, even in the object of the quest.

But during eras when the ocean — and the natural world — was taken more seriously, it was also understood there can never be a way to completely eliminate hazards or fully control the sea's fearsome powers; before such forces, all lives hang in the balance.

Why Johnny's College Isn't What It Used to Be

BOOKS OF THE TIMES

STEVEN KNAPP

Andrew Hacker and Claudia Dreifus have written a lucid, passionate and wide-ranging book on the state of American higher education and what they perceive as its increasing betrayal of its primary mission — for them, the teaching of undergraduates. That both are academics — one a well-known professor (Mr. Hacker) and the other consigned to the adjunct, or what they call "contingent," faculty (Ms. Dreifus, who is also a frequent contributor to The New York Times) — provides them with memorable, often acerbic anecdotes that neatly offset their citations of statistics and (it must be said) their sometimes rather sweeping generalizations.

These anecdotes take the edge off the polemical intensity a reader might expect from the book's title, "Higher Education? How Colleges Are Wasting Our Money and Failing Our Kids — and What We Can Do About It." That may be because these anecdotes display insiders' familiarity, and often an implied intimacy, with distinguished academics and the elite institutions in which they reside.

This is not a book for those seeking a social-scientific explanation of how American higher education, from its simple beginnings as a training ground for gentlemen clergy, has evolved into a diverse industry that, whatever one thinks of it, is unquestionably the envy of the world and an integral, arguably indispensable part of the United States economy. But in a series of well-structured and strongly argued chapters, the book does pose searching and sometimes troubling questions about the degree to which the social utility,

Steven Knapp is president and professor of English at the George Washington University.



TEQUILA MINSKY

Higher Education?
How Colleges Are Wasting Our Money and Failing Our Kids — and What We Can Do About It

By Andrew Hacker and Claudia Dreifus
271 pages. Times Books. $26.

personal benefits and philosophical ideals promoted by admissions and publicity offices are overstated, overpriced, subordinated to extraneous purposes or distorted by self-perpetuating bureaucracies.

As with many indictments, one must distinguish the crimes the prosecutors merely mention from those they really care about. Mr. Hacker and Ms. Dreifus list a host of crimes, or at least flaws in the system, some in the control of universities and others built into the external political, cultural or

ONLINE: EXCERPT

A selection from "Higher Education?":
nytimes.com/books

economic environment, or indeed into human nature. These include the narrow self-interestedness of academic departments; the greed of faculty members and administrators alike; the near-universal hypertrophy of "the athletics incubus"; unfunded government mandates; lifetime employment for pampered professors (thanks to the combination of tenure and Congressional abolition of mandatory retirement); and the demands of students and their parents for frivolous extras (driving what the authors call "the amenities arms race").

But the target to which they most often and most radically return — radically in the sense that they regard it as the root of all the other evils and propose to root it out — is captured in a single word: research.

There was a time, in their telling, when universities saw their mission as education; now even small colleges compel their faculties to publish (at the expense of teaching) for the sake of an institutional stature that teaching alone cannot confer. The authors' deepest scorn is reserved for the claim that good teaching depends on research, and their most extreme proposal is that universities drastically reduce the amount of research they support, by "spinning off" medical schools and research centers, discontinuing paid sabbaticals and abolishing the current system of promotion and tenure, a system that tends to reward research productivity more than effective teaching. (The authors raise interesting questions about tenure and its alternatives. Like many critics of tenure, though, they have a keen eye for abuses of power but are remarkably sanguine about the capacity of the First Amendment to shield scholars from pressure exerted by those with the power to fire them.)

The rest of their prescriptions are scarcely controversial. Who can quarrel with a call to reduce student debt, "engage all students," "make students use their minds," employ technology with care or "end exploitation of adjuncts"? I do not mean that what the authors have to say on those subjects is bland or uninformative; on the contrary, I hope their analyses and prescriptions will be widely read and pondered. But when it comes to the role of research in universities — and, yes, even in colleges — their insight and imagination appear to fail them.

Consider, for instance, the proposal that universities divest themselves of medical schools: they are, the authors think, too distracting and costly, if not in dollars, then in their demands on a president's attention. A tempting suggestion, many a president will agree!

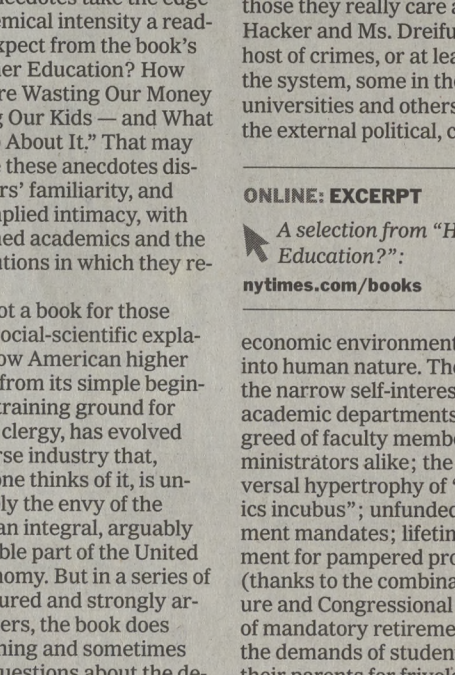
But what an odd suggestion from the pen of authors who lament the self-enclosure of traditional academic disciplines. This is an era, after all, in which some of the most searching inquiry — and most exciting teaching, including the teaching of undergraduates — is taking place precisely at the intersection of medicine and other fields, not just engineering and physics but also fields like anthropology and history. It is a time when some of our most engaged undergraduates are fascinated by fields like global health, which brings medicine and the social and human sciences together in ways more rich and subtle than students of my generation could have imagined. And where are the humanities more alive, right here and now, than in seminars in bioethics that expose undergraduates to searing and quite possibly unanswerable questions about the beginning and end of life?

A similar point could be made about the educational value of working at the frontier of discovery in one of the research centers that Mr. Hacker and Ms. Dreifus decry. Have they spoken with undergraduates who have enjoyed the privilege of assisting a top investigator in an active, federally financed laboratory? In my own anecdotal experience, the best of those students, far from shutting themselves away in a narrow specialization, are very likely spending their time outside the lab in life-expanding service activities that, again, were quite beyond the ken of undergraduates in earlier generations.

In short, the dichotomies on which Mr. Hacker and Ms. Dreifus rely — between teaching and research, liberal arts and "training," humanistic reflection and advanced inquiry — do not quite match the reality they seek to describe, with the always salutary aim of reforming it.

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IN MEMORIAM

BRIDGE

A Principle Is Put to the Test

By PHILLIP ALDER

There were three Spingold Knockout Team events at the Summer North American Championships in New Orleans three weeks ago. The winners of the 0 to 5,000 master point flight were Morrie Kleinplatz of Windsor, Ontario; Mark Leonard of Ypsilanti, Mich.; John Boyer of Hastings-on-Hudson, N.Y.; and Robert Stayman of New Rochelle, N.Y.

In the final, they defeated Jim Russell of Bradenton, Fla.; Nancy Spear and Stephen Stewart of Shawnee Mission, Kan.; and Mark Jones of Birmingham, Ala., by 137 international match points to 93.

The diagramed deal occurred in an early round.

The standards for a pre-emptive opening bid usually vary with position at the table. In the third chair, anything goes. If you have a weak hand, the fourth player is probably still counting his points. In the second position, though, you normally have a textbook hand because one opponent has passed and you are as likely to be disrupting partner as your opponents. However, in this match both Easts opened three hearts despite the paucity of points and shortage of suit quality.

At the first table, South overcalled three no-trump. This ended the bidding, and declarer took 11 tricks.

Stayman (South) preferred to double with such a strong hand. Then, when Boyer (North) jumped to four spades, South closed the auction at six no-trump.

Fla., overtook with the jack; and South won with his king. Declarer cashed his spade ace and continued with the spade queen, which West did well to duck, but only after pausing momentarily. (For squeeze aficionados, if West had taken her spade king and returned, say, a heart, South would have won and cashed five diamonds and the spade jack, bringing everyone down to three cards. When the last diamond was led, it would have executed a double squeeze. East would have had to keep his high heart, so could retain only one club. Then South would have discarded the heart eight. And West would have had to hold her spade nine, so would have also reduced to one club. Declarer would have won the last two tricks with the ace and queen of clubs to make his contract.)

Stayman cashed his heart ace, then ran the diamonds. With one round to go, this was the position:

NORTH
♠ J 8
♡ —
♢ 6
♣ 4

WEST
♠ K 9
♡ —
♢ —
♣ K 10

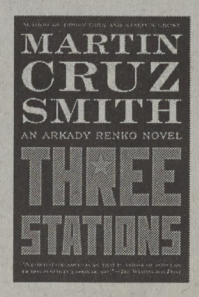
EAST
♠ —
♡ Q 7 6
♢ —
♣ J

SOUTH
♠ —
♡ 8
♢ —
♣ A Q 9

On the last diamond, East and

Newly Released

Stories of crime and misdemeanors — gritty, comic, fantastic and true-life — make their bid for the beach reader this month. The locations may vary, from Mumbai to Manhattan to Bad Münstereifel (it's in Germany), but as always, the plots thicken.



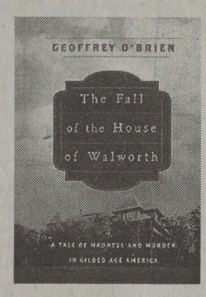
Three Stations

An Arkady Renko Novel

By Martin Cruz Smith
243 pages. Simon & Schuster. $25.99.

The Soviet Union has crumbled, but Martin Cruz Smith's Investigator Arkady Renko endures. In this seventh outing, Arkady moves between the oligarchs and cast-offs of post-Soviet Russia, with his sympathies exactly where you expect them. Maya, a young girl forced into prostitution, has escaped her pimp captors with her newborn baby, only to have the child stolen as she sleeps. She winds up at Three Stations (Komsomol Square on the tourist maps), where Moscow's train and Metro lines converge and "the crippled, outcast and usually hidden members of society gathered like the Court of Miracles only without the miracles." Also at Three Stations is the body of a young woman whom Arkady is sure was murdered, though his bosses say otherwise, and Zhenya, the chess prodigy runaway introduced in "Wolves Eat Dogs," who sets out to help Maya, not always with her assent. Their searches intertwine in the underground (literal and metaphorical) of the new Russia.

AMY VIRSHUP



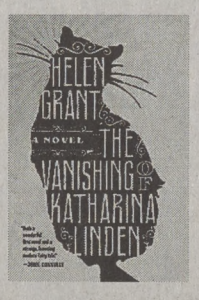
The Fall of the House of Walworth

A Tale of Madness and Murder in Gilded Age America

By Geoffrey O'Brien
337 pages. Henry Holt. $30.

This nonfiction account of the 1873 murder of Mansfield Tracy Walworth by his 19-year-old son, Frank, seems aimed at the "Devil in the White City" slot on the best-seller lists. Walworth père was the scion of a Saratoga family, a novelist and apparently a lout who beat and threatened his wife. But among his greatest crimes may have been writing sentences like this, from his first book, "The Mission of Death": "The silver lamps of heaven were lighted one by one above the glistening spires of the provincial city; and as their increasing lustre dispelled the gloomy shades of night, distant sounds of festal merriment came swelling from the tranquil bosom of the bay, as if to accelerate the loitering footsteps of the tardy reveller." Mr. O'Brien's own prose can occasionally seem haunted by Mansfield's ghost, though the dolorous Walworths might bring out the dime novelist in the best of us.

AMY VIRSHUP



The Vanishing of Katharina Linden

By Helen Grant
287 pages. Delacorte Press. $24.

Ms. Grant isn't bashful about her influences in this, her first novel. "When she vanished," she writes of the unseen title character, "it almost seemed like something from a fairy tale, as though she were one of Grimms' twelve dancing princesses." A small German town, where gossip is rife and "everyone knew everyone else," is an apt setting for a contemporary story that feels age-old, too. There 10-year-old Pia Kolvenbach and her pal Stefan go sleuthing when other girls begin to disappear. Pia is already the subject of whispers, known as "the girl whose grandmother exploded" in what was actually a ghoulish household accident. Dotted with the creepy tales of Unshockable Hans and the Fiery Man of the Hirnberg, the plot climaxes just where it should: in a dark cellar, with an icy well and a hidden tunnel. . . .

SCOTT HELLER

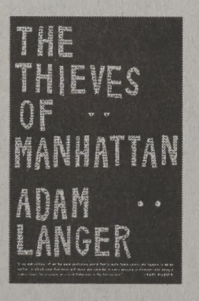


Serious Men

By Manu Joseph
310 pages. W. W. Norton & Company. $14.95.

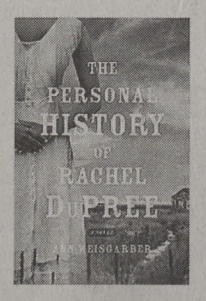
Ayyan Mani could use a little fun and so he creates some, for as long as he can. In Mumbai, where they take their traditions and class divisions seriously, Ayyan is the low-status, "untouchable" personal assistant to Arvind Acharya, an astronomer who is the director of the Institute of Theory and Research. At work, while his colleagues devise competing projects to prove the existence of extraterrestrial life, Ayyan amuses himself by writing fictional quotations on a blackboard that are aimed at irritating his Brahmin superiors. At home, to cheer up Oja, his depressed, soap-opera-addicted wife, he indulges in lies and trickery to make his 10-year-old son, Adi (who is partly deaf), appear to be a genius at his Catholic school. What happens when Ayyan's tangled web grows knotty is the subject of this satire, which is being published as a paperback original.

FELICIA R. LEE



The Thieves of Manhattan

By Adam Langer



The Personal History of Rachel DuPree

NYT
2/21/10

DIGITAL DOMAIN

RANDALL STROSS

The Birth of Cheap Communication (and Junk Mail)

WOULD you pay a full day's earnings just to receive an e-mail message from me? On those terms, I bet you wouldn't welcome hearing from me very often.

In England in 1830, postage for letters was calculated not only by the number of sheets of paper but also by the number of miles traversed, and the recipient was the one who had to pay. For a person of ordinary means, a letter of middling length could come to about a day's wages, a fearsome cost for the unfortunate household that received a letter.

But a decade or so later, when Britain and the United States introduced cheap, flat postal rates, without regard to the number of sheets or distance traveled, correspondents enjoyed something like our unmetered broadband today. Communication became more frequent, and ties were strengthened among families and friends. But cheap rates also led to junk mail and postal scams.

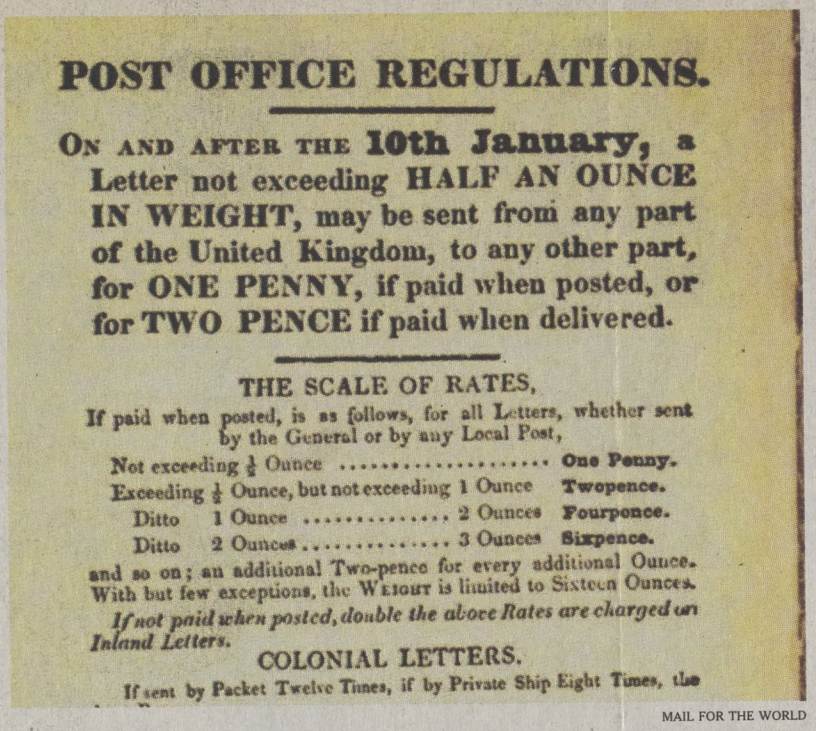
In Victorian London, though service wasn't 24/7, it was close to 12/6. Home delivery routes would go by every house 12 times a day — yes, 12. In 1889, for example, the first delivery began about 7:30 a.m. and the last one at about 7:30 p.m. In major cities like Birmingham by the end of the century, home routes were run six times a day.

"In London, people complained if a letter didn't arrive in a couple of hours," said Catherine J. Golden, a professor of English at Skidmore College and author of "Posting It: The Victorian Revolution in Letter Writing" (2009).

And, not unlike us, most Victorian letter writers seemed more concerned about getting a rapid response than a long one. "Return of post" was an often-used phrase, requesting an immediate response, in time for the next scheduled delivery that day.

As any English major could tell you, the literary output of eminent Victorians was prodigious. Anthony Trollope, for example, wrote dozens of novels while working for the British post office, using the Victorian equivalent of a laptop computer: a portable writing desk.

Randall Stross is an author based in Silicon Valley and a professor of business at San Jose State University. E-mail: stross @nytimes.com.



POST OFFICE REGULATIONS.

ON AND AFTER THE **10th January,** a Letter not exceeding HALF AN OUNCE IN WEIGHT, may be sent from any part of the United Kingdom, to any other part, for ONE PENNY, if paid when posted, or for TWO PENCE if paid when delivered.

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Not exceeding ½ Ounce		One Penny.
Exceeding ½ Ounce, but not exceeding	1 Ounce	Twopence.
Ditto 1 Ounce	2 Ounces	Fourpence.
Ditto 2 Ounces	3 Ounces	Sixpence.

and so on; an additional Two-pence for every additional Ounce. With but few exceptions, the WEIGHT is limited to Sixteen Ounces.

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COLONIAL LETTERS.

If sent by Packet Twelve Times, if by Private Ship Eight Times, the

MAIL FOR THE WORLD



OLI SCARFF/GETTY IMAGES

A traditional pillar box, right, is still used for mail in London. Starting in 1840, Britain allowed letters to be sent anywhere in the country for as little as a penny.

For his books, he didn't stint on words: a modern reprint of "He Knew He Was Right," with small type, runs 930 pages. But Ms. Golden said his letters tended to be brief and businesslike.

David M. Henkin, a history professor at the University of California, Berkeley, says that there has been "a distorted impression of how articulate or thoughtful 19th-century letter writers were — both American and British."

"The historical letters we encounter were often written by famous, articulate people," he added, "preserved by their recipients and selected for publication."

When researching letters written by not-so-famous Americans, Mr. Henkin was struck by writing that was "prosaic, not poetic."

In the early 1800s, before the postal reforms, Americans often sent letters that weren't letters at all, but newspapers they had received in the mail and then resent to distant friends and family. Postal rates favored the practice, as newspapers could be remailed in their entirety for about what a single-sheet letter would cost — and the sender was spared the obligation of writing an actual letter.

In 1840, The New Orleans Picayune tried to persuade its subscribers to buy gift subscriptions instead of remailing their own copies of the paper, gently scolding that when "you send your friend all the news in a printed journal you have a very fair excuse for being lazy with your pen." (Online readers should feel perfectly free to send this column to friends.)

Postal service was democratized in Britain in 1839, with legislation that set a flat rate effective the next year and introduced the adhesive postage stamp, shifting the payment burden to the sender. For a penny, a letter of up to half an ounce could reach any destination in Britain. (Recipients could still do the paying, but that would cost 2 pence.)

The United States, like other countries, soon followed. In 1845 and 1851, Congress substantially reduced the cost of sending a letter and offered a steep discount for prepayment. But inexpensive postage didn't spur people to send long, handwritten letters, so much as it enabled advertisers to spew out unsolicited junk mail on a mass scale. In 1855, according to Mr. Henkin, 30 or 40 mailbags filled with nothing but printed "circulars" for lotteries and patent medicines arrived daily at some post offices.

The same postal reforms that allowed family members and legitimate businesses to get in touch inexpensively also made it possible for cheats to do so, too. In the United States after the Civil War, a guide to New York City estimated that more than 2,000 "swindling establishments" were using the postal system, Mr. Henkin writes in "The Postal Age: The Emergence of Modern Communications in 19th-Century America" (2006).

These operators sent out "tens of thousands of solicitations and at minimal expense," he writes. "Even a small percentage of replies from eager victims remitting a dollar or just a postage stamp could translate into a major windfall." (Unused stamps could be resold or used in the next mailing and sometimes functioned as currency, he says.)

THE Victorians mailed all sorts of things besides words: tree cuttings, leeches, mosses and even manure, Ms. Golden writes. We could say that the only thing left for the modern correspondent to invent was the completely empty envelope — the Facebook "poke," the sending of a greeting without saying so much as "hi."

When one Facebook member clicks to "poke" another, of course, the receiver can poke back, returning the wordless greeting. Compared with a poke, even a brief e-mail message seems impressively articulate. □

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NYT Dec. 28 '09

PAUL KRUGMAN

The Big Zero

Maybe we knew, at some unconscious, instinctive level, that it would be an era best forgotten. Whatever the reason, we got through the first decade of the new millennium without ever agreeing on what to call it. The aughts? The naughties? Whatever. (Yes, I know that strictly speaking the millennium didn't begin until 2001. Do we really care?)

But from an economic point of view, I'd suggest that we call the decade past the Big Zero. It was a decade in which nothing good happened, and none of the optimistic things we were supposed to believe turned out to be true.

It was a decade with basically zero job creation. O.K., the headline employment number for December 2009 will be slightly higher than that for December 1999, but only slightly. And private-sector employment has actually declined — the first decade on record in which that happened.

It was a decade with zero economic gains for the typical family. Actually, even at the height of the alleged "Bush boom," in 2007, median household income adjusted for inflation was lower than it had been in 1999. And you know what happened next.

The decade when nothing went right.

It was a decade of zero gains for homeowners, even if they bought early: right now housing prices, adjusted for inflation, are roughly back to where they were at the beginning of the decade. And for those who bought in the decade's middle years — when all the serious people ridiculed warnings that housing prices made no sense, that we were in the middle of a gigantic bubble — well, I feel your pain. Almost a quarter of all mortgages in America, and 45 percent of mortgages in Florida, are underwater, with owners owing more than their houses are worth.

Last and least for most Americans — but a big deal for retirement accounts, not to mention the talking heads on financial TV — it was a decade of zero gains for stocks, even without taking inflation into account. Remember the excitement when the Dow first topped 10,000, and best-selling books like "Dow 36,000" predicted that the good times would just keep rolling? Well, that was back in 1999. Last week the market closed at 10,520.

So there was a whole lot of nothing going on in measures of economic progress or success. Funny how that happened.

For as the decade began, there was an overwhelming sense of economic triumphalism in America's business and political establishments, a belief that we — more than anyone else in the world — knew what we were doing.

Let me quote from a speech that Lawrence Summers, then deputy Treasury secretary (and now the Obama administration's top economist), gave in 1999. "If you ask why the American financial system succeeds," he said, "at least my reading of the history would be that there is no innovation more important than that of generally accepted accounting principles: it means that every investor gets to see information presented on a comparable basis; that there is discipline on company managements in the way they report and monitor their activities." And he went on to declare that there is "an ongoing process that really is what makes our capital market work and work as stably as it does."

So here's what Mr. Summers — and, to be fair, just about everyone in a policy-making position at the time — believed in 1999: America has honest corporate accounting; this lets investors make good decisions, and also forces management to behave responsibly; and the result is a stable, well-functioning financial system.

What percentage of all this turned out to be true? Zero.

What was truly impressive about the decade past, however, was our unwillingness, as a nation, to learn from our mistakes.

Even as the dot-com bubble deflated, credulous bankers and investors began inflating a new bubble in housing. Even after famous, admired companies like Enron and WorldCom were revealed to have been Potemkin corporations with facades built out of creative accounting, analysts and investors believed banks' claims about their own financial strength and bought into the hype about investments they didn't understand. Even after triggering a global economic collapse, and having to be rescued at taxpayers' expense, bankers wasted no time going right back to the culture of giant bonuses and excessive leverage.

Then there are the politicians. Even now, it's hard to get Democrats, President Obama included, to deliver a full-throated critique of the practices that got us into the mess we're in. And as for the Republicans: now that their policies of tax cuts and deregulation have led us into an economic quagmire, their prescription for recovery is — tax cuts and deregulation.

So let's bid a not at all fond farewell to the Big Zero — the decade in which we achieved nothing and learned nothing. Will the next decade be better? Stay tuned. Oh, and happy New Year. □

SATUR



2009 A

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S. Times Oct. 4 109

China's short march: bold plans and a wake-up call for the West

BY ORVILLE SCHELL
Special to The Times

BEIJING — After massive preparations, China's government staged a grand National Day parade in Beijing's Tiananmen Square last week to celebrate both the 60th anniversary of the PRC's founding and the 30th anniversary of Deng Xiaoping's program of "reform and opening up."

Walking through the square recently, I found myself thinking back to when I first began following China's amazing odyssey. The iconic, Mona Lisa-like visage of Chairman Mao still gazes out from the Gate of Heavenly Peace, but what was happening all around me suggested how much things had changed.

When I first began studying China at Harvard a half-century ago, China's leaders trumpeted the superiority of their socialist command economy, which controlled every aspect of life. Hostility between the United States and China, however, prevented students like me from actually traveling there.

But in 1975, while Mao still lived, the Cultural Revolution still raged, class politics still held sway, and there were no private cars, shops, advertisements, or private property, I arrived in Beijing. Even we visiting foreigners — all dutifully clad in blue Mao suits and caps — were expected to attend regular political "study sessions" to purify our bourgeois minds with proletarian tracts written by the Gang of Four. That trip set an indelible baseline against which I have since been able to measure all the changes China has undergone.



GABRIEL CAMPANARIO / THE SEATTLE TIMES

As Deng Xiaoping began to encourage individual incentives over the next several decades — embodied in such slogans as, "To Get Rich Is Glorious" — I watched with wonder and amazement as China's private economy began to rise from the ashes of Mao's revolution. As this process unfolded, it became fashionable for market fundamentalists in the West to bask in a sense of vindication. After all, were the scales not falling away from the eyes of Chinese leaders, and were they not now turning for salvation toward the god of capitalism that they had once so militantly denounced?

This "end-of-history" interlude, when "communism" was either failing or recycling itself into its opposite, also encouraged many latter-day American political missionaries to proselytize for democracy as well as capitalism — to urge China's leaders to abandon state controls not only over their economy, but over their political system as well.

Of course, China's leaders vigorously resisted that evangelism, especially after the collapse of communism in Europe in 1989, often berating the West for "intruding in the internal affairs of China" and clinging even more defiantly to their Leninist, one-party form of governance. As the imbalance between China's ever more dynamic, modern and globalized economy and its opaque, single-party system of political rule deepened, many Western specialists predicted that the contradiction would inevitably trip China up. Instead, it was America and the West that went into an economic tailspin.

When, after the eight catastrophic years of George W. Bush's presidency, Barack Obama entered the White House, it seemed for a moment as if America might be able to arrest its downward slide. But then an unwelcome thing happened. Obama ran right into a perfect storm of the worst aspects of American democracy: red-state provincialism and ignorance, fearful conservatism, Republican Party obstructionism and even some Democratic Party dissidence.

The U.S. Congress became paralyzed by partisan politics. Seemingly lacking a central nervous system, it has become a dysfunctional creature with little capacity to recognize any common national, much less international, interest. Under such circumstances, even a brilliant leader, with an able staff and promising policies, will be unable to pursue his agenda.

As governments across the West have become increasingly bogged down trying to fix a broken economy, China has been formulating a whole series of new, well-considered policies and forging ahead with bold decision-making to tackle one daunting problem after another. Triumphant from the 2008 Olympic Games, its leaders have undertaken the most impressive infrastructure program in history, implemented a highly successful economic-stimulus package, and now are moving into the forefront of green technology, renewable energy and energy efficiency — the activities out of which the new global economy is certain to grow.

In short, China is veritably humming with energy, money, plans, leadership and forward motion, while the West seems paralyzed.

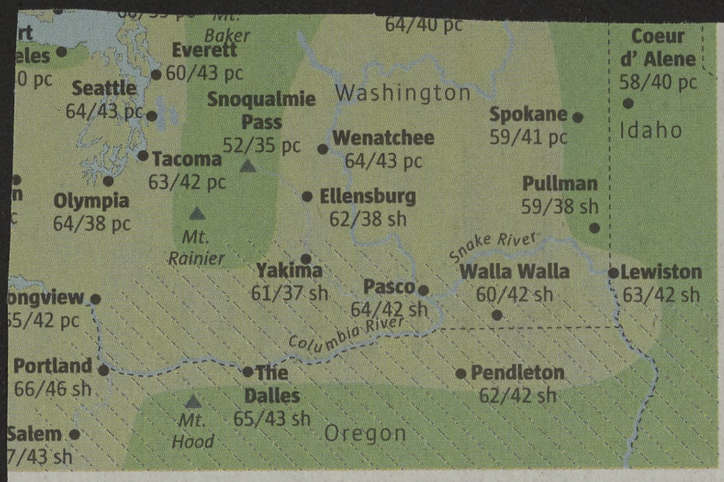
As I strolled through Tiananmen Square, the paradox that struck me was that the very system of democratic capitalism that the West has so ardently believed in and advocated now seems to be failing us. At the same time, the kind of authoritarianism and state-managed economics that we have long impugned now seems to be serving China well.

It is intellectually and politically unsettling to realize that, if the West cannot quickly straighten out its systems of government, only politically unreformed states like China will be able to make the decisions that a nation needs to survive in today's high-speed, high-tech, increasingly globalized world.

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Orville Schell is director of the Center on U.S.-China Relations at the Asia Society.



Forks	62	38	pc
Friday Harbor	60	40	pc
Hoquiam	63	41	pc
Longview	65	42	pc
Oak Harbor	60	47	pc
Olympia	64	38	pc
Port Angeles	59	40	pc
Pullman	59	38	sh
Seattle	64	43	pc
Shelton	65	37	pc
Spokane	59	41	pc
Stampede Pass	57	33	pc
Tacoma	63	42	pc
Tri-Cities	64	42	sh
Walla Walla	60	42	sh
Wenatchee	64	43	pc
Yakima	61	37	sh
OREGON			
Astoria	65	43	pc
Bend	42	27	rs
Eugene	62	37	sh
Medford	55	37	sh
Portland	66	46	sh
IDAHO			
Boise	51	34	rs
Sun Valley	37	28	rs

Jackson, MS	75	68	t
Jacksonville	84	69	pc
Kansas City	67	52	sh
Klamath Falls	40	28	rs
Las Vegas	75	54	pc
Little Rock	66	57	r
Tucson	83	60	t
Tulsa	64	53	r
Wash., DC	74	52	s
Wichita	66	51	r
Wilmington	75	51	s
Yuma	86	64	pc

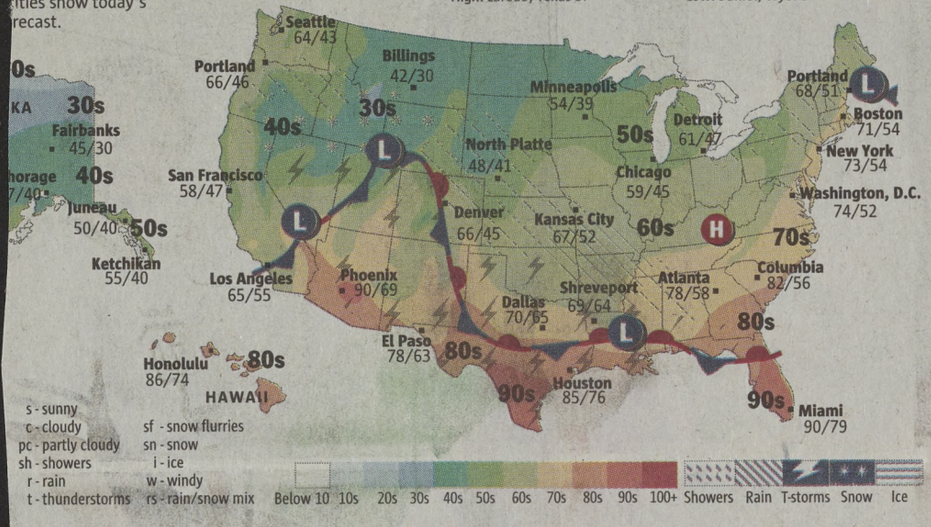
International

Today's forecast

	Hi	Lo	W		Hi	Lo	W
Amsterdam	57	41	sh	Madrid	80	56	pc
Athens	79	67	pc	Manila	83	76	t
Auckland	64	53	sh	Mazatlan	87	77	pc
Baghdad	98	72	s	Mexico City	70	55	t
Bangkok	95	78	t	Montreal	61	52	r
Beijing	73	53	s	Moscow	53	44	c
Belgrade	65	43	s	Nairobi	77	54	pc
Berlin	59	48	sh	New Delhi	89	73	t
Bermuda	84	77	t	Nice	74	63	pc
Bogota	67	50	t	Oslo	48	24	sh
Budapest	69	48	s	Ottawa	61	48	sh
Buenos Aires	71	59	s	Paris	60	39	sh
Cairo	95	71	s	Puerto Vallarta	87	73	pc
Calgary	40	32	rs	Reykjavik	37	24	sn
Cancun	89	77	pc	Rio de Janeiro	82	66	t
Caracas	86	77	t	Riyadh	99	75	s
Copenhagen	55	46	sh	Rome	71	57	s
Dublin	53	37	c	Santiago	66	41	pc
Edmonton	48	23	pc	Sao Paulo	75	63	t
Frankfurt	60	50	pc	Seoul	66	55	s
Geneva	65	50	pc	Singapore	87	78	t
Guam	86	76	t	St. Petersburg	43	35	sh
Havana	93	71	t	Stockholm	48	42	sh
Helsinki	53	35	sh	Sydney	62	57	sh
Hong Kong	81	77	pc	Taipei	83	75	t
Islamabad	94	74	pc	Tehran	79	63	s
Istanbul	81	65	t	Tokyo	69	64	s
Jerusalem	88	67	s	Toronto	59	48	sh
Johannesburg	62	58	t	Vancouver, B.C.	61	44	s
Kabul	82	53	pc	Victoria, B.C.	61	42	s
Lima	66	59	c	Vienna	59	48	s
Lisbon	81	64	pc	Warsaw	69	56	pc
London	57	39	pc	Winnipeg	49	41	c

...nal forecast

...ities show today's ...recast.



s - sunny
c - cloudy
pc - partly cloudy
sh - showers
r - rain
t - thunderstorms
sf - snow flurries
sn - snow
i - ice
w - windy
rs - rain/snow mix

Below 10 10s 20s 30s 40s 50s 60s 70s 80s 90s 100+ Showers Rain T-storms Snow Ice

National extremes *(contiguous U.S.)*

High: Laredo, Texas 97 Low: Daniel, Wyo. 9

Sun schedule

	Sunrise	Sunset
Today	7:13 a.m.	6:42 p.m.
Tomorrow	7:14 a.m.	6:40 p.m.

Moon schedule



Last	New	First	Full
Oct. 11	Oct. 17	Oct. 25	Nov. 2

	Moon rises	Moon sets
Today	6:28 p.m.	7:54 a.m.
Tomorrow	6:52 p.m.	9:08 a.m.

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From left, a Caduveo woman from Brazil and a Maori chief's self-portrait, from "Tristes Tropiques"; Caduveo women, from "Structural Anthropology"; Caduveo body designs, from "Tristes Tropiques."

Claude Lévi-Strauss, 100, Dies; Altered Western Views of the 'Primitive'

By EDWARD ROTHSTEIN

Claude Lévi-Strauss, the French anthropologist whose revolutionary studies of what was once called "primitive man" transformed Western understanding of the nature of culture, custom and civilization, has died at 100.

His son Laurent said Mr. Lévi-Strauss died of cardiac arrest Friday at his home in Paris. His death was announced Tuesday, the same day he was buried in the village of Lignerolles, in the Côte-d'Or region southeast of Paris, where he had a country home.

"He had expressed the wish to have a discreet and sober funeral, with his family, in his country house," his son said. "He was attached to this place; he liked to take walks in the forest, and the cemetery where he is now buried is just on the edge of this forest."

A powerful thinker, Mr. Lévi-Strauss, in studying the mythologies of primitive tribes, transformed the way the 20th century came to understand civilization itself. Tribal mythologies, he argued, display remarkably subtle systems of logic, showing rational mental qualities as sophisticated as those of Western societies.

Mr. Lévi-Strauss rejected the idea that differences between societies were of no consequence, but he focused on the common aspects of humanity's attempts to understand the world. He became the premier representative of "structuralism," a school of thought in which universal "structures" were believed to underlie all human activity, giving shape to seemingly disparate cultures and creations.

His work was a profound influence even on his critics, of whom there were many. There has been no comparable successor to him in France. And his writing — a mixture of the pedantic and the poetic, full of daring juxtapositions, intricate argument and elaborate metaphors — resembles little that had come before in anthropology.

"People realize he is one of the great intellectual heroes of the 20th century," Philippe Descola, the chairman of the anthropology department at the Collège de France, said last November in an interview with The New York Times on the centenary of Mr. Levi-Strauss's birth. Mr. Lévi-Strauss was so revered that the occasion was celebrated in at least 25 countries.

A descendant of a distinguished French-Jewish artistic family, he was a quintessential French intellectual, as comfortable in the public sphere as in the academy. He taught at universities in Paris, New York and São Paulo, Brazil, and also worked for the United Nations and the French government.

His legacy is imposing. "Mythologiques," his four-volume work about the structure of native mythology in the Americas, attempts nothing less than an interpretation of the world of culture and custom, shaped by analysis of several hundred myths of little-known tribes and traditions. The volumes — "The Raw and the Cooked," "From Honey to Ashes," "The Origin of Table Manners" and "The Naked Man," published from 1964 to 1971 — challenge the reader with their complex interweaving of theme and detail.

In his analysis of myth and culture, Mr. Lévi-Strauss might contrast imagery of monkeys and jaguars; consider the differences in meaning of roasted and boiled food (cannibals, he suggested, tended to boil their friends and roast their enemies); and establish connections between weird mythological tales and ornate laws of marriage and kinship.

Many of his books include diagrams that look like maps of interstellar geometry, formulas that evoke mathematical techniques, and black-and-white photographs of scarified faces and exotic ritual that he made during his field work.

'The Savage Mind'

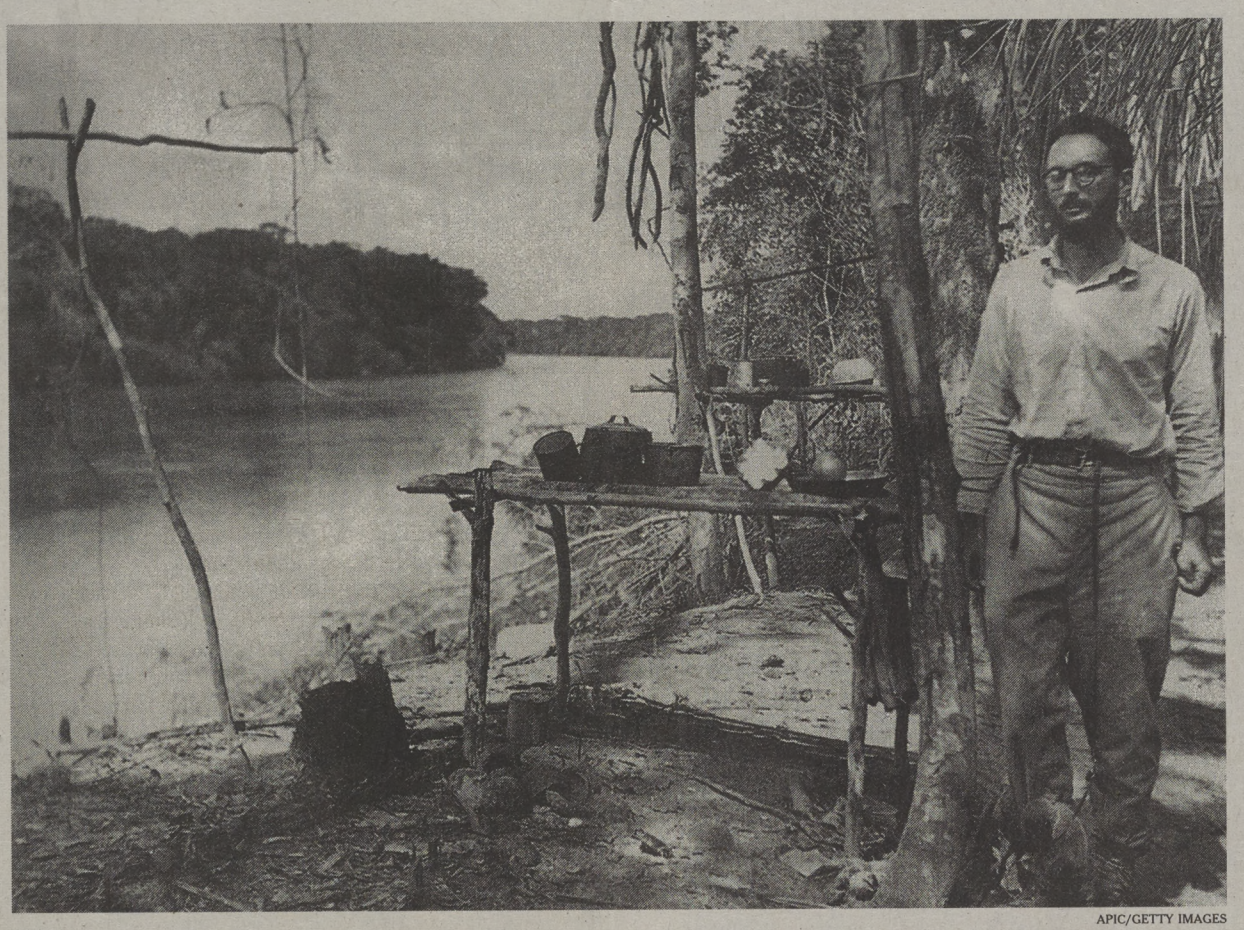
His interpretations of North and South American myths were pivotal in changing Western thinking about so-called primitive societies. He began challenging the conventional wisdom about them shortly after beginning his anthropological research in the 1930s — an experience that became the basis of an acclaimed 1955 book, "Tristes Tropiques," a sort of anthropological meditation based on his travels in Brazil and elsewhere.

The accepted view held that primitive societies were intellectually unimaginative and temperamentally irrational, basing their approaches to life and religion on the satisfaction of urgent needs for food, clothing and shelter.

Mr. Lévi-Strauss rescued his subjects from this limited perspective. Beginning with the Caduveo and Bororo tribes in the Mato Grosso region of Brazil, where he did his first and primary fieldwork, he found among them a dogged quest not just to satisfy material needs but also to understand origins, a sophisticated logic that governed even the most bizarre myths, and an implicit sense of order and design, even among tribes who practiced ruthless warfare.

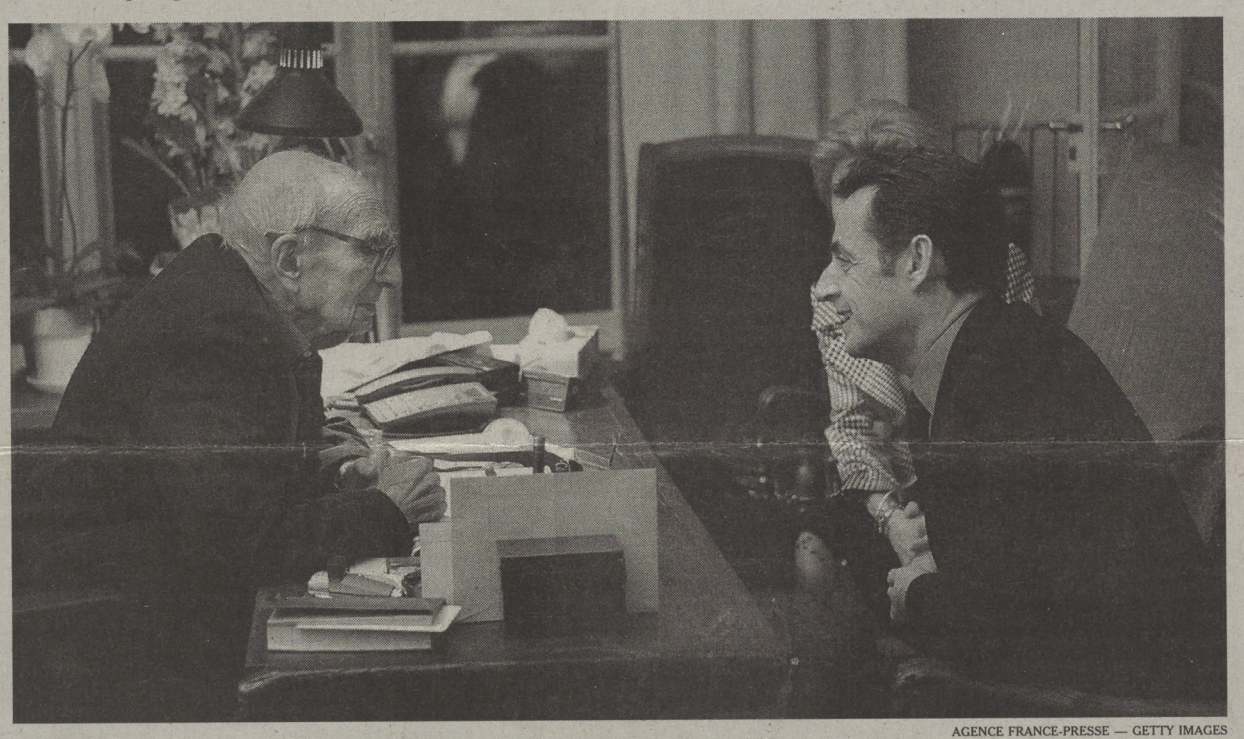
His work elevated the status of "the savage mind," a phrase that became the English title of one of his most forceful surveys, "La Pensée Sauvage" (1962).

Nadim Audi contributed reporting from Paris.



APIC/GETTY IMAGES

The anthropologist Claude Lévi-Strauss, who lived in Brazil in the late '30s, in the Amazon rain forest around 1936.



AGENCE FRANCE-PRESSE — GETTY IMAGES

Mr. Lévi-Strauss at home in Paris on Nov. 28, 2008, his 100th birthday, being visited by President Nicolas Sarkozy.

"The thirst for objective knowledge," he wrote, "is one of the most neglected aspects of the thought of people we call 'primitive.'"

The world of primitive tribes was fast disappearing. From 1900 to 1950, more than 90 tribes and 15 languages had disappeared in Brazil alone. This was another of Mr. Lévi-Strauss's recurring themes. He worried about the growth of a "mass civilization," of a modern "monoculture." He sometimes expressed exasperated self-disgust with the West and its "own filth, thrown in the face of mankind."

In this seeming elevation of the savage mind and denigration of Western modernity, he was writing within the tradition of French Romanticism, inspired by the 18th-century philosopher Jean-Jacques Rousseau, whom Mr. Lévi-Strauss revered. It was a view that helped build Mr. Lévi-Strauss's public reputation in the era of countercultural romanticism in the 1960s and '70s.

But such simplified romanticism, and the cultural relativism that developed in later decades, was also a distortion of his ideas. For Mr. Lévi-Strauss, the savage was not intrinsically noble or in any way "closer to nature." Mr. Lévi-Strauss was withering, for example, when describing the Caduveo, whom he portrayed as a tribe so in rebellion against nature — and thus doomed — that it even shunned procreation, choosing to "reproduce" by abducting children from enemy tribes.

His descriptions of North and South American Indian tribes bear little relation to the sentimental and pastoral clichés that have become commonplace. Mr. Lévi-Strauss also made sharp distinctions between the primitive and the modern, focusing on the development of writing and historical awareness. It was an awareness of history, in his view, that allowed the development of science and the evolution and expansion of the West. But he worried about the fate of the West. It was, he wrote in The New York Review of Books, "allowing itself to forget or destroy its own heritage." With the fading of myth's power in the modern West, he also suggested that music had taken on myth's function. Music, he argued, had the ability to suggest, with primal narrative power, the conflicting forces and ideas that lie at the foundation of society.

But Mr. Lévi-Strauss rejected Rousseau's idea that humankind's problems derive from society's distortions of nature. In his view, there is no alternative to such distortions. Each society must shape itself out of nature's raw material, he believed, with law and reason as the essential tools. This application of reason, he argued, created universals that could be found across all cultures and times. He became known as a structuralist because of his conviction that a structural unity underlies all of humanity's mythmaking, and he showed how those universal motifs played out in societies, even in the ways a village was laid out.

For Mr. Lévi-Strauss, every culture's mythology was built around oppositions: hot and cold, raw and cooked, animal and human. And it is through these opposing "binary" concepts, he said, that humanity makes sense of the world.

This was quite different from what most anthropologists had been concerned with. Anthropology had traditionally sought to disclose differences among cultures rather than discovering universals. It had been preoccupied not with abstract ideas but with the particularities of rituals and customs, collecting and cataloguing them.

Mr. Lévi-Strauss's "structural" approach, seeking universals about the human mind, cut against that notion of anthropology. He did not try to determine the various purposes served by a society's practices and rituals. He was never interested in the kind of fieldwork that anthropologists of a later generation, like Clifford Geertz, took on, closely observing and analyzing a society as if from the inside. (He began "Tristes Tropiques" with the statement "I hate traveling and explorers.")

Ideas That Shook His Field

To his mind, as he wrote in "The Raw and the Cooked," translated from "Le Cru et le Cuit" (1964), he had taken "ethnographic research in the direction of psychology, logic and philosophy."

In radio talks for the Canadian Broadcasting Corporation in 1977 (published as "Myth and Meaning: Cracking the Code of Culture"), Mr. Lévi-Strauss demonstrated how a structural examination of myth might proceed. He cited a report that in 17th-century Peru, when the weather became exceedingly cold, a priest would summon all those who had been born feet first, or who had a harelip, or who were twins. They were accused of being responsible for the weather and were ordered to repent. But why these groups? Why harelips and twins?

Mr. Lévi-Strauss cited a series of North American myths that associate twins with opposing natural forces: threat and promise, danger and expectation. One myth, for example, includes a magical hare, a rabbit, whose nose is split in a fight, resulting, literally, in a harelip, suggesting an incipient twinness. With his injunctions, the Peruvian priest seemed aware of associations between cosmic disorder and the latent powers of twins.

Mr. Lévi-Strauss's ideas shook his field. But his critics were plentiful. They attacked him for ignoring history and geography, using myths from one place and time to help illuminate myths from another, without demonstrating any direct connection or influence.

In an influential critical survey of his work in 1970, the Cambridge University anthropologist Edmund Leach wrote of Mr. Lévi-Strauss: "Even now, despite his immense prestige, the critics among his professional colleagues greatly outnumber the disciples."

Mr. Leach himself doubted whether Mr. Lévi-Strauss, during his fieldwork in Brazil, could have conversed with "any of his native informants in their native language" or stayed long enough to confirm his first impressions. Some of Mr. Lévi-Strauss's theoretical arguments, including his explanation of cannibals and their tastes, have been challenged by empirical research.

Mr. Lévi-Strauss conceded that his strength was in his interpretations of what he discovered, and he thought that his critics did not sufficiently credit the cumulative impact of those speculations. "Why not admit it?" he once said to an interviewer, Didier Eribon, in "Conversations With Lévi-Strauss" (1988). "I was fairly quick to discover that I was more a man for the study than for the field." Claude Lévi-Strauss was born on Nov. 28, 1908, in Brussels to Raymond Lévi-Strauss and the former Emma Levy, who were living in Belgium at the time. He grew up in France, near Versailles, where his grandfather was a rabbi and his father a portrait painter. His great-grandfather Isaac Strauss was a Strasbourg violinist mentioned by Berlioz in his memoirs. As a child, he loved to collect disparate objects and juxtapose them. "I had a passion for exotic curios," he said in "Conversations." "My small savings all went to the secondhand shops." A collection of Jewish antiquities from his family's collection, he said, was displayed in the Musée de Cluny in Paris; others were looted after France fell to the Nazis in 1940. From 1927 to 1932, Claude obtained degrees in law and philosophy at the University of Paris, then taught in a local high school, the Lycée Janson de Sailly, where his fellow teachers included Jean-Paul Sartre and Simone de Beauvoir. He later became a professor of sociology at the French-influenced University of São Paulo in Brazil.

A Taste for Adventure

Determined to become an anthropologist, he began making trips into the country's interior, accompanied by his wife, Dina Dreyfus, whom he married in 1932. "I was envisaging a way of reconciling my professional education with my taste for adventure," he said in "Conversations," adding: "I felt I was reliving the adventures of the first 16th-century explorers."

His marriage to Ms. Dreyfus ended in divorce, as did a subsequent marriage, in 1946, to Rose-Marie Ullmo, with whom he had his son Laurent. In 1954 he married Monique Roman, and they, too, had a son, Matthieu. Besides Laurent, Mr. Lévi-Strauss is survived by his wife and Matthieu as well as by Matthieu's two sons.

Mr. Lévi-Strauss left teaching in 1937 and devoted himself to fieldwork, returning to France in 1939 for further study. But on the eve of World War II, he was drafted into the French Army to serve as a liaison with British troops. In "Tristes Tropiques," he writes of his "disorderly retreat" from the Maginot Line after Hitler's invasion of France, fleeing in cattle trucks, sleeping in "sheep folds."

In 1941 Mr. Lévi-Strauss was invited to become a visiting professor at the New School for Social Research in New York, with help from the Rockefeller Foundation. He called it "the most fruitful period of my life," spending time in the reading room of the New York Public Library and befriending the distinguished German-born American anthropologist Franz Boas and the Russian-born linguist (and structuralist) Roman Jakobson.

He also became part of a circle of artists and Surrealists, including Max Ernst, André Breton and Jean-Paul Sartre's future mistress, Dolorès Vanetti. Ms. Vanetti shared his "passion for objects," Mr. Lévi-Strauss said in "Conversations," and the two regularly visited an antique shop in Manhattan that sold artifacts from the Pacific Northwest. The excursions left Mr. Lévi-Strauss with the "impression that all the essentials of humanity's artistic treasures could be found in New York."

After the war, Mr. Lévi-Strauss was so intent on pursuing his studies in New York that he was given the position of cultural attaché by the French government until 1947. On his return to France, he earned a doctorate in letters from the University of Paris in 1948 and was associate curator at the Musée de l'Homme in Paris in 1948 and 1949. His first major book, "The Elementary Structures of Kinship," was published in 1949. (Several years later, the jury of the Prix Goncourt, France's most famous literary award, said that it would have given the prize to "Tristes Tropiques," his hybrid of memoir and anthropological travelogue, had it been fiction.)

After the Rockefeller Foundation gave the École Pratique des Hautes Études in Paris a grant to create a department of social and economic sciences, Mr. Lévi-Strauss became the school's director of studies, remaining in the post from 1950 to 1974.

Other positions followed. From 1953 to 1960, he served as secretary general of the International Social Science Council at Unesco. In 1959 he was appointed professor at the Collège de France. He was elected to the French Academy in 1973. By 1960, Mr. Lévi-Strauss had founded L'Homme, a journal modeled on The American Anthropologist.

By the 1980s, structuralism as imagined by Mr. Lévi-Strauss had been displaced by French thinkers who became known as poststructuralists: writers like Michel Foucault, Roland Barthes and Jacques Derrida. They rejected the idea of timeless universals and argued that history and experience were far more important in shaping human consciousness than universal laws.

"French society, and especially Parisian, is gluttonous," Mr. Lévi-Strauss responded. "Every five years or so, it needs to stuff something new in its mouth. And so five years ago it was structuralism, and now it is something else. I practically don't dare use the word 'structuralist' anymore, since it has been so badly deformed. I am certainly not the father of structuralism."

But Mr. Lévi-Strauss's version of structuralism may end up surviving poststructuralism, just as he survived most of its proponents. His monumental work "Mythologiques" may even ensure his legacy, as a creator of mythologies if not their explicator.

The final volume ends by suggesting that the logic of mythology is so powerful that myths almost have a life independent from the peoples who tell them. In his view, myths speak through the medium of humanity and become, in turn, the tools with which humanity comes to terms with the world's greatest mystery: the possibility of not being, the burden of mortality.

PHILLIES WORLD SERIES YANKEES

The Ultimate Consolation Prize

Utley Could Be Series M.V.P. for Losing Team

By JACK CURRY

Mickey Mantle was crying. When Bobby Richardson flashes back to how Bill Mazeroski's game-ending homer vaulted the Pittsburgh Pirates over the Yankees in the 1960 World Series, he remembers that Mantle wept. Richardson stared at his friend and teammate because he had never seen Mantle so distraught.

In the moments after the favored Yankees lost the series, Richardson was told that he had been chosen the most valuable player. Richardson, who felt numb, was confused. He had never heard of an M.V.P. being named from a losing team, and the award alleviated none of Richardson's numbness. Richardson is the only player from a losing team to win the award.

"We were so disappointed that we'd lost," Richardson said. "I said thank you for it, but there was no jubilation."

Richardson was a slick second baseman who was a complementary player on a club that included Mantle, Roger Maris and Yogi Berra. But, for seven memorable games in 1960, Richardson was better than any Yankee. After driving in 26 runs all season, Richardson batted .367, hit a homer and knocked in 12 runs during the World Series. It might be the best World Series ever for a second baseman.

But Chase Utley is chasing Richardson's legacy. After Utley smashed two homers to steer the Philadelphia Phillies over the Yankees, 8-6, in Game 5 of the World Series, Richardson received a telephone call. It was Robby, one of Richardson's sons, gushing about another second baseman's performance.

"He said, 'Dad, they might lose, but Utley has the chance to be the most valuable player,'" Richardson said.



BARTON SILVERMAN/THE NEW YORK TIMES

Chase Utley has five home runs in the Series, making him an M.V.P. contender.

Utley has five homers, which is tied with Reggie Jackson, another former Yankee, for the most in a World Series. Jackson bashed five homers, including three off three Dodgers pitchers in one game, when the Yankees won in 1977. Utley could surpass Jackson, and he might match Richardson with an M.V.P. as well.

In five games, Utley's exploits have linked him to two Yankees from different eras. Richardson played on three championship teams, and Jackson won two titles in New York. When Jackson was asked about what Utley has done, he initially offered a playful response.

"It's the greatest performance in the history of baseball," he said. "Anytime a player hits five homers in the World Series, it's the greatest performance in the history of baseball."

After Jackson turned serious, he explained how he was speaking with A. J. Burnett in the clubhouse when Utley clubbed his fifth homer in Game 5. Jackson said he was more concerned about how the Phillies had extended their lead than about Utley tying him.

"If he hits a couple more homers and we win it, it wouldn't bother me," Jackson said. "If he doesn't hit any more homers and we don't win, that would bother me."

Until his son called, Richardson said he had not thought of comparing himself with Utley. If Utley and the Phillies do not win the next two games, Utley will be a strong candidate to join Richardson as the only M.V.P. who did not earn a World Series ring on the same day.

Richardson likes Utley's smooth swing and wondered how the series might be different if the Phillies had more runners on base ahead of Utley. Four of Utley's homers have come with no men on. Utley also ripped a ball high off the right-field fence at Citizens Bank Park.

"A star in my day would be a star today and vice versa," Richardson said in assessing Utley. "And he's certainly a star."

While Richardson was more of a serviceable player than a star player, he was better in the World Series than the regular season. Richardson hit .305 in 36 World Series games, which was 39 points higher than his career average. After the Yankees lost in 1960, Richardson batted .391 to help them win it all in 1961 and speared Willie McCovey's liner for the final out as they won again in 1962.

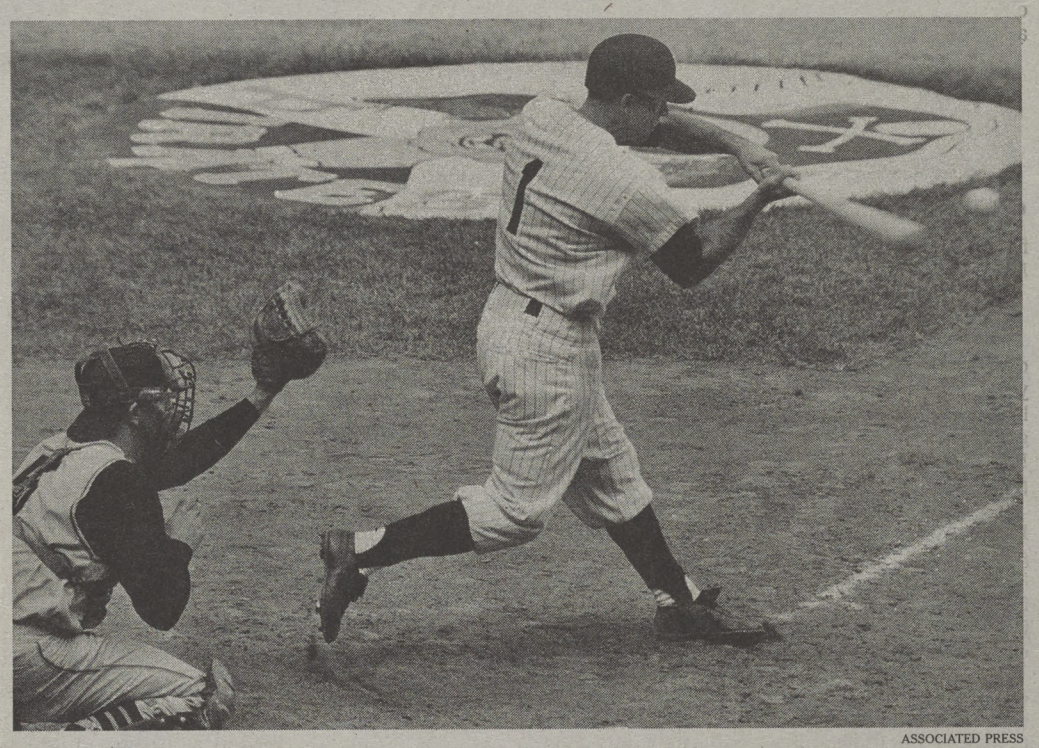
Unlike the imposing Utley, who bats third, Richardson was a modest hitter. When Richardson batted in the first inning of Game 3 in 1960, the Yankees had a 2-0 lead and the bases loaded. Richardson actually thought Manager Casey Stengel might pinch-hit for him. Stengel did not. Richardson was trying to hit a ball to the right side to avoid a double play. Instead, he drilled a grand slam.

"I was probably more surprised than anybody when it went out of the park," Richardson said.

A few days after Richardson saw Mantle weep, he received a white Corvette with red upholstery for winning the M.V.P. Richardson brought the snazzy sports car to his home in Sumter, S.C., but he did not keep it.

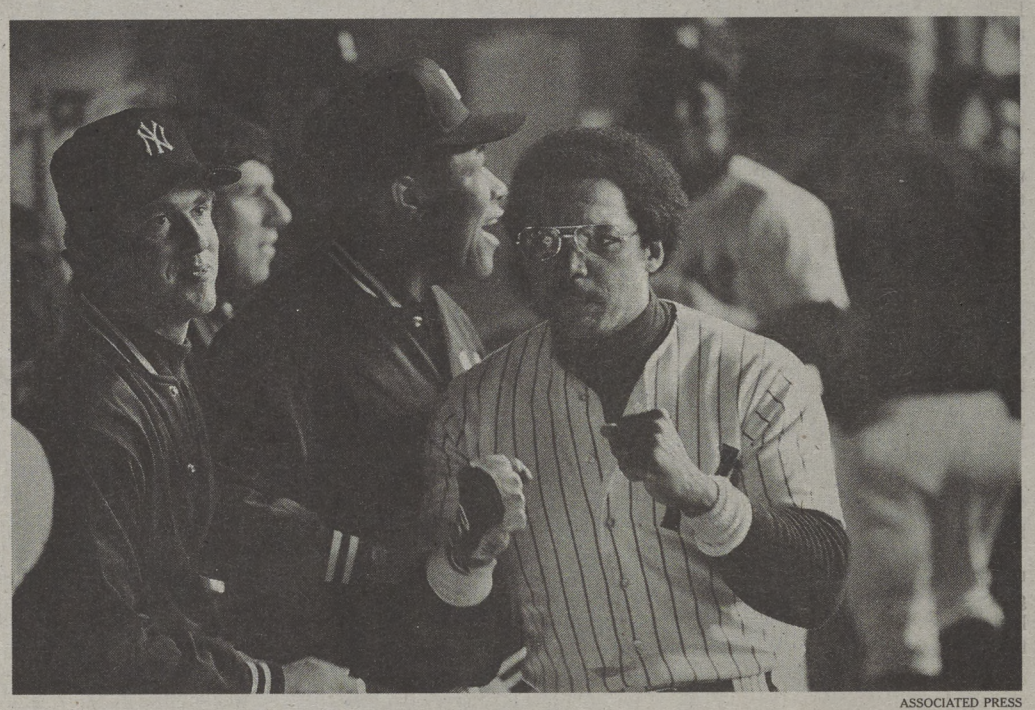
Since Richardson had young children who could not sit in the Corvette, he decided to unload it. Richardson traded in the Corvette and an old station wagon for a jeep and a new station wagon. Almost half a century later, Richardson was still sheepish as he revealed that he ditched the car attached to his M.V.P.

"Looking back, I can't believe I did that," Richardson said. "But, at that time, it was the right thing to do."



ASSOCIATED PRESS

Bobby Richardson is the only player to be named M.V.P. of a World Series when his team lost.



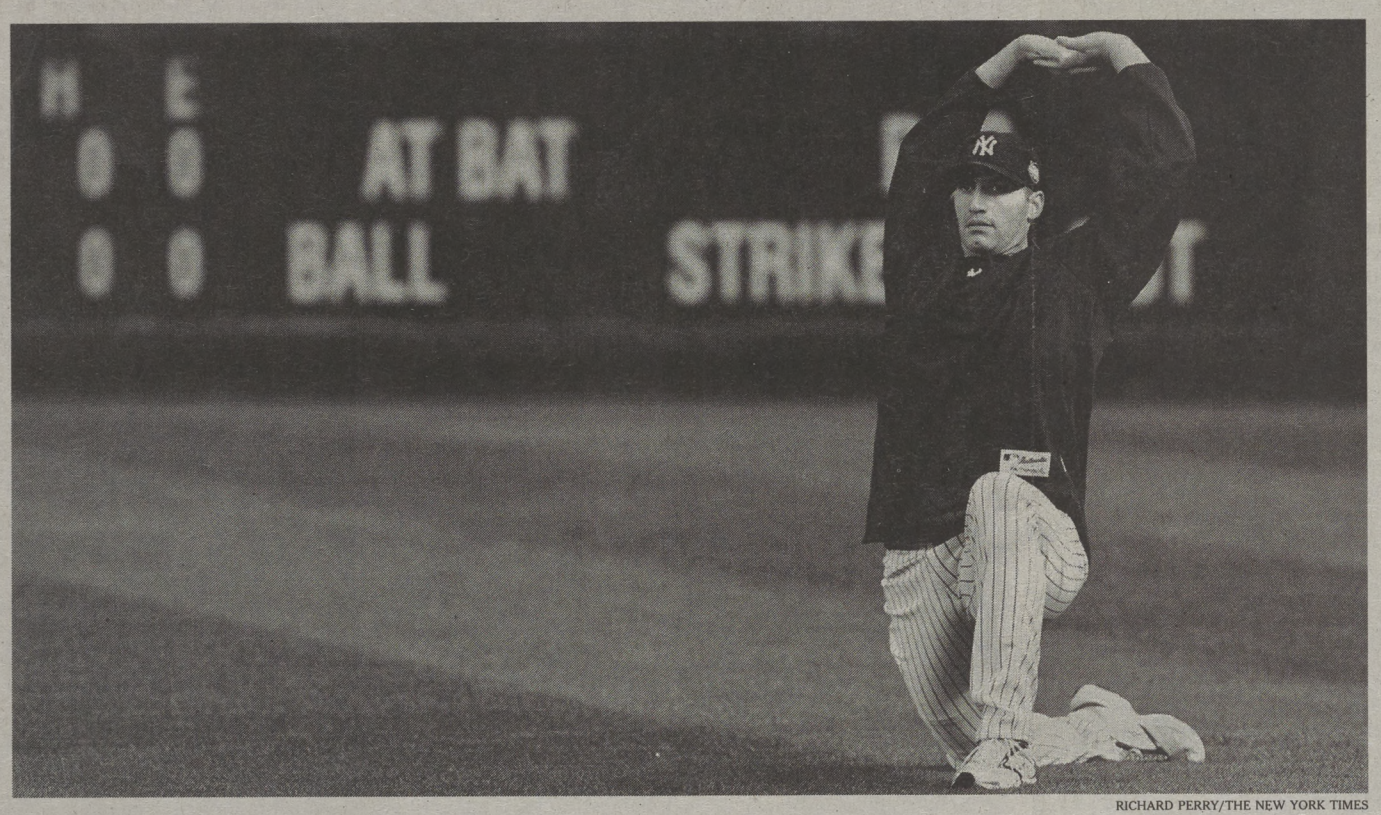
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Reggie Jackson hit five home runs, including three in one game, when the Yankees won in 1977.

Utley Takes On Yankees History

Chase Utley's dynamic World Series has left him face to face with the great World Series numbers that Bobby Richardson and Reggie Jackson produced in 1960 and 1977.

		G	AB	H	2B	3B	HR	RBI	AVG
1960	Bobby Richardson	7	30	11	2	2	1	12	.367
1977	Reggie Jackson	6	20	9	1	0	5	8	.450
2009	**Chase Utley**	**5**	**18**	**6**	**1**	**0**	**5**	**8**	**.333**



RICHARD PERRY/THE NEW YORK TIMES

Andy Pettitte stretching Tuesday as he prepared for something he has done before: pitching a World Series game on three days' rest.

ANALYSIS

Short Rotation Puts Pettitte on the Spot

From First Sports Page

The victory improved Pettitte's career postseason record to 17-9, but he said he could not remember any of those victories being as much of a struggle as Game 3. Now that he has told Manager Joe Girardi he feels fine, Pettitte will try to win again on three days' rest, with a championship at stake.

It will not be easy. A. J. Burnett pitched on short rest in Game 5, also with the title in sight, after a dominant performance in Game 2. Yet Burnett had nothing — no curveball, no fastball command, no chance. Girardi said there was no correlation to the short rest and the poor performance, but what else could he say?

At this point, Girardi has no other options. Joba Chamberlain was the fourth starter in the regular season, but he faded down the stretch as his innings limit approached, and now he is a short reliever again.

The Yankees' other starters were Sergio Mitre, an erratic right-hander who is not on the World Series roster, and Chad Gaudin, who has pitched one inning in a month. Chien-Ming Wang, the nominal No. 2 starter when the season began, is out until May after shoulder surgery.

There was a time when teams would regularly line up three starters and survive the postseason, as the Yankees are trying to do. From 1986 to 1991, the Series champion never used more than three starters. Since then, every champion has used four.

Pettitte, 37, has not made starts four days apart since the end of the 2006 season, when he pitched for the Houston Astros. According to the Elias Sports Bureau, he is 2-6 with a 4.70 earned run average pitching on three days' rest for his career in the regular season, and 3-1 with a 3.24 E.R.A. in the playoffs. But there is no recent data to analyze.

Pettitte has past highlights of strong World Series starts on three days' rest. In Game 5 of the 1996 World Series, he earned Joe Torre's everlasting trust by working eight and a third shutout innings in Atlanta to beat the Braves, 1-0. In 2003, he allowed no earned runs over eight and two-thirds innings in a Game 2 triumph over Florida.

Those games, though, may have nothing to do with the Pettitte of 2009. Pettitte, more than anybody, understands this, as he explained after Game 3: "It's hard to draw on past success or whatever when you're standing out on that mound and the ball is not going where you want it to."

The Yankees know they can count on Pettitte's competitive will. If there is a way out of trouble, they know he will find it. But if his pitches are as lifeless as Burnett's were in Game 5, there may be nothing he can do, no magic to summon. And his teammates must score against Pedro Martinez, who has not pitched since Game 2 and rested the first half of the season.

"We're always confident with Andy pitching," Jeter said. "He's been in a lot of big games for us. He's come through for us. But we all have a job to do."

Pettitte could close out the Phillies the way he silenced the Los Angeles Angels in the American League Championship Series clincher. But even if he falters, the Yankees have C. C. Sabathia for Game 7. Sabathia will be on short rest, too, but he has shown twice this postseason that he is essentially the same pitcher on three days' rest as he is on four.

The Phillies' Game 7 plans are unclear, but Manager Charlie Manuel has used five starters this postseason, so he will have more choices. Manuel could even call for Cliff Lee on two days' rest because Thursday would be his day to throw in the bullpen.

Asked for his thoughts after winning on Monday, Lee gave the earnest answer almost all pitchers give this time of year.

"I'll pitch whenever they want me to pitch," Lee said. "That's about as clear as I can say it."

The Daddy Of All Rivals: Martinez Is Back

From First Sports Page

season and a 6-3 record in the postseason. Yet he presents all this as an illusion, maybe even a mistake.

"Everybody that grows up in the Dominican and didn't have a rich life, it's a survival," Martinez told reporters. "And in baseball I am a survivor. I'm someone that wasn't meant to be, and here I am on one big stage. I thank God for the blessings of being here because I was supposed to just survive and that's it."

His history with the Yankees is complicated, with a vein of toxicity. He forever gained the hatred of Yankee fans for sending the septuagenarian coach Don Zimmer sprawling to the ground when Zimmer charged the mound during a dustup in Fenway Park in 2003. Zimmer has since acknowledged he should never have been out there, and Martinez has said he is not proud of his instincts that day, but he has never apologized.

During the pennant race of 2004, Martinez lost to the Yankees and said: "I can't find a way to beat them at this point. You have to give them credit. They didn't beat my team. They beat me. They're that good right now. They're that hot. I just tip my hat and call the Yankees my daddy."

•

This was one of the oddest things to come out of a ballplayer's lips. Athletes tend to not express their subservience to other athletes. Henceforth he heard chants of "Who's your daddy?" in Yankee Stadium.

In 2004, he lost the second game of the league championship series there and said, "I was the center of attention for a stadium full of people." He added, "That made me feel important."

And he continued: "I caught the attention of 60,000 people," contrasting his importance to "the time back 15 years ago, I was sitting under a mango tree without 50 cents to actually pay for a bus."

Now he shows signs of understanding he has a place in the world. After the Mets let him go, he sat out the first half of 2009 and came back to win five of six decisions with the Phillies, with an earned run average of 3.63. Clearly, Martinez has the power of reinvention, coming up with a new narrative on his life.

On Tuesday, Martinez challenged reporters to write about him when he is retired and doing good works that need publicity. He said he would not mind if he is remembered as Petey, along with singular baseball deities like the Bambino.

Petey's power of reinvention will be tested in Game 6.

"But I'm pretty sure that my name will be mentioned," Martinez assured reporters. "I don't know which way. But maybe after I retire, because normally when you die, people tend to actually give you props about the good things.

"But that's after you die," he said with comedic timing. "So I'm hoping to get it before I die."

He said he wanted to be remembered as a "human being to take his clothes off to probably give it to a man down the street." Sometimes when Martinez gets in this vein, I find myself touched by his creativity, if not his candor, but there will be a stadium full of fans who think he is an opportunist who plays the poor-mouth card.

After he was done with us, Petey crossed paths with his manager.

"Knocked 'em dead," Petey reassured Manuel. Now, in this strange twist, he is back in the Bronx, trying to knock the Yankees dead.

E-mail: geovec@nytimes.com

Tick-Tock and Other Pulses of the West

EDWARD ROTHSTEIN

CONNECTIONS

Back in the days of the early Middle Ages when sand and water and shadow were used to tell time, before there were mechanical clocks or eyeglasses or great cathedrals or steam engines, China was the world's leading technological culture, able to best the provincial Europeans by nearly any measure. Three of the most important new materials that made their way into Europe from the 13th to the 15th century were paper, cast iron and gunpowder, each of which had probably been invented in China, each of which also was a fundamental resource for the development of Western civilization.

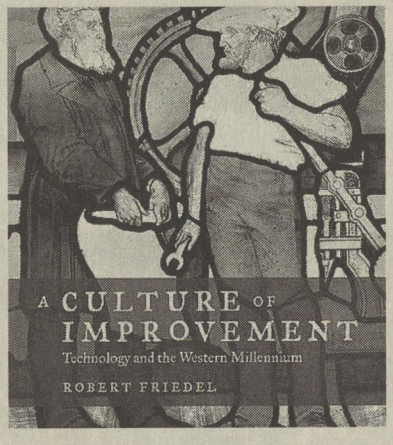
How did the West emerge, though, out of what was once a diverse set of has-been or backwater cultures of a relatively small geographic region roughly contained in the boundaries of modern Europe? This is no mere academic question. That transformation is one of the great phenomena of world history. Alliances are still being made and wars still being fought in which ideas about the origins of the West and its powers play a central role. So successful has the West been that its achievements are avidly envied or used even when they are looked at with wariness or hostility.

But despite the long-held beliefs of many 20th-century historians, and the persistent conviction of many 21st-century global plutocrats, the wealth and reach of the West did not develop because of imperial plunder and domination of non-Western lands. There is always enough rapaciousness and greed to go around in history's persistently growing roster of confrontations and dominations, but imperialism, even at its most gluttonous, was not the source of Western triumph. Just the opposite. Imperialism was the result of Western triumph, a reflection of powers that derived from other sources. It was only possible once other forms of mastery had been established.

The subtle nature of that mastery in science and technology can be gleaned from a new book, "A Culture of Improvement: Technology and the Western Millennium" by Robert Friedel (MIT Press). Mr. Friedel, a historian at the University of Maryland, emphasizes that he does not try to address these big questions about the rise of the West; he explicitly states that he does not attempt to answer questions "about why the West was able to create such a dynamic and productive technology while the rest of the world failed to do so."

Connections, a critic's perspective on arts and ideas, appears every other Monday.

But his book is also a rare, detailed, nontheoretical survey that exposes the veins of invention that run through Western culture, creating an astonishing picture of achievement through its careful accumulation of small details. Mr. Friedel surveys the kinds of inventions and technologies that developed in the West over centuries, compiling a roster of innovation that encompasses everything from textiles to time telling. Under his firm touch it begins to be possible to feel something like the primal pulse of this culture.



A new book by Robert Friedel examines the veins of invention that run through Western culture.

Consider, for example, the earliest examples of mechanical clocks in the 14th century. Somehow they had to use a continuous mechanical force — the pull of a suspended weight slowly falling — to measure discrete intervals of time. This was done through an "escapement," which Mr. Friedel argues, could be "the single most important mechanical invention to emerge from the Middle Ages." An escapement was originally a toothed wheel turned by the slowly dropping weight. The evenly spaced notches on the wheel were used to spur evenly timed mechanical movements: Divided space is turned into divided time. The turning wheels of a clock could also trace different measures of time, including the motions of the moon and the planets, as if its mechanism were a model of the heavens.

By the 16th century it was clear that this achievement was the reflection of certain beliefs about the world. The principles applied to the turning of a wheel in a clock were seen as mirroring, in some way, the workings of cosmic spheres. There was a faith that the world was governed by the same laws that governed the smallest of human inventions. This also reflected confidence in human ability to comprehend that world and replicate its organization. This is the faith of the scientific enterprise itself: Human ability is honored as much as universal principles.

At the same time the development of such mechanical clocks permitted the formation of certain kinds of organized human community. Mr. Friedel suggests the clocks may have evolved out of the need in monasteries to create reliable schedules for prayers. The clock created a standard for time keeping, a public accounting that could not be reliably achieved with hourglasses or sundials. Clocks created community.

None of this can be taken for granted, for the technological process of innovation is difficult. We commonly learn, for example, about the culture of literacy that grew out of the invention of movable type in Europe, which allowed for the creation of less expensive books with greater distribution. This wasn't just a matter of someone having the idea of movable type; the ability to execute it cannot be taken for granted. It meant creating small metal letters that were used to punch a reverse matrix in some softer material; molten metal would be poured so the indentations of the matrix would shape the particular piece of type, which could then be inked in order to print.

This required exquisite craftsmanship and expertise in metallurgy. It also required developing techniques for composing arrays of type into pages. But once developed, movable type stirred an appetite: by 1480, some 30 years after the Gutenberg Bible, there were presses in more than 110 European towns and cities.

This is the pattern again and again. Encouraged by the possibilities of commerce or trade, these extraordinarily sophisticated modifications of the world come into being, sometimes anonymously (as with the invention of the clock escapement or eyeglasses), sometimes under the guidance of an inventor. When they succeed, they amplify what Mr. Friedel calls a "culture of improvement": a drive for transforming human life and experience, ameliorating their hardships, altering their conditions, a drive that Mr. Friedel suggests characterized the West.

It meant that the world could be altered by its inhabitants, and that mental labors could have extraordinary consequences. A new civilization flowered out of such ideas — even its abilities to wage war — and out of trauma and invention, the world we live in began to take shape, a world in which we are, even if in rebellion, heirs of the West.

Maroon 5 Faces Great Expectations

Continued From First Arts Page

Grammy award for best new artist two years ago, to depart the fold of a major record label after a smash debut. The result speaks loudly about the nature of longevity in today's music business, in which sales are slumping, turnover on the Billboard charts is high, and platinum albums are scarce.

"Songs About Jane" sold an estimated 10 million copies worldwide, but that was not enough to assure top executives at Sony BMG, the music giant that distributed it, that the rights to Maroon 5's future recordings were worth the asking price. Instead Sony BMG sold its stake in the partnership with Octone Records, the start-up label that had signed and developed the band.

Waiting in the wings, however, was an eager new corporate home. In February Universal Music Group said it would take on a new partnership with Octone, with Maroon 5 as the principal act on the roster. Universal paid about $35 million for the stake in the new partnership, now called A&M/Octone, said people briefed on the deal, who spoke on condition of anonymity because they had not been authorized to speak publicly about it. Universal's Interscope division will split profits on artists in A&M/Octone.

Early signs suggest that the new Maroon 5 album will be a hit, though how big is hard to say. Already it has generated record advance sales at iTunes, Universal executives said. And the first single, the 1970s disco-flavored "Makes Me Wonder," is getting heavy radio play.

None of this has made it easier to predict whether the album or future efforts by Maroon 5 and other artists on the label will sell enough for Universal's bet to pay off. (Maroon 5 is said to owe at least two more albums, with options for more.)

Rivals estimate that A&M/Octone will have to sell at least 15 million albums for Universal to break even on its investment. Universal insiders put the figure in the 10 million to 12 million unit range. With CD sales in the United States already sinking about 20 percent since a year ago and the industry's prospects still uncertain, either figure is a tall order.

And it is the long bet on relatively new talent that has made this deal so buzz-worthy. "It's difficult if not impossible to realistically know what the consumer is going to make of a particular band five years from now," said Celia Hirschman, an independent marketing consultant and former major-label executive. "In the last two years the record industry has changed so drastically that events that took place five years ago are no longer relevant. I think you're going to see less and less of these deals in the future."

There have not been many similar deals in the past either. Most record contracts are designed to keep artists bound to the same label for up to seven albums, though it is rare for a major label to hold on to an act that doesn't score by its third. But Maroon 5 was in an unusual position early this year, mainly because its first album did not pay off quickly.

"Songs About Jane" hit shops in 2002, but it did not catch on with a mass audience until nearly two years later, after tireless touring by the band and a push by Octone and Sony BMG's J Records label. As a result the band was finishing its second

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Nina Ananiashvili. Photo by Nancy Ellison.



THEATER DIRECTORY

A Question of Blame When Societies Fall

By GEORGE JOHNSON

As I pulled out of Tucson listening to an audiobook of Jared Diamond's "Collapse: How Societies Choose to Fail or Succeed," the first of a procession of blue-and-yellow billboards pointed the way to Arizona's strangest roadside attraction, "The Thing?"

The come-ons were slicker and brighter than those I remembered from childhood trips out West. But the destination was the same: a curio store and gas station just off the highway at a remote whistle stop called Dragoon, Ariz.

Dragoon is also home to an archaeological research center, the Amerind Foundation, where a group of archaeologists, cultural anthropologists and historians converged in the fall for a seminar, "Choices and Fates of Human Societies."

What the scientists held in common was a suspicion that in writing his two best-selling sagas of civilization — the other is "Guns, Germs and Steel" — Dr. Diamond washed over the details that make cultures unique to assemble a grand unified theory of history.

"A big-picture man," one participant called him. For anthropologists, who spend their lives reveling in minutiae — the specifics and contradictions of human culture — the words are not necessarily a compliment.

"Everybody knows that the beauty of Diamond is that it's simple," said Patricia A. McAnany, an archaeologist at Boston University

Continued on Page 3

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A Question of Blame When Societies Flourish and Vanish

From First Science Page

who organized the meeting with her colleague Norman Yoffee of the University of Michigan. "It's accessible intellectually without having to really turn the wattage up too much."

Dr. Diamond's many admirers would disagree. "Guns, Germs and Steel" won a Pulitzer Prize, and Dr. Diamond, a professor of geography at the University of California, Los Angeles, has received, among many honors, a National Medal of Science. It is his ability as a synthesizer and storyteller that makes his work so compelling.

For an hour I had listened as he, or rather his narrator, described how the inhabitants of Easter Island had precipitated their own demise by cutting down all the palm trees — for, among other purposes, transporting those giant statues — and how the Anasazi of Chaco Canyon and the Maya might have committed similar "ecocide."

By the time I approached the turnoff for Amerind's boulder-strewn campus, Dr. Diamond had moved on to the Vikings' fate. But for the moment my mind was in the grip of "The Thing."

Detouring past the conference center, I parked in front of the old tourist trap, paid the $1 admission and followed a path of stenciled yellow footprints to a building out back. Inside a cinder-block coffin lay the subject of my quest, what appeared to be the mummified remains of a woman holding a mummified child.

"The Thing" looked human, or maybe like pieces of human dolled up with papier-mâché. Either way, it seemed like a fitting symbol for the complaints I'd been hearing about Dr. Diamond: that through the wide-angle lenses of his books, people appear not as thinking agents motivated by dreams and desires, ideas and ideologies, but as pawns of their environment. As things.

The backlash had been brewing since a symposium last year, "Exploring Scholarly and Best-Selling Accounts of Social Collapse and Colonial Encounters," at a meeting of the American Anthropological Association in San Jose, Calif. Although "Guns, Germs and Steel" has been celebrated as an antidote to racism — Western civilization prevails not because of inherent superiority, but geographical luck — some anthropologists saw it as excusing the excesses of the conquerors. If it wasn't their genes that made them do it, it was their geography.

"Diamond in effect argues that no one is to blame," said Deborah B. Gewertz, an anthropologist at Amherst College. "The haves are not to be blamed for the condition of the have-nots."

Dr. Diamond anticipated this kind of reaction. In the epilogue to "Guns, Germs and Steel," he acknowledged that human will was an important pivot in the turning of history, as were freak accidents and chaotic "butterfly effects," in which tiny perturbations are amplified into cataclysms. But the accidents of geography — the availability of raw materials and crops, a hospitable climate, accessible trade routes and even the cartographical shapes of continents — step forth as prime movers.

While "Guns, Germs, and Steel" explored the factors contributing to a society's rise, "Collapse" tried to account for the downfalls. Here, human agency played a more prominent role. In case after case, Dr. Diamond described how a confluence of factors — fragile ecosystems, climatic change, hostile neighbors and, ultimately, bad decision making — cornered a society into inadvertently damaging or even destroying itself.

In his haunting chapter about Easter Island, he weighed the data — radiocarbon dating, charcoal and pollen analysis and botanical and archaeological surveys — and concluded that the inhabitants had mined the forests to extinction, setting off a cataclysm. What, Dr. Diamond wondered in an often cited passage, was going through the mind of the Easter Islander who cut the last tree?

But what was intended as a cautionary tale was taken by some readers as blaming the victims. Terry Hunt, an archaeologist at the University of Hawaii, came to the Amerind conference with a different story. Deforestation, he said, was caused not by people, but by predatory Polynesian rats, with the human population remaining stable until the introduction of European diseases.

Dr. Diamond, he said, "shifts all of the burden to people and their stupidity rather than to a complex ecosystem where these things interact."

Taken together, the two books struck Frederick K. Errington, an anthropologist at Trinity College in Hartford, as a "one-two punch." The haves prosper because of happenstance beyond their control, while the have-nots are responsible for their own demise.

Dr. Errington and Dr. Gewertz, who are husband and wife, work in Papua New Guinea, a treasure trove of ethnic groups speaking more than 700 languages. Dr. Diamond has also spent time on the island, where he first went to study birds.



TOMAS MUNITA FOR THE NEW YORK TIMES (ABOVE); PETER ANDREWS/REUTERS (BELOW)



CIVILIZATIONS The ancient Moai on Easter Island, top, and Hutu refugees in 1996 on their way back to Rwanda from Zaire, above.

Case Studies of Decline

In his book "Collapse: How Societies Choose to Fail or Succeed," Jared Diamond identifies five factors that can contribute to the decline and collapse of a civilization.

	Environmental damage and population growth	Climate change	Hostile neighbors	Weakened trade partners	Failure to solve societal problems
Easter Island	X				X
Pitcairn Islands	X			X	X
Anasazi	X	X			X
Maya	X	X	X		X
Norse Greenland	X	X	X	X	X

THE NEW YORK TIMES

Dr. Gewertz still bristles as she recalls picking up "Guns, Germs, and Steel" and seeing that it had been framed around what was called "Yali's question."

Yali was a political leader and a member of a "cargo cult" that sprung up after World War II. By building ritualistic landing strips and control towers and wearing hand-carved wooden headsets, islanders hoped to summon the return of the packaged food, weapons, medicine, clothing and other gifts from the heavens that had been airdropped to troops fighting Japan.

One day Yali asked Dr. Diamond, "Why is it that you white people developed so much cargo and brought it to New Guinea, but we black people had little cargo of our own?"

Thus began Dr. Diamond's tale about the combination of geographical factors that led to Europeans' colonizing Papua New Guinea rather than Papua New Guineans' colonizing Europe.

"We think he gets Yali's question wrong," Dr. Gewertz said. "Yali was not asking about nifty Western stuff."

With more of the cargo their European visitors so clearly coveted, the islanders would have been able to trade with them as equals. Instead, they were subjugated.

What Yali was really asking, she suggested, was why Europeans had never

'Ecocide' or excusing the excesses of the conquerors?

treated them like fellow human beings. The responsibility and struggle of anthropology, Dr. Gewertz said, is to see the world through others' eyes.

In "Collapse," Dr. Diamond proposed that a precipitating factor in the Rwanda genocide of 1994, in which hundreds of thousands of Tutsis were slaughtered by Hutu compatriots, was Malthusian. The country had let its population outstrip its food supply.

Christopher C. Taylor, an anthropologist at the University of Alabama at Birmingham, saw the tragedy through the other end of the telescope. One afternoon, he sat in the living room of Amerind's old mission-style lodge, which looks out onto the desolate beauty of the Little Dragoon mountains, calmly describing how he and his Tutsi fiancée had fled Rwanda just as the massacres began. Safely back in the United States, he studied the country's popular political cartoons, sensing that for many Rwandans, politics was tangled in a web of legends involving sacred kingship and fertility rites. The king, and by implication the president, was the conduit for imaana, a spiritual current symbolized by liquids like rain, rivers, milk, honey, semen and blood.

In times of droughts, floods, crop failures, infant mortality or other misfortunes, he might have to be sacrificed to spill his imaana back into the soil.

"In order to understand the motives of the Rwandans, you have to understand the local symbolism and the local cosmology," Dr. Taylor said. "Because, after all, what Diamond is doing is imposing his own cosmology, his own symbolic system."

By the time I left Amerind, I realized that what I had witnessed was a clash of world views. Central to the "cosmology" of Dr. Diamond's tribe is a principle celebrated throughout the physical and biological sciences — to understand is to simplify and seek patterns.

In an e-mail message, he said that progress in any field depends on syntheses and individual studies. "In both chemistry and physics, the need for both approaches has been recognized for a long time," he wrote. "One no longer finds specialists on molybdenum decrying the periodic table's sweeping superficiality, nor advocates of the periodic table scorning mere descriptive studies of individual elements."

For the anthropologists, the exceptions were more important than the rules. Instead of seeking overarching laws, the call was to "contextualize," "complexify," "relativize," "particularize" and even "problematize," a word that in their dialect was given an oddly positive spin. At some moments, the seminar seemed less like a scientific meeting than a session of the Modern Language Association.

But the anthropologists had a point. As Einstein put it, explanations should be as simple as possible — but no simpler. Is it realistic to hope, as Dr. Diamond did at the end of "Guns, Germs and Steel," that "historical studies of human societies can be pursued as scientifically as studies of dinosaurs"?

One afternoon I drove out to Casa Grande Ruins National Monument, about 130 miles northwest of Dragoon. Turning off North Arizona Boulevard near a Blockbuster Video store and KFC/Taco Bell, I saw the Great House, four stories high, loom into view. Abandoned over half a millennium ago by the Hohokam people, the earthen ruins have been incongruously protected from the elements by a steel roof on stilts designed in 1928 by Frederick Law Olmsted Jr.

One suspects that the Hohokam were content to let the place melt. Depending on which eyeglasses you are wearing, Casa Grande is a story of environmental collapse or of adaptation and resilience. When conditions no longer favored centralization the people moved on, reemerging as the O'odham tribes and a thriving casino industry.

Abandonment as a strategy. Driving back on Interstate 10, past an umbilical cord of eastbound railroad container cars owned by Hanjin Shipping and the latest crests of urban sprawl, I tried to imagine the good people of Tucson or Phoenix bowing out with such grace.

At the seminar, Dr. McAnany suggested that the very idea of societal collapse might be in the eye of the beholder. She was thinking of the Maya, whose stone ruins have become the Yucatan's roadside attractions. But the descendants of the Maya live on. She recalled a field trip by local children to a site she was excavating in Belize: "This little girl looks up at me, and she has this beautiful little Maya face, and asks, 'What happened to all the Maya? Why did they all die out?'"

No one visits Stonehenge, she noted, and asks whatever happened to the English.

Letters

The Order of the Universe

To the Editor:

Re "Laws of Nature, Source Unknown" (Dec. 18): Science is a methodology for asking questions. The so-called "laws" are simply today's answer to the question posed. As with all things transient, tomorrow a different form of the question may modify, discard or replace "the law" pertaining to whatever is being investigated. The laws, thus, come from nowhere but the mind of humankind.

What is amazing is not the laws, but that we lowly humans have the capability of looking at the world and universe about us, and by exercise of our intellect we are able to understand much of it, if only until the next more intelligent question is posed.

TOM CLARKE
Walnut Creek, Calif.

To the Editor:

By focusing on natural law, its nature and the amazing fact that it actually exists, Dennis Overbye's article took us to a higher vantage point and hopefully canceled the doctrinaire feud between evolutionists and creationists. Both sides — if at all logical — will recognize that their respective arguments about man's origin are moot until they can explain what is termed law. And through an understanding of law, we might also learn about such other mysteries as creation and gravity.

ROD CARLSON
White Plains, N.Y.



JEREMY TRAUM

To the Editor:

The construct known as law is human made, a manifestation of consciousness organizing the world and itself. To project this onto the cosmos is an excellent example of anthropomorphic tendency. Laws are creations of mind, nothing more, nothing less. To search for the law that becomes the theory of everything is to deny the evolving and participatory nature of the universe and depicts man's need to categorize.

MEL SCHWARTZ
Westport, Conn.

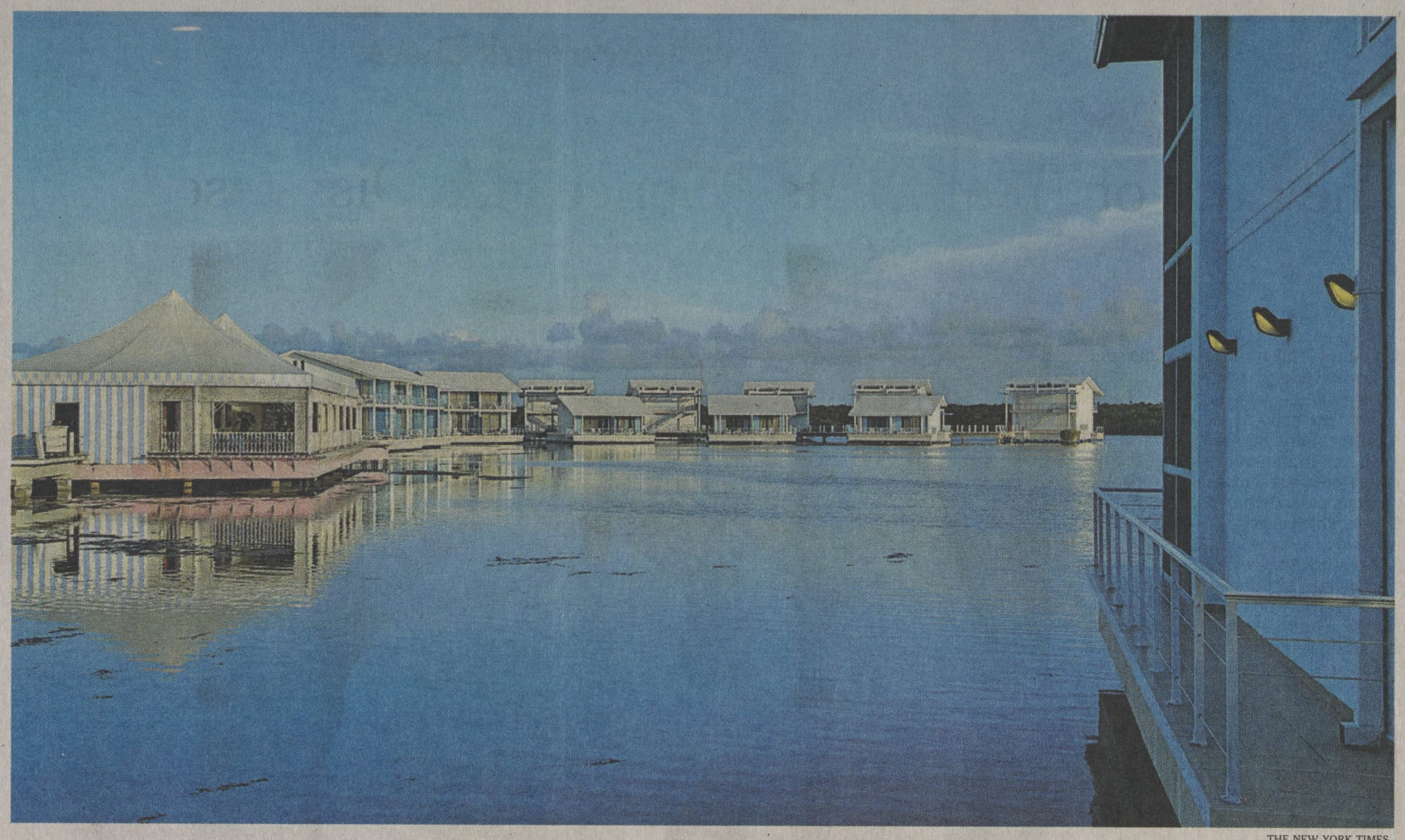
Teens and Decision Making

To the Editor:

Re "Teenage Risks, and How to Avoid Them" (Personal Health, Dec. 18): As a psychologist and the mother of two teenagers, I have thought many times about the subject of Jane Brody's article. However, I feel that by not addressing the latest neuroscience findings, an important piece of the puzzle has been omitted.

We now understand that the prefrontal cortex, the area of the brain responsible for long-range planning and impulse control, is not fully developed until the mid-20s. This relatively new finding is important in understanding the underlying neurological basis for teenage difficulties in risk avoidance.

The joke among psychologists interested in neuroscience is that the only people who acknowledged this information before now are the auto insur-



THE NEW YORK TIMES

Conservation in Cuba, After the Embargo

From First Science Page

diversity and set them aside," said Oliver Houck, a professor of environmental law at Tulane University Law School who attended the conference.

In the late 1990s, Mr. Houck was involved in an effort, financed in part by the MacArthur Foundation, to advise Cuban officials writing new environmental laws.

But, he said in an interview, "an invasion of U.S. consumerism, a U.S.-dominated future, could roll over it like a bulldozer" when the embargo ends.

By some estimates, tourism in Cuba is increasing 10 percent annually. At a minimum, Orlando Rey Santos, the Cuban lawyer who led the law-writing effort, said in an interview at the conference, "we can guess that tourism is going to increase in a very fast way" when the embargo ends.

"It is estimated we could double tourism in one year," said Mr. Rey, who heads environmental efforts at the Cuban ministry of science, technology and environment.

About 700 miles long and about 100 miles wide at its widest, Cuba runs from Haiti west almost to the Yucatán Peninsula of Mexico. It offers crucial habitat for birds, like Bicknell's thrush, whose summer home is in the mountains of New England and Canada, and the North American warblers that stop in Cuba on their way south for the winter.

Zapata Swamp, on the island's southern coast, may be notorious for its mosquitoes, but it is also known for its fish, amphibians, birds and other creatures. Among them is the Cuban crocodile, which has retreated to Cuba from a range that once ran from the Cayman Islands to the Bahamas.

Cuba has the most biologically diverse populations of freshwater fish in the region. Its relatively large underwater coastal shelves are crucial for numerous marine species, including some whose larvae can be carried by currents into waters of the United States, said Ken Lindeman, a marine biologist at Florida Institute of Technology.

Dr. Lindeman, who did not attend the conference but who has spent many years studying Cuba's marine ecology,

CHANGE Cuba has avoided much environmental degradation in recent decades, but now hotel developments, above, are seen extending into the water in Cayo Coco. The banks of a river in the Marianao section of Havana, below left, are showing signs of pollution. The island is a crucial habitat for birds, like the Cuban Trogon, below right, and its swamps are home to crocodiles.







PHOTOGRAPHS BY JOSE GOITIA FOR THE NEW YORK TIMES (ABOVE LEFT, RIGHT); STEVE WINTER/NATIONAL GEOGRAPHIC

into American ports if they have recently been in Cuban waters in the previous six months, and the Cuban government will not allow American research vessels in Cuban waters.

One answer might be vessels already in Cuba, but nowadays they are often tied up in tourism-related efforts, Cubans at the Cancún meeting said.

And even with a ship, several American researchers at the conference said, it is difficult to get Cuban government permission to travel to places like the island's northwest coast, the stretch closest to the United States. As a result, that region is the least-studied part of the Cuban coast, Dr. Guggenheim and others said.

Another big problem in Cuba is the lack of access to a source of information researchers almost everywhere else take for granted: the Internet.

Critics blame the Castro government, saying it limits access to the Internet as a form of censorship. The Cuban government blames the embargo, which it says has left the country with inadequate bandwidth and other technical problems that require it to limit Internet access to people who need it most.

In any event, "we find we do not have access," Teresita Borges Hernández, a biologist in the environment section of Cuba's science and technology ministry, said through a translator. She appealed to the Americans at the meeting to do "anything, anything to improve this situation."

Dr. Guggenheim echoed the concern and said even telephone calls to Cuba often cost as much as $2 a minute. "These details, though they may seem trite," he said, "are central to our ability to collaborate."

Dr. Gebelein and several of the Cubans at the meeting said that some American Web sites barred access to people whose electronic addresses identify them as Cuban. She suggested that the group organize a Web site in a third country, a site where they could all post data, papers and the like, and everyone would have access to it.

For Dr. Guggenheim, the best lessons for Cubans to ponder as they contemplate a more prosperous future can be seen 90 miles north, in the Florida Keys. There, he said, too many people have

SANTIAGO JOURNAL

Before '73 Coup, Chile Tried to Find the Right Software for Socialism

By ALEXEI BARRIONUEVO

SANTIAGO, Chile — When military forces loyal to Gen. Augusto Pinochet staged a coup here in September 1973, they made a surprising discovery. Salvador Allende's Socialist government had quietly embarked on a novel experiment to manage Chile's economy using a clunky mainframe computer and a network of telex machines.

The project, called Cybersyn, was the brainchild of A. Stafford Beer, a visionary Briton who employed his "cybernetic" concepts to help Mr. Allende find an alternative to the planned economies of Cuba and the Soviet Union. After the coup it became the subject of intense military scrutiny.

In developing Cybersyn, Mr. Beer changed the lives of the bright young Chileans he worked with here. Some 35 years later, this little-known feature of Mr. Allende's abortive Socialist transformation was remembered in an exhibit in a museum beneath La Moneda, the presidential palace.

A Star Trek-like chair with controls in the armrests was a replica of those in a prototype operations room. Mr. Beer planned for the room to receive computer reports based on data flowing from telex machines connected to factories up and down this 2,700-mile-long country. Managers were to sit in seven of the contoured chairs and make critical decisions about the reports displayed on projection screens.

While the operations room never became fully operational, Cybersyn gained stature within the Allende government for helping to outmaneuver striking workers in October 1972. That helped planners realize — as the pioneers of the modern-day Internet did — that the communications network was more important than computing power, which Chile did not have much of, anyway. A single I.B.M. 360/50 mainframe, which had less storage capacity than most flash drives today, processed the factories' data, with a Burroughs 3500 later filling in.

Cybersyn was born in July 1971 when Fernando Flores, then a 28-year-old government technocrat, sent a letter to Mr. Beer seeking his help in organizing Mr. Allende's economy by applying cybernetic concepts. Mr. Beer was excited by the prospect of being able to test his ideas.

He wanted to use the telex communications system — a network of teletypewriters — to gather data from factories on variables like daily output, energy use and labor "in real time," and then use a computer to filter out the important pieces of economic information the government needed to make decisions.

Mr. Beer set up teams of computer programmers in England and Chile, and began making regular trips to Santiago to direct the project. He was paid $500 a day while working in Chile, a sizable sum here at the time, said Raúl Espejo, who was Cybersyn's operations director.

The Englishman became a mentor to the Chilean team, many of them in their 20s. On one visit he tried to inspire them by sharing Richard Bach's "Jonathan Livingston Seagull," the story of a seagull who follows his dream to master the art of flying against the wishes of the flock.

An imposing man with a long gray-flecked beard, Mr. Beer was a college dropout who challenged the young Chileans with tough questions. He shared his love for writing poetry and painting, and brought books and classical music from Europe. He smoked cigars and drank whiskey and wine constantly, "but was never losing his head," Mr. Espejo said.



JOAO PINA FOR THE NEW YORK TIMES

A replica of a chair that was part of an experiment in the early 1970s to use a computer to help manage Chile's economy.

Most of the Cybersyn team scrupulously avoided talking about politics, and some even had far-right-wing views, said Isaquino Benadof, who led the team of Chilean engineers designing the Cybersyn software.

One early challenge was how to build the communications network. Short of money, the team found 500 unused telex machines in a warehouse of the national telecommunications company.

Cybersyn's turning point came in October 1972, when a strike by truckers and retailers nearly paralyzed the economy. The interconnected telex machines, exchanging 2,000 messages a day, were a potent instrument, enabling the government to identify and organize alternative transportation resources that kept the economy moving.

The strike ended within a week. While it weakened Mr. Allende's Popular Unity party, the government survived, and Cybersyn was praised for playing a major role. "From that point on the communications center became part of whatever was happening," Mr. Espejo said.

"Chile run by computer," blared The British Observer on Jan. 7, 1973, as word of the experiment began leaking out.

But as the country's political and security situation worsened, Mr. Beer and his Chilean team realized that time was running out.

Mr. Allende remained committed to Cybersyn to the end. On Sept. 8, 1973, he gave orders to move the operations room to the presidential palace. But three days later the military took over; Mr. Allende died that afternoon.

Military officials soon confronted Cybersyn's leaders, seeking to understand their political motivations. Mr. Benadof said he was interrogated at least three times. Mr. Espejo, after being questioned, was warned to leave the country; two months after the coup he fled to England.

The military never could grasp Cybersyn, and finally dismantled the operations room. Several other Cybersyn team members went into exile. Mr. Flores, who was both economy and finance minister in the Allende government, spent three years in military concentration camps. After his release, he moved with his family to California to study at Stanford University and the University of California, Berkeley, where he earned a Ph.D. in philosophy.

He later was one of the inventors of the Coordinator, a program that tracked spoken commitments between workers within a company, one of the first forays into "work flow" software. He became a millionaire and returned to Chile, where today he is a senator representing the Tarapacá Region.

Mr. Beer, who died in 2002, helped some team members secure college teaching positions in England. That included Mr. Espejo, who dedicated himself to advancing cybernetics.

"The Chilean project completely transformed Stafford's life, and he obviously had a huge impact on all of us," Mr. Espejo said. "Clearly, his work was not recognized during his lifetime. But what he has written will remain for a long time."

aud Led to Suspension of Company Supplying Arms to Afghanistan

Mr. Diveroli's company, AEY Inc. of Miami Beach, received a two-year contract in January 2007, potentially worth $298 million, to provide Afghan security forces with ammunition. At the time, Mr. Diveroli was 21.

An examination of the company's business by The New York Times, reported on Wednesday, found that it had shipped tens of millions of decades-old Chinese cartridges to Afghanistan, almost all of them in poor packaging. AEY has also worked with middlemen and a shell company that are on a list of federal entities suspected of illegal arms trafficking and that have been accused of corruption.

Representative Henry A. Waxman, the California Democrat who leads the House Oversight and Government Reform Committee, said Thursday that the committee would hold a hearing next month to review contracts received by AEY.

"Something appears to have gone fundamentally wrong inside the Defense Department," Mr. Waxman said in a statement. "The committee will try to find out how many taxpayer dollars were squandered and who is responsible."

Representative Ike Skelton, the Missouri Democrat who is chairman of the House Armed Services Committee, said his committee would also examine military procurement and "work to ensure that such practices are eliminated and never repeated."

In a statement, he said: "Supplying substandard equipment to the Afghan security forces can only undermine our mission there. Furthermore, the use of networks of illegal arms dealers, if this in fact occurred, undermines U.S. arms sales policy and our international reputation."

Reports of mislabeled boxes and 40-year-old ammunition.

Interviews with military officers, American officials, international arms dealers and private organizations that monitor them suggest that the problems with the Afghan contract were rooted in part in AEY's business conduct. But they stemmed as well from how Army procurement officials write contracts and vet and supervise companies that receive them.

Nicholas Marsh, a research fellow at the International Peace Research Institute in Norway who studies the arms trade, said AEY's work with suspicious middlemen was part of a pattern for purchases of foreign munitions for the Pentagon.

Under American law, arms dealers must notify the State Department of everyone they do business with in a given arms transfer, including middlemen, brokers, sellers and transport companies. As a practice, the State Department checks subcontractors and partners against a watch list, which is regularly updated by analysts and with information from embassies around the world.

Purchases for the Pentagon, however, are exempt from this law and practice. Middlemen have rushed into the deals, without the Pentagon's contractors disclosing the relationships. "You see people subcontracting and subcontracting all over the place," Mr. Marsh said. "It's a huge mess."

Military officers and a private arms dealer also said that insufficient quality-control standards were evident in many Army purchases of foreign arms.

Afghan and Iraqi forces principally use weapons designed by the Soviet Union. Munitions for these weapons are not typically made in the United States.

During the cold war, however, the American military and intelligence agencies studied Soviet arms and published volumes on their design, use, packaging and performance. The volumes, long ago declassified, are available in libraries in military installations.

But when the Army began buying huge batches of Communist bloc equipment, many contracting officers apparently did not refer either to such information or to the foreign standards for age limits and reliability testing.

AEY's Afghan contract did not set an age limit for any munitions or require it to be tested. This meant that despite providing millions of cartridges more than 40 years old, Mr. Diveroli's company was in compliance with the contract, Army contracting officials have said.

Reuben F. Johnson, an American in Ukraine who has been buying Eastern bloc equipment for the United States military since 1999, said such standards were a mark of contracting incompetence.

"The people in the U.S. Army who are responsible for issuing these solicitations are, almost to a man, completely unaware of the many volumes of data that were amassed on these systems during the cold war," he said. (Mr. Johnson said he did not bid on any contracts that AEY was awarded.)

Not everyone has ignored those old manuals, however. For shipments of Chinese munitions, AEY removed it from its Chinese packaging and repacked it in generic brown cardboard boxes.

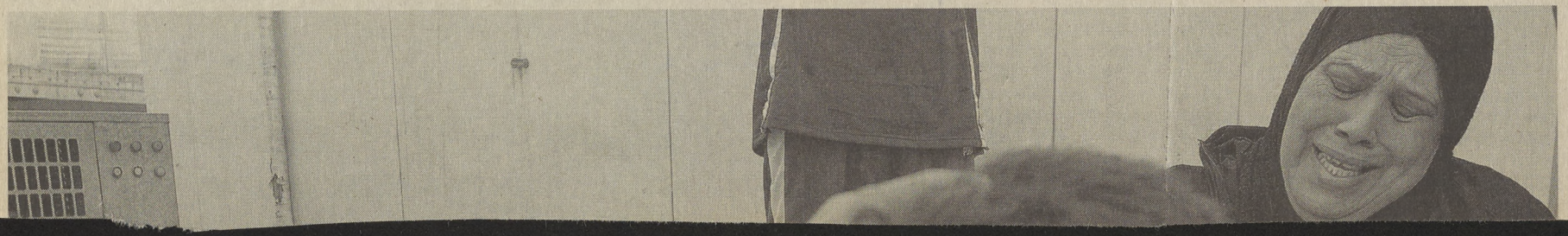
This step might have obscured its origins. But years ago the Defense Intelligence Agency published a detailed guide of manufacturer markings for military small-arms cartridges made around the world.

These keys enable investigators to trace a cartridge to the factory where it was made. The New York Times used these old intelligence charts last fall to show that ammunition shipped to Afghanistan by AEY was Chinese and had been made in the 1960s.

The Army's fraud investigators, snapping pictures of what they found in January, used these same charts to show that AEY's supposedly Hungarian munitions had come from Chinese factories, too, according to the investigators' memorandum.

Based on this evidence, Mr. Diveroli was accused of fraud, and his company suspended.

aqi Security Forces Stalls as Shiite Militias Fight Back in Basra





A frieze of horses and rhinos near the Chauvet cave's Megaloceros Gallery, where artists may have gathered to make charcoal. Chauvet

backs for Chávez followed. A decree law, intended to bolster the country's intelligence in case of "imperialist attacks," passed on May 28th and came under immediate and widespread criticism; many Venezuelans feared that it would require them to inform on one another. Ten days later, on June 7th, the Colombian government announced the arrest of a Venezuelan officer whom they accused of smuggling forty thousand AK-47 bullets to the FARC. Chávez's government said that it was investigating. Adding to the sense of disarray, the FARC was forced to confirm reports that its legendary leader, Manuel Marulanda, had died of a heart attack.

Chávez seemed to realize that he had gone too far. The day of the smuggling arrest, he announced that he would suspend the new intelligence law, saying, "There is no dictatorship here." Then, on his June 8th "Aló Presidente" broadcast, he unexpectedly called on the FARC to give up its armed struggle and let its hostages go, saying that guerrillas did not have a place in today's world. Chávez appeared—for now—to be withdrawing from the battlefield he had helped to create, pragmatically cutting his losses. Above all, he had shown the strength of his instincts as a survivor.

Whether his call to the FARC was more than a tactical ploy remains to be seen. "Those were very useful words," Assistant Secretary Shannon said at a talk in Miami. "That does not mean we aren't aware of what is happening, and the kind of relationship that has been built over time between some members of the Venezuelan government and the FARC." The question is, Shannon said, will the Venezuelan government "use that relationship in an effort to get the FARC to come in out of the cold and end a four-decade conflict? Or will it continue to conspire against a democratic neighbor? . . . That, I think, is what everybody in the region is waiting for: how Venezuela will define itself."

Bill Richardson said that, in April, he had travelled to Caracas to speak to Chávez on behalf of the families of three American defense contractors being held by the FARC. Chávez had been effusive and friendly—Richardson is Mexican-American, and they spoke for an hour and a half in Spanish. He told Richardson that he did not comprehend the Bush Administration's hostility toward him: "He told me he didn't like being demonized."



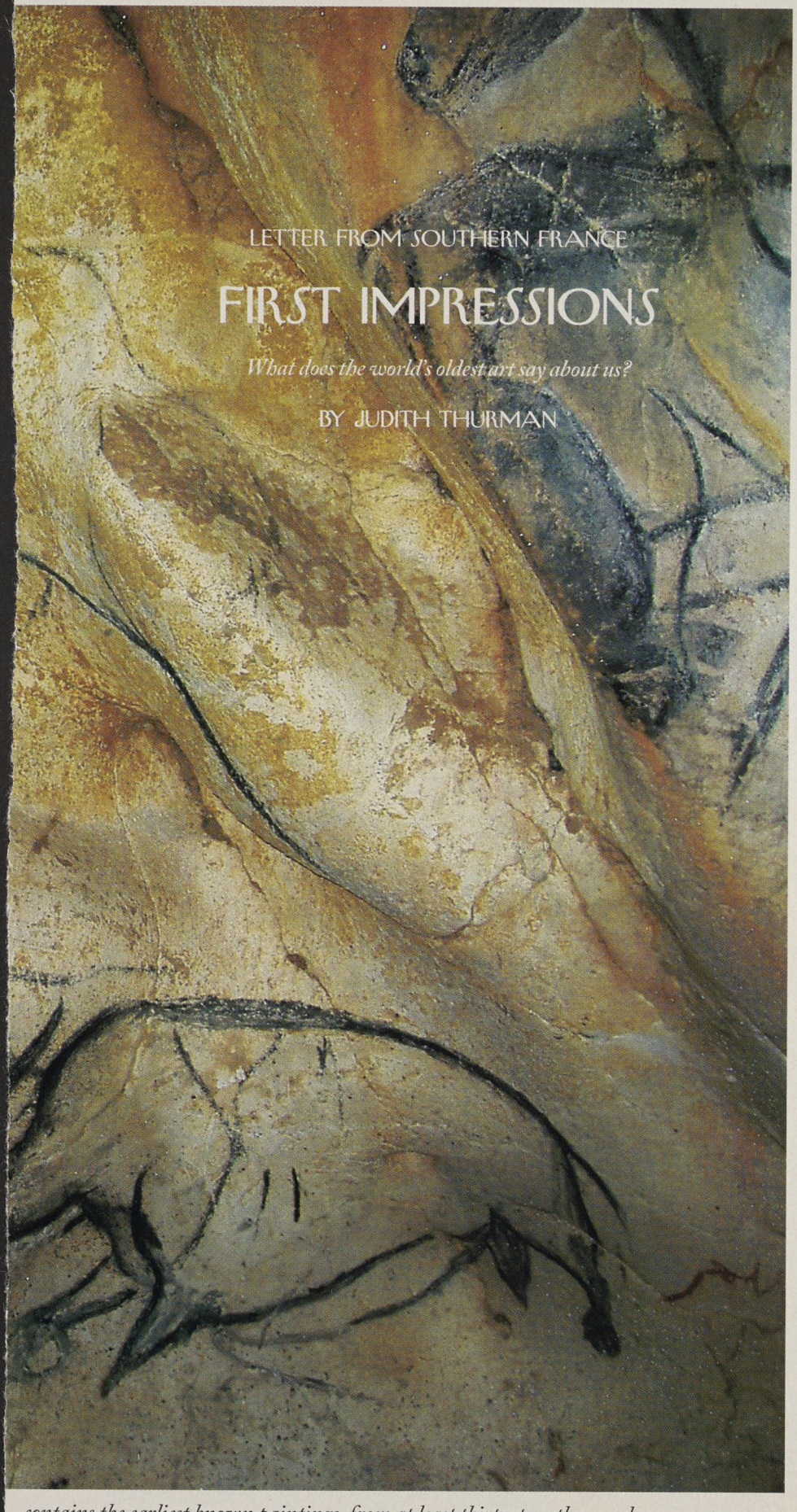
When Richardson asked him if he would get in touch with the FARC about the American contractors, Chávez said, "*Sí, te ayudo*"—"Yes, I will help you." Richardson said, "We need to establish some lines of communication with him, and this—coöperation on the hostage negotiations—is a possible way to start. I think we should keep a stable relationship with Venezuela; it's in our interest to do so."

On June 7th, Chávez had also said, "Whoever is the next President of the United States, I'd like to start preparing the way to start working together." When I asked Ana Navarro, an adviser to Senator John McCain, the presumptive Republican nominee, about the offer, she said, "Senator McCain thinks that Chávez is a charlatan and a thug. The Senator doesn't trust Chávez, and does not think it worth getting into a back-and-forth with him." Last year, Senator Barack Obama was asked in a debate if he would be willing to meet with leaders who are hostile to the United States—Iran's Mahmoud Ahmadinejad, Chávez, and Castro—"without precondition." Obama answered that he would, prompting Senators McCain and Hillary Clinton to suggest that he was naïve. Obama subsequently said that high on his agenda in any talks with Chávez would be addressing "the fomentation of anti-American sentiment in Latin America," and "his support of the FARC in Colombia," which, he said, was "not acceptable."

I asked Richardson if he had carried a message to Chávez on behalf of Senator Obama, whose candidacy he endorsed after dropping out of the Presidential race himself. Richardson said that he hadn't, but that the thought had seemed to occur to Chávez, too. "He said that he had noticed my endorsement. And he said, 'We could use better treatment from the United States.' But I don't think he sees me as a representative of Obama, but as a fellow Latin-American," Richardson said. "His message to me was 'Take me seriously, and treat me better.'" ♦

NEWYORKER.COM

More photographs of Hugo Chávez.



LETTER FROM SOUTHERN FRANCE

FIRST IMPRESSIONS

What does the world's oldest art say about us?

BY JUDITH THURMAN

contains the earliest known paintings, from at least thirty-two thousand years ago.

JEAN CLOTTES/CHAUVET CAVE SCIENTIFIC TEAM

During the Old Stone Age, between thirty-seven thousand and eleven thousand years ago, some of the most remarkable art ever conceived was etched or painted on the walls of caves in southern France and northern Spain. After a visit to Lascaux, in the Dordogne, which was discovered in 1940, Picasso reportedly said to his guide, "They've invented everything." What those first artists invented was a language of signs for which there will never be a Rosetta stone; perspective, a technique that was not rediscovered until the Athenian Golden Age; and a bestiary of such vitality and finesse that, by the flicker of torchlight, the animals seem to surge from the walls, and move across them like figures in a magic-lantern show (in that sense, the artists invented animation). They also thought up the grease lamp—a lump of fat, with a plant wick, placed in a hollow stone—to light their workplace; scaffolds to reach high places; the principles of stencilling and Pointillism; powdered colors, brushes, and stumping cloths; and, more to the point of Picasso's insight, the very concept of an image. A true artist reimagines that concept with every blank canvas—but not from a void.

Some caves have rock porches that were used for shelter, but there is no evidence of domestic life in their depths. Sizable groups may have visited the chambers closest to the entrance—perhaps for communal rites—and we know from the ubiquitous handprints that were stamped or airbrushed (using the mouth to blow pigment) on the walls that people of both sexes and all ages, even babies, participated in whatever activities took place. Only a few individuals ventured or were permitted into the furthest reaches of a cave—in some cases, walking or crawling for miles. Those intrepid spelunkers explored every surface. If they bypassed certain walls that to us seem just as suitable for decoration as ones they chose, the placement of the art apparently wasn't capricious. In the course of some twenty-five thousand years, the same animals—primarily bison, stags, aurochs, ibex, horses, and mammoths—recur in similar poses, illustrating an immortal story. For a nomadic people, living at nature's mercy, it must have been a powerful consolation to know

that such a refuge from flux existed.

As the painters were learning to crush hematite, and to sharpen embers of Scotch pine for their charcoal (red and black were their primary colors), the last Neanderthals were still living on the vast steppe that was Europe in the Ice Age, which they'd had to themselves for two hundred millennia, while *Homo sapiens* were making their leisurely trek out of Africa. No one can say what the encounters between that low-browed, herculean species and their slighter but formidable successors were like. (Paleolithic artists, despite their penchant for naturalism, rarely chose to depict human beings, and then did so with a crudeness that smacks of mockery, leaving us a mirror but no self-reflection.) Their genomes are discrete, so it appears that either the two populations didn't mate or they couldn't conceive fertile offspring. In any case, they wouldn't have needed to contest their boundless hunting grounds. They coexisted for some eight thousand years, until the Neanderthals withdrew or were forced, in dwindling numbers, toward the arid mountains of southern Spain, making Gibraltar a final redoubt. It isn't known from whom or from what they were retreating (if "retreat" describes their migration), though along the way the arts of the newcomers must have impressed them. Later Neanderthal campsites have yielded some rings and awls carved from ivory, and painted or grooved bones and teeth (nothing of the like predates the arrival of *Homo sapiens*). The pathos of their workmanship—the attempt to copy something novel and marvellous by the dimming light of their existence—nearly makes you weep. And here, perhaps, the cruel notion that we call fashion, a coded expression of rivalry and desire, was born.

The cave artists were as tall as the average Southern European of today, and well nourished on the teeming game and fish they hunted with flint weapons. They are, genetically, our direct ancestors, although "direct" is a relative term. Since recorded history began, around 3200 B.C., with the invention of writing in the Middle East, there have been some two hundred human generations (if one reckons a new one every twenty-five years). Future discoveries may alter the math, but, as it now stands, forty-five hundred generations separate the earliest *Homo sapiens* from the earliest cave artists, and between the artists and us another fifteen hundred generations have descended the birth canal, learned to walk upright, mastered speech and the use of tools, reached puberty, reproduced, and died.

Early last April, I set off for the Ardèche, a mountainous region in south-central France where cave networks are a common geological phenomenon (hundreds are known, dozens with ancient artifacts). It was here, a week before Christmas in 1994, that three spelunkers exploring the limestone cliffs above the Pont d'Arc, a natural bridge of awesome beauty and scale which resembles a giant mammoth straddling the river gorge, unearthed a cave that made front-page news. It proved to contain the oldest known paintings in the world—some fifteen to eighteen thousand years older than the friezes at Lascaux and at Altamira, in the Spanish Basque country—and it was named for its chief discoverer, Jean-Marie Chauvet. Unlike the amateur adventurers or lucky bumblers (in the case of Lascaux, a posse of village urchins and their dog) who have fallen, sometimes literally, upon a cave where early Europeans left their cryptic signatures, Chauvet was a professional—a park ranger working for the Ministry of Culture, and the custodian of other prehistoric sites in the region. He and his partners, Christian Hillaire and Éliette Brunel, were aware of the irreparable damage that even a few indelicate footsteps can cause to an environment that has been sealed for eons—posterity has lost whatever precious relics and evidence that the carelessly trampled floors of Lascaux and Altamira, both now sealed to the public, might have yielded.

The cavers were natives of the Ardèche: three old friends with an interest in archeology. Brunel was the smallest, so when they felt an updraft of cool air coming from a recess near the cliff's ledge—the potential sign of a cavity—they heaved some rocks out of the way, and she squeezed through a tight passage that led to the entrance of a deep shaft. The men followed, and, unfurling a chain ladder, the group descended thirty feet into a soaring grotto with a domed roof whose every surface was blistered or spiked with stalagmites. Where the uneven clay floor had receded, it was littered with calcite accretions—blocks and columns that had broken off—and, in photographs, the wrathful, baroque grandeur of the scene evokes some Biblical act of destruction wreaked upon a temple. As the explorers advanced, moving gingerly, in single file, Brunel suddenly let out a cry: "They have been here!"

The question of who "they" were speaks to a mystery that thinking people of every epoch and place have tried to fathom: who are we? In the century since the modern study of caves began, specialists from at least half a dozen disciplines—archeology, ethnology, ethology, genetics, anthropology, and art history—have tried (and competed) to understand the culture that produced them. The experts tend to fall into two camps: those who can't resist advancing a theory about the art, and those who believe that there isn't, and never will be, enough evidence to support one. Jean Clottes, the celebrated prehistorian and prolific author who assembled the Chauvet research team, in 1996, belongs to the first camp, and most of his colleagues to the second. Yet no one who studies the caves seems able to resist a yearning for communion with the artists. When you consider that their legacy may have been found by chance, but surely wasn't left by chance, it, too, suggests a yearning for communion—with us, their descendants.

Two books published in the past few years, "The Cave Painters" (2006), by Gregory Curtis, and "The Nature of Paleolithic Art" (2005), by R. Dale Guthrie, approach the controversy generated by their subject from different perspectives. Guthrie is an encyclopedic polymath who believes he can "decode" prehistory. Curtis, a former editor of *Texas Monthly*, is a literary detective (his previous book, on the Venus de Milo, also concerned the obscure provenance of an archaic masterpiece), and in quietly enthralling prose, without hurry or flamboyance, he spins two narratives. (The shorter one, as he notes, covers a few million years, and the longer one, the past century.)

I packed both volumes, along with some hiking boots, protein bars, and other survival gear, all of it unnecessary, for my sojourn in the Ardèche. My destination was a Spartan summer camp—

a concrete barracks in a valley near the Pont d'Arc. It is owned by the regional government, and normally houses groups of schoolchildren on subsidized holidays. But twice a year, for a couple of weeks in the spring and the autumn, the camp is a base for the Chauvet team. They, and only they, are admitted to the cave (and sometimes not even they: last October, the research session was cancelled because the climate hadn't restabilized). Access is so strictly limited not only because traffic causes contamination but also because the French government has been embroiled for thirteen years in multimillion-dollar litigation with Jean-Marie Chauvet and his partners, as well as with the owners of the land on which they found the cave. (The finders are entitled to royalties from reproductions of the art, while the owners are entitled to compensation for a treasure that, at least technically, is their property—the Napoleonic laws, modified in the nineteen-fifties, that give the Republic authority to dispose of any minerals or metals beneath the soil do not apply to cave paintings. Had Chauvet been a gold mine, the suit couldn't have been brought.)

By dusk on the first night, most of the researchers had assembled in the cafeteria for an excellent dinner of rabbit fricassée, served with a Côtes du Vivarais, and followed by a selection of local cheeses. (The Ardèche is a gourmet's paradise, and the camp chef was a tough former sailor from Marseilles whose speech and cooking were equally pungent.) Among the senior team members, Evelyne Debard is a geologist, as is Norbert Aujoulat. He is a former director of research at Lascaux, and the author of a fine book on its art, who calls himself "an underground man." Marc Azéma is a documentary filmmaker who specializes in archeology. Carole Fritz and Gilles Tosello, a husband and wife from Toulouse, are experts in parietal art, and Tosello is a graphic artist whose heroically patient, stroke-by-stroke tracings of the cave's signs and images are essential to their study. Jean-Marc Elalouf, a geneticist, and the author of a poetic essay on Chauvet, has, with a team of graduate students, sequenced the mitochondrial DNA of the cave's numerous bears. They pocked the floor with their hibernation burrows, and, in a space known as the Skull Chamber, a bear's cranium sits on a flat, altar-like pedestal—perhaps enshrined there by the artists. The grotto is littered with other ursine remains, and some of the bones seem to have been planted in the sediment or stuck with intent into the fissured walls. (No human DNA has yet surfaced, and Elalouf doesn't expect to find any.) Dominique Baffier, an official at the Ministry of Culture, is Chauvet's curator. She coördinates the research and conservation. Jean-Michel Geneste, an archeologist, is the director of the project, a post he assumed in 2001, when Jean Clottes, at sixty-seven, took mandatory retirement.

Clottes is a hero of Gregory Curtis's "The Cave Painters," one of the "giants" in a line of willful, brilliant, and often eccentric personalities who have shaped a discipline that prides itself on scientific detachment but has been a battleground for the kind of turf wars that were absent from the caves themselves. No human conflict is recorded in cave art, although at three separate sites there are four ambiguous drawings of a creature with a man's limbs and torso, pierced with spearlike lines. More pertinent, perhaps, is a famous vignette in the shaft at Lascaux. It depicts a rather comical stick figure with an avian beak or mask, a puny physique, and a long skinny penis. He and his erect member seem to have rigor mortis. He is flat on his back at the feet of an exquisitely realistic wounded bison, whose intestines are spilling out. The bison's glance is turned away, but it might have an ironic smile. Could the subject be hubris? Whatever it represents, some mythic contest—and the struggle of prehistorians to interpret their subject is such a contest—has ended in a draw.

Curtis profiles a dynasty of interpreters, beginning with the Spanish nobleman Marcelino Sanz de Sautuola, who discovered Altamira in 1879—it was on his property. (Parts of Niaux and Mas d'Azil, two gigantic painted caves in the Pyrenees, had been known for centuries, but their decorations were regarded as graffiti made in historic times, perhaps by Roman legionaries.) He was accused of art forgery, and his scholarly papers on the paintings' antiquity were ridiculed by two of the era's greatest archeologists, Gabriel de Mortillet and Émile Cartailhac. Sautuola died before Cartailhac repented of his skepticism, in 1902. By then, the art at two important sites, Les Combarelles and Font-de-Gaume (which contains a ravishing portrait of two amorous reindeer), had come to light, and, in 1906, Cartailhac published a lavish compendium of cave



"I've rented the extra room to an escaped convict—maybe you know him."

painting that was subsidized by the Prince of Monaco. The book's much admired illustrations of Altamira were the work of a young priest with a painterly eye, Henri Breuil, who, in the course of half a century, became known as the Pope of Prehistory. He divided the era into four periods, and dated the art by its style and appearance. Aurignacian, the oldest, was followed by Perigordian (later known as Gravettian), Solutrean, and Magdalenian. They were named for type-sites in France: Aurignac, La Gravette, Solutré, and La Madeleine. But Breuil's theory about the art's meaning—that it related to rituals of "hunting magic"—was discredited by subsequent studies.

During the Second World War, Max Raphael, a German art historian who had studied the caves of the Dordogne before fleeing the Nazis to New York, was looking for clues to the art's meaning in its thematic unity. He concluded that the animals represented clan totems, and that the paintings depicted strife and alliances—an archaic saga. In 1951, the year before Raphael died, he sent an extract of his writings to Annette Laming-Emperaire, a young French archeologist who shared his conviction that "prehistory cannot be reconstructed with the aid of ethnography." Beware, in other words, of analogue reasoning, because no one should presume to parse the icons and figures of a vanished society by comparing them with the art of hunter-gatherers from more recent eras. In 1962, she published a doctoral thesis that made her famous. "The Meaning of Paleolithic Rock Art" dismissed the various, too creative theories of its predecessors, and, with them, any residual nineteenth-century prejudice or romance about the "primitive" mind. Laming-Emperaire's structuralist methodology is still in use, much facilitated by computer science. It involves compiling minutely detailed inventories and diagrams of the way that species are grouped on the cave walls; of their gender, frequency, and position; and of their relation to the signs and handprints that often appear close to them. In "Lascaux" (2005), Norbert Aujoulat explains how he and his colleagues added time to the equation. Analyzing the order of superimposed images, they determined that wherever horses, aurochs, and stags appear on the same panel, the horse is beneath, the aurochs in the middle, and the stag on top, and that the variations in their coats correspond to their respective mating seasons. The triad of "horse-aurochs-stag" links the fertility cycles of important, and perhaps sacred or symbolic, animals to the cosmic cycles, suggesting a great metaphor about creation.

Laming-Emperaire had an eminent thesis adviser, André Leroi-Gourhan, who revolutionized the practice of excavation by recognizing that a vertical dig destroys the context of a site. In twenty years (1964-84) of insanely painstaking labor—scraping the soil in small horizontal squares at Pincevent, a twelve-thousand-year-old campsite on the Seine—he and his disciples gave us one of the richest pictures to date of Paleolithic life as the Old Stone Age was ending.

A new age in the science of prehistory had begun in 1949, when radiocarbon dating was invented by Willard Libby, a chemist from Chicago. One of Libby's first experiments was on a piece of charcoal from Lascaux. Breuil had, incorrectly, it turns out, classified the cave as Perigordian. (It is Magdalenian.) He had also made the Darwinian assumption that the most ancient art was the most primitive, and Leroi-Gourhan worked on the same premise. In that respect, Chauvet was a bombshell. It is Aurignacian, and its earliest paintings are at least thirty-two thousand years old, yet they are just as sophisticated as much later compositions. What emerged with that revelation was an image of Paleolithic artists transmitting their techniques from generation to generation for twenty-five millennia with almost no innovation or revolt. A profound conservatism in art, Curtis notes, is one of the hallmarks of a "classical civilization." For

SLOW DRAG BLUES

I don't believe in sex

after marriage.
    My wife does, just

not with me.
    I plead the Fifth

of whiskey. I am close

to perfecting a theory
    of forgettability.

Grief a dog
    that keeps dogging me—

Good Grief,
    I say. It's me

he's teaching to beg—

my next anniversary
    is newspaper, yesterday's—

lining my cage—
    Tomorrow the day

I hope to learn to stay.

—*Kevin Young*

the conventions of cave painting to have endured four times as long as recorded history, the culture it served, he concludes, must have been "deeply satisfying"—and stable to a degree it is hard for modern humans to imagine.

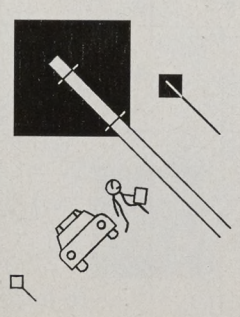
Jean Clottes is a tall, cordial man of seventy-four, who still attends the biannual sessions at Chauvet, conducting his own research (this April, he and Marc Azéma found a new panel of signs), while continuing to travel and lecture widely. The latest addition to his bibliography, "Cave Art," a luxuriously illustrated "imaginary museum" of the Old Stone Age, is due out from Phaidon this summer.

Clottes's eminence in his field was never preordained. He once taught high-school English in Foix, a city in the Pyrenees, near the Andorran border, which is an epicenter for decorated caves. He studied archeology in his spare time, and earned a doctorate at forty-one, when he quit teaching. He had been moonlighting in a job that gave him privileged access to new caves, and an impressive calling card—as the director of prehistory for the Midi-Pyrenees—but a nominal salary. The appointment was made official in 1971, and for the next two decades Clottes was usually the first responder at the scene of a new discovery. The most sensational find, before Chauvet, was Cosquer—a painted cave near Marseilles that could be reached only through a treacherous underwater tunnel, in which three divers had drowned. Like Altamira, Cosquer was, at first, attacked as a hoax, and some of the press coverage impeached Clottes's integrity as its authenticator. He could judge its art only from photographs, but, in 1992, a year after Cosquer was revealed, carbon dating proved that the earliest paintings are at least twenty-seven thousand years old. That year, the Ministry of Culture elevated him to the rank of inspector general.

At the base camp, Clottes bunked down, as did everyone, in a dorm room, and braved the morning hoarfrost for a dash to the communal showers. There is a boyish quality to his energy and conviction. (At sixty-nine, he learned to scuba dive so that he could finally explore Cosquer himself.) One evening, he showed us a film about his "baptism," in 2007, as an honorary Tuareg; the North African nomads crowned him with a turban steeped in indigo that stained his forehead, and he danced to their drums by a Saharan campfire. Among his own sometimes fractious tribesmen, Clottes also commands the respect due an unusually vigorous elder, and it was hard to keep pace with him as he scampered on his long legs up the steep cliff to Chauvet, talking with verve the entire way.

The path skirts a vineyard, then veers up into the woods, emerging onto a corniche—a natural terrace with a rocky overhang on one side, and a precipitous drop on the other. "En route to Chauvet, the painters might have sheltered here or prepared their pigments. Looking at the valley and the river gorge, they saw what we do," Clottes said, indicating a magnificent view. "The topography hasn't changed much, except that the Ice Age vegetation was much sparser: mostly evergreens, like fir and pine. Without all the greenery, the resemblance of the Pont d'Arc to a giant mammoth would have been even more dramatic. But nothing of the landscape—clouds, earth, sun, moon, rivers, or plant life, and, only rarely, a horizon—figures in cave art. It's one among many striking omissions."

Where the terrace ended, we plunged back into the underbrush, following a track obstructed by rocks and brambles, and, after about half an hour of climbing, we arrived at the entrance that Jean-Marie Chauvet and his partners discovered. (The prehistoric entrance has been plugged, for millennia, by a landslide.) A shallow cave at the trailhead has been fitted out as a storeroom for gear and supplies. From here, a wooden ramp guides one along a narrow ledge, shaped like a horseshoe, that was formed when the cliffs receded, to a massive metal door that's as well defended—with voice alarms, video surveillance, and a double key system—as a bank vault. Some members of the team relaxed with a cigarette or a cold drink and a little academic gossip, but Clottes immediately changed into his spelunking overalls, donned a hard hat with a miner's lamp, and disappeared into the underworld.



On a map, Chauvet resembles the British Isles, and, like an island with coves and promontories, its outline is irregular. The distance from the entrance to the deepest gallery is about eight hundred feet, and, at the northern end, the cave forks into two horn-shaped branches. In some places, like the grotto that Éliette Brunel first plumbed in 1994 (it is named for her), the terrain is rocky and chaotic, while in others, like the Chamber of the Bear Hollows, the walls and floor are relatively smooth. (In the nineteen-nineties, a metal catwalk was installed to protect the cave bed.) The ceilings of the principal galleries vary in height from about five to forty feet, but there are passages and alcoves where an adult has to kneel or crawl. Twenty-six thousand years ago (six millennia after the first paintings were created), a lone adolescent left his footprints and torch swipes in the furthest reaches of the western horn, the Gallery of the Crosshatching.

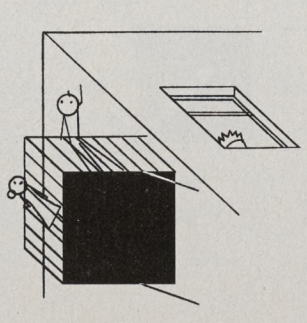
The Megaloceros Gallery—a funnel in the eastern horn named for the huge, elklike herbivores that mingle on the walls with rhinos, horses, bison, a glorious ibex, three abstract vulvas, and assorted geometric signs—is the narrowest part of the cave, and it seems to have been a gathering point or a staging area where the artists built hearths to produce their charcoal. Dominique Baffier, the curator, and Valérie Feruglio, a young archeologist who arrived at the base camp during my visit with her new baby, were moved to write in "Chauvet Cave" (2001), a book of essays and photography on the team's research, "The freshness of these remains gives the impression that . . . we interrupted the Aurignacians in their task and caused them to flee abruptly." They dropped an ivory projectile, which was found in the sediment.

From here, one emerges into the deepest recess of Chauvet, the End Chamber, a spectacular vaulted space that contains more than a third of the cave's etchings and paintings—a few in ochre, most in charcoal, and all meticu-

lously composed. A great frieze covers the back left wall: a pride of lions with Pointillist whiskers seems to be hunting a herd of bison, which appear to have stampeded a troop of rhinos, one of which looks as if it had fallen into, or is climbing out of, a cavity in the rock. As at many sites, the scratches made by a standing bear have been overlaid with a palimpsest of signs or drawings, and one has to wonder if cave art didn't begin with a recognition that bear claws were an expressive tool for engraving a record—poignant and indelible—of a stressed creature's passage through the dark.

To the far right of the frieze, on a separate wall, a huge, finely modelled bison stands alone, gazing stage left toward a pair of figures painted on a conical outcropping of rock that descends from the ceiling and comes to a point about four feet above the floor. The fleshy shape of this pendant is unmistakably phallic, and all of its sides are decorated, though only the front is clearly visible. The floor of the End Chamber is littered with relics. In order to preserve them, the catwalk stops close to the entrance, and the innermost alcove, known as the Sacristy, remains to be explored. But one of the team's archeologists, Yanik Le Guillou, rigged a digital camera to a pole, and was able to photograph the pendant's far side. Wrapped around, or, as it appears, straddling, the phallus is the bottom half of a woman's body, with heavy thighs and bent knees that taper at the ankle. Her vulva is darkly shaded, and she has no feet. Hovering above her is a creature with a bison's head and hump, and an aroused, white eye. But a line branching from its neck looks like a human arm with fingers. The relationship of these figures to each other, and to the frieze on the adjacent wall, is among the great enigmas in cave art. The woman's posture suggests that she may be squatting in childbirth, and the animals, on a level with her loins, seem to be streaming away from her. Gregory Curtis, who fights and loses a valiant battle with his urge to speculate, admits in "The Cave Painters" that he can't help reading a mythical narrative into the scene, one that relates to the Minotaur—the hybrid offspring of a mortal woman and a sacred bull "who lived in the Labyrinth, which is a kind of cave." Art on the walls of Cretan palaces depicts the spectacle of youths leapfrogging a charging bull, and that public spectacle—in the guise of the bullfight—has, he points out, endured into modern times precisely in the regions where decorated caves are most concentrated. "European culture began somewhere," he concludes. "Why not right here?"

In the course of a friendly correspondence, Yanik Le Guillou gave Curtis a warning about indulging his imagination. Perhaps that sin might be forgiven in an American journalist, but not in Jean Clottes. The book that sets forth his controversial theory about the art, "The Shamans of Prehistory," co-written with the South African archeologist David Lewis-Williams, and published in 1996—the year Clottes took over at Chauvet—detonated a polemical firestorm that hasn't entirely subsided. Defying the prohibitions against importing evidence to the caves from external sources, the authors grounded their interpretation in Lewis-Williams's studies of shamanism among hunter-gatherers, historical and contemporary, and of African rock art, specifically the paintings of a nomadic people, the San, whose shamans still serve as spiritual mediators with the powers of nature and with the dead. In an earlier article, "The Signs of All Times," written with the anthropologist T. A. Dowson, Lewis-Williams had explored what he called "a neurological bridge" to the Old Stone Age. The authors cited laboratory experiments with subjects in an induced-trance state which suggested that the human optic system generates the same types of visual illusions, in the same three stages, differing only slightly by culture, whatever the stimulus: drugs, music, pain, fasting, repetitive movements, solitude, or high carbon-dioxide levels (a phenomenon that is common in close underground chambers). In the first stage, a subject sees a pattern of points, grids, zigzags, and other abstract forms (familiar from the caves); in the second stage, these forms morph into objects—the zigzags, for example, might become a serpent. In the third and deepest stage, a subject feels sucked into a dark vortex that generates intense hallucinations, often of monsters or animals, and feels his body and spirit merging with theirs.



Peoples who practice shamanism believe in a tiered cosmos: an upper world (the heavens); an underworld; and the mortal world. When Clottes joined forces with Lewis-Williams, he had come to believe that cave painting largely represents the experiences of shamans or initiates on a vision quest to the underworld, where spirits gathered. The caves served as a gateway, and their walls were considered porous. Where the artists or their entourage left handprints, they were palping a living rock in the hopes of reaching or summoning a force beyond it. They typically incorporated the rock's contours and fissures into the outlines of their drawings—as a horn, a hump, or a haunch—so that a frieze becomes a bas-relief. But, in doing so, they were also locating the dwelling place of an animal from their visions, and bodying it forth.

This scenario has its loose ends, particularly in the art's untrancelike fidelity to nature, but it fits the dreamlike suspension of the animals in a vacuum, and it helps to explain three of the most sensational figures in cave art. One is the bison-man at Chauvet; another is the bird-man at Lascaux; and the third, known as the Sorcerer, looks down from a perch close to the high ceiling at Les Trois Frères, a Magdalenian cave in the Pyrenees. He has the ears and antlers of a stag; handlike paws; athletic human legs and haunches; a horse's tail; and a long, rather elegantly groomed wizard's beard.

Clottes was hurt and outraged by the rancor of the attacks that greeted "The Shamans of Prehistory" ("psychedelic ravings," one critic wrote), and the authors defended themselves in a subsequent edition. "You can advance a scientific hypothesis without claiming certainty," Clottes told me one evening. "Everyone agrees that the paintings are, in some way, religious. I'm not a believer myself, and I'm certainly not a mystic.

But *Homo sapiens* is *Homo spiritualis*. The ability to make tools defines us less than the need to create belief systems that influence nature. And shamanism is the most prevalent belief system of hunter-gatherers."

Yet even members of the Chauvet team feel that Clottes's theories on shamanism go too far. The divide seems, in part, to be generational. The strict purists tend to be younger, perhaps because they came of age with deconstruction, in a climate of political correctness, and are warier of their own baggage. "I don't mind stating uncategorically that it's impossible to know what the art means," Carole Fritz said. Norbert Aujoulat tactfully told me, "We're more reserved than Jean is. He may be right about the practice of shamanism in the caves, but many of us simply don't want to interpret them." He added with a laugh, "If I knew what the art meant, I'd be out of business. But in my own experience—I've inventoried five hundred caves—the more you look, the less you understand."

For an older generation, on more intimate terms with mortality, it may be harder to accept the lack of resolution to a life's work. Jean-Michel Geneste, a leonine man of fifty-nine with a silver mane, told me about an experiment that he had conducted at Lascaux in 1994. (In addition to directing the work at Chauvet, he is the curator of Lascaux, and last winter he had to deal with an invasion of fungus that was threatening the paintings there.) Geneste decided to invite four elders of an Aboriginal tribe, the Ngarinyins—hunter-gatherers from northwestern Australia—to visit the cave, and put them up at his house in the Dordogne. "I explained that I would be taking them to a place where ancients had, like their own ancestors, left marks and paintings on the walls, so that perhaps they could explain them," he said. " 'They're your ancestors?' they asked. I said no, and that stupid reply made them afraid. If we weren't visiting my ancestors, they wouldn't enter their sanctuary, and risk the consequences. I was terribly disappointed, and finally, as good guests, they agreed to take a look. But first they had to purify themselves, so they built a fire, and pulled some of their underarm hair out and burned it. Their own rituals involve traversing a screen of smoke—passing into another zone. When they entered the cave, they took a while to get their bearings. Yes, they said, it was an initiation site. The geometric signs, in red and black, reminded them of their own clan insignia, the animals and engravings of figures from their creation myths."



"Take my advice, Roberts, and hide your light under a bushel."

Geneste agrees with their reading, but he also believes that a cave like Lascaux or Chauvet served many purposes—"the way a twelfth-century church did. Everyone must have heard that these sanctuaries existed, and felt drawn to them. Look at the Pont d'Arc: it's a great beacon in the landscape. And, like the art in a church, the richness of graphic expression in the caves was satisfying to lots of different people in different ways—familial, communal, and individual, across the millennia—so there is probably no one adequate explanation, no unified theory, for it."

For the next week, I climbed the hill to Chauvet once a day. A guardian, Charles Chauveau, who, by law, has to be present when the scientists are underground, took me hiking, and we scaled the cliffs to sun our faces on a boulder, watching the first rafters of the season negotiate the river and pass under the Pont d'Arc. Only a few members of the team enter the cave at a time, each to pursue his or her research, though because of potential hazards, especially carbon-dioxide intoxication, no fewer than three can ever be alone there. "In the old days, when you sometimes had Chauvet to yourself, it was awesome and a little frightening," the geologist Evelyne Debard said. But Aujoulat felt more intimidated at Lascaux. "I used to spend a solitary hour there once a week," he said. "I rehearsed all my gestures, so I wouldn't lose time. But after a while it became oppressive: those huge animals staring you down in a small space—trying, or so it feels, to dominate you."

Those who have elected to stay behind spend the day in a prosaic annex next to the camp parking lot which was built to provide the team with office space and computer outlets. Marc Azéma, who has collaborated with Clottes on books about Chauvet's lions (he also filmed the Tuareg baptism), gave me a virtual cave tour on a big monitor. Of necessity, Fritz and Tosello spend more time Photoshopping their research than conducting field work. (Henri Breuil made tracings directly from cave walls—an unthinkable sacrilege to modern archeologists.) They digitally photograph an image section by section, print the picture to scale, and take it back underground, where Tosello sets up a drawing board as close as possible to the area of study. The digital image is overlaid

with a sheet of clear plastic, and he traces the image onto the sheet, referring constantly to the original painting as he does so. This dynamic act of translation gives him a deeper insight into the artists' gestures and techniques than a mere reading would. He repeats the process on successive plastic sheets, each one focussed on a separate aspect of the composition, including the rock's contours. Then he transfers the tracings (as many as a dozen layers) onto the computer, where they can be magnified and manipulated. Describing the detail in a monumental frieze of horses between the Megaloceros Chamber and the Skull Chamber, Fritz and Tosello wrote, in "Chauvet Cave":

> Once again, the surface was carefully scraped beneath the throat, which suggests to us a moment of reflection, or perhaps doubt. . . . The last horse is unquestionably the most successful of the group, perhaps because the artist is by now certain of his or her inspiration. This fourth horse was produced using a complex technique: the main lines were drawn with charcoal; the infill, colored sepia and brown, is a mixture of charcoal and clay spread with the finger. A series of fine engravings perfectly follow the profile. With energetic and precise movements, the significant details are indicated (nostril, open mouth). A final charcoal line, dark black, was placed just at the corner of the lips and gives this head an expression of astonishment or surprise.

While the team was at work, I often stayed on the cliff with Chauveau, reading Dale Guthrie's book at a picnic table. Guthrie, a professor emeritus of zoology at the University of Alaska, specializes in the paleobiology of the Pleistocene era. Not only is he an expert on the large mammals that cavort on cave walls; he has spent forty years in the Arctic wilds hunting their descendants with a bow and arrow. In that respect, perhaps, he brings more empiricism to his research than other scholars, though he also brings less humility. "The Nature of Paleolithic Art," as its title suggests, aspires to be definitive.

It is a handsome, five-hundred-page volume composed, like a mosaic, of boxed highlights, arresting graphics, and short sections of text that distill a wealth of multi-disciplinary research. The prose, like the layout, is designed to engage a layman without vulgarizing the science, or, at least, not too much. Guthrie, who sounds and looks, in his author's photograph, like an earthy guy, has fun with occasional rib-nudging subtitles ("Lesbian Loving or Male Fantasy?," "Graffiti and Testosterone"), but they promote a premise at least as audacious as that of Clottes and Lewis-Williams: that our biology, expressed in our carnal appetites and attractions, including an attraction to the supernatural, is a "baseline of truth" for the cave artists' symbolic language.

Nearly all the illustrations are Guthrie's own renderings or interpretations of Paleolithic imagery (there are no photographs). A number of prehistorians are and have been, as he is, gifted draftsmen and copyists. But unlike the devout Breuil, or the cautious Tosello, Guthrie is a desacralizer. He admires the creative "freedom" of cave art—an acuity of observation coupled with, in his view, a nonchalance of composition. He stresses its erotic playfulness, even straining to discern evidence of dildos and bondage, despite the rarity of sexual acts depicted on walls or artifacts. ("No Sex, Please—We're Aurignacian" was the title of a scholarly paper on the period.) The reverence with which certain researchers—including, one infers, the Chauvet team—treat even the smallest nick in a cave strikes him as a bit too nice, and, where they perceive an elaborate, if obscure, metaphysics, he sees high-spirited improvisation. "Some Paleolithic images identified as part man and part beast may simply be artistic bloopers," he writes. (But the artists sometimes did correct their work, Azéma told me, by scraping the rock's surface.)

Paleobiology is, in part, a science of statistical modelling, and, analyzing the handprints in the caves, Guthrie argues that many, perhaps a majority, of the artists were not the "Michelangelos" of Lascaux or Chauvet but teenage boys, who, being boys, loved rutting and rumbling and, in essence, went on tagging sprees. It is true that among the masterpieces there are many line drawings, including pubic triangles, that seem hasty, impish, or doodle-like. In Guthrie's view, prehistorians have imported their mandarin pieties, and the bias of a society where children are a minority, to the study of what, demographically, was a free-wheeling youth culture.

Guthrie is both provocative and respected—Clottes wrote one of the cover blurbs on his book—but some of his methods make you wonder how much of the light that he throws onto the nature of the art owes to false clarity. By culling examples of erotica from a huge catchment area without noting their size, date, or position, he distorts their prevalence. His cleaned-up drawings minimize the art's bewildering ambiguity and the contouring or the cave architecture organic to many compositions. As for the bands of brothers



"I don't blame you for everything—I blame Dad for some things, too."

spelunking on a dare, and leaving what Guthrie calls their "children's art" to bemuse posterity, the life expectancy for the era was, as he notes, about eighteen, since infant mortality was exorbitant. But those who lived on could, thanks to the rarity of infectious diseases and the abundance of protein, expect to survive for thirty years more—considerably longer than the Greeks, the Romans, or the medieval peasants who built Chartres. Can puerility as we know it—horny, reckless, and transgressive—be attributed to a people for whom early parenthood and virtuosity in survival skills were, as Guthrie acknowledges, imperative? Rash spelunkers die every year, yet no human remains have been discovered in the caves (with the exception of a single skeleton, that of a young man, at Vilhonneur, near Angoulême, and those of five adults who were buried at Cussac, in the Dordogne). That is a staggering testament to the artists' sureness of foot and purpose, if not to their solemnity.

A few days before Easter, I left the camp and drove southwest, over the mountains, stopping at the town of Albi, where the Toulouse-Lautrec Museum, in a thirteenth-century palace off the cathedral square, has a small gallery of Stone and Bronze Age artifacts. I wanted to see the museum's tiny Solutrean carving, in red sandstone, of an obese woman with impressive buttocks. She seemed well housed among Toulouse-Lautrec's louche Venuses. By the next evening, in a thunderstorm, I had reached Jean Clottes's home town of Foix, and found an old-fashioned hotel that he had recommended. From a corner table in the dining room, I could watch the swollen Ariège River flowing toward a distant wall of snow-covered peaks—the Pyrenees—that were black against a livid sunset. The Neanderthals had come this way.

Pascal Alard, an archeologist, met me the next morning at Niaux, where he has conducted research for twenty years. It is one of three caves (with Chauvet and Lascaux) that Clottes, who had arranged the rendezvous, considers paradigmatic. I had driven south for about forty minutes, the last few miles on a road with hairpin turns that wound up into flinty, striated hills. The site was nothing like Chauvet. There was, for one thing, a parking lot at the entrance, deserted at that hour, a bookshop, and an imposing architectural sculpture, in Cor-ten steel, cantilevered into the cliff. (It is supposed to represent an imaginary prehistoric animal.)

Niaux is Magdalenian—its walls were decorated about fourteen thousand years ago—and it was one of the first caves to be explored. Visitors from the seventeenth century left graffiti, as did pranksters for the next three hundred years. In 1866, an archeologist named Félix Garrigou, who was looking for prehistoric relics, confessed to his journal that he couldn't figure out the "funny-looking" paintings. "Amateur artists drew animals here," he noted, "but why?"

Niaux's enormity—a network of passages that are nearly a mile deep from the entrance gallery, which was used as a shelter during the Bronze Age, to the Great Dome, at the far end, branching like a cactus into narrow alcoves and low-ceilinged funnels, but also into chambers the size of an amphitheatre—helps to give it a stable climate, and small groups can make guided visits at appointed times. But when Alard had unlocked the door, and it closed behind us, we were alone. He had two electric torches, and he gave me one. "Don't lose it," he joked. He told me that he and some colleagues, all of whom know the cave intimately, decided, one day, to see if they could find their way out without a light source. None of them could.

The floor near the mouth was fairly flat, but as we went deeper it listed and swelled unpredictably. Water was dripping, and sometimes it sounded like a sinister whispered conversation. The caves are full of eerie noises that gurgle up from the bowels of the earth, yet I had a feeling of traversing a space that wasn't terrestrial. We were, in fact, walking on the bed of a primordial river. Where the passage narrowed, we squeezed between two rocks, like a turnstile, marked with four lines. They were swipes of a finger dipped in red pigment that resembled a bar code, or symbolic flames. Further along, there was a large panel of dots, lines, and arrows, some red, some black. I felt their power without understanding it until I recalled what Norbert Aujoulat had told me about the signs at Cussac. He was the second modern human to explore the cave, in 2000, the year it was unearthed, some twenty-two thousand years after the painters had departed. (The first was Cussac's discoverer, Marc Delluc.) "As we trailed the artists deeper and deeper, noting where they'd broken off stalagmites to mark their path, we found signs that seemed to say, 'We're sanctifying a finite space in an infinite universe.' "

Beyond the turnstile, the passage widens for about six hundred feet, veering to the right, where it leads to one of the grandest bestiaries in Paleolithic art: the Black Salon, a rotunda a hundred and thirty feet in diameter. Scores of animals were painted in sheltered spots on the floor, or etched in charcoal on the soaring walls: bison, stags, ibex, aurochs, and, what is rarer, fish (salmon), and Niaux's famous "bearded horses"—a shaggy, short-legged species that, Clottes writes in his new book, has been reintroduced from their native habitat, in Central Asia, to French wildlife parks. All these creatures are drawn in profile with a fine point, and some of their silhouettes have been filled in with a brush or a stumping cloth. I looked for a little ibex, twenty-one inches long, that Clottes had described to me as the work of a perfectionist, and one of the most beautiful animals in a cave. When I found him, he looked so perky that I couldn't help laughing. Alard was patient, and, since time loses its contours underground, I didn't know how long we had spent there. "I imagine that you want to see more," he said after a while, so we moved along.

Every encounter with a cave animal takes it and you by surprise. Your light has to rouse it, and your eye has to recognize it, because you tend to see creatures that aren't there, while missing ones that are. Halfway home to the mortal world, I asked Alard if we could pause and turn off our torches. The acoustics magnify every sound, and it takes the brain a few minutes to accept the totality of the darkness—your sight keeps grasping for a hold. Whatever the art means, you understand, at that moment, that its vessel is both a womb and a sepulchre. ♦

FICTION

THE HEADSTRONG HISTORIAN

BY CHIMAMANDA NGOZI ADICHIE



NYT
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DAVID BROOKS

Genius: The Modern View

Some people live in romantic ages. They tend to believe that genius is the product of a divine spark. They believe that there have been, throughout the ages, certain paragons of greatness — Dante, Mozart, Einstein — whose talents far exceeded normal comprehension, who had an other-worldly access to transcendent truth, and who are best approached with reverential awe.

We, of course, live in a scientific age, and modern research pierces hocus-pocus. In the view that is now dominant, even Mozart's early abilities were not the product of some innate spiritual gift. His early compositions were nothing special. They were pastiches of other people's work. Mozart was a good musician at an early age, but he would not stand out among today's top child-performers.

What Mozart had, we now believe, was the same thing Tiger Woods had — the ability to focus for long periods of time and a father intent on improving his skills. Mozart played a lot of piano at a very young age, so he got his 10,000 hours of practice in early and then he built from there.

The latest research suggests a more prosaic, democratic, even puritanical view of the world. The key factor separating geniuses from the merely accomplished is not a divine spark. It's not I.Q., a generally bad predictor of success, even in realms like chess. Instead, it's deliberate practice. Top performers spend more hours (many more hours) rigorously practicing their craft.

The recent research has been conducted by people like K. Anders Ericsson, the late Benjamin Bloom and others. It's been summarized in two enjoyable new books: "The Talent Code" by Daniel Coyle; and "Talent Is Overrated" by Geoff Colvin.

If you wanted to picture how a typical genius might develop, you'd take a girl who possessed a slightly above average verbal ability. It wouldn't have to be a big talent, just enough so that she might gain some sense of distinction. Then you would want her to meet, say, a novelist, who coincidentally shared some similar biographical traits. Maybe the writer was from the same town, had the same ethnic background, or, shared the same birthday — anything to create a sense of affinity.

This contact would give the girl a vision of her future self. It would, Coyle emphasizes, give her a glimpse of an enchanted circle she might someday join. It would also help if one of her parents died when she was 12, infusing her with a profound sense of insecurity and fueling a desperate need for success.

Armed with this ambition, she would read novels and literary biographies without end. This would give her a core knowledge of her field. She'd be able to chunk Victorian novelists into one group, Magical Realists in another

> A democratic, and puritanical, take on great accomplishment.

group and Renaissance poets into another. This ability to place information into patterns, or chunks, vastly improves memory skills. She'd be able to see new writing in deeper ways and quickly perceive its inner workings.

Then she would practice writing. Her practice would be slow, painstaking and error-focused. According to Colvin, Ben Franklin would take essays from The Spectator magazine and translate them into verse. Then he'd translate his verse back into prose and examine, sentence by sentence, where his essay was inferior to The Spectator's original.

Coyle describes a tennis academy in Russia where they enact rallies without a ball. The aim is to focus meticulously on technique. (Try to slow down your golf swing so it takes 90 seconds to finish. See how many errors you detect.)

By practicing in this way, performers delay the automatizing process. The mind wants to turn deliberate, newly learned skills into unconscious, automatically performed skills. But the mind is sloppy and will settle for good enough. By practicing slowly, by breaking skills down into tiny parts and repeating, the strenuous student forces the brain to internalize a better pattern of performance.

Then our young writer would find a mentor who would provide a constant stream of feedback, viewing her performance from the outside, correcting the smallest errors, pushing her to take on tougher challenges. By now she is redoing problems — how do I get characters into a room — dozens and dozens of times. She is ingraining habits of thought she can call upon in order to understand or solve future problems.

The primary trait she possesses is not some mysterious genius. It's the ability to develop a deliberate, strenuous and boring practice routine.

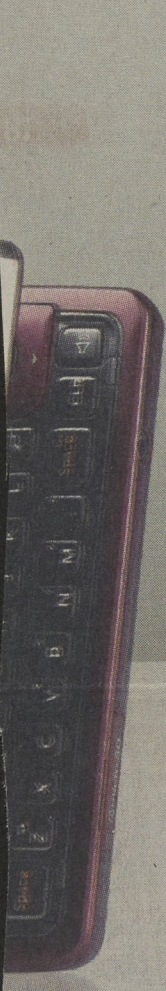
Coyle and Colvin describe dozens of experiments fleshing out this process. This research takes some of the magic out of great achievement. But it underlines a fact that is often neglected. Public discussion is smitten by genetics and what we're "hard-wired" to do. And it's true that genes place a leash on our capacities. But the brain is also phenomenally plastic. We construct ourselves through behavior. As Coyle observes, it's not who you are, it's what you do. □

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GABRIEL FIELDING

THE USES OF FEAR

A novelist and physician—who has to cope in everyday life with frightened men, women, and children—analyzes why we must learn to live with our fears and how we can make them work for us.

WHEN I was about six my father often used to come into my morning bedroom to tell me there was a special bird in the garden. I would tumble out to the gray pane to see the green woodpecker or the white blackbird at the loganberries, but I was always too late. Through the window, by the time I reached it, there was only the garden and a great birdlessness.

In fact the only bird I ever saw was my father himself, a tall white ruffled bird with a black crest who cried sadly, "Dash it! Dash it! He's frightened it away," and this was his call for years afterwards until by stealth I learned the slow, almost hypnotic movements of the true bird watcher.

About this time I read a book about jackdaws by a German who had studied them closely in Switzerland. He described their alarm cries and signals and said that what most disturbed them was an old black velvet glove dangled from his hand. They would forgive him anything but this. Sudden movements, noises, flight signals would only startle them and they would soon return; but the black portent of the glove would drive them away for days on end, as if they saw the very shape of death in its hanging empty fingers.

What then is the difference between alarm and fear? Perhaps alarm is only unpremeditated fright whereas fear, like hope, lies all in the anticipation. If this is so, then it might be fascinating to look for its first showing in babies. I certainly have found it so, and both at home and in my work I've had many opportunities of what I might call "fear-watching."

I believe that very small babies, a few hours or days old, have no conscious fear at all; they are the only fearless creatures in the human world, thank Heaven. With their grip-reflex they would dangle from the top of the Eiffel Tower or the Empire State Building until their forearm muscles tired, when surprised and serene as ever they would let go and drop without a single cry.

Before one of my sons was eighteen months old he fell into a lily pond. At the time I was busy some distance away and I thought it was an apple falling; but just to make sure I turned round. One moment there was nothing, and then an arm and hand tiny as a Chinese carving rose slowly from the water, and I was there.

Beneath the clear surface between the lily leaves I saw my son's wide washed eyes gazing up at me, surprised and quite without fear. I saw all this and more, so sharply that although, even as I saw it I was lifting him out, I could never forget it, and even made use of it much later when I was writing the lake scene in *In the Time of Greenbloom*. The Flood predates the great fires; in mythology the face beneath the water whether that of Palinurus or of Ophelia is an earlier image perhaps than the form in the flames. As someone once said, "Water is more dangerous than fire because it is always there."

But I think that the reason I saw everything with such icy clarity on the occasion was that I was so very much frightened myself. My fear and love together were like a coupled-lens focusing the image so exactly that for several years afterwards I often found myself wondering what my son had experienced in these ten or twenty underwater seconds and longed for him to be old enough to tell me.

Eventually he did. He said that the memory of it all had become confused with those of faces gazing into his pram. It was as if he had been in a most satisfying dream, keel-deep beneath a boat of some sort with many people looking affectionately down upon him. He never spoke of the experience as having been frightening at the time; he said it was only much later that he

of physical acquisition and plain materialism."

"Why do you keep your refrigerator in the living-room, Mohammed?" I asked a friend of mine when I visited him at home.

"Because if we kept it in the kitchen no one would know we owned one," Mohammed said.

A USE FOR DREAMS?

NEVER have Nasser's remarkable tactical gifts been more evident than since the Syrian upheaval. With his personal position threatened, he had to dramatize once again—through lightning and ruthless action—his ability to remain top dog. Thus in breathless sequence came the sequestration of the aristocrats' property, cabinet changes, the alleged French plot to assassinate him, the creation of a new National Congress of Popular Powers, and in December his threat to nationalize all foreign-owned lands and his break of Egypt's three-year-old tie with the reactionary kingdom of Yemen.

The National Congress—which is to be elected early in 1962—is Nasser's answer to the pressure from Boghdady and others to democratize the regime. Nasser made the "democratization process" extremely intricate. First, a preparatory committee was to debate and then define the nature of the popular powers and to decide on the method of representation in the Congress. This Congress in turn will prepare for national elections to form a final third-stage parliament which will write a permanent constitution for Egypt. Whether the Congress succeeds in evolving a unique and truly representative form of democracy for Egypt remains to be seen.

Nasser realizes that he cannot afford to push the process of alienation much further—in making so many enemies among the upper and middle classes he has collided with the deep-rooted tribal traditions of Egypt. Many of the impoverished and imprisoned "enemies of the people" have brothers or relatives in the army—and the uneasiness there is said to be growing. If he loses the loyalty of the army, he is finished. And to keep the country running he must rapidly reinforce his corps of managers and technicians to replace the upper-class experts he has so totally alienated. He does not have much time. He hopes that within a few months his new Socialist system will have sufficiently shaken down to enable him to reduce drastically the present omnipresent activities of the secret police.

One should not be too hard on Nasser for being so suspicious. If he sees plots everywhere, it is frequently with reason. Conspiracy is the chemistry of the Arab character; Nasser himself has always had the mentality of a conspirator: he conspired his way to power, and to this day he has consistently visualized his internal and external problems in terms of intrigue. He has always aspired to statesmanship, and has intermittently cultivated that image. He would have preferred to rule like a reticent Scandinavian, but early in the game he discovered that Egypt could only be run as it always has been run: by plotting. Nasser is an intricate, intelligent, brooding man, animated by a curious alchemy of complexes and compassion.

What is the American government's present attitude to Nasser? Washington now recognizes his neutralism in the Cold War as genuine. In Egypt, the focus of American concern is not so much on Nasser as it is on the stability and prosperity of his people. This is why we give so much free food. But it is also generally felt that in this imperfect world there is no likely alternative to Nasser but chaos or even communism. Even Vice President Boghdady, though popular, lacks the personal force to hold Egypt together. Five years ago Nasser was regarded as the West's archenemy, but today even Whitehall realizes that his overthrow would mean an upheaval in the Middle East that would make its previous instability seem mild by comparison. Important financial interests in America—oil companies among them—reason the same way.

Nasser has committed many errors in governing Egypt, but he has also tangibly begun to honor his promises to its hungry millions. He is probably the first ruler Egypt ever had who really *cares* about its poverty. The greatest impediment to his dreams is the character of his own people—not enough of them share his integrity and tirelessness. Thus he has set himself a task which far transcends the building of a few factories or the success of a five-year plan. He is trying to *remake* the very character of his people.

Can he succeed in such a utopian endeavor? Can he make Arab Socialism work and turn Egypt into a model state? Perhaps not. But the skepticism of the outside world has always been his adrenalin. The experts said he could not run the Suez Canal; he proved them wrong. They said he had mortgaged his economy to the Soviets and had joined the Communist camp; they were wrong again. The obstacles are infinitely greater today. And yet somehow one feels that in the years to come a less wretched Egypt will look back and thank God that Nasser was a dreamer.

Harper's Magazine, February 1962

had learned from us to attribute terror to it.

I am convinced that he knew no real fear until he was perhaps three or three-and-a-half years old, when one night he called to me and begged for a night light. I asked him why he wanted it and he replied, "Because the dark's got a mouth."

MOTHS FOR DANGER

SINCE then I've seen many children, scores or even hundreds, reach what I might call the Gothic stage in fear. It's the first, the most natural, and in some ways the pleasantest. It demands nourishment: the Fairy Tales of Grimm, the Fables of Aesop, Tales of Mystery and Imagination, novels like *The Turn of the Screw*. But essentially I feel it's a fear which must be outgrown and no more often indulged after one has grown up than is a taste for cream cakes or scenic railways. Victorians, like my father's parents, clung to it for a whole generation: its sign may be read in their prison buildings, their domestic architecture, and their cemetery monuments as much as in their drama and light fiction. They liked nothing so much as to sit round a blazing fire with well-filled stomachs and titillate themselves with thoughts of hauntings, of owls screeching amongst ruins and chains rattling so loudly that they might never hear the voices of the real children slaving away in their factories. A book might be written on the Gothic conscience of Dickens.

In fact this is the point about Gothic fear, that if it is allowed to become a habit it spreads the psychic waistline; the better part of a lifetime may be passed within its limits, whilst one sups comfortably on executions, poltergeists, and train disasters, drifting through morbidity and ghoulishness to complacency or worse.

As with our affections we must advance in our fears; the two are corollaries of that greediness which is "being alive" itself. They must be neither neglected nor overindulged. They should be a progress, each degree of affection, as each sort of fear, being accepted until it is understood and then discarded in favor of a higher. As children, for example, we have to leave Gothic fear behind and overcome both blood-fear and body-fear: the first bleeding knee, the first terrible doctor and the threatened operation on the one hand; the awe of the primary sexual encounter on the other—that first scamper at the party, that outraged adult eye discovering in us too soon those abysses of which we were hitherto safely unconscious.

Young children are moths for danger; they love its touch. They are curious of its light if only to discover the extent of the darkness which it illumines within them, their metaphysical time and space. They sense the dangers of their sexual hungers more delicately than a hound pup winding his first fox; and in making their discoveries they should be handled as gently as they are in the presence of death, and as honestly.

I remember once a little boy of six who was going to have his tonsils taken out. Both his parents and myself had tried to cheer him with talk about the children's ward in the hospital: the gay pictures on the walls, the rocking horses, and the diet in which ice cream was medically recommended. But one day when I was visiting the house he got me to himself and asked:

"If this is all there is about it, these rocking horses and ice creams, then why's it so nasty to have your tonsils out?"

I admitted that it was painful and he said:

"Then I wish you'd tell me the worst, the very worst part of it."

So I said, "Well, when I had mine out, it was the next morning. You wake up, you don't know where you are and you want to be somewhere else and then the pain seems to sit in your throat and stop you from thinking anything at all."

"You're sure that's the worst?" he asked.

"Yes, I'm pretty sure it is; but the wonderful thing is that it wears off even before you've begun to get used to it."

"Well I'll remember that," he said, "and when that first morning is actually happening I'll say to myself, 'I'm in it now. This is the really worst part, and it'll soon be over and then I won't be frightened anymore.' "

But I often think blood-fear was best illustrated by Dante who allotted a whole forest of trees to those who had committed suicide. This forest bordered the outermost circle of the Inferno and each tree represented the body of some victim of himself and of his ungrown fear. As Dante and his guide struggled between them, each of these soft trees wailed and bled at their touch. To medieval thinking, the spirits they

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Gabriel Fielding is the brilliant English novelist and poet, best known in this country for "In the Time of Greenbloom" and, most recently, "Brotherly Love" (published last fall by Morrow). Educated at Oxford and Dublin, he studied medicine in London. He now practices in Kent and includes prisoners in Maidstone among his patients.

represented were not worthy even of Hell since perhaps they had not progressed far enough in their fears to deserve it.

Haunted as we are in our peacetimes by the atom bomb, by the specter of Auschwitz and the final diagnosis, this concept of Dante's is strange to us. Reading the latest pronouncement of the ethically innocent physicist or the newest atrocity story, or waiting in the hospital queue, we've had little chance of transcending our own blood-fear. We are an insurance generation and in this sense have remained immature.

In health many of my patients have said to me: "If I were ever to get cancer, I'd want nothing done; I should just want to be given something to finish me off painlessly and quickly." But in disease it's a different story: courage is the rule. I have sat with many slowly dying people whose relatives have upheld the fiction of their eventual recovery and had them say to me as soon as the door closed, "Of course *I* know, but please don't tell them. They like to think that I think I'm going to get better." In fact, in twenty years I remember only one man who begged me for release. He lay in his post-operative oxygen tent shouting to me through the glass and I do not know even now which of us was the more frightened: myself because I had grown so accustomed to bravery, or he because no one until that moment had dared to tell him that death was already so close that he had nothing to fear.

When death comes slowly, fear may come fast: it can spread a conspiracy in a home: bright-eyed, stiff-smiling, and truly fearful. A silence is engendered which isolates the dying person far more surely than his malady. Two languages begin to be spoken: one in the sickroom and the other in the remainder of the house; the bedroom door may become an iron lattice filtering off the light and truth of the household from him who is in most need of them. But if the fear is described and accepted, the conspiracy shrinks to its proper dimensions; it is confined to the bed, to one man and the not-terrible whisperings of his demise. As Jacques de la Rivière said:

"Peace lies only in the irremediable."

It would be possible to classify many other varieties of fear, I know; there is the fear of rejection, whether social or between the sexes; that of money, unique in that we are seldom afraid of having too much. There is the fear by which the dictator rules—that of police and the law; there are the final fears of loneliness, madness, and old age. They are as numerous as the serpents on the head of the Medusa and much more purposeful; because it was the Medusa's gaze which turned men to stone; the snakes were just a horrific and meaningless stage property.

THREE-TIME BUNGLER

WHAT I might call criminal or psychopathic fear is a terrible thing; its victim never acknowledges its reality or its influence. Very often a man guilty of some crime of dreadful violence will refuse any medical treatment which involves the spilling of his own blood: the lancing of a boil even, or the extraction of a tooth.

If one asks him why he's frightened he says: "I'm not frightened, I don't want it, that's all."

"Then you must be frightened."

He shouts: "Look, leave it, see! I don't want it and I'm not having it."

His face, his whole body, stiffens. If one persists to the point at which there is any danger of his recognizing his fear he becomes coldly threatening. At this stage, it's only too easy to believe that he needs only one drink or one companion to recommit the same sort of crime for which he has already been sentenced. I have often thought that if he could be photographed at the moment of the commission, the picture would show a quite expressionless face; as blank-eyed as that of the Medusa whose fearfulness may have lain in the fact that she herself was a stranger to fear.

Sometimes the effects are otherwise. There is a kind of hysterical fear which wears a different face, as contorted as the mask of an oriental dragon, and I remember one man in particular whose behavior illustrates this. He was a middle-aged prisoner who had three times attempted murder and I was looking after him toward the end of a long sentence. He was powerfully muscled with a rubbery physique and very vain of his ferocity. Having worked his way to a relatively "soft" prison he had begun to terrorize it by swiftly cultivated outbursts of violence. When it suited him he would hurl everything within reach through the air: furniture, prisoners, staff, and on one occasion even the prison chaplain.

One evening when he had come to the hospital for medicine, he caught me alone in the casualty theatre; he shut and locked the door and sat down in the treatment chair. He was extremely sagacious, he knew by many signs that I was alarmed, and it amused him. He began to tell me in detail of his attempted killings: of the knife that missed the carotid artery by a fraction of an



The How and Why Of Turning Camera Shy

The dilemma: oblige, or refuse a stranger's request to pose?

Drawings by Chip Wass

By MARTHA STEVENSON

SOME people like having their picture taken. I once saw the French movie star Isabelle Huppert in the middle of a photo shoot, and she seemed to enjoy every click of the shutter; it was as if she and the camera were old and good friends. I'm not like that at all — I have graduated from a childish surliness at having my picture taken to a glum acceptance that, for posterity, vacations and family reunions demand it. Of course, Isabelle Huppert and I have other differences: she has the sort of definite, angular features and narrow figure that translates on film into beauty, whereas in the chemical bath I develop a receding chin, horsey teeth, a shiny moon face and lots of extra fat. Deep down I believe I look like the young Audrey Hepburn, and so I've never really liked cameras.

This was not a problem until recently, when a friend and I took an extended trip to Southeast Asia and India. We took a little camera of our own and I grew to enjoy it, the way it documented all those places and people I didn't want to forget. Of course, there was the time I threatened to throw the thing into the ocean when I found myself ignoring a glorious Balinese sunset to discuss f-stops, backlight and why the flash didn't go off, but there were also all those memorable moments that were made even more so by their preservation on film. No, it wasn't my camera that was the problem; it was being asked to pose for other people's.

MARTHA STEVENSON, a writer based in New York City and a former editor of The East Hampton Star, recently completed an 11-month trip around the world.

It's interesting to note the different ways tourists approach photography. To some, the ideal photo is one without people; they are the ones who get up at dawn or in the middle of the night hoping to avoid the crowds, and who stand waiting, fingers tapping and camera poised on its tripod, for Isabelle Huppert to move out of the way so they can get an uninterrupted shot of an ancient ruin.

Others, like me, hate the idea of being a camera-toting tourist in the first place; our cameras have automatic everything and we take photos on the move, like those swinging photographers in mod British films from the 60's. For still others, the exotic sight is not of so much importance as having managed to get there, and so every photo has the same smiling group in its foreground. This bunch will ask a passer-by to act as photographer so everyone can be in the picture. When that happens, I enjoy yelling, "Say cheese!" and doing the honors.

No, my problem this trip was with tourists who wanted me to be in *their* snapshots — not so infrequent an occurrence as one might imagine; visiting a well-known tourist site, I was likely to be asked several times in an hour. Of course, when I had made friends with someone or some group, that was one thing; it was natural that they should want a picture of me and I one of them. But often perfect strangers wanted me to pose with them, looking chummy, maybe with my arm around their waist.

I don't think of myself as a curmudgeon. One of the reasons I travel is that I enjoy meeting people and being part of strange rituals and doing things I might not normally do. And so the first time I was asked to pose with a group, I did, cheerfully. It helped that they were such a cheerful bunch already — a group of about 10 Thai schoolgirls who had



climbed a steep hill to a temple, carrying guitars and cans of Coca-Cola and singing songs. It was like being in an "I'd Like to Teach the World to Sing" commercial, and I sang and swayed and laughed while the shutter winked.

After a while, though, the experience lost some of its charm, or maybe, like a lot of things related to travel, it was just that the first time was destined to be the best. It was on the north coast of Bali, at another temple, that I realized my patience for this kind of noblesse was waning. It didn't help that I'd just had a bag of peanuts snatched from my hand by a greedy monkey. Since the temple was aswarm with the simians and it was raining to boot, I decided to shelter myself in a little open-sided hut near the roadside and wait for my friend to finish his tour.

A car pulled up, and a large family emerged: mother, father, aunts, uncles, children — about eight in all. They were on vacation in Bali from Java; they had come to see the temple, but they were especially delighted to see me. They asked me to pose for the family album — not just once, but separately with each and everyone of them, and then, when I thought we must be finished, in combinations of twos and threes.

Balzac believed every body to be composed of layers of ghostly images, and that each photograph robbed its subject of one of these layers. Already a stranger in a strange land, I felt as if I were being nibbled to death by the clicks of the camera. It was there that I decided to draw the line.

No more photos, I protested. Enough.

JUST one more, they pleaded, with the aunt and uncle, and once more again, with the little ones.

I was embarrassed. Why had I been singled out for this honor? What possible explanation could they give their friends and relatives for my grumpy moon face with a fixed smile, appearing over and over again in their vacation snapshots? Would they say we were pals? Or would their friends at home understand, having their own snapshot collection of posed strangers?

Of course, I reasoned later, they must live in a place not on the tourist trail and so perhaps consider me more exotic an appearance on their trip than any temple could be.

Nevertheless, after that day I refused requests for photos more and more often. Young men alone or in groups were certain to get a "no"; I could only imagine the kind of stories the photos might generate in transit.

Families were more a dilemma. On the one hand, the New Yorker in me asked, Why should I submit to something that made me unconfortable? On the other, the Global Citizen argued, How could I be so ugly an American as to snub parents in front of their children?

It was in India, where Westerners historically have tackled the deeper questions, that my photo policy was subjected to debate. "Why not?" asked an offended male at the top of Gunpowder Hill in Mussoorie. "You're not a movie star," he offered pointedly. "No, I'm a fugitive from justice," I wisecracked. Then I tried sincerely to explain why not, but the rejection had labeled me a bad sport.

Another fellow, this time in the desert province of Rajasthan, was also miffed. "At least I asked your permission," he said by way of saving face. "You Western tourists take photos all the time of Indians and never even ask." That was true of many tourists, I admitted. However, I added, I always asked permission when focusing on a person rather than a scene, and many times had even noted the subject's address and sent prints.

Further complicating the issue in India is that many "picturesque" Indians feel as uncomfortable as I about having their images as specimens in a stranger's collection and have begun either refusing to be photographed or else asking for money. Some enterprising children pop their heads into the viewfinder at the crucial moment and then demand 1 rupee.

I hate to think this snapshooting skirmish will escalate into a war, with each side upping the ante until picture taking loses its cozy feeling of appropriation and becomes a full-fledged grab fest. Maybe if and when that happens, tourists domestic and foreign will decide to leave their cameras at home, buy souvenir slides and postcards and develop newfound friends into pen pals instead of photo album anomalies. ■

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UNCONVENTIONAL CRUDE

Canada's synthetic-fuels boom.

BY ELIZABETH KOLBERT

The town of Fort McMurray occupies a set of irregularly spaced hillsides on either side of the Athabasca River, in northern Alberta. It has a dozen check-cashing joints, a roughly equal number of hotels, and a gaming center called the Boomtown Casino. It also has a museum, which is devoted to the region's most important resource, the Alberta tar sands. Exhibits include an eight-foot-long rotor, half of a hundred-and-fifty-ton truck, and a pump of Brobdingnagian proportions. Near the entrance to the museum sits a black mound covered by a clear plastic dome. A sign invites visitors to scratch around in the mound with a little retractable rake, then lift up a flap and take a sniff. Tar sands look like dirt and smell like diesel fuel.

The tar sands begin near the border of Saskatchewan, around the latitude of Edmonton, and extend, in three major deposits, north and west almost to British Columbia. All in all, they cover—or, more accurately, underlie—some fifty-seven thousand square miles, an area roughly the size of Florida. It is believed that they were pushed into their present location seventy million years ago by the uplift of the Rocky Mountains.

For the most part, the tar sands consist of quartzite, clay, and water. The other ingredient—the "tar"—is a mixture of very heavy hydrocarbons known as bitumen. Bitumen can be used as a sealant—supposedly the word "mummy" is derived from the term in ancient Persian—and as a paving material. With the right technology, it can also be converted into a form of petroleum known as synthetic crude.

There are two ways to assess the world's oil supply. One is to consider only conventional reserves—the sort of oil that comes gushing out of the ground. Estimates of conventional reserves vary widely, but most analyses suggest that their output will begin to decline sometime in the next few decades (if it hasn't already)—a development that so-called "peak oilers" predict will lead to a variety of gruesome consequences, including blackouts, food shortages, and general economic collapse. The second way is to look beyond conventional reserves to unconventional ones, like the tar sands.



JIRI REZAC/POLARIS

Suncor's Millennium Mine. The shift to new sources of oil could significantly increase greenhouse-gas emissions.

It is estimated that there is enough bitumen in Alberta to yield 1.7 trillion barrels of synthetic crude. Assuming that only ten per cent of this is actually recoverable, it still represents the second-largest oil reserve in the world, after Saudi Arabia's, and more oil than is contained in the reserves of Kuwait, Norway, and Russia put together. Unconventional crude

speculated that BTK was lower middle class, probably living in a rental. Walker felt BTK was in a "lower-paying white collar job, as opposed to blue collar." Hazelwood saw him as "middle class" and "articulate." The consensus was that his I.Q. was somewhere between 105 and 145. Douglas wondered whether he was connected with the military. Hazelwood called him a "now" person, who needed "instant gratification."

Walker said that those who knew him "might say they remember him, but didn't really know much about him." Douglas then had a flash—"It was a sense, almost a knowing"—and said, "I wouldn't be surprised if, in the job he's in today, that he's wearing some sort of uniform. . . . This guy isn't mental. But he is crazy like a fox."

They had been at it for almost six hours. The best minds in the F.B.I. had given the Wichita detectives a blueprint for their investigation. Look for an American male with a possible connection to the military. His I.Q. will be above 105. He will like to masturbate, and will be aloof and selfish in bed. He will drive a decent car. He will be a "now" person. He won't be comfortable with women. But he may have women friends. He will be a lone wolf. But he will be able to function in social settings. He won't be unmemorable. But he will be unknowable. He will be either never married, divorced, or married, and if he was or is married his wife will be younger or older. He may or may not live in a rental, and might be lower class, upper lower class, lower middle class or middle class. And he will be crazy like a fox, as opposed to being mental. If you're keeping score, that's a Jacques Statement, two Barnum Statements, four Rainbow Ruses, a Good Chance Guess, two predictions that aren't really predictions because they could never be verified—and nothing even close to the salient fact that BTK was a pillar of his community, the president of his church and the married father of two.

"This thing is solvable," Douglas told the detectives, as he stood up and put on his jacket. "Feel free to pick up the phone and call us if we can be of any further assistance." You can imagine him taking the time for an encouraging smile and a slap on the back. "You're gonna nail this guy." ♦

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Jasper Johns: Gray is organized by The Art Institute of Chicago, in cooperation with The Metropolitan Museum of Art, New York. The exhibition is made possible by Kenneth and Anne Griffin. Major funding is generously provided by the Harris Family Foundation in memory of Bette and Neison Harris. The project is also supported by an award from the National Endowment for the Arts. An indemnity is provided by the Federal Council on the Arts and the Humanities.

Jasper Johns, *0 through 9*, 1961. Private Collection. Art ©Jasper Johns/Licensed by VAGA, New York, NY. Photo: Professional Graphics Inc., Rockford, Illinois.

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can be found in many other parts of the globe besides Canada; these include eastern Venezuela, which is home to a huge tar-sandslike deposit called the Faja Petrolífera del Orinoco, and portions of Colorado, Utah, and Wyoming, where there's a thick layer of oil shale known as the Green River Formation. Even coal can be converted into liquid fuel. During the Second World War, the Nazis employed a technique called the Fischer-Tropsch process; the same process is now in use in several countries, most notably South Africa, which invested heavily in coal-to-liquids technology during the apartheid era. Build enough coal-to-liquids plants and places like Montana and West Virginia could one day become major petroleum producers.

In Fort McMurray, what might be called the world's first unconventional oil boom is already under way. Since 2002, Shell, ConocoPhillips, Chevron, and Imperial Oil, which is primarily owned by ExxonMobil, have all received approval to construct major projects in the tar sands; Total has announced its intention to follow suit. Over the next five years, investment in the Fort McMurray area is expected to amount to more than seventy-five billion dollars. Residents of the town have taken to calling it Fort McMoney.

Thanks in large part to what's happening in the tar sands—output now tops a million barrels a day—Canada has become America's No. 1 source of imported oil; the country supplies the United States with more petroleum than all of the nations of the Persian Gulf combined. (If you have bought gas recently in Colorado, Ohio, or Indiana—states where tar-sands oil is refined—you are probably driving around with a piece of northern Alberta in your tank.) By 2010, the tar sands' yield is expected to double, and by 2015 to triple. Crude from the tar sands and other unconventional sources could keep oil flowing well into the middle of the century, and perhaps beyond. Depending on how you look at things, this is either a heartening prospect or a terrifying one.

The company that has been producing oil from the tar sands the longest is known as Suncor. (Suncor used to be a part of Sun Oil, now Sunoco, but today it is owned and operated independently.) One day this summer, I went to take a tour of its operations, which sprawl across several hundred square miles. I was picked up at the entrance to the site by a grandmotherly guide named Gloria Jackson, and together we went to fetch another Suncor official, named Darin Zandee. "There's no blasts today, so that's good," Zandee said, referring to the charges that are periodically set off to loosen the sands. We drove up to a lookout, from which we could see, spread before us, Suncor's newest mine, the Millennium. Rings of jet-black earthworks were scattered across an enormous pit, an arrangement that might have been based on a blueprint from the Inferno.

The Millennium Mine opened in 2002. Suncor expects to continue to pull tar sands out of it for the next twenty-five years. By then the pit, which is now roughly two miles in diameter, will be six miles across. We drove over the edge of the mine and slowly made our way down to the bottom. There a huge, Mike Mulligan-esque shovel was standing idle. Its bucket hung in midair, steel teeth glinting. Zandee said that to lift one of the teeth would require thirty men—"That gives you a sense of the scale." A gargantuan truck rumbled by. Zandee estimated that it was carrying about three hundred tons. "That's some of our smaller equipment," he said. The largest truck in the mine—the Caterpillar 797B—can haul more than four hundred tons. It has twelve-foot-tall tires, and its cab sits twenty-one feet off the ground. Driving one, I was told, is like trying to steer a house while peering out the window of the upstairs bathroom.

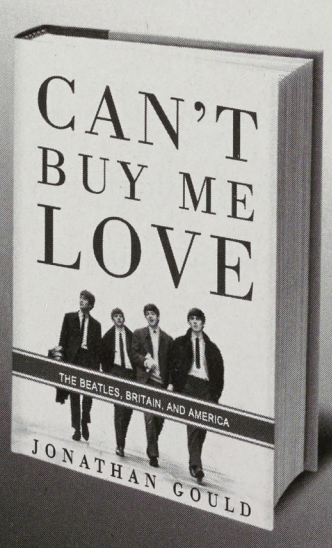
At the Millennium, the tar sands start at a depth of roughly a hundred feet and extend down in a more or less continuous layer, known as the "feed," for about a hundred and fifty feet. Before mining begins, everything above the feed—trees, bushes, grass, soil, rocks, wildlife—gets scooped up and carted away. (The material is delicately referred to as "overburden.") Below the tar sands, there's a thick layer of limestone, the remains of an ancient ocean that once covered Alberta. Suncor mines some of the limestone, too, and uses it to shore up the roads in the pit. What with the overburden and the tar sands and the limestone, Zandee said, "We try to move a million tons a day." He pointed out a truck in the distance that was dumping a load of tar sands onto what looked like a large platform. The platform was actually a grate, through



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which the sands were being fed into a giant tank of hot water.

In any given load of sands, only about ten per cent is bitumen; to produce synthetic crude, the other ninety per cent has to be separated out. In the hot-water tank, the sands get spun around; the liberated bitumen is then siphoned off. For every barrel of synthetic crude that Suncor eventually produces, forty-five hundred pounds of tar sands have to be dug up and separated.

We made our way out of the pit and headed on, following the bitumen to its next stop, the upgrader. Along the way, we passed a murky expanse of water with oily scum on the surface. A few dozen scarecrow-like creatures, fixed to empty barrels, were bobbing on top. This, Gloria Jackson explained, was a tailings pond; it held water that had been used in the separation process and was too contaminated with mercury and other toxins to be released back into the Athabasca. (Suncor has nine such ponds, which collectively cover an area of eleven square miles.) The scarecrows, known as "bitu-men," were supposed to discourage birds from landing on the pond and poisoning themselves. Every minute or so, a dull boom filled the air. This was the sound of a propane cannon, another bird-intimidation device.

The primary difference between bitumen and ordinary crude is the size of the hydrocarbon molecules: in liquid oil, these molecules contain between five and twenty carbon atoms, while in bitumen they contain more than twenty. (At room temperature, pure bitumen is so viscous that it will not flow.) The main job of the upgrader is to break down the oversized hydrocarbons into smaller units. We drove along roads with names like Sulphur Street and Diesel Alley and pulled up to a huge refinery-like complex that covered several square blocks. There were dozens of smokestacks and tanks, and more pipes than could possibly be counted. Jackson explained that somewhere inside this maze the bitumen would be "cracked," at a temperature of nearly nine hundred degrees. After that, in the form of synthetic crude, it would be piped to specially outfitted refineries, either in the United States or Canada, to be converted largely into transportation fuels—gasoline for cars, diesel for trucks, and jet fuel for planes. (Suncor owns a refinery near Denver that processes tar-sands oil.) I had told Jackson that I had twin boys at home, and at the end of the tour she handed me two yellow Matchbox-size versions of the 797B.



American accounts usually give the start of the oil age as 1859, the year that a former railroad conductor named Edwin L. Drake drilled his first successful well, near Titusville, Pennsylvania. Canadian accounts go back a year earlier, to 1858, when a businessman named James Miller Williams decided to dig a well for drinking water outside the town of Bear Creek, Ontario. Instead of water, he struck oil.

Efforts to extract oil from the tar sands soon followed. Entrepreneurs and con men sunk dozens of wells around Fort McMurray in the second half of the nineteenth century. (One enterprising German immigrant who claimed to have struck oil apparently poured the stuff down the hole himself.) Eventually, it became clear that there was no oil, and attention turned to mining the bitumen. In 1930, a former farmer named Robert Fitzsimmons set up the first commercial separation plant in the tar sands; in 1938, Fitzsimmons had to flee Canada to avoid his creditors.

In 1956, an American geologist, Manley Natland, came up with the idea of streamlining the process by using atom bombs. Natland reasoned that "thermal devices" could be lowered into the limestone beneath the tar sands and exploded. This would create cavities into which the bitumen, heated to more than a thousand degrees, would flow and from which it could then be collected. The idea was taken seriously at the highest levels in both Ottawa and Washington—the United States Atomic Energy Commission even agreed to supply a bomb to test Natland's theory—but it was never implemented. (Beginning in the mid-nineteen-sixties, the Soviet Union actually tried the experiment, setting off half a dozen nuclear explosions to stimulate conventional oil production; production increased, but, unfortunately, much of the oil turned out to be radioactive.)

The technology for removing bitumen from the tar sands is probably still best described as a work in progress. Where the feed lies closest to the surface, as, for example, at the Suncor site, the bitumen is strip-mined and then separated. But most of the tar sands lie too deep to be mined profitably. In these zones, a method known as in-situ extraction is used. In-situ extraction is based on much the same principle as Natland's scheme, minus the atom bombs. Typically, two horizontal wells are drilled into the sands, one above the other. High-pressure steam is injected into the top well; eventually, the tar sands grow hot enough—nearly four hundred degrees—that bitumen begins to flow into the bottom well. The technical name for this process is Steam Assisted Gravity Drainage, or SAGD (pronounced "sag-dee").

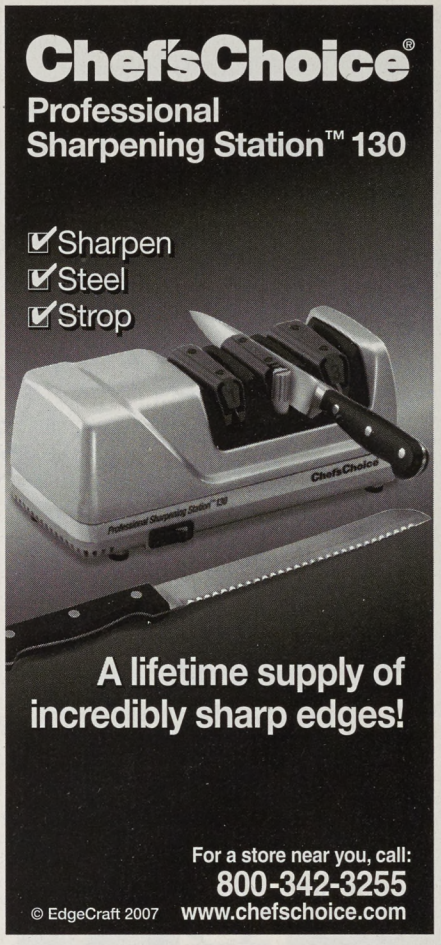
Whichever method is used, a great deal of energy is required. To produce a barrel of synthetic crude through mining takes roughly eight hundred and ten megajoules, which is the energy content of about an eighth of a barrel of oil. To produce a barrel of synthetic crude through SAGD takes more than sixteen hundred megajoules, which is the energy content of more than a quarter of a barrel of oil. This means that, for every three barrels extracted via SAGD, one has, in effect, been consumed.

Tar-sands oil itself could, in principle, be used to power the operations; in fact, most of the energy used to generate the steam for SAGD, as well as to run all the upgraders and separators, now comes from natural gas. It is estimated that by 2012 tar-sands operations will consume two billion cubic feet of natural gas a day, or enough to heat all the homes in Canada. Such is the demand for natural gas around Fort McMurray that a consortium of companies, including Shell Canada and Imperial Oil, has proposed building a seven-hundred-and-fifty-mile pipeline from the Arctic Ocean through the largely undisturbed wilderness of the Mackenzie River Valley and down into northern Alberta. The proposal, which has been challenged by native and environmental groups, has yet to receive regulatory approval; meanwhile, a variety of other plans have been floated. As it happens, while I was visiting Fort McMurray a company called the Energy Alberta Corporation filed an application to build a pair of nuclear reactors four hundred miles west of town. Early reports stated that the company already had a "large industrial off-taker" lined up to buy nearly three-quarters of the twenty-two hundred megawatts that the reactors would generate. Energy Alberta would not disclose the identity of this "off-taker"; in the local press it seemed to be taken for granted that the power would be going to the tar sands.

There are several reasons that companies like Chevron and ExxonMobil are now rushing to develop the tar sands, the most obvious being that it's increasingly profitable to do so. Converting the sands into synthetic crude costs around thirty dollars a barrel; last week, the price of a barrel of oil on the New York Mercantile Exchange was over ninety dollars. Other synthetic fuels require more elaborate processing, and are commensurately more costly to produce; converting coal into oil, for example, requires gasifying the coal under intense pressure and heat, then condensing it into a liquid. To extract oil from shale, meanwhile, involves basically rewriting geological history. (Shell has been experimenting with a process that involves baking the shale with electric heaters until it reaches a temperature of nearly seven hundred degrees while, at the same time, freezing the area around it.) If the price of oil remains above ninety dollars—many analysts expect it to hit a hundred dollars a barrel soon—then these and other unconventional forms of fuel can also be developed at a profit, and, all other things being equal, they will be.

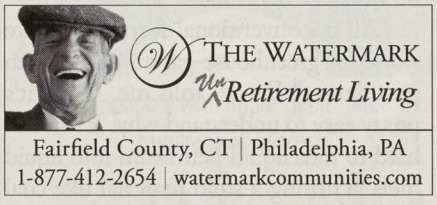
No matter how it is carried out, oil extraction is a destructive business. Conventional oil wells require pipelines and drill pads and roads for heavy equipment; all of these fragment (or destroy) the landscape. The flaring of natural gas, which often accompanies oil production, produces an array of air pollutants, and leaks and spills release toxins ranging from volatile chemicals, like benzene (a known carcinogen), to much heavier compounds, like benzopyrene (another known carcinogen). With unconventional oil, the damage tends to be higher all around—more land gets disturbed, more pollutants are produced, and more opportunities arise for contamination. And then there are the greenhouse gases.

Alex Farrell is a professor in the Energy

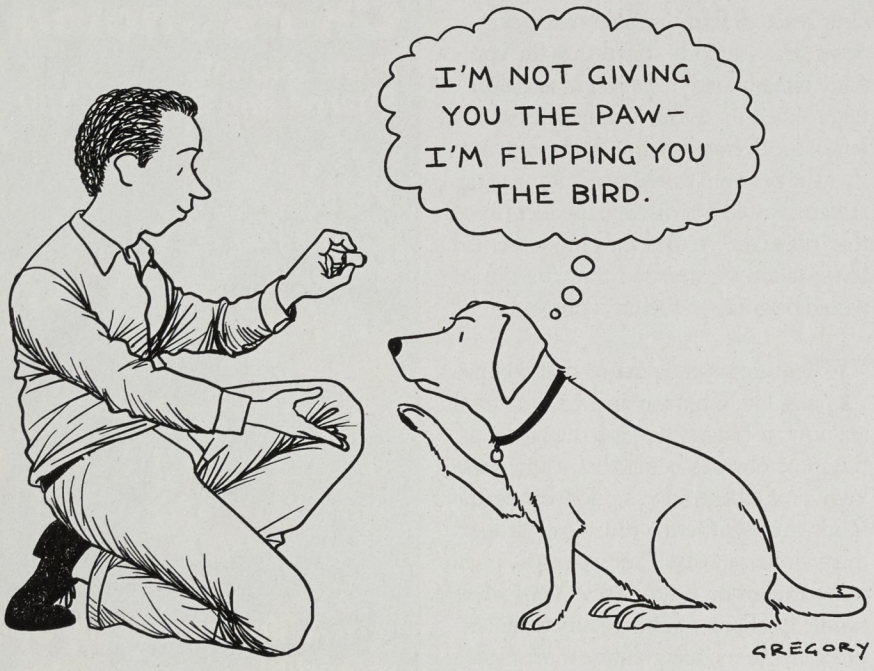












and Resources Group at the University of California at Berkeley who studies the impacts of unconventional oil. A few years ago, Farrell realized that all the major climate models were based on the same faulty premise: they assumed that in the future increased oil demand would be met with increased supplies of conventional crude. Together with a graduate student named Adam Brandt, Farrell decided to try to come up with projections that more accurately reflected reality. For their calculations, the two assumed that where there was a gap between demand and conventional supply it would be filled with synthetic fuels, first with tar-sands oil and later with oil from coal and shale. (According to high-end estimates, coal and oil shale could together yield some ten trillion barrels of unconventional crude.) They then calculated what the impact would be on global carbon-dioxide levels.

"All unconventional forms of oil are worse for greenhouse-gas emissions than petroleum," Farrell told me. "And it's pretty easy to understand why. It's not so hard to turn liquid petroleum into liquid fuels. Turning a solid material like coal into a liquid—it sounds hard to do, and it *is* hard to do. And that extra effort shows up in higher energy consumption and higher water use and higher emissions." In the case of tar-sands oil, total greenhouse-gas emissions per barrel—which is to say, the carbon dioxide produced in creating the oil and then burning it—are between fifteen and forty per cent higher than those from conventional oil. In the case of coal-to-liquids, or C.T.L., total emissions are almost two times as high as with conventional oil, and for oil shale they can be more than twice as high.

"Let's take coal-to-liquids," Farrell said. "You're talking about nearly doubling the greenhouse-gas emissions. Think about this—we're talking about a world in which over-all greenhouse-gas emissions should start to go down, and this is a technology that doubles emissions. They don't go together too well, do they?" Farrell and Brandt found that the shift to unconventional oil could add somewhere between fifty and four hundred gigatons of carbon to the atmosphere by 2100.

"The environment and climate change are what are called 'externalities,' " Farrell continued. "And at the moment we don't have effective ways of including these externalities in market transactions of any sort. Until we do, the market won't solve them, since by definition they're external to the market. They're a social good—government has to step up and say, 'We're going to take this into account.' "

One way that a government could take greenhouse-gas emissions into account would be to tax them. This would encourage producers of unconventional fuels to cut their emissions, by, for example, employing "carbon capture and storage" technologies. Ideally, it would also prompt entrepreneurs to develop alternatives to oil, like biofuels. Many analyses, though, suggest that, to have an appreciable effect on the oil sector, carbon taxes would have to be quite high—in the neighborhood of two dollars on a gallon of gasoline—precisely because today there are no readily available substitutes for gas or diesel or jet fuel. Farrell favors federal fuel standards, which would function somewhat like vehicle-efficiency standards, requiring oil companies to achieve a certain emissions target across all the products that they sell. (This target could be adjusted over time, much as auto-efficiency standards were ratcheted up during the seventies and eighties.) California is now in the process of drawing up such a plan—the California Low Carbon Fuel Standard is supposed to take effect on January 1, 2010—and several bills have been introduced in Congress that would impose such standards nationally.

At the same time, there is a great deal of support in Washington for measures that would, in effect, subsidize high-carbon fuels. One such measure, the Coal-to-Liquid Fuel Promotion Act, introduced earlier this year by Senators Jim Bunning, of Kentucky, and Barack Obama, of Illinois, would encourage companies to invest in C.T.L. plants by providing tax incentives and federal loan guarantees. (Although C.T.L. would be profitable at today's oil prices, building the plants requires large capital investments, which are considered risky as long as there's a chance that oil prices will fall.)

"If companies could lay off the risk of oil prices dropping below forty dollars a barrel, there would be enormous investment in this," Farrell told me. "But, when policies are proposed to promote C.T.L., I think the question to ask is, Is this an industry we want to start now?"

The Athabasca River flows north, into Lake Athabasca, which spans the Alberta-Saskatchewan border. In the winter, it is possible to drive the hundred and fifty miles from Fort McMurray to the lake on an ice road. (Because of rising temperatures, the number of days that the road is passable has been steadily shrinking.) In the summer, the only way to make the trip is by boat or by prop plane. One day when I was visiting Alberta, I flew up

to a village on the edge of the lake, Fort Chipewyan, in a six-seat Cessna. As the plane gained altitude, I could see the vast black pits of the tar-sands mines that surround Fort McMurray. Farther north, the pits gave way to regularly spaced square-shaped clearings in the trees—signs of preparation for in-situ operations. Finally, these, too, gave way, and below was nothing but the wild green of the boreal forest. (Spread over 1.4 billion acres, Canada's boreal forest is considered one of the largest still intact ecosystems on the planet.)

Fort Chipewyan, which was founded in the seventeen-eighties as a trading post, is a native village; about half its twelve hundred or so residents are Mikisew Cree, and the other half are Athabasca Chipewyan. It has a few hundred houses, a post office, and two churches—one Anglican and one Catholic—both perched near the edge of the lake. To a certain extent, Fort Chip, as it is known locally, has shared in the tar-sands boom; many residents of the village work construction jobs in Fort McMurray and return home only on their days off. At the same time, there's a good deal of concern in the village about what is happening. A peculiarly high number of cases of a rare cancer have been reported in town; this has prompted speculation that toxins from the tailings ponds are working their way downriver into the lake, which provides the village with drinking water as well as with staples like whitefish and pike. Meanwhile, both the Chipewyan and the Cree consider many of the tracts that the Alberta government has leased to oil companies to be their ancestral lands. The week before I visited Fort Chip, there was a rally at the local community center, calling for a moratorium on new projects.

"It's sad to see this thing destroyed, you know," Ray Ladouceur, a fisherman I met, said. We were standing by the lake, which is more than two hundred miles long. It was a still afternoon, and billowy white clouds were reflected in the water. "A lot of the fish are getting—I might as well say it—scabby.

"I don't know what we have to do to try to prevent them from destroying any more," he said, referring to the oil companies. "They try to say they can clean it. There's no way. It'll take a thousand years before it flushes itself out, and I think I'll be too damn old for that."

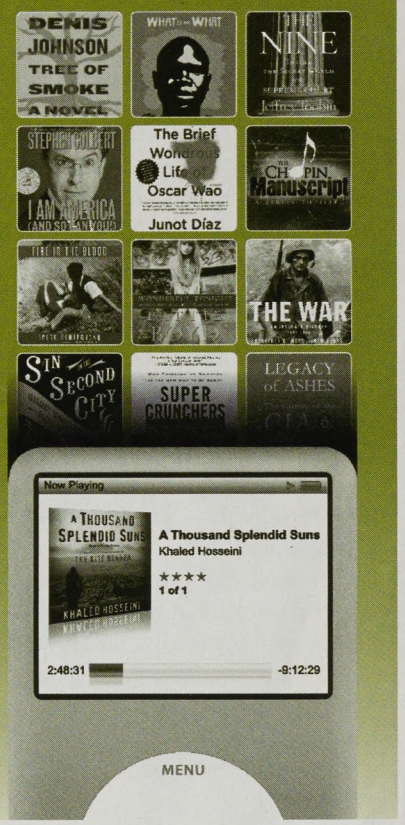
Over the past year or so, opposition to new tar-sands projects has been steadily growing. Around Fort McMurray, the emphasis is on local impacts; town officials have fought recent expansion proposals by several oil companies on the ground that there's already a shortage of housing and hospital beds in the area. In the rest of Canada, the focus is on the destruction of the boreal forest and the implications for the climate. Canada, in contrast to the United States, was an early signatory to the Kyoto Protocol, but it will be all but impossible for the country to meet its CO_2-reduction goals, in part because of the tar sands. (A recent Toronto *Globe & Mail* op-ed piece on emissions from the sands was titled "The Gassy Elephant in Our Living Room.") The former Canadian Environment Minister Charles Caccia has compared the country's position on greenhouse gases—pledging to reduce emissions on the one hand while increasing tar-sands production on the other—to "attempting to ride two horses galloping in opposite directions."

Meanwhile, development in northern Alberta continues unabated. All the applications opposed by Fort McMurray officials were ultimately approved, and just a few months ago an American company, Hyperion Resources, announced plans to build the first new oil refinery in this country in thirty years, to handle increasing volumes of tar-sands crude. Stéphane Dion, the leader of Canada's Liberal Party (which is currently out of power), has said, "There is no environmental minister on earth who can stop the oil from coming out of the sand, because the money is too big."

When I first landed at Fort Chip's tiny airport, the place was deserted. When I returned there for the flight back, I found a few dozen people standing on the tarmac. The crowd, I was told, was waiting for a corpse; a village elder had died the previous day in a hospital in Fort McMurray, and his body was being brought home. Everyone was quiet as the casket was carried out of the plane and then loaded onto the back of a pickup truck. As soon as the crowd dispersed, I and three other passengers climbed into the Cessna, and two minutes later we took off. Below was the wilderness, then the perfectly square clearings in the trees, and, finally, as we headed into Fort McMurray, the vast pits and the black ponds, with the bitu-men bobbing on top. ♦

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ROUGH RIDER

Where will Sam Zell take the struggling Tribune Company?

BY CONNIE BRUCK

In April, 2005, Sam Zell travelled to Abu Dhabi to meet Crown Prince Sheikh Mohammed bin Zayed al-Nahyan. Zell is best known as a real-estate magnate, whose reputation has been enhanced by the sale, last February, for thirty-nine billion dollars, of Equity Office Properties Trust, the largest collection of office buildings in the country. Zell, who is sixty-six, delights in claiming that at the time the sale—to Blackstone, the private-equity firm—was "the largest single transaction that has ever been done." But for decades his appetite for economic opportunity has lured him beyond real estate into investments in oil and gas, barges, insurance, wineries, cruise ships, department stores, waste-to-energy power projects, and radio stations. In April, he signed an $8.2-billion deal that would effectively give him control of Tribune Company, the giant media conglomerate, whose assets include the Chicago *Tribune* and the Los Angeles *Times*. For about a dozen years, he has also invested aggressively abroad, most recently in the Middle East. He spends about twelve hundred hours a year on his plane—the equivalent of flying from New York to London every few days. "I want to see everybody in their habitat," he told me, in a low, rasping voice. "When these people see me come halfway around the world to meet them and spend time with them, it creates a level of confidence that translates into other things"—by which he means, he says, "successful business."

A lawyer friend of Zell's, who had established a relationship with the ruling family of Abu Dhabi, suggested to Zell that he get to know them; he promptly arranged a trip. During a dinner at Sheikh Mohammed's palace, the men got along well. The Sheikh's father, Sheikh Zayed bin Sultan al-Nahyan, who for more than three decades, until his death, in 2004, was the President of the United Arab Emirates, was known for his diplomatic talents and his generosity. He directed billions of dollars in aid to forty poorer countries, a beneficence made possible by the discovery, in the nineteen-fifties, off the shores of Abu Dhabi, of one of the world's largest crude reserves. *Fortune* recently described the city of Abu Dhabi as the richest in the world, reporting that its four hundred and twenty thousand citizens are worth about seventeen million dollars each. Sheikh Mohammed is determined to strengthen the emirate's ties to the West. He and Zell spoke for two hours about business and world affairs, and, finally, about more personal topics. Zell described annual motorcycle trips that he takes with an eclectic group of friends he calls "Zell's Angels," to Italy, Switzerland, Corsica, Sardinia—wherever the scenery is breathtaking and the roads vertiginous. "I understand that you ride motorcycles," he told the Sheikh. "I'd love to go for a ride with you."

"How about tomorrow night?" the Sheikh replied.

At eleven o'clock the next evening, the men, wearing jeans and helmets, mounted a pair of motorcycles and raced along Abu Dhabi's tree-lined boulevards.

That day, Sheikh Sultan bin Tahnoon al-Nahyan, who is the chairman of the Abu Dhabi Tourism Authority, had invited Zell to see a model of a planned development of an island being created just off the coast, in the Persian Gulf. The neighboring emirate of Dubai has become famous for its devotion to the superlative: it has one of the world's largest indoor ski slopes, and is constructing the world's tallest building and largest shopping mall. Abu Dhabi, with far greater oil reserves and a more conservative, religious population, has proceeded more deliberately. Sheikh Tahnoon was eager to hear what Zell thought of his development plans. Accompanied by a small entourage, the two men drove to a hotel and entered a conference room dominated by a model so vast that it nearly filled the space. Sheikh Tahnoon led Zell around the structure, pointing to office towers, malls, hotels, schools, hospitals, apartment buildings, and houses. The towers would be built first, he explained. Zell listened intently, scrutinizing the model. Finally, he spoke. "Pardon me, Your Highness, but I have a reputation for being direct," he said. "This makes no sense!"

Zell told the Sheikh that his planners had it all wrong. They should start by building the kind of housing, schools, and shopping centers that would make people want to live on the island. Office towers should be built only after it had been populated. Zell warned the Sheikh not to be influenced by the grand ambitions of his architects—not to build a skyline in advance of demand. Sheikh Tahnoon said that he thought Zell might be right. At Zell's direction, a construction manager began to move pieces of the model around, and an assistant to the Sheikh took notes.

Zell has since returned to Abu Dhabi many times. "We've invited the ruling family to be investors in our portfolio of companies, and they've invited us to explore homebuilding with them in Abu Dhabi and neighboring countries," said Gary Garrabrant, who is the C.E.O. of Equity International, a private-equity company owned by Zell which invests in real-estate-related businesses outside the United States. "They are taken with Sam because, I think, he speaks candidly to them and doesn't necessarily affirm their view." Zell's lack of inhibition has proved disarming in other ways, too. On one trip to Abu Dhabi, Zell and a colleague were at their hotel, preparing to see Sheikh Mohammed, when two dishdashas were delivered to their rooms as a gift. "Let's wear them!" Zell exclaimed. Their hosts laughed uproariously at the sight of the two Jews in flowing Arab robes.

Zell, who was raised in an Orthodox household and is a supporter of Israel, says that his religion has never been an issue in

GERALD SCARFE

In Dusty Archives, a Theory of Affluence



ALAN BAKER

By NICHOLAS WADE

For thousands of years, most people on earth lived in abject poverty, first as hunters and gatherers, then as peasants or laborers. But with the Industrial Revolution, some societies traded this ancient poverty for amazing affluence.

Historians and economists have long struggled to understand how this transition occurred and why it took place only in some countries. A scholar who has spent the last 20 years scanning medieval English archives has now emerged with startling answers for both questions.

Gregory Clark, an economic historian at the University of California, Davis, believes that the Industrial Revolution — the surge in economic growth that occurred first in England around 1800 — occurred because of a change in the nature of the human population. The change was one in which people gradually developed the strange new behaviors required to make a modern economy work. The middle-class values of nonviolence, literacy, long working hours and a willingness to save emerged only recently in human history, Dr. Clark argues.

Because they grew more common in the centuries before 1800, whether by cultural transmission or evolutionary adaptation, the English population at last became productive enough to escape from poverty, followed quickly by other countries with the same long agrarian past.

Dr. Clark's ideas have been circulating in articles and manuscripts for several years and are to be published as a book next month, "A Farewell to Alms" (Princeton University Press). Economic historians have high praise for his thesis, though many disagree with parts of it.

"This is a great book and deserves attention," said Philip Hoffman, a historian at the California Institute of Technology. He described it as "delightfully provocative" and a "real challenge" to the prevailing school of thought that it is institutions that shape economic history.

Samuel Bowles, an economist who studies cultural evolution at the Santa Fe Institute, said Dr. Clark's work was "great historical sociology and, unlike the sociology of the past, is informed by modern economic theory."

The basis of Dr. Clark's work is his recovery of data from which he can reconstruct many features of the English

Continued on Page 4

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In Dusty British Archives, a Theory of Affluence

From First Science Page

economy from 1200 to 1800. From this data, he shows, far more clearly than has been possible before, that the economy was locked in a Malthusian trap — each time new technology increased the efficiency of production a little, the population grew, the extra mouths ate up the surplus, and average income fell back to its former level.

This income was pitifully low in terms of the amount of wheat it could buy. By 1790, the average person's consumption in England was still just 2,322 calories a day, with the poor eating a mere 1,508. Living hunter-gatherer societies enjoy diets of 2,300 calories or more.

"Primitive man ate well compared with one of the richest societies in the world in 1800," Dr. Clark observes.

The tendency of population to grow faster than the food supply, keeping most people at the edge of starvation, was described by Thomas Malthus in a 1798 book, "An Essay on the Principle of Population." This Malthusian trap, Dr. Clark's data show, governed the English economy from 1200 until the Industrial Revolution and has in his view probably constrained humankind throughout its existence. The only respite was during disasters like the Black Death, when population plummeted, and for several generations the survivors had more to eat.

Malthus's book is well known because it gave Darwin the idea of natural selection. Reading of the struggle for existence that Malthus predicted, Darwin wrote in his autobiography, "It at once struck me that under these circumstances favourable variations would tend to be preserved, and unfavourable ones to be destroyed. . . . Here then I had at last got a theory by which to work."

Given that the English economy operated under Malthusian constraints, might it not have responded in some way to the forces of natural selection that Darwin had divined would flourish in such conditions? Dr. Clark started to wonder whether natural selection had indeed changed the nature of the population in some way and, if so, whether this might be the missing explanation for the Industrial Revolution.

The Industrial Revolution, the first escape from the Malthusian trap, occurred when the efficiency of production at last accelerated, growing fast enough to outpace population growth and allow average incomes to rise. Many explanations have been offered for this spurt in efficiency, some economic and some political, but none is fully satisfactory, historians say.

Dr. Clark's first thought was that the population might have evolved greater resistance to disease. The idea came from Jared Diamond's book "Guns, Germs and Steel," which argues that Europeans were able to conquer other nations in part because of their greater immunity to disease.

In support of the disease-resistance idea, cities like London were so filthy and disease ridden that a third of their populations died off every generation, and the losses were restored by immigrants from the countryside. That suggested to Dr. Clark that the surviving population of England might be the descendants of peasants.

A way to test the idea, he realized, was through analysis of ancient wills, which might reveal a connection between wealth and the number of progeny. The wills did that, , but in quite the opposite direction to what he had expected.

Generation after generation, the rich had more surviving children than the poor, his research showed. That meant there must have been constant downward social mobility as the poor failed to reproduce themselves and the progeny of the rich took over their occupations. "The modern population of the English is largely descended from the economic upper classes of the Middle Ages," he concluded.

As the progeny of the rich pervaded all levels of society, Dr. Clark considered, the behaviors that made for wealth could have spread with them. He has documented that several aspects of what might now be called middle-class values changed significantly from the days of hunter gatherer societies to 1800. Work hours increased, literacy and numeracy rose, and the level of interpersonal violence dropped.

Another significant change in behavior, Dr. Clark argues, was an increase in people's preference for saving over instant consumption, which he sees reflected in the steady decline in interest rates from 1200 to 1800.

"Thrift, prudence, negotiation and hard work were becoming values for communities that previously had been spendthrift, impulsive, violent and leisure loving," Dr. Clark writes.

Around 1790, a steady upward trend in production efficiency first emerges in the English economy. It was this significant acceleration in the rate of productivity growth that at last made possible England's escape from the Malthusian trap and the emergence of the Industrial Revolution.

In the rest of Europe and East Asia, populations had also long been shaped by the Malthusian trap of their stable agrarian economies. Their workforces easily absorbed the new production technologies that appeared first in England.

It is puzzling that the Industrial Revolution did not occur first in the much larger populations of China or Japan. Dr. Clark has found data showing that their richer classes, the Samurai in Japan and the Qing dynasty in China, were surprisingly unfertile and so would have failed to generate the downward social mobility that spread production-oriented values in England.



ALAN BAKER

After the Industrial Revolution, the gap in living standards between the richest and the poorest countries started to accelerate, from a wealth disparity of about 4 to 1 in 1800 to more than 50 to 1 today. Just as there is no agreed explanation for the Industrial Revolution, economists cannot account well for the divergence between rich and poor nations or they would have better remedies to offer.

Many commentators point to a failure of political and social institutions as the reason that poor countries remain poor. But the proposed medicine of institutional reform "has failed repeatedly to cure the patient," Dr. Clark writes. He likens the "cult centers" of the World Bank and International Monetary Fund to prescientific physicians who prescribed bloodletting for ailments they did not understand.

If the Industrial Revolution was caused by changes in people's behavior, then populations that have not had time to adapt to the Malthusian constraints of agrarian economies will not be able to achieve the same production efficiencies, his thesis implies.

Dr. Clark says the middle-class values needed for productivity could have been transmitted either culturally or genetically. But in some passages, he seems to lean toward evolution as the explanation. "Through the long agrarian passage leading up to the Industrial Revolution, man was becoming biologically more adapted to the modern economic world," he writes. And, "The triumph of capitalism in the modern world thus may lie as much in our genes as in ideology or rationality."

> Downward mobility may have broken a Malthusian trap.

What was being inherited, in his view, was not greater intelligence — being a hunter in a foraging society requires considerably greater skill than the repetitive actions of an agricultural laborer. Rather, it was "a repertoire of skills and dispositions that were very different from those of the pre-agrarian world."

Reaction to Dr. Clark's thesis from other economic historians seems largely favorable, although few agree with all of it, and many are skeptical of the most novel part, his suggestion that evolutionary change is a factor to be considered in history.

Historians used to accept changes in people's behavior as an explanation for economic events, like Max Weber's thesis linking the rise of capitalism with Protestantism. But most have now swung to the economists' view that all people are alike and will respond in the same way to the same incentives. Hence they seek to explain events like the Industrial Revolution in terms of changes in institutions, not people.

Dr. Clark's view is that institutions and incentives have been much the same all along and explain very little, which is why there is so little agreement on the causes of the Industrial Revolution. In saying the answer lies in people's behavior, he is asking his fellow economic historians to revert to a type of explanation they had mostly abandoned and in addition is evoking an idea that historians seldom consider as an explanatory variable, that of evolution.

Most historians have assumed that evolutionary change is too gradual to have affected human populations in the historical period. But geneticists, with information from the human genome now at their disposal, have begun to detect ever more recent instances of human evolutionary change like the spread of lactose tolerance in cattle-raising people of northern Europe just 5,000 years ago. A study in the current American Journal of Human Genetics finds evidence of natural selection at work in the population of Puerto Rico since 1513. So historians are likely to be more enthusiastic about the medieval economic data and elaborate time series that Dr. Clark has reconstructed than about his suggestion that people adapted to the Malthusian constraints of an agrarian society.

"He deserves kudos for assembling all this data," said Dr. Hoffman, the Caltech historian, "but I don't agree with his underlying argument."

The decline in English interest rates, for example, could have been caused by the state's providing better domestic security and enforcing property rights, Dr. Hoffman said, not by a change in people's willingness to save, as Dr. Clark asserts.

The natural-selection part of Dr. Clark's argument "is significantly weaker, and maybe just not necessary, if you can trace the changes in the institutions," said Kenneth L. Pomeranz, a historian at the University of California, Irvine. In a recent book, "The Great Divergence," Dr. Pomeranz argues that tapping new sources of energy like coal and bringing new land into cultivation, as in the North American colonies, were the productivity advances that pushed the old agrarian economies out of their Malthusian constraints.

Robert P. Brenner, a historian at the University of California, Los Angeles, said although there was no satisfactory explanation at present for why economic growth took off in Europe around 1800, he believed that institutional explanations would provide the answer and that Dr. Clark's idea of genes for capitalist behavior was "quite a speculative leap."

Dr. Bowles, the Santa Fe economist, said he was "not averse to the idea" that genetic transmission of capitalist values is important, but that the evidence for it was not yet there. "It's just that we don't have any idea what it is, and everything we look at ends up being awfully small," he said. Tests of most social behaviors show they are very weakly heritable.

He also took issue with Dr. Clark's suggestion that the unwillingness to postpone consumption, called time preference by economists, had changed in people over the centuries. "If I were as poor as the people who take out payday loans, I might also have a high time preference," he said.

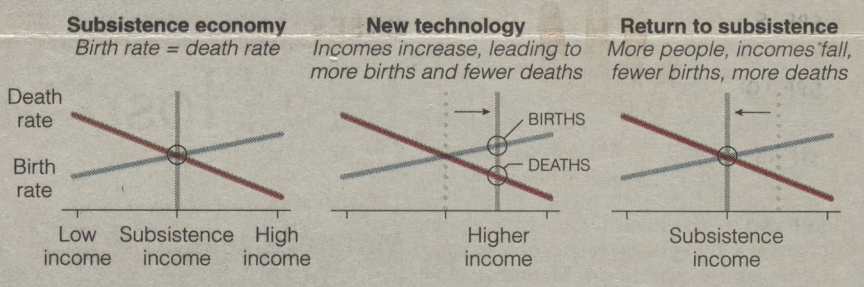
Dr. Clark said he set out to write his book 12 years ago on discovering that his undergraduates knew nothing about the history of Europe. His colleagues have been surprised by its conclusions but also interested in them, he said.

"The actual data underlying this stuff is hard to dispute," Dr. Clark said. "When people see the logic, they say 'I don't necessarily believe it, but it's hard to dismiss.' "

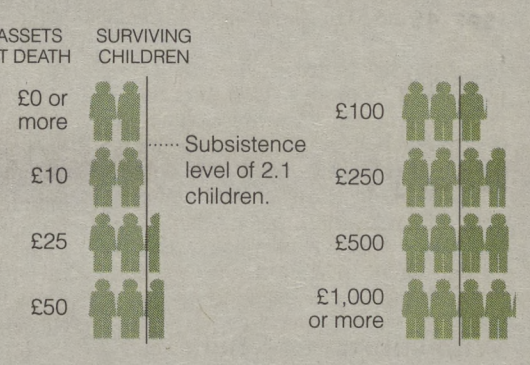
Breaking Out of the Malthusian Trap

An economic historian has proposed that the Industrial Revolution of the late 18th and early 19th centuries occurred because of changes in the human population.

EARLY SOCIETIES WERE TRAPPED . . .
In 1798, Thomas Malthus predicted a grim future for humanity: the introduction of new technology would raise average income, but that increase would soon be canceled by a rise in the population.



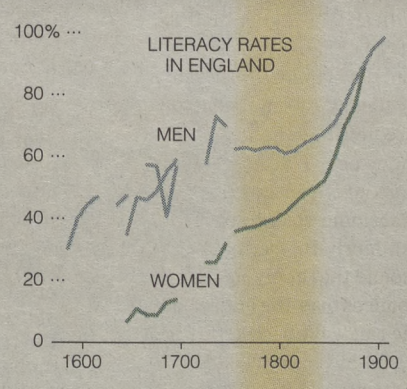
BUT WEALTHIER PEOPLE HAD MORE CHILDREN . . .
Within a subsistence economy, variations in personal income could affect the number of surviving children. An analysis of the wills of English men from around 1600 found that wealthier men tended to have more living children than poorer men.



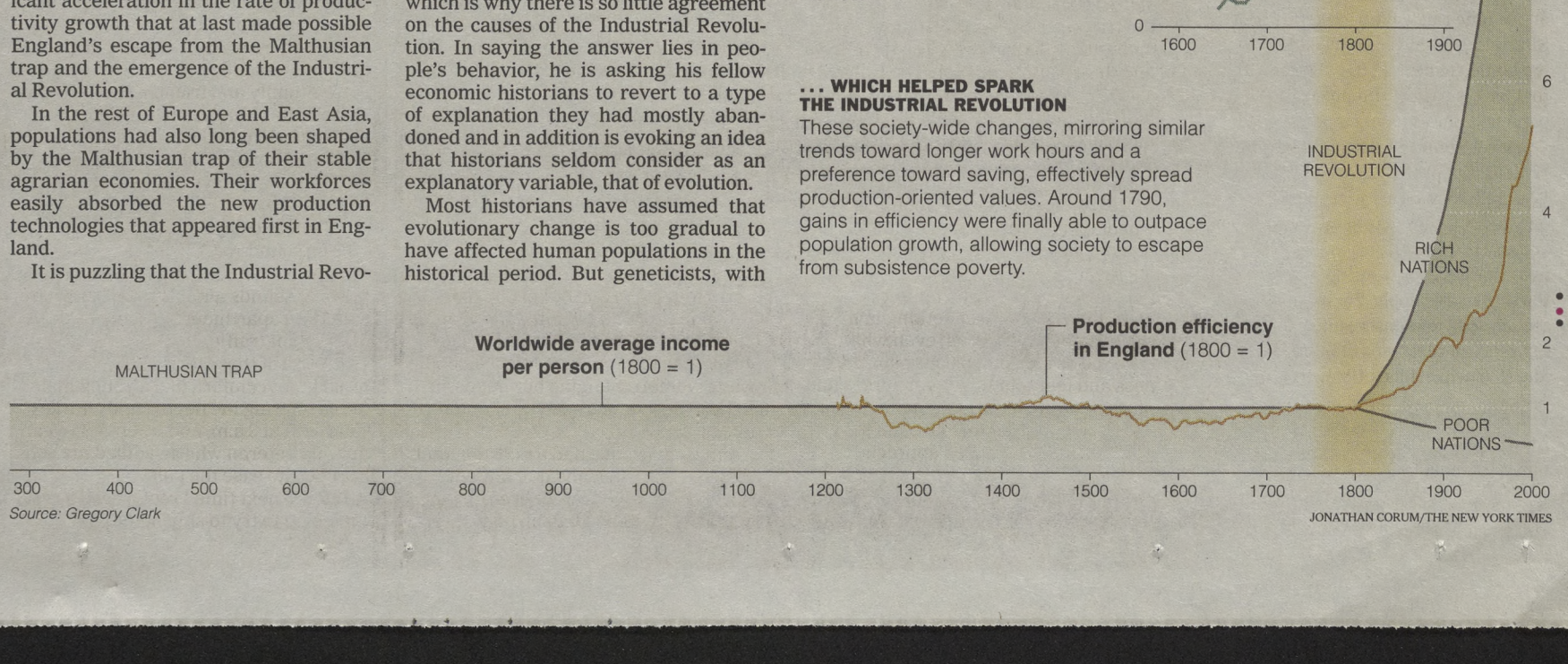
. . . WHO WERE LESS VIOLENT . . .
As poorer members of society failed to replace themselves, decendants of wealthier people began to pervade all levels of society, and behaviors gradually changed. An analysis of coroner's inquests found a steady decline in deaths by violence.



. . . AND MORE LITERATE . . .
At the same time, the reproductive advantage of the wealthy may have contributed to the increasing literacy of the population. Several studies of marriage registers and legal documents show an increase in the percentage of people who were able to sign their names.



. . . WHICH HELPED SPARK THE INDUSTRIAL REVOLUTION
These society-wide changes, mirroring similar trends toward longer work hours and a preference toward saving, effectively spread production-oriented values. Around 1790, gains in efficiency were finally able to outpace population growth, allowing society to escape from subsistence poverty.



Source: Gregory Clark

JONATHAN CORUM/THE NEW YORK TIMES

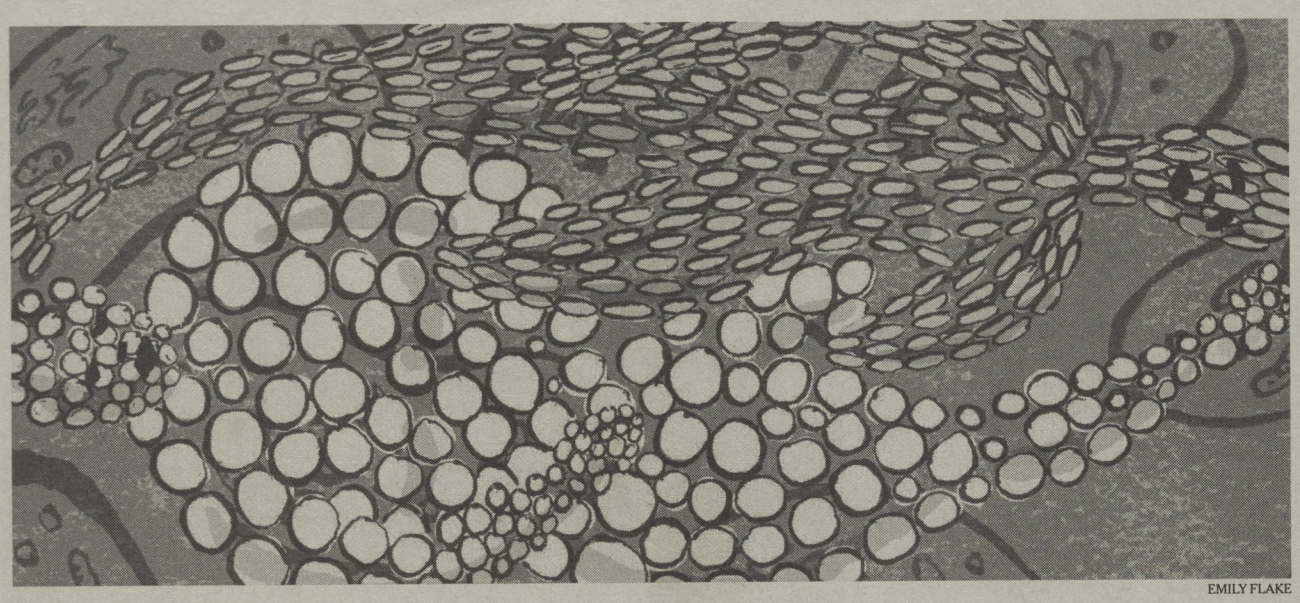
Its Poor Reputation Aside, Our Fat Tissue Is Just Doing U

From First Science Page

Medical Center, at Harvard.

Indeed, evolutionary biologists have proposed that our relative plumpness compared with our closest nonhuman kin, the chimpanzee, may help explain our relative braininess. Even a lean male athlete with a body fat content of 8 percent to 10 percent of total body mass (half the fat found on the average nonobese, non-Olympic American man) is still a few percentage points more marbled than a wild male chimpanzee, and scientists have suggested that our distinctive adipose stores help ensure that our big brains will be fed even when our cupboards go bare.

Scientists who study fat emphasize that its bland and amorphous appearance notwithstanding, our adipose depots represent highly specialized organs, as finely honed to the task of energy storage as muscle is built for flexing. Our body fat is made of some 40 billion fat cells, or adipocytes, and their supportive matrix, with most of the bulk stashed under the skin but also threaded viscerally, around and between other organs. Each fat cell is essentially a bouncing balloon filled with those greasy lipids we call triglycerides, three fatty acid chains of mostly carbons and hydrogens arrayed in high-energy configurations that explain why, gram for gram, dietary fat has more than twice



EMILY FLAKE

the calories of meat or starch; and every fatty acid trio is tacked to a sugar-sweet glycerol frame.

In most body cells, the watery cytoplasm where the labor of proteins takes place accounts for maybe 70 percent of the cell's volume, with another 10 percent given over to the nucleus, seat of the cell's DNA. In a fat cell, by contrast, lipids are king, queen and bishop, and the checkerboard, too. They fill more than 95 percent of the adipocyte volume, crowding the cytoplasm with its proteins and the nucleus with its genes up against the cell wall in what Dr. Kahn calls "a crescent moon space."

Yet for all its lipid density, the average fat cell is ever primed to hoard more, to take in more fatty acids and sugars from the blood and stitch them into triglyceride stores, and to swell to several times its cellular waistline of yore. Most weight that we gain and lose in life is the result of our existing fat cells growing and shrinking, absorbing and releasing energy-rich lipids as needed, depending on our diet and exercise regimens of the moment. But when exposed to chronic caloric overload, fat cells will initiate cell division to augment the supply; and because fat cells, like muscle cells, rarely turn over and die, those new lipidinous recruits will be your helpmeets for life.

Fat is no rutabaga. It is dynamic and mercantile, exchanging chemical sig-

ESSAY

What's in a Name? Parsing the 'God Particle,' the Ultima

By DENNIS OVERBYE

We need to talk about the "God particle."

Recently in this newspaper, I reported on the attempts by various small armies of physicists to discover an elementary particle central to the modern conception of nature. Technically it's called the Higgs boson, after Peter Higgs, an English physicist who conceived of it in 1964. It is said to be responsible for endowing the other elementary particles in the universe with mass.

In a stroke of either public relations genius or disaster, Leon M. Lederman, the former director of the Fermi National Accelerator Laboratory, or Fermilab, referred to the Higgs as "the God particle" in the book of the same name he published with the science writer Dick Teresi in 1993. To Dr. Lederman, it made metaphorical sense, he explained in the book, because the Higgs mechanism made it possible to simplify the universe, resolving many different seeming forces into one, like tearing down the Tower of Babel. Besides, his publisher complained, nobody had ever heard of the Higgs particle.

In some superficial ways, the Higgs has lived up to its name. Several Nobel Prizes have been awarded for work on the so-called Standard Model, of which the Higgs is the central cog. Billions of dollars are being spent on particle accelerators and experiments to find it, inspect it and figure out how it really works.

But physicists groan when they hear it referred to as the "God particle" in newspapers and elsewhere (and the temptation to repeat it, given science reporters' desperate need for colorful phrases in an abstract and daunting field, is irresistible). Even when these physicists approve of what you have written about their craft, they grumble that the media are engaging in sensationalism, or worse.

Last week a reader accused me of trying to attract religiously inclined readers by throwing out "God meat" for them.

It was not the first time that I had been accused of using religion to sell science. Or was it using science to sell religion?

Last year, I described the onset five billion years ago of dark energy, the mysterious force that seems to be accelerating the expansion of the cosmos, with the words "as if God had turned on an antigravity machine."

More people than I had expected wrote in wanting to know why I had ruined a perfectly good article by dragging mythical deities into it.

My guide in all of this, of course, the biggest name-dropper in science, is Albert Einstein, who mentioned God often enough that one could imagine he and the "Old One" had a standing date for coffee or tennis. To wit: "The Lord is subtle, but malicious he is not."

Or this quote regarding the pesky randomness of quantum mechanics: "The theory yields much, but it hardly brings us closer to the Old One's secrets. I, in any case, am convinced that He does not play dice."

Describing cosmic mysteries, with Einstein as a guide.

With Einstein, we always knew where he stood in relation to "God" — it was shorthand for the mystery and rationality of nature, the touchstones of the scientific experience. Cosmic mystery, Einstein said, is the most beautiful experience we can have, "the fundamental emotion that stands at the cradle of true art and true science."

"He who does not know it and can no longer wonder, no longer feel amazement," he continued, "is as good as a snuffed-out candle."



MICHAEL CRILEY

If we didn't already have a name for the object of Einstein's "cosmic religion," we would have to invent one. It's just too bad that the name has been tainted and trivialized by association with the image of a white-bearded Caucasian-looking creature who sits in the clouds attended by harp-strumming angels.

If Einstein were around today, he would likely be scolded every other time he opened his metaphor-laden mouth for giving aid and comfort to the creationists. Indeed, the architects of intelligent design have not been shy about interpreting his aversion to divine dice playing and a remark wondering if God had any choice in creating the world, as support for an intelligent designer. Einstein didn't mean it that way, of course. He was only using a metaphor to wonder if it was possible to build more than one logically consistent universe. That's a question that still provokes hot debate.

As it happened, Dr. Lederman's book

Observatory | Henry Fountain

A New Answer For Another Mystery In Saturn's Rings

The rings of Saturn have become far less mysterious since Galileo first discovered them in 1610 (and thought they might be moons). The latest puzzle to be cleared up involves the origin of one of the outermost rings, a thin, faint one labeled G.

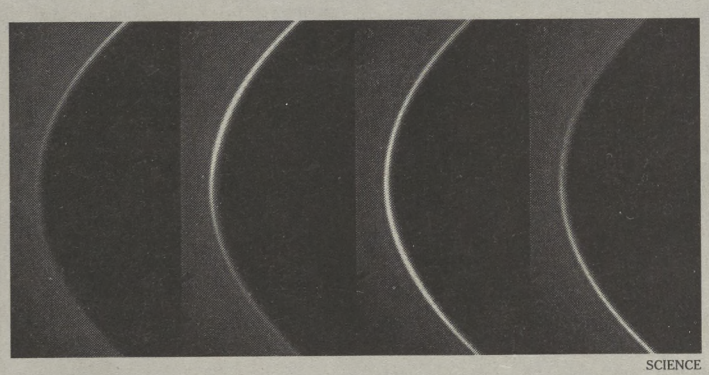
Saturn's rings are largely made up of ice and dust, and in most cases scientists are able to pinpoint a nearby moon that is either the source of the particles or whose gravity helps confine them. But in the case of the G ring, there had been no apparent source.

Now, using images and data from the Cassini orbiter, Matthew M. Hedman of Cornell and colleagues have discovered that the ring, which is about 100,000 miles from Saturn's center, has a bright arc along about one-sixth of its circumference.

The researchers discovered that the arc was in rotational resonance with one of Saturn's moons, Mimas — that is, its position is affected by the moon's gravity. (Similar resonant arcs occur in the rings of Neptune.)

Cassini's cameras show that the arc consists of tiny dust grains, but other data suggest there should be larger bodies, up to about three feet in diameter, within it.

All told, the researchers say in a paper in Science, the arc probably contains debris equivalent to an icy moonlet about 300 feet in diameter. Collisions among these larger bits of debris, they say, create tiny particles that drift from the arc, filling in the ring.



SCIENCE

Images of the G ring of Saturn taken within two hours last September. Researchers found that a nearby moon's gravity affects the bright arc.

Found at Yellowstone: Hot Spring Bacteria That Harvest Light

Ah, Yellowstone. Home to elk and bison, wolf and beaver, eagle and hawk — and a newly discovered light-harvesting bacterium.

Donald A. Bryant of Penn State University and David M. Ward of Montana State University and colleagues report the discovery of the microbe, which they named Candidatus Chloracidobacterium thermophilum, in Octopus Spring and other hot springs in the park. Microbial mats near the surface in these springs give them their rainbow of colors and harbor some unusual organisms that, among other things, tolerate temperatures in excess of 140 degrees Fahrenheit.

The bacterium was discovered by analyzing a DNA "soup" from the springs for specific genetic sequences, including one responsible for a protein that is part of the light-harvesting machinery.

After they found the genes, the researchers were able to isolate the bacterium from a culture of microbes from the mats.

Bacteria like this use a spec type of chlorophyll to turn sun into chemical energy.

Until now, this capability wa found in only 5 of 25 bacterial p la. The new finding, reported i Science, adds a sixth, Acidoba ria.

The researchers say similar netic sequences have been fou in samples from hot springs in bet and Thailand, so there may relatives of the new species, w similar capabilities, around the world.

Ancient Flying Reptiles Probably Swooped, Not Skimmed, for Food



Chris G

It was a nice idea while it lasted.

Researchers who studied pterosaurs, those flying reptiles that lived (and died) with the dinosaurs, thought that some of them might have foraged in a very striking way — by flying low across a body of water with their lower jaws slightly submerged to scoop up fish or other food. The idea was based on what appeared to be anatomical similarities between pterosaur fossils and the few existing bird species that feed in this way.

But a study by Stuart Humphries of the University of Reading in England and colleagues shows that the pterosaurs probably were incapable of such skimming behavior. Their jaws would have created so much drag that they would have tumbled into the drink.

Dr. Humphries said he recalled reading a paper in 2002 that described a new pterosaur and suggested it fed by skimming. "It just didn't feel right," he said. "So I started looking into the hydrodynamics of the situation."

He and his colleagues created models of the jaws of pterosau and of a modern black skimme and conducted drag tests in a ter tank. Then they estimated amount of metabolic power av able for flight, based on muscl size and other factors.

Even for the existing birds, found that the amount of drag ed by submerging the jaw increased the power requiremer

What Hamas Wants

By Ahmed Yousef

GAZA CITY

THE events in Gaza over the last few days have been described in the West as a coup. In essence, they have been the opposite. Eighteen months ago, our Hamas Party won the Palestinian parliamentary elections and entered office under Prime Minister Ismail Haniya but never received the handover of real power from Fatah, the losing party. The Palestinian president, Mahmoud Abbas, has now tried to replace the winning Hamas government with one of his own, returning Fatah to power while many of our elected members of Parliament languish in Israeli jails. That is the real coup.

Ahmed Yousef is the political adviser to Ismail Haniya, who became the Palestinian prime minister last year.

From the day Hamas won the general elections in 2006 it offered Fatah the chance of joining forces and forming a unity government. It tried to engage the international community to explain its platform for peace. It has consistently offered a 10-year cease-fire with the Israelis to try to create an atmosphere of calm in which we resolve our differences. Hamas even adhered to a unilateral cease-fire for 18 months in an effort to normalize the situation on the ground. None of these points appear to have been recognized in the press coverage of the last few days.

Nor has it been evident to many people in the West that the civil unrest in Gaza and the West Bank has been precipitated by the American and Israeli policy of arming elements of the Fatah opposition who want to attack Hamas and force us from office. For 18 months we have tried to find ways to coexist with Fatah, entering into a unity government, even conceding key positions in the cabinet to their and international demands, negotiating up until the last moment to try to provide security for all of our people on the streets of Gaza.

> Fatah caused the violence by failing to turn over power.

Sadly, it became apparent that not all officials from Fatah were negotiating in good faith. There were attempts on Mr. Haniya's life last week, and eventually we were forced into trying to take control of a very dangerous situation in order to provide political stability and establish law and order.

The streets of Gaza are now calm for the first time in a very long time. We have begun disarming some of the drug dealers and the armed gangs and we hope to restore a sense of security and safety to the citizens of Gaza. We want to get children back to school, get basic services functioning again, and provide long-term economic gains for our people.

Our stated aim when we won the election was to effect reform, end corruption and bring economic prosperity to our people. Our sole focus is Palestinian rights and good governance. We now hope to create a climate of peace and tranquillity within our community that will pave the way for an end to internal strife and bring about the release of the British journalist Alan Johnston, whose kidnapping in March by non-Hamas members is a stain on the reputation of the Palestinian people.

We reject attempts to divide Palestine into two parts and to pass Hamas off as an extreme and dangerous force. We continue to believe that there is still a chance to establish a long-term truce. But this will not happen unless the international community fully engages with Hamas.

Any further attempts to marginalize us, starve our people into submission or attack us militarily will prove that the United States and Israeli governments are not genuinely interested in seeing an end to the violence. Dispassionate observers over the next few weeks will be able to make up their own minds as to each side's true intentions. □

THOMAS L. FRIEDMAN

Behind The Masks

Every war has THE picture that captures its essence, and the Palestinian civil war in Gaza is no exception. My nominee would be the photograph of a Hamas fighter in Gaza, lounging in a senior Fatah official's office over which he had just taken control. The masked Hamas fighter in jeans is relaxing in an ornate chair, holding a rifle in one hand and speaking — through the opening in his mask — on a telephone in the other. It has the weird feel of a Gap ad for Halloween.

In his essay on this page yesterday, Fouad Ajami described the two sides of the Palestinian civil war as "the masked men of Fatah" and "masked men of Hamas." Indeed, the fact that masks were worn by the fighters on both sides is one of the unique things about this civil war — and it raises, for me, two questions. First, why were both the Hamas and Fatah fighters wearing ski masks? And two, where do you buy a ski mask in Gaza?

Oscar Wilde said: "Give a man a mask and he'll tell you the truth." So what truth does it tell us when fighters on both sides in this civil war (and in Iraq's) are wearing masks?

The first answer is habit. Hamas fighters always wore masks when confronting Israel so that Israel could not identify them for retribution. On June 16, though, Reuters quoted a Hamas spokesman as saying masks should not be worn in the intra-Palestinian war. "Wearing masks should only be near the borders and in fighting the Zionist enemy, not in the streets and near people's homes," said Khaled Abu Hilal.

> 'Give a man a mask and he'll tell you the truth.'

But certain habits, especially bad ones, die hard — and they can end up warping your own society as much as your enemy's. You can see what's happened here: If it's O.K. to wear masks when confronting the Jews, it eventually becomes O.K. to wear masks when confronting other Palestinians. If it becomes O.K. to use suicide bombers against the Jews, it eventually becomes O.K. to use suicide bombers against other Muslims. What goes around comes around.

Beyond old habits, though, there is also some new shame. These masks are worn by fighters who not only wish to shield themselves from Israel's gaze, but also from the gaze of their parents, friends and neighbors.

After generations of Arabs highlighting the justice and nobility of the Palestinian struggle for statehood, there was surely an element of shame that Palestinian brothers were killing brothers, throwing each other off rooftops, dragging each other from hospital beds and generally ripping apart Palestinian society in a naked power struggle. There was nothing noble about this fight, which is why, I would guess, many wanted to wear masks. The mask both protects you against shame and liberates you to kill your brothers — and their children.

Putting on a mask is also a way to gain power and enhance masculinity. People in black masks are always more frightening — not only physically, but because their sheer anonymity suggests that they answer to no one and no laws. In our society, it's usually only burglars, rapists or Ku Klux Klansmen who wear masks — either to terrorize others or make it easier to break the law. The mask literally says: "I don't play by the rules. Be afraid. Be very afraid."

Think of how relieved you'd be to be captured in war by someone in a uniform and how frightened you'd be to be captured by someone in a mask. But given the breakdown in society we see in Iraq, Lebanon and the Palestinian areas, that may be a luxury. Wars against masked men and gangs — whose true identities, agendas, rules and aspirations are never clear — will be the norm.

"These masks are the uniforms of the new armies of the 21st century and the new kind of violence," which in Iraq, Lebanon and Gaza "no longer distinguishes between war against the stranger and war against members of your own society," argued political theorist Yaron Ezrahi. "Just as this new violence doesn't have a front, it doesn't have a face. It doesn't have boundaries."

That is why these masks announce one more thing: These young men do not report to anyone above them. They have no ranks. No leader can ever be sure of their allegiance. Every masked man is a general, and every militia is a cross between a self-funded criminal gang and a modern army.

Get used to it. In today's environment, where the big divide is between the world of order and the world of disorder, you can expect to see a lot more confrontations between armies in uniforms and helmets and armies in blue jeans and masks.

•

Correction from Sunday's column: While head scarves are banned in French public schools, French universities are exempted. □

The Shadow Goes

By Margaret Wertheim

LOS ANGELES

ON Thursday, on the summer solstice, the Sun will celebrate the year's lazy months by resting on the horizon. The word solstice derives from the Latin "sol" (sun) and "sistere" (to stand still). The day marks the sun's highest point in the sky, the moment when our shadows shrink to their shortest length of the year. How strange to think that these mundane friends, our ever-present familiars, can actually go faster than the sun's rays.

I remarked on this recently to my husband as we sat on the porch with our shadows pooling by our chairs. Nothing can go faster than light, he insisted, expressing what is surely the most widely known law of physics, ingrained into us by a thousand "Nova" programs.

That is the point, I explained: Nothing can go faster than light. A shadow isn't a thing. It's a non-thing. It's the absence of light.

Special relativity dictates that we cannot move anything more quickly than the particles of light known as photons, but no law says you can't do *nothing* faster than light. Physicists have known this for a long time, even if they generally do not mention it on PBS documentaries.

My husband looked troubled, as did my sister and some friends I regaled with the story that evening. Like the warp drive on "Star Trek," faster-than-light travel is supposed to be a science-fiction fantasy. Isn't it?

They are right about the travel: According to relativity, no physical substance can exceed the speed of light because it would take infinite energy to accelerate anything to such a velocity.

Yet the laws of physics pertain only to that which is. That which *isn't* is not bound by relativity's restraint. From the point of view of relativity, a shadow (having no mass) is a nonthing, an existential void.

It's quite easy to conjure up a faster-than-light shadow, at least in theory. Build a great klieg light, a superstrong version of the ones set up at the Academy Awards. Now paste a piece of black paper onto the klieg's glass so there is a shadow in the middle of the beam, like the signal used to summon Batman. And we are going to mount our light in space and broadcast the Bat-call to the cosmos.

Margaret Wertheim, the director of the Institute for Figuring, a science and mathematics education organization, is writing a book on physics and the imagination.

The key to our trick is to rotate the klieg. As the light turns, the bat shadow sweeps across the sky. Round and round it goes, projecting into the void. Just as the rim of a bicycle wheel moves faster than its hub, so too, away from the source our bat shadow will fly faster and faster, a consequence of the geometry that guarantees the rim of a really big wheel moves faster than a co-rotating small wheel.

At a great enough distance from the source, our shadow bat will go so fast it will exceed the speed of light. This does not violate relativity because a shadow carries no energy. Literally nothing is transferred. Our shadow bat can go 10 times the speed of light or 100 times faster without breaking any of physics' sacred rules.

> The shade cast by the solstice can go faster than light.

My sister leapt to the heart of this apparent paradox: Why isn't the light itself traveling faster than the speed of light? Isn't it also rotating in space? Actually, no. The bulbs that produce the light are spinning, but the light particles leave the source at 186,000 miles a second, the vaunted "speed of light." Once emitted, the photons continue to travel at this speed directly away from the source. Only the shadow revolves around the great circle. The critical point is that no object, no substance, defies light.

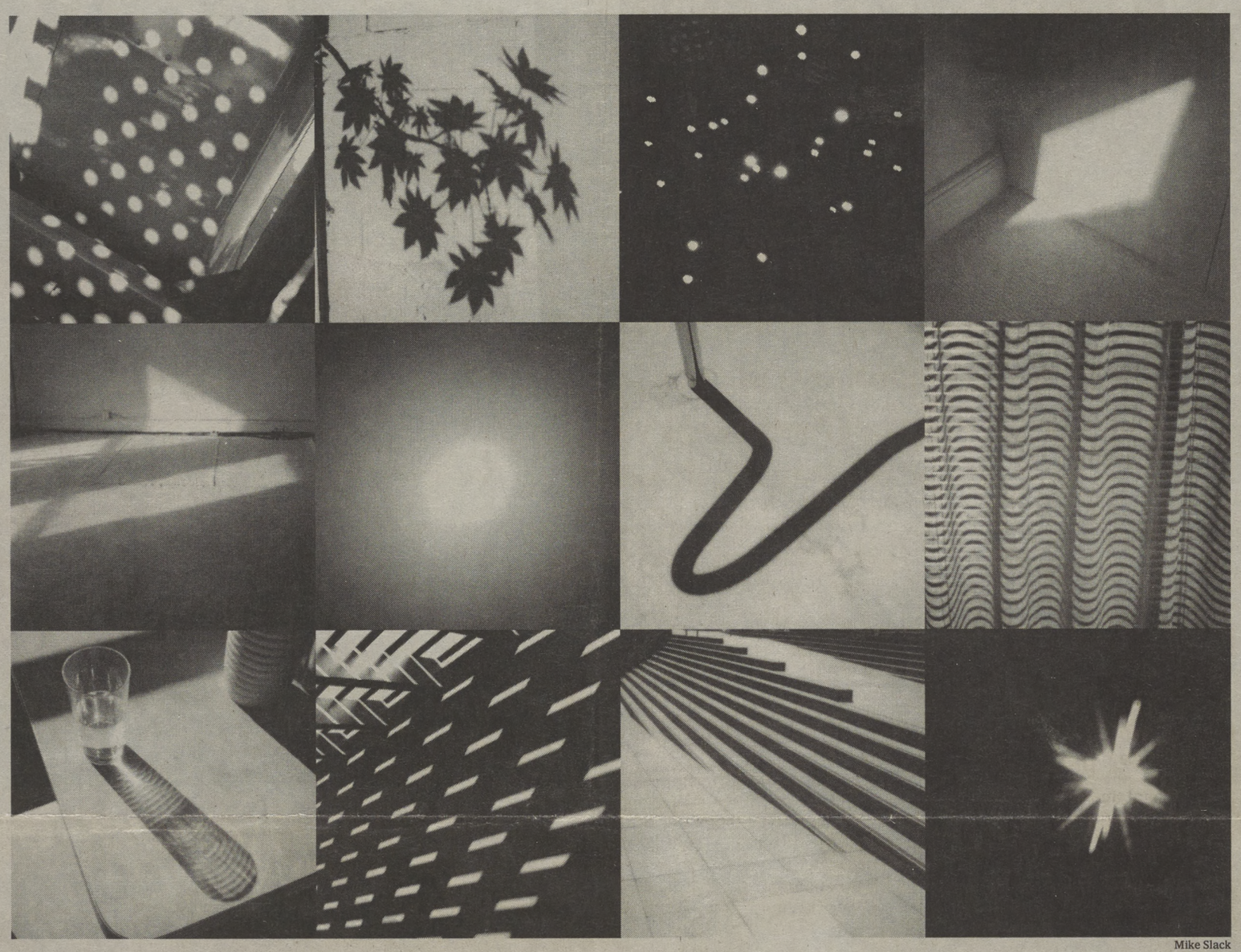
My husband was right to object that you'd need one spectacular klieg to produce a detectable shadow thousands of miles out in space. Still, the theory is sound.

The anthropologist Mary Douglas noted that all systems of categorizing break down somewhere, unable to incorporate certain forms. By standing beyond relativity's injunction, shadows suggest the limits of all classification schemes, a tension that even modern science cannot completely resolve.

In the terms recognized by relativity, shadows are non-things. Yet before the invention of clocks, shadows were the most important means for telling time. Weightless and without energy, shadows can nonetheless convey information — though they cannot, despite our giant klieg, be used for faster-than-light communication. That's because the shadow's location cannot be detected until the light, moving at its ponderous relativistic pace, arrives.

"Here there be monsters," said the medieval maps, signaling the limits of reason's reach. As a map of being, physics is flanked by the monsters of non-being whose outlines we glimpse in the paradoxes of quantum mechanics and in the zooming arc of a shadow bat going faster than light.

In Christian theology we are told, "God is that which nothing is greater than." The scientific corollary might be, "Light is that which nothing is faster than" — a statement true both in spirit and fact. □



Mike Slack

TimesSelect: Paul Krugman: Money Talks The columnist responds to readers' complaints, praise and questions on his recent columns: nytimes.com/krugman. **Join the Conversation** Readers can send columnists their comments: nytimes.com/timesselect.

MAUREEN DOWD

Carmela Got Gold Jewelry. Hillary Wants a White House.

WASHINGTON

Would Carmela, she of the pans of baked ziti and casseroles of veal parm, ever deny the omnivorous Tony onion rings?

Nah.

But the Carmela-Tony pact was a lot less strict than the Hillary-Bill pact.

Besides, this is a Hillaryized Carmela, or a Carmelized Hillary, so Bill Clinton must munch carrot sticks in their diner scene.

Actually, Hillary's probably playing Tony, since she's the one studying the songs on the jukebox and checking out a cruel-looking stranger at the counter.

Either way, the Clintons joined forces yesterday in a comic sendup of that last scene of "The Sopranos," complete with a Journey soundtrack and an exchange about how Chelsea would be joining them once she got past her parallel-parking problems.

The satire was a video on Hillary's Web site to whip up attention for the winner of her online contest to choose a campaign song.

Unfortunately, the winner, "You and I," is definitely not for you and me. (I look forward to Obama's new campaign ditty, "I Am Thou.") It doesn't bode well for the cultural health of the country that Hillary picked a song by Celine Dion, who combines the worst of Vegas and Canada.

It was an acid flashback to the cultural wasteland of Bill Clinton's reign, when instead of Pablo Casals, we got Kenny G.

During the 1992 campaign, young Clinton aides obsessed on how they could get the boss to change from Fleetwood Mac's "Don't Stop (Thinking About Tomorrow)" to something hipper and less baby-boomer middlebrow. Even Christine McVie, one of the band's singers who wrote the song, said it might be better as a jingle for an insurance company.

Maya Angelou, the poet of the first Clinton inaugural, is back as well. With the campaign trying to shore up support among affluent, educated, over-35 women — women like Hillary — Ms. Angelou offers a taped testimonial to Hillary on the campaign Web site, saying that people "have profound affection for you, ever since you stood up as a woman and said: Yes, I'm a woman. Phenomenal woman. That's my mother and all your mothers and my grandmothers and all your grandmothers. And my great-grandmothers and yours. And great-greats and great-greats and all you women here, along with Hillary Rodham Clinton and me!"

She said that she was proud that Hillary, who has dropped the "Rodham," "gives herself the authority to be in her own skin, to be who she is."

But Ms. Angelou gets it exactly backward. Hillary never seems at ease in her own skin, and she always gives herself too much authority.

A Los Angeles Times article notes that the paradox of the race is that voters want a Democrat to win, but when they are offered a head-to-head contest between Hillary vs. Rudy, John McCain or Mitt Romney, many switch allegiance to the Republicans. There is, the article said, "a sour aftertaste from controversies of her White House years with President Clinton."

"Who wants four or eight more years of the Clintons' marital disputes, paid for by the United States, we the people? I certainly don't," Carol Bendick, a 63-year-old Democrat, told the paper.

> Soprano and Clinton family values.

Whether Bill and Hill actually had a formal 20-year pact entailing two terms for president for her after two terms for him, as some suggested in "Her Way," the Hillary bio by Don Van Natta Jr. and Jeff Gerth, they certainly had an understanding.

The Clintons' "don't ask, don't tell" policy seems so similar to that of the Sopranos, that it could be a bit risky to play the mob couple, even for a gag.

Like Carmela, who was rewarded with jewels, watches and building permits for her husband's infidelities with his goomahs, Hillary, too, found a way to profit from her husband's failings and flaws.

At a lunch Carmela had with her girlfriends at Vesuvio, the women spoke admiringly of Hillary as a role model, someone who was able to turn a sow's ear of a marriage into a silk purse.

And like Tony, Hillary is so power-hungry that she can justify any thuggish means to get the prize.

In the Clintons' mob spoof, as a rather wooden Hillary is about to announce her song choice to a loose and funny Bill, the screen suddenly goes dark.

In the case of "The Sopranos," this was cause for perplexity. In the case of the Clintons, it's an unwittingly satirical moment, because if there's one thing we know about this tough New York family, it is that they will never, ever go dark.

Where's a black screen when you need one? □

Note to Readers

The Op-Ed page welcomes unsolicited manuscripts. We regret, however, that because of the volume of submissions, we cannot acknowledge an article or return it. If a manuscript is accepted for publication, the author will be notified within one week. For further information, call (212) 556-1831.

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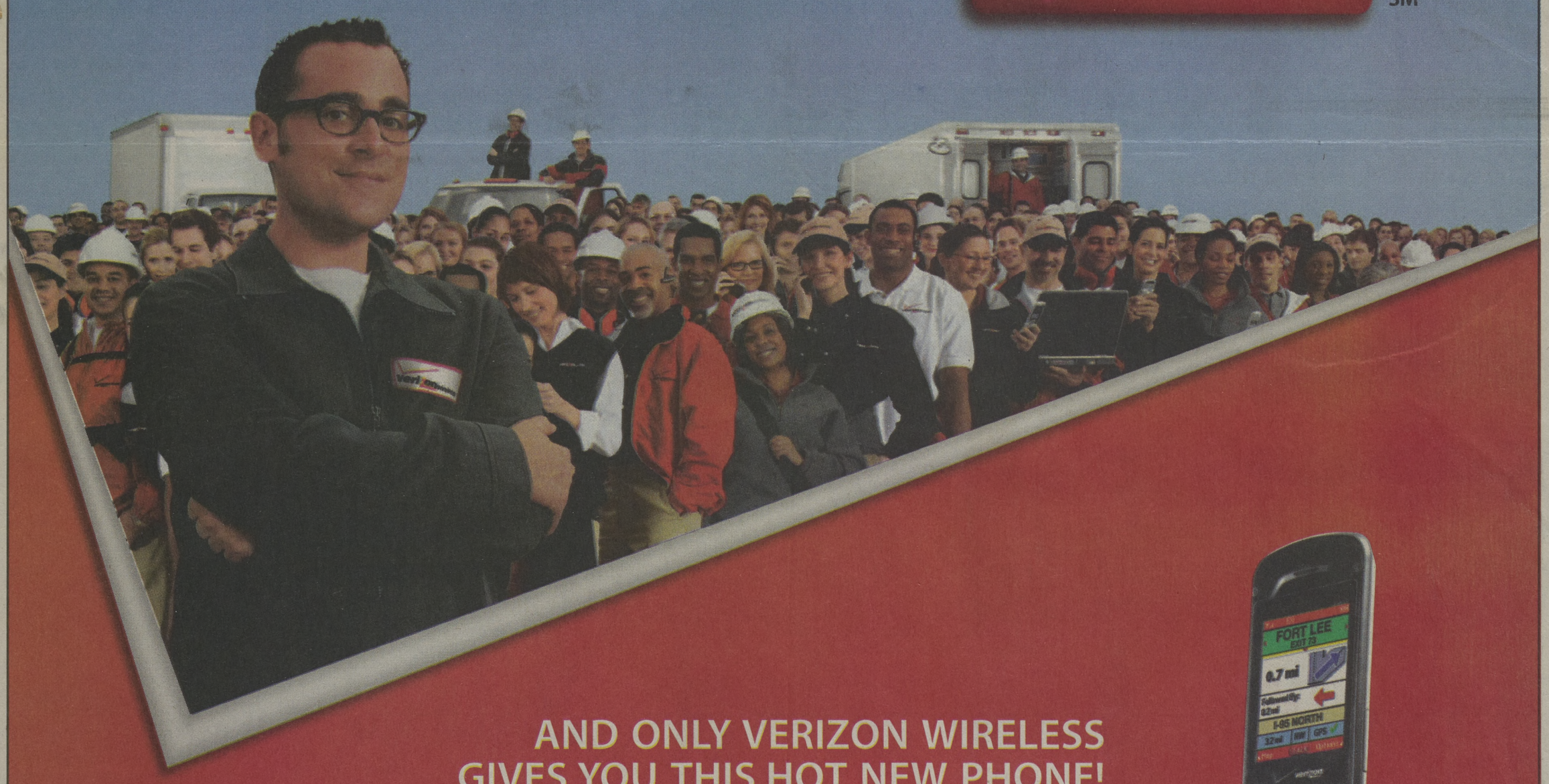
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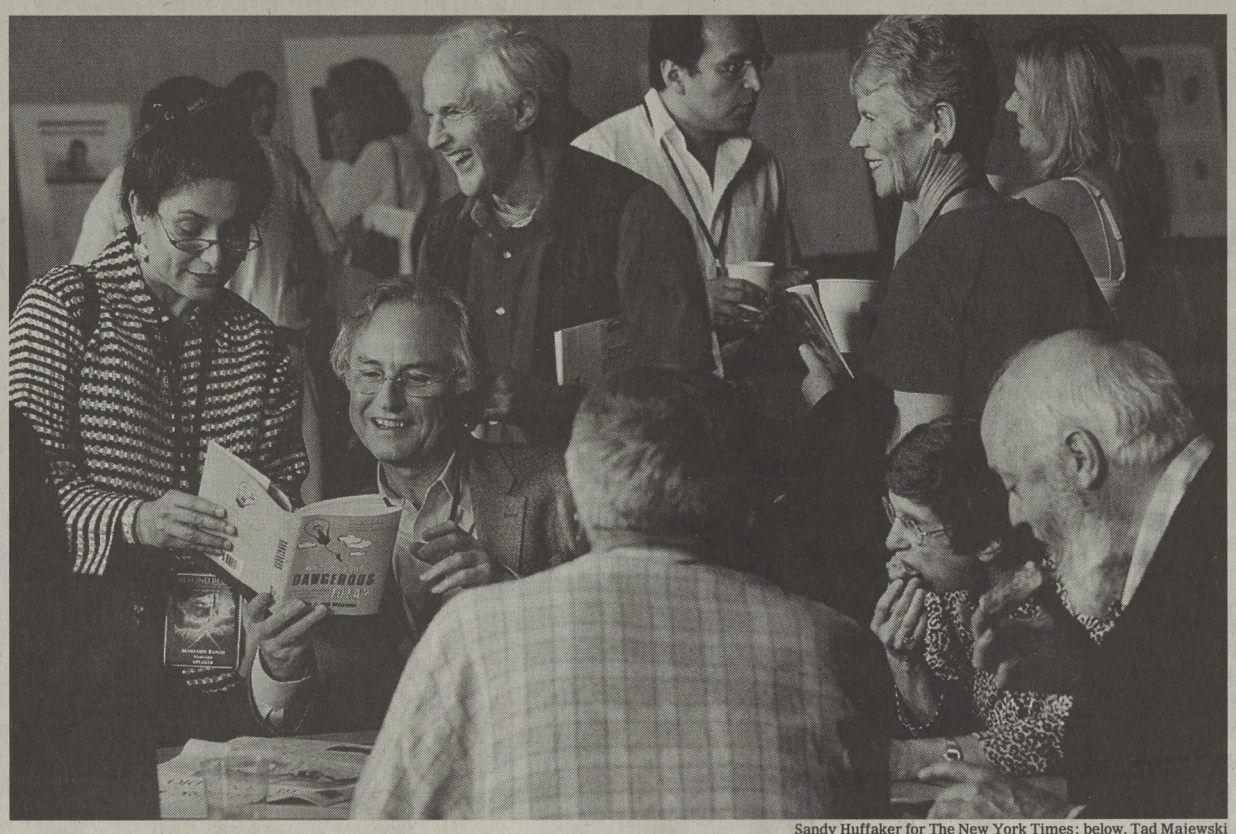
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Sandy Huffaker for The New York Times; below, Tad Majewski

'GOD DELUSION' The author Richard Dawkins, with a book, says people are brainwashed to respect religion.

'Anything that we scientists can do to weaken the hold of religion should be done and may in the end be our greatest contribution to civilization.'

STEVEN WEINBERG
Nobel laureate in physics

Free-for-All Debate on Science and Religion

Continued From First Science Page

of "anti-Templeton"), the La Jolla meeting, "Beyond Belief: Science, Religion, Reason and Survival," rapidly escalated into an invigorating intellectual free-for-all. (Unedited video of the proceedings will be posted on the Web at tsntv.org.)

A presentation by Joan Roughgarden, a Stanford University biologist, on using biblical metaphor to ease her fellow Christians into accepting evolution (a mutation is "a mustard seed of DNA") was dismissed by Dr. Dawkins as "bad poetry," while his own take-no-prisoners approach (religious education is "brainwashing" and "child abuse") was condemned by the anthropologist Melvin J. Konner, who said he had "not a flicker" of religious faith, as simplistic and uninformed.

After enduring two days of talks in which the Templeton Foundation came under the gun as smudging the line between science and faith, Charles L. Harper Jr., its senior vice president, lashed back, denouncing what he called "pop conflict books" like Dr. Dawkins's "God Delusion," as "commercialized ideological scientism" — promoting for profit the philosophy that science has a monopoly on truth.

That brought an angry rejoinder from Richard P. Sloan, a professor of behavioral medicine at Columbia University Medical Center, who said his own book, "Blind Faith: The Unholy Alliance of Religion and Medicine," was written to counter "garbage research" financed by Templeton on, for example, the healing effects of prayer.

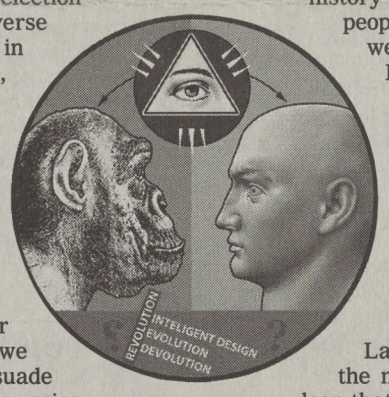
With atheists and agnostics outnumbering the faithful (a few believing scientists, like Francis S. Collins, author of "The Language of God: A Scientist Presents Evidence for Belief," were invited but could not attend), one speaker after another called on their colleagues to be less timid in challenging teachings about nature based only on scripture and belief. "The core of science is not a mathematical model; it is intellectual honesty," said Sam Harris, a doctoral student in neuroscience and the author of "The End of Faith: Religion, Terror and the Future of Reason" and "Letter to a Christian Nation."

"Every religion is making claims about the way the world is," he said. "These are claims about the divine origin of certain books, about the virgin birth of certain people, about the survival of the human personality after death. These claims purport to be about reality."

By shying away from questioning people's deeply felt beliefs, even the skeptics, Mr. Harris said, are providing safe harbor for ideas that are at best mistaken and at worst dangerous. "I don't know how many more engineers and architects need to fly planes into our buildings before we realize that this is not merely a matter of lack of education or economic despair," he said.

Dr. Weinberg, who famously wrote toward the end of his 1977 book on cosmology, "The First Three Minutes," that "the more the universe seems comprehensible, the more it also seems pointless," went a step further: "Anything that we scientists can do to weaken the hold of religion should be done and may in the end be our greatest contribution to civilization."

With a rough consensus that the grand stories of evolution by natural selection and the blossoming of the universe from the Big Bang are losing out in the intellectual marketplace, most of the discussion came down to strategy. How can science fight back without appearing to be just one more ideology?



"There are six billion people in the world," said Francisco J. Ayala, an evolutionary biologist at the University of California, Irvine, and a former Roman Catholic priest. "If we think that we are going to persuade them to live a rational life based on scientific knowledge, we are not only dreaming — it is like believing in the fairy godmother."

"People need to find meaning and purpose in life," he said. "I don't think we want to take that away from them."

Lawrence M. Krauss, a physicist at Case Western Reserve University known for his staunch opposition to teaching creationism, found himself in the unfamiliar role of playing the moderate. "I think we need to respect people's philosophical notions unless those notions are wrong," he said.

"The Earth isn't 6,000 years old," he said. "The Kennewick man was not a Umatilla Indian." But whether there really is some kind of supernatural being — Dr. Krauss said he was a nonbeliever — is a question unanswerable by theology, philosophy or even science. "Science does not make it impossible to believe in God," Dr. Krauss insisted. "We should recognize that fact and live with it and stop being so pompous about it."

That was just the kind of accommodating attitude that drove Dr. Dawkins up the wall. "I am utterly fed up with the respect that we — all of us, including the secular among us — are brainwashed into bestowing on religion," he said. "Children are systematically taught that there is a higher kind of knowledge which comes from faith, which comes from revelation, which comes from scripture, which comes from tradition, and that it is the equal if not the superior of knowledge that comes from real evidence."

By the third day, the arguments had become so heated that Dr. Konner was reminded of "a den of vipers."

"With a few notable exceptions," he said, "the viewpoints have run the gamut from A to B. Should we bash religion with a crowbar or only with a baseball bat?"

His response to Mr. Harris and Dr. Dawkins was scathing. "I think that you and Richard are remarkably apt mirror images of the extremists on the other side," he said, "and that you generate more fear and hatred of science."

Dr. Tyson put it more gently. "Persuasion isn't always 'Here are the facts — you're an idiot or you are not,' " he said. "I worry that your methods" — he turned toward Dr. Dawkins — "how articulately barbed you can be, end up simply being ineffective, when you have much more power of influence."

Chastened for a millisecond, Dr. Dawkins replied, "I gratefully accept the rebuke."

In the end it was Dr. Tyson's celebration of discovery that stole the show. Scientists may scoff at people who fall back on explanations involving an intelligent designer, he said, but history shows that "the most brilliant people who ever walked this earth were doing the same thing." When Isaac Newton's "Principia Mathematica" failed to account for the stability of the solar system — why the planets tugging at one another's orbits have not collapsed into the Sun — Newton proposed that propping up the mathematical mobile was "an intelligent and powerful being."

It was left to Pierre Simon Laplace, a century later, to take the next step. Hautily telling Napoleon that he had no need for the God hypothesis, Laplace extended Newton's mathematics and opened the way to a purely physical theory.

"What concerns me now is that even if you're as brilliant as Newton, you reach a point where you start basking in the majesty of God and then your discovery stops — it just stops," Dr. Tyson said. "You're no good anymore for advancing that frontier, waiting for somebody else to come behind you who doesn't have God on the brain and who says: 'That's a really cool problem. I want to solve it.' "

"Science is a philosophy of discovery; intelligent design is a philosophy of ignorance," he said. "Something fundamental is going on in people's minds when they confront things they don't understand."

He told of a time, more than a millennium ago, when Baghdad reigned as the intellectual center of the world, a history fossilized in the night sky. The names of the constellations are Greek and Roman, Dr. Tyson said, but two-thirds of the stars have Arabic names. The words "algebra" and "algorithm" are Arabic.

But sometime around 1100, a dark age descended. Mathematics became seen as the work of the devil, as Dr. Tyson put it. "Revelation replaced investigation," he said, and the intellectual foundation collapsed.

He did not have to say so, but the implication was that maybe a century, maybe a millennium from now, the names of new planets, stars and galaxies might be Chinese. Or there may be no one to name them at all.

Before he left to fly back home to Austin, Dr. Weinberg seemed to soften for a moment, describing religion a bit fondly as a crazy old aunt.

"She tells lies, and she stirs up all sorts of mischief and she's getting on, and she may not have that much life left in her, but she was beautiful once," he lamented. "When she's gone, we may miss her."

Dr. Dawkins wasn't buying it. "I wont miss her at all," he said. "Not a scrap. Not a smidgen."

ONLINE: AUDIO AND VIDEO

In an audio slide show, John Schwartz describes his visit to the set of "Mythbusters":
nytimes.com/science

A video on endangered lighthouses:
nytimes.com/earth

The Science Times podcast includes an interview with Dr. Erin N. Marcus on how doctors should dress:
nytimes.com/podcasts

Health & Fitness
The New York Times

ESSAY

When Young Doctors Strut Too Much

By ERIN N. MARCUS, M.D.

MIAMI, Nov. 20 — When I was a new faculty physician, I worked with a resident doctor who was smart and energetic and took excellent care of her patients.

There was just one problem. As she delivered her thoughtful patient presentations to me and the other attending doctors, it was hard not to notice her low-cut dress.

"You two have to say something to her," one of my male colleagues said to me and another female doctor one afternoon. But while none of us would have hesitated to intervene had she prescribed the wrong drug for a patient, we felt weird saying something to her about her clothes. So we didn't.

Nearly a decade later, my impression is that more young physicians and students are dressing like that resident. Every day, it seems, I see a bit of midriff here, a plunging neckline there. Open-toed sandals, displaying brightly manicured toes, seem ubiquitous.

My observations may partly reflect the city in which I work, Miami, a subtropical place known for its racy clothes. But colleagues who practice elsewhere report that they, too, have seen medical students and young doctors show up for clinical work in less-than-professional attire.

"Poor choice is not regional — I've seen it everywhere," said Dr. Pamela A. Rowland, a behavioral scientist and director of the office of professional development at Dartmouth Medical School, who has studied the impact of physician clothing on patient confidence. "It always surprises me when there are dress codes for staff but not for physicians."

Among older and middle-aged physicians (like myself), tales of salacious and sloppy trainee attire abound. One colleague commented that a particularly statuesque student "must have thought all her male patients were having strokes" when she walked in their exam room wearing a low-cut top and a miniskirt. Another complained about a male student who came to class unshaven, even though he hadn't been on call the night before. One Midwestern medical school dean reported that her school instituted a formal dress policy after administrators noticed students revealing too much flesh while sunbathing on a small patch of grass outside the school building, directly below patients' hospital room windows.

Patients and colleagues may dismiss a young doctor's skills and knowledge or feel their concerns aren't being taken seriously when the doctor is dressed in a manner more suitable for the gym or a night on the town. There are also hygiene considerations: open-toed shoes don't protect against the spills that commonly occur in patient care, and long, flowing hair can potentially carry harmful bacteria.

"Patients don't have your c.v. in front of them, and app by," Dr. Rowl their expecta creases."

In a study p American Jou veyed in one o ingly preferre mal attire wit tors in scrubs, clothes — jean above-the-kne



Illustrations b

'Every day, it seems, I see a bit of midriff here, a plunging

Dr. Erin N. Marcus is a general internist and assistant professor of clinical medicine at the University of Miami Miller School of Medicine.

CASES

Like a Fish Needs a Bicycle: For Some People

By RICHARD A. FRIEDMAN, M.D.

It is practically an article of faith among psychotherapists that an intimate human relationship is good for you. None other than Freud himself once famously said that health requires success in work and in love.

I'm not so sure. It seems that for some people, love and intimacy might not just be undesirable but downright toxic.

Not long ago, a man consulted me about his 35-year-old son, who had made a suicide attempt.

"I was shocked, because he never seemed depressed or unhappy in his life," the man said of his son. "He always preferred his own company, so we were relieved when he started to date."

He went on to tell me that he and his wife had strongly encouraged their son to become engaged to a woman he was dating. "She was perfect for him," he recalled. "Warm, intelligent and affectionate."

Everything seemed to be going well until, one day, the father got a call from his son's girlfriend. She had not heard from the son for several days, so she went to his apartment and found him semiconscious in a pool of blood. He had taken an overdose of sleeping pills and slit his wrists.

After a brief hospitalization, where he was treated for depression with medication, he returned home and broke off the relationship. Soon after, he moved to Europe to work but remained in frequent e-mail contact with his family. His messages were always pleasant, though businesslike, full of the day-to-day details of his life. The only thing missing, his father recalled, was any sense of feeling.

I got a taste of this void firsthand when his son came home for a family visit during the holidays. Sitting in my office, he made little direct eye contact but was pleasant and clearly very intelligent. He had lots of interests: computers, politics and biking. But after an hour of speaking with him, I suddenly realized that he had not mentioned a single personal relationship in his life.

"Who is important to you in your life?" I asked.

"Well, I have my family here in the States and some friends from work," he said.

"Do you ever feel lonely?"

"Why would I?" he replied.

And then I suddenly understood. He wasn't depressed or unhappy at all. He enjoyed his work as a software engineer immensely, and he was obviously successful at it. It was just that human relationships were not that important to him; in fact, he found them stressful.

Just before he made his suicide attempt, he remembered, he had been feeling very uncomfortable with his girlfriend and the pressure from his parents. "I wanted everyone to go away," he recalled.

Typical of schizoid patients, this man had a lifelong pattern of detachment from people, few friends and limited emotional expressiveness. His well-meaning parents always encouraged him to make friends and, later on, to date, even though he was basically unintereste

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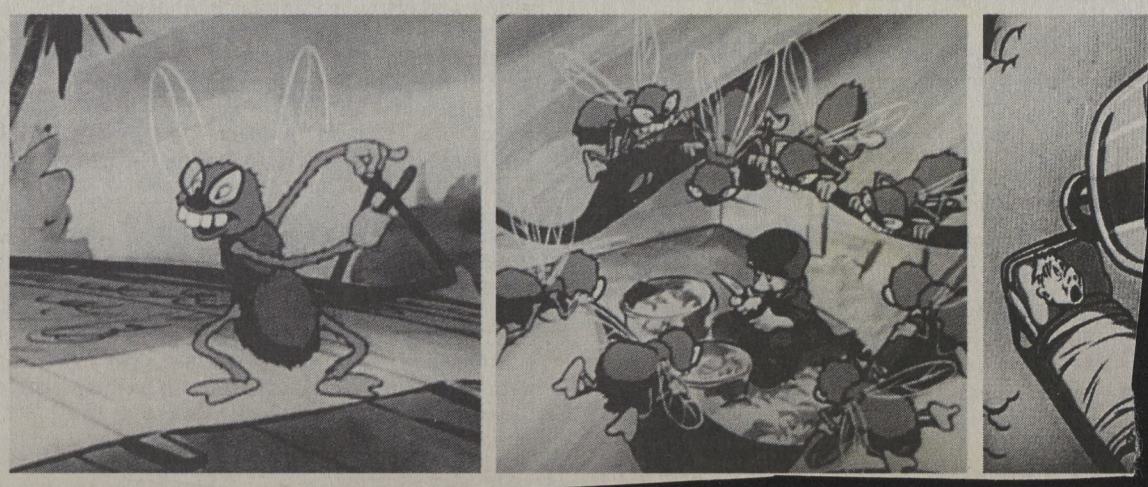
But after fou patient had ba these goals. Y reason a thera

REALLY?

THE CLAIM *Pricking a stroke victim's fingers can help delay symptoms.*

THE FACTS A recent, widely circulated e-mail message proposes an unusual way to help the victim of a stroke. "Help the victim sit up to prevent him from falling over," the message states. "Then sterilize a needle and use it to prick the tip of the person's finger. After a few minutes, the victim should regain consciousness."

The message says that doing this



A Free-for-All on Science and Religion

By GEORGE JOHNSON

Maybe the pivotal moment came when Steven Weinberg, a Nobel laureate in physics, warned that "the world needs to wake up from its long nightmare of religious belief," or when a Nobelist in chemistry, Sir Harold Kroto, called for the John Templeton Foundation to give its next $1.5 million prize for "progress in spiritual discoveries" to an atheist — Richard Dawkins, the Oxford evolutionary biologist whose book "The God Delusion" is a national best-seller.

Or perhaps the turning point occurred at a more solemn moment, when Neil deGrasse Tyson, director of the Hayden Planetarium in New York City and an adviser to the Bush administration on space exploration, hushed the audience with heartbreaking photographs of newborns misshapen by birth defects — testimony, he suggested, that blind nature, not an intelligent overseer, is in control.

Somewhere along the way, a forum this month at the Salk Institute for Biological Studies in La Jolla, Calif., which might have been one more polite dialogue between science and religion, began to resemble the founding convention for a political party built on a single plank: in a world dangerously charged with ideology, science needs to take on an evangelical role, vying with religion as teller of the greatest story ever told.

Time to take the gloves off, some scientists say.

Carolyn Porco, a senior research scientist at the Space Science Institute in Boulder, Colo., called, half in jest, for the establishment of an alternative church, with Dr. Tyson, whose powerful celebration of scientific discovery had the force and cadence of a good sermon, as its first minister.

She was not entirely kidding. "We should let the success of the religious formula guide us," Dr. Porco said. "Let's teach our children from a very young age about the story of the universe and its incredible richness and beauty. It is already so much more glorious and awesome — and even comforting — than anything offered by any scripture or God concept I know."

She displayed a picture taken by the Cassini spacecraft of Saturn and its glowing rings eclipsing the Sun, revealing in the shadow a barely noticeable speck called Earth.

There has been no shortage of conferences in recent years, commonly organized by the Templeton Foundation, seeking to smooth over the differences between science and religion and ending in a metaphysical draw. Sponsored instead by the Science Network, an educational organization based in California, and underwritten by a San Diego investor, Robert Zeps (who acknowledged his role as a kind

Continued on Page 6

1362

rehabilitation professionals at Kessler Institute share one goal: to provide the very best care and specialized treatment to people with stroke, brain injury, spinal cord injury, amputation and neuromuscular disorders. The expertise and experience of our physicians, nurses and therapists enable our patients to achieve greater outcomes and reach their individual rehabilitation goals. That's just one reason why *U.S. News & World Report* recognizes Kessler Institute as one of "America's Best Hospitals." When you need medical rehabilitation, you need Kessler.

Page Two

WASHINGTON SKETCH

Dana Milbank

They Don't Know Why They Did the Things They Did

Cher, on Capitol Hill yesterday to promote better combat helmets for the troops, has long been a friend of the military. Seventeen years ago, she danced on the deck of the USS Missouri and, cladding her tattooed bottom in fishnet, straddled one of its 16-inch guns as she recorded her "If I Could Turn Back Time" video.

Cher had weightier thoughts on her mind, and more fabric on her body, when she took her seat yesterday for a hearing of a House Armed Services subcommittee, attended by a pack of solicitous congressmen and the other former Mrs. Sonny Bono, Rep. Mary Bono (R-Calif.). But even in full attire and a sedate setting, the presence of the ageless entertainer had a magical effect: Everybody was performing his own version of "If I Could Turn Back Time."

On the day the Pentagon announced that 2,500 troops had died in Iraq, the House spent 10 hours re-debating the decision to invade Iraq in 2003 — at least until several of them left for a picnic at the White House.

Six years after his candidacy helped to deprive Al Gore of the presidency, Ralph Nader stopped by a Gore book-signing event to patch things up with his former foe.

Meanwhile, the House Government Reform Committee was meeting to find out why the Bush administration cut counterterrorism funding for the Washington area for this year by 40 percent — even as lawmakers conceded it was too late to do anything about it.

The beat goes on.

The daylong retrospective began at the House Government Reform Committee, where Chairman Tom Davis (R-Va.) and other lawmakers were scolding Homeland Security Undersecretary George Foresman for his agency's decision to stiff Washington.

"One of the greatest displays of incompetence," said Carolyn Maloney (D-N.Y.) "It does boggle the mind," agreed Jim Moran (D-Va.). Florida's John Mica (R) added: "I've never seen a goofier list of priorities."

"You really think," Davis demanded, that "Montana is at a higher risk than D.C.?"

Foresman, his hands trembling slightly, advised Davis: "Congressman, there are all kinds of intricacies." Behind him, his aides were chewing gum, shaking their heads and passing notes.

But all Davis and his colleagues could do was complain. Foresman said he has no plan to revisit the decision, and lawmakers said the best they could do would be to fix things next year so it doesn't happen again.

La de da de de. La de da de da.

Next stop on the Turn-Back-Time tour: Olsson's book shop on 7th Street Northwest, where Gore was signing books at noon. "I'm not supposed to say anything, just sign books," he announced when he started. But when he got to number 214 in the line, he noticed the lanky figure and stood up. "Nice to see you! How you doing? . . . I'm really so grateful to you for coming by."



BY CHIP SOMODEVILLA — GETTY IMAGES

Cher joins Mark Meaders while his father, Bob Meaders, testifies before a House Armed Services subcommittee. The elder Meaders started Operation Helmet and has helped raise about $800,000 to make Marine helmets safer.

After more pleasantries, Gore scribbled a line in the book: "For my friend, Ralph Nader. With respect, Al Gore."

Nader was smitten. "He's liberated!" Nader said. "He's defining what progressive Democrats should be about."

Had they reached such a rapport six years ago, Gore might have won the election in 2000, as two men in line reminded Nader. "Thanks to you, we had Bush all these years," said one. "How many are dead in Iraq because of that?"

La de da de de. La de da de da.

Back on the Hill, both houses of Congress were in a raucous, backward-looking debate about the war in Iraq. Rep. George Miller (D-Calif.) tried to Turn Back Time to 2003. "This is a blunder of historic proportions," he said of the war.

Pete Hoekstra (R-Mich.) went back even further back in time: "The historic blunder is that we didn't confront the problem in the 1990s."

Disgusted with the proceedings, Rep. Barney Frank (D-Mass.) advised any Iraqi parliamentarians watching on television: "Don't try this at home."

The Senate attempted a more forward-looking debate: a resolution calling for most troops to be withdrawn from Iraq by the end of the year. But it was difficult to take the senators seriously: A third of them wore blue-and-white striped suits in honor of "Seersucker Thursday," making the floor of the Senate resemble a Good Humor convention.

"If we were to cut and run," said Majority Leader Bill Frist (R-Tenn.), wearing a seersucker suit and white shoes, "bloody civil war would result." Frist returned to his office, where free ice cream was being served to all.

The Senate dispensed with the Iraq debate quickly, freeing the lawmakers to attend the annual congressional picnic at the White House.

La de da de de. La de da de da.

With everybody else living in the past, Cher herself seemed to be enjoying the present yesterday, as lawmakers fussed over her.

At the hearing room, signs on chairs dictated the seating: "Reserved Army;" "Reserved Navy;" "Reserved Cher."

"I'm waiting for Cher!" a star-struck Curt Weldon (R-Pa.) boasted to a colleague as he stood near the elevator. "Do you know who I'm waiting for?" he asked another.

Lawmakers besieged the singer when she emerged, in blue sunglasses and a black suit. Mike Conaway (R-Tex.) invited her to take a trip with him to Germany and Iraq, "whenever you want."

"I'd love to," Cher said politely.

Afterward, the giddy Conaway told an aide: "She said she'd do it!"

But will she wear fishnet?

TREND LINES

Father's Day: June 18

The idea of Father's Day was conceived by Sonora Dodd of Spokane, Wash., while she listened to a Mother's Day sermon in 1909. Dodd wanted a special day to honor her father, William Smart, a widowed Civil War veteran who was left to raise his six children on a farm. A day in June was chosen for the first Father's Day celebration — June 19, 1910 — proclaimed by Spokane's mayor because it was the month of William Smart's birth. The first presidential proclamation honoring fathers was issued in 1966 when President Lyndon B. Johnson designated the third Sunday in June as Father's Day. Father's Day has been celebrated annually since 1972, when President Richard M. Nixon signed the public law that made it permanent.

REMEMBERING DAD

Nearly 95 million

Estimated number Father's Day cards given last year in the U.S.

■ **Neckties lead the list** of Father's Day gifts.

■ **Other items high on the list** of gifts include those items you might find in dad's toolbox, such as hammers, wrenches and screwdrivers.



HOW MANY FATHERS?

26.4 million

Number of fathers who are part of married-couple families with their own children under the age of 18.

2.3 million

Number of single fathers, up from 400,000 in 1970. Currently, among single parents living with their children, 18 percent are men.

Among these fathers:

■ **11 percent** are raising three or more of their own children under the age of 18.

■ **16 percent** live in the home of a relative or nonrelative.

■ **22 percent** have an annual family income of $50,000 or more.



SOURCES: Hallmark, Census Bureau

PHOTOS — ISTOCKPHOTO AND PHOTODISC; GRAPHIC — THE W

Weather

Today: *Sunny, clear. High 86. Low 65.*
Saturday: *Mostly sunny. High 91. Low 70.*

Details, **B10**

The Washington Post

129TH YEAR NO. 193 M2 DC

FRIDAY, JUNE 16, 2006

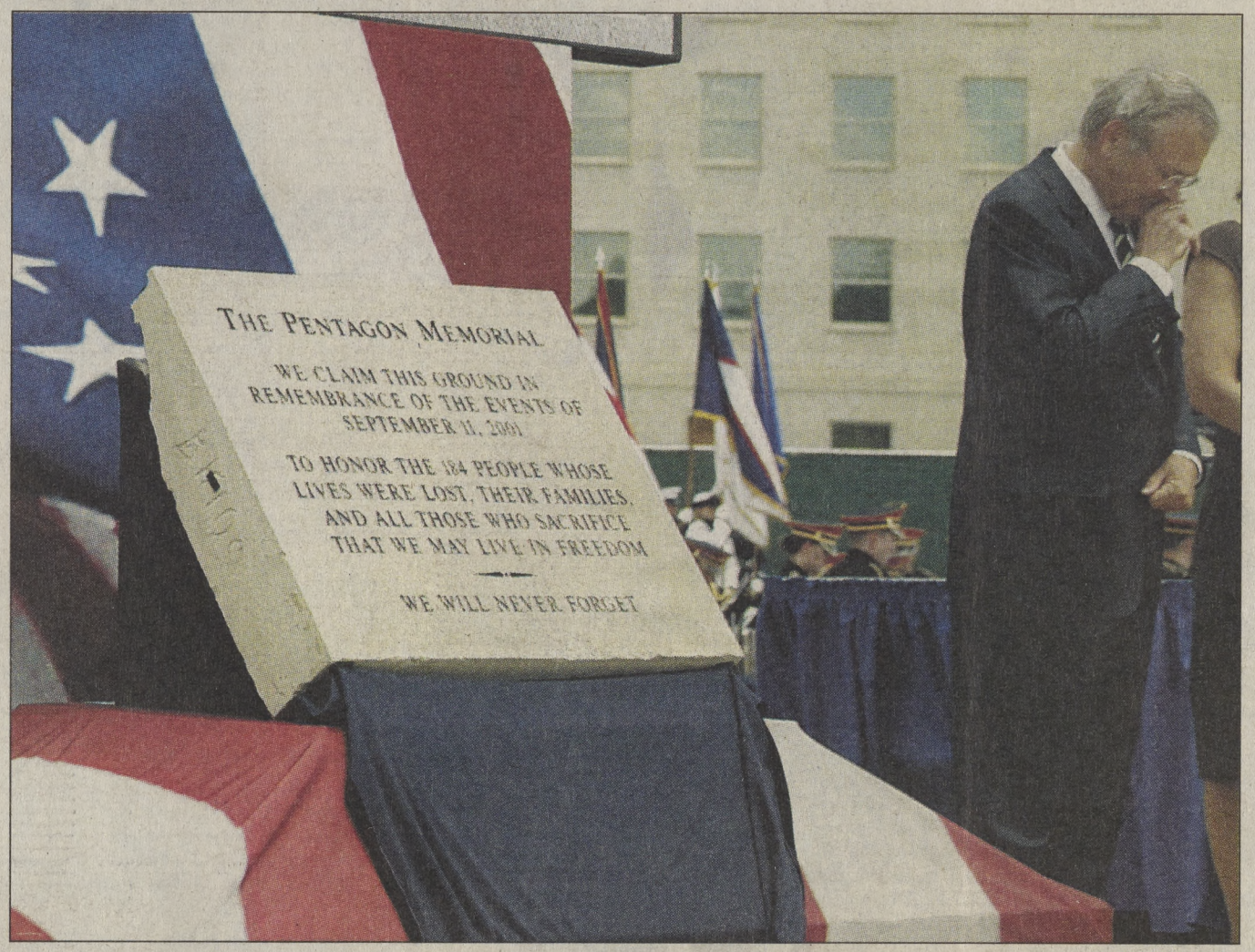
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DISTRICT FINAL

35¢

Prices may vary in areas outside metropolitan Washington. (See box on A2)

'Sacred Ground' Broken for Pentagon Memorial



BY JIM YOUNG — REUTERS

Defense Secretary Donald H. Rumsfeld helps to break ground on a Pentagon memorial to victims of the Sept. 11 attacks. The engraved piece of marble recovered after the building was hit in 2001 by American Airlines Flight 77 will be placed at the entrance to the memorial. Story, B1.

Parties Face Off Over Iraq War in 11-Hour Debate

By JONATHAN WEISMAN
and CHARLES BABINGTON
Washington Post Staff Writers

Congress plunged into a wide-ranging debate over the origins and conduct of the war in Iraq yesterday, with each party excoriating the other for alleged weakness and complacency about the stakes involved.

As the Pentagon announced the 2,500th death of a U.S. service member in the conflict, the House embarked on its first extended discussion of the war since Congress authorized force nearly four years ago. More than 140 lawmakers took the floor to applaud or attack President Bush's prosecution of the war in an 11-hour debate scheduled to last until nearly midnight.

The debate will culminate today with a vote on a Republican-drafted resolution declaring that the United States must complete "the mission to create a sovereign, free, secure and united Iraq" without setting "an arbitrary date for the withdrawal or redeployment" of U.S. troops.

In the Senate, Republicans tried to put Democrats on the record as supporting or opposing an amendment — drafted by Sen. John F. Kerry (D-Mass.) but submitted for a vote by Sen. Mitch McConnell (R-Ky.) — to demand a timetable for

See **DEBATE**, *A6, Col. 1*

Maliki Aide Leaves

Iraq's prime minister disavows remarks about amnesty; an Egyptian may succeed Zarqawi. *A22*

Abu Ghraib Release

Nearly 500 more detainees are freed as part of an Iraqi government effort to end sectarian tensions. *A22*

Shiite Militias Control Prisons, Official Says

By JONATHAN FINER
and ELLEN KNICKMEYER
Washington Post Foreign Service

BAGHDAD — Iraq's prison system is overrun with Shiite Muslim militiamen who have freed fellow militia members convicted of major crimes and executed Sunni Arab inmates, the country's deputy justice minister said in an interview this week.

"We cannot control the prisons. It's as simple as that," said the deputy minister, Pusho Ibrahim Ali Daza Yei, an ethnic Kurd. "Our jails are infiltrated by the militias from

fer prisons and detainees from American to Iraqi control. "Our ministry is unprepared at this time to take over the facilities, especially those in areas where Shiite militias exist," he said in a letter to U.S. Army Maj. Gen. John D. Gardner, the official in charge of American detention facilities.

U.S. officials said months ago that they planned to turn over Baghdad's Abu Ghraib prison and three other American-run facilities to the Iraqi government, but the handoff has been repeatedly pushed back. Gardner has said he will not authorize the transfers until he is convinced that standards of

alvo Claims 4 Other Shootings, Source Says

of Snipers' Confirmed and Suspected Attacks Across U.S. Grows to 27 – 17 Fatal

TO LONDOÑO
RICH
Post Staff Writers

told law en-

A second source confirmed that investigators have received information implicating the snipers in those shootings, which claimed the lives of two men and wounded two others in the months before

sively by law enforcement officials in preparation for his testimony at Muhammad's trial last month in Maryland.

It is unclear to what degree, if any, authorities have corroborated Malvo's new claims. He has accounts of

The claims bring the list of confirmed and suspected sniper shootings to 27, including 17 homicides, and add two states to the list of jurisdictions that could file charges against Muhammad and Malvo.

The first previously undisclosed homicide victim was a man

NYT July '06

THOMAS L. FRIEDMAN

The Age Of Interruption

LIMA, Peru

The best part of this job is being able to step outside of your routine and occasionally look at the world through a completely different lens. The Peruvian Amazon rain forest is such a lens, and looking at the world through this dense jungle has given me new perspectives on two issues — Middle East violence and the spread of the Internet.

What is so striking about the rain forest, when viewed up close, is what an incredibly violent place it is — with trees, plants and vines all struggling with each other for sunlight, and animals, insects and birds doing the same for food. I was always impressed at how our Peruvian Indian guide would identify a certain bird or wild pig or possum or parrot and immediately add who its predators were. In the rain forest, everyone and everything is part of a matched pair of predator and prey.

Yes, there is nothing like the violence of a rain forest, but it is violence with an identifiable purpose: plants and animals demarcating and protecting territory for the survival of their species.

I have to say that the violence unfolding between Israelis and Palestinians today is utterly without purpose. Israel has evacuated Gaza, and what does Hamas do? It doesn't put all its energy into building a nest for its young there — a decent state and society, with jobs. Instead, it launches hundreds of rockets into Israel.

The Palestinians could have a state on the West Bank, Gaza and East Jerusalem tomorrow, if they and the Arab League clearly recognized Israel, normalized relations and renounced violence. Anyone who says otherwise doesn't know Israel today. But those driving Palestinian politics seem determined to destroy Israel in its territory — even if it means destroying themselves in their own territory. Species that behave that way in the rain forest become extinct.

Loud and clear where cellphones are silent.

As for the Internet in the rain forest, my point is this: There is none. Yes, I had to go to the Tambopata Research Center, deep in the Peruvian Amazon, to find it, but I can report there is still a place with no Internet or cellphone service. Of course, there are still many such places, but the fact that people could use their cellphones from atop the sacred Incan ruin of Machu Picchu, in the Andes, reminds one that there are fewer and fewer every day.

I have to say, as a wired junkie myself, there was something cleansing about spending four days totally disconnected. It was the best antidote to the disease of our age, what the former Microsoft executive Linda Stone aptly labeled "continuous partial attention."

Continuous partial attention is when you are on the Internet or cellphone or BlackBerry while also watching TV, typing on your computer and answering a question from your kid. That is, you are multitasking your way through the day, continuously devoting only partial attention to each act or person you encounter.

It is the malady of modernity. We have gone from the Iron Age to the Industrial Age to the Information Age to the Age of Interruption.

All we do now is interrupt each other or ourselves with instant messages, e-mail, spam or cellphone rings. Who can think or write or innovate under such conditions? One wonders whether the Age of Interruption will lead to a decline in civilization — as ideas and attention spans shrink and we all get diagnosed with some version of Attention Deficit Disorder.

I know that connectivity means productivity. But it is possible to overdose. There is such a thing as "too connected," and modern society is heading in that direction, as more people at more income levels get wired. Everyone we met in Peru had a cellphone, since Peru, like so many developing countries, is going straight from no phones to cellphones, skipping over land lines.

It means everyone is always "in." You're never "out." Out is over. Maybe soon we'll have to artificially recreate "out." Maybe soon we'll see an ad for a Four Seasons resort that says, "We guarantee that every room comes *without* Internet service."

What struck me about our Peruvian rain forest guide, Gilbert, though, was that he carried no devices and did not suffer from continuous partial attention. Just the opposite. He heard every chirp, whistle, howl or crackle in the rain forest and would stop us in our tracks and immediately identify what bird, insect or animal it was. He also had incredible vision and never missed a spider's web, or a butterfly, or a toucan, or a column of marching termites.

He was totally disconnected from the Web, but totally in touch with the incredible web of life around him. I wonder if there's a lesson there. □



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OPINION

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L&C Forest travel plan DEIS is still on the table

OUR OPINION

Comments still are being sought on the proposed travel plan for the Little Belt, Castle and Crazy mountains in the Lewis and Clark National Forest.

The draft environmental impact statement on the plan includes five summer-travel and three winter-travel alternatives. The eventual product will update the 1988 L&C Forest travel plan.

Much has changed in outdoor recreation over the past 16 years, including the continued evolution and proliferation of motorized "all-terrain vehicles," which weren't sufficiently taken into account in the old plan.

A "travel plan" is the narrow-sounding name for what amounts to an overall management plan for any tract of federal land.

In this case, it takes in more than a million acres — 900,310 in the Little Belts south and east of Great Falls; 79,820 in the Castle Mountains east of White Sulphur Springs, and 69,980 in the northern portion of the Crazy Mountains straight south of the Castles.

The DEIS on the table includes one path-finding winter-travel plan — Alternative Two — that was hammered out in negotiations among the Forest Service and two often-contrary user groups: snowmobilers and wilderness advocates, then implemented in February 2005.

Other forest users challenged it in court, but about a month ago federal Judge Don Molloy upheld the plan.

Its critics now are worried that the judge's ruling will lull their colleagues into thinking the overall travel plan is no longer on the table.

Craig Osterman of Belt, director of one critics group, said in a release that "if you were in the belief that the Little Belt/Crazies/Castle mountain winter travel plan had been decided by Judge Molloy's decision, you were mistaken."

We agree with the judge's statement that the winter plan worked out by the Montana Snowmobile Association and the Montana Wilderness Association "embodies the balanced use envisioned by the Congress under the Montana Wilderness Study Act."

But Osterman is right when he says the issue is not yet settled.

We join him in urging people with a stake in the travel plan to send their comments (see inset).

To comment:

Send written comments to: **Forest Supervisor Spike Thompson, Lewis and Clark National Forest, P.O. Box 869, Great Falls, MT 59403-0869.**

Or e-mail to: comments-northern-lewisclarkfs.fed.us, and put LBCC Travel Plan in the subject line.

Provide comments by **Oct. 20.**

GUEST /OPINIONS

Keep your kids in-country: Senate just ratcheted up hostility

By GARRISON KEILLOR



Keillor

I would not send my college kid off for a semester abroad if I were you. This week, we have suspended human rights in America, and what goes around comes around. Ixnay habeas corpus.

The U.S. Senate, in all its splendor and majesty, has decided that an "enemy combatant" is any noncitizen whom the president says is an enemy combatant, including your Korean greengrocer or your Swedish grandmother or your Czech au pair, and can be arrested and held for as long as authorities wish without any right of appeal to a court of law to examine the matter.

If your college kid were to be arrested in Bangkok or Cairo, suspected of "crimes against the state," and held in prison, you'd assume that an American foreign service officer would be able to speak to your kid and arrange for a lawyer, but this may not be true anymore. Be forewarned.

The Senate also decided it's up to the president to decide whether it's OK to make these enemies stand naked in cold rooms for a couple days in blinding light and be beaten by interrogators.

This is now purely a bureaucratic matter: The plenipotentiary stamps the file "enemy combatants" and throws the poor schnooks into prison and at his leisure he tries them by any sort of kangaroo court he wishes to assemble and they have no right to see the evidence against them, and there is no appeal.

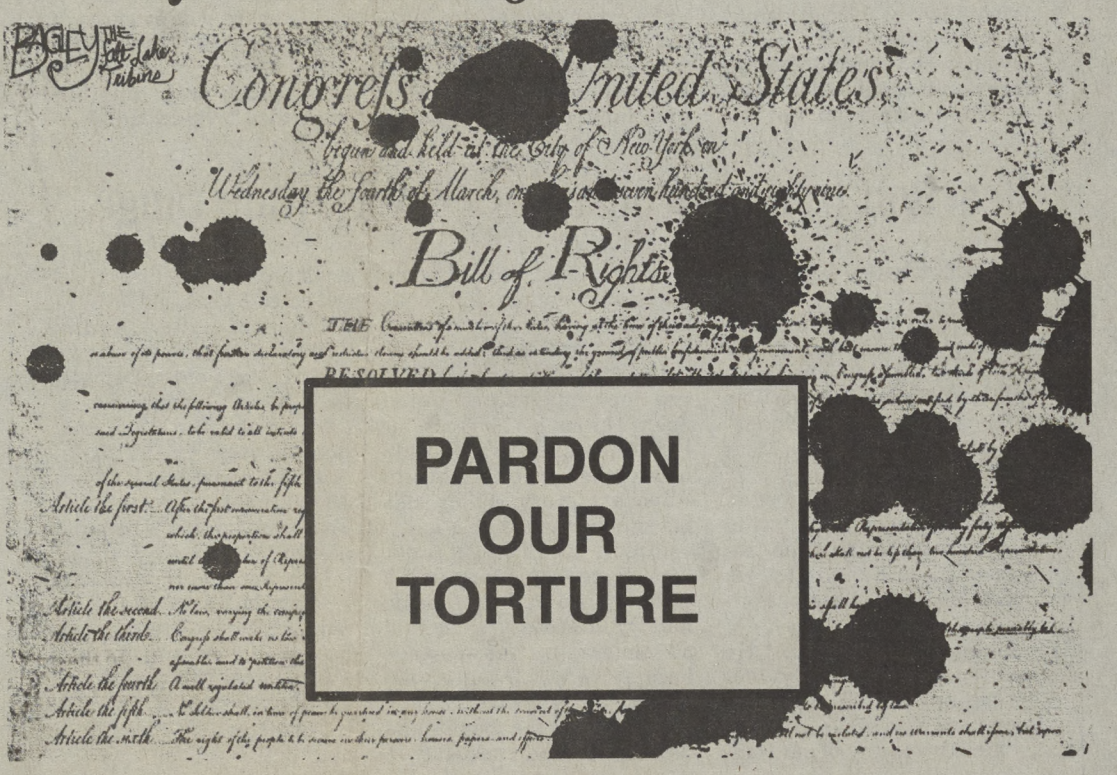
This was passed by 65 senators and will now be signed by Mr. Bush, put into effect, and in due course be thrown out by the courts.

It's good that Barry Goldwater is dead because this would have killed him. Go back to the Senate of 1964 — Goldwater, Dirksen, Russell, McCarthy, Javits, Morse, Fulbright — and you won't find more than 10 votes for it.

None of the men and women who voted for this bill has any right to speak in public about the rule of law anymore, or to take a high moral view of the Third Reich, or to wax poetic about the American Idea.

Mark their names. Any institution of higher learning that grants honorary degrees to these people forfeits its honor:

Alexander, Allard, Allen, Bennett, Bond, Brownback, Bunning, Burns, Burr, Carper, Chambliss, Coburn, Cochran, Coleman, Collins, Cornyn, Craig, Crapo, DeMint, DeWine, Dole, Domenici, Ensign, Enzi, Frist, Graham, Grassley, Gregg, Hagel, Hatch, Hutchison, Inhofe, Isakson, Johnson, Kyl, Landrieu, Lautenberg, Lieberman, Lott, Lugar, Martinez, McCain, McConnell, Menendez, Murkowski, Nelson of Florida, Nelson of Nebraska,



Pryor, Roberts, Rockefeller, Salazar, Santorum, Sessions, Shelby, Smith, Specter, Stabenow, Stevens, Sununu, Talent, Thomas, Thune, Vitter, Voinovich, Warner.

To paraphrase Sir Walter Scott: Mark their names and mark them well.

For them, no minstrel raptures swell. High though their titles, proud their name, boundless their wealth as wish can claim, these wretched figures shall go down to the vile dust from whence they sprung, unwept, unhonored and unsung.

Three Republican senators made a show of opposing the bill and after they'd collected all the praise they could get, they quickly folded. Why be a hero when you can be fairly sure that the court will dispose of this piece of garbage.

If, however, the court does not, then our country has taken a step toward totalitarianism. If the government can round up someone and never be required to explain why, then it's no longer the United States of America as you and I always understood it.

Our enemies have succeeded beyond their wildest dreams. They have made us become like them.

I got some insight last week into who supports torture when I went down to Dallas to speak at Highland Park Methodist Church. It was spooky.

I walked in, was met by two burly security men with walkie-talkies, and within 10 minutes was told by three people that this was the Bushes' church and that it would be better if I didn't talk about politics. I was there on a book tour for "Homegrown Democrat," but they thought it better if I didn't mention it.

So I tried to make light of it: I told the audience, "I don't need to talk politics. I have no need even to be interested in politics — I'm a citizen, I have plenty of money and my grandsons are at least 12 years away from being eligible for military service."

And the audience applauded! Those were their sentiments exactly. We've got ours, and who cares?

The Methodists of Dallas can be fairly sure that none of them will be snatched off the streets, flown to Guantanamo, stripped naked, forced to stand for 48 hours in a freezing room with deafening noise, so why should they worry?

It's only the Jews who are in danger, and the homosexuals and gypsies. The Christians are doing just fine. If you can't trust a Methodist with absolute power to arrest people and not have to say why, then whom can you trust?

Garrison Keillor's "A Prairie Home Companion" can be heard Saturday nights on public radio stations across the country. It's on at 6 p.m. on KGPR, Great Falls. Coincidentally, it was broadcast from Missoula this past Saturday.

READER /OPINIONS

On our minds: Animal Foundation, holy days, coal generator

Different organization

There is confusion over the city's audit of the Humane Society.

Some think it involved the Animal Foundation, which is a different corporation with a different board of trustees. People often think the groups are the same.

The two organizations are completely separate. The foundation's mission is to build a new shelter and dog park.

We do not operate the city-owned shelter. The city did not audit the foundation. We are not involved in animal control.

Our volunteer-based organization has more than $1 million in the bank, no debt, and minimal operating costs.

A new shelter will cost more than $2 million, and construction drawings of its interior will be completed in the near future.

We hope to begin construction of the new shelter in the fall of 2007 if additional money is raised.

The foundation has a responsibility to its donors to ensure the new shelter is in good hands and run in a businesslike manner.

We intend to fulfill this responsibility even though we will not be involved in the actual shelter operation.

We appreciate all the support that we have received in our community's first capital fund drive for animals.

We sincerely thank everyone in Great Falls and the surrounding area for their generosity.

Please continue to support this important community project by sending your donations to the Animal Foundation, P.O. Box 3624, Great Falls, MT 59403.

— Bob James, Great Falls, president, Animal Foundation

Holy wishes

Here's wishing all the good people of Great Falls and north central Montana L'Shannah Tovah, Hebrew for a good year. This is a shortening of the traditional seasonal greeting that means, "May you be inscribed and sealed for a good year."

The two-day (one day if in Israel or if following the Reform ritual) Jewish Biblical Festival of Rosh Hashannah (Lev. 23:23-25) commemorates the anniversary of the creation of the world, and more specifically the day on which God created Man, God's final and most precious creation; and, of God as judge, dispensing mercy or justice to those who do or do not repent their sins.

The shofar (ram's horn) is blown, sounding the alarm that it is the time for introspection, asking for forgiveness, giving forgiveness, resolving to do better, and remembering God is our king and judge.

The synagogue service is followed in the early afternoon by a festive meal of sweet foods at home with family and friends. Pieces of challah (braided egg bread) are dipped in honey, rather than the usual practice of dipping in salt before saying the pre-meal blessing, and pieces of apple are also dipped in honey before eating.

This year, Rosh Hashannah, because it will occur on Shabbat (Sabbath), began 18 minutes before sunset on Friday, Sept. 22,



on the civil calendar and marks the beginning of the high holy days that end nine days later on Yom Kippur (Day of Atonement, Lev. 16:29-31, 23:26-32).

L'Shannah Tovah, and happy 5767.

— Walter Greenspan, Great Falls

Makes no sense

On the one hand, there are groups and individuals trying very hard to recruit companies to locate in Great Falls. There is also ongoing recruitment for physicians and other professionals.

Several large companies moving to Great Falls would greatly increase our tax base and population. One of the large incentives for companies to move to Great Falls is that we enjoy about the cleanest air of cities in the nation!

On the other hand, there is the large ongoing push to create a coal-fired producer of electricity very near Great Falls. This hand has the distinct potential of a shooting in the foot. Would companies and professionals want to locate in Great Falls where mercury and other pollutants foul our air?

Then there should be the considerations of pollutants in the areas of Highwood, Conrad, Choteau, and Browning, and Glacier National Park. Also to be considered is the pollution of the Missouri River and other streams in the area.

Great Falls is the location of an outstanding medical center for here and our region.

Professionals would question breathing fouled air for themselves and families.

It is an imperative time to get out the balance sheet and very seriously think long term about the future of Great Falls and the region.

— Evan Crandall, Great Falls

Should be better

I noticed a very interesting fact about taxes and our standard of living. The nations with the highest standard of living have the highest taxes.

The United States is barely in the top 10 for standard of living. High income, lowest standard of living. Countries like Norway, Sweden, Switzerland, and Canada have higher standards of living.

The amount of taxation is not as relevant as to how these taxes are used. When used for pork barrel, wars, cuts for the rich, etc., the standard of living for most citizens is affected negatively, and the spread between rich and poor widens, as in the United States.

When these taxes are used for health care, education, infrastructure, technology etc., the cost of living is decreased and quality of jobs increases. An educated society with no insecurity about health advances rapidly.

You may disagree with me, but do the research. Greed is America's enemy — more than terrorism. Politicians buy our votes with our own money, and we the sheeple follow without question like sheep.

We make a high income in America but spend it on things that our taxes should pay, thus a lower standard of living.

Our president and Congress need a dip in the old think-tank and need to stop working for special interests.

Oh yes, why do our elected officials get full coverage health care and not us? Don't they work for us? The master is working for the servant.

— Gary Moffitt, Great Falls

Backs Jolley

This letter is in support of Mary Jolley who is running for House District 22 representative. Although I don't live in Mary's district, I want voters to know I believe she will do the best job for her constituents.

I met Mary in 2000 when I was Executive Director of CASA-CAN Children's Advocate Network and Mary was a volunteer Guardian ad Litem. At that time, Mary was acting as a voice in court for children from two families. These children were in foster care in Cascade County. Mary was one of the most active advocates I ever worked with — she did thorough investigations of the children's cases, wrote timely court reports, and testified in court for the children's best interests.

Since then, Mary has worn many more hats in our community, including serving as CASA-CAN Children's Advocate Network Board vice president for two years. She is our board president, and it is a privilege to serve with her.

She works selflessly for the CASA program, with no personal benefit. In sum, Mary Jolley dedicates herself to children and families in Cascade County — because it is the right thing to do.

On a personal level, Mary has helped my children and me whenever we have needed her. She has a cool head in crisis situations and knows intuitively the right thing to do to help.

Mary will take her experience, integrity and dedication to the Montana House of Representatives. Residents of District 22: Don't hesitate to make Mary Jolley your choice.

— Suzanne Porter, Great Falls

PLEASE WRITE TO US

The Tribune publishes all nonlibelous letters it receives on topics of public interest. Each letter must be written and signed by its author for the Tribune only, and not longer than 250 words. Letters should contain the author's full name, home address and daytime phone number. Letters are subject to editing for clarity, taste and brevity. Readers are welcome to write for publication every 60 days. Write to Great Falls Tribune, P.O. Box 5468, Great Falls, MT 59403. Fax us at 406-791-1431 or e-mail us at tribletters@sofast.net. Letters to the editor and guest opinions submitted to the Tribune may be published or distributed in print, electronic or other forms.



World briefs

Thailand's rulers tap key official

BANGKOK, Thailand — Retired army commander Gen. Surayud Chulanont was sworn in Sunday as Thailand's interim prime minister, saying he wanted to settle a bloody Muslim insurgency and heal a country divided by the policies of his predecessor.

The ruling military council running Thailand since a Sept. 19 coup appointed Surayud after ousting Thaksin Shinawatra.



Surayud

"It was injustice that caused problems in politics and the south," Surayud said, referring to divisions over Thaksin's rule and to a Muslim insurgency in south Thailand. "I urge everybody to help solve the two problems, and unity is needed to deal with them."

While Surayud endorsed elections scheduled for next year, a temporary constitution announced Sunday still reserved considerable powers for Thailand's coup leaders, a situation which is expected to unnerve rights activists.

Storm hits Vietnam; death toll at least six

DANANG, Vietnam — Tropical Storm Xangsane barreled across central Vietnam on Sunday, leaving at least six people dead, hundreds injured and tens of thousands of homes damaged, officials said.

Heavy rains are expected to continue for several days and could unleash floods and landslides across the region, national weather center director Bui Minh Tang said.

The storm, which killed at least 76 people and left about 69 missing in the Philippines last week, hit Vietnam's coastal city of Danang Sunday morning and caused widespread blackouts, officials said.

Overpass collapse leaves five dead

LAVAL, Quebec — At least five people were crushed to death in their cars after the collapse of an overpass near Montreal, Quebec provincial police said Sunday.

There appeared to have been some advance warning signs of trouble with the overpass in Laval, part of the Greater Montreal Area. One witness told TVA television network that he noticed the road had sunk an inch or two when he traveled over the overpass minutes before the collapse and he called emergency dispatchers.

An inspector from Transport Quebec, the provinces transportation ministry, was sent to the site about 30 minutes before the tragedy but the overpass remained open.

40 feared dead in dam destruction

KANO, Nigeria — Families were swept away in a torrent of water and up to 40 people were feared dead after a dam collapsed in northwest Nigeria, a state-owned radio station said Sunday.

The dam — about one mile from the center of Zamfara state's capital city of Gusau — collapsed Saturday after heavy rains. But surveyors were trying to determine whether to blame the downpour or structural neglect.

Ibrahim Brini Magaja, a spokesman for the Zamfara state governor, said it was too early to determine why the dam did not hold up, but a construction firm had been asked to study the damage for clues.

— From Tribune wires

FBI considers criminal probe of former congressman Foley

By JOHN HEILPRIN
Associated Press Writer

WASHINGTON — The FBI is examining former Rep. Mark Foley's e-mail exchanges with teenagers to determine if they violated federal law, an agency spokesman said Sunday.

FBI spokesman Richard Kolko said the FBI is "conducting an assessment to see if there's been a violation of federal law." He had no further comment.



Hastert

House Speaker Dennis Hastert requested Sunday that the Justice Department conduct an investigation into Foley's electronic messages to teenage boys — a lurid scandal that has put House Republicans in political peril.

"As Speaker of the House, I hereby request that the Department of Justice conduct an investigation of Mr. Foley's conduct with current and former House pages to determine to what extent any of his actions violated federal law," Hastert, R-Ill., wrote to Attorney General Alberto Gonzales.

The White House and Democratic leaders in Congress also called Sunday for a criminal probe. White House counselor Dan Bartlett called the allegations against Foley shocking, but said President Bush hadn't learned of Foley's inappropriate e-mails to a 16-year-old boy and instant messages to other boys before the news broke last week.



Foley

Foley, R-Fla., quit Congress on Friday after the disclosure of the e-mails he sent to a former congressional page and sexually suggestive instant messages he sent to other high school pages.

A law enforcement official, who asked for anonymity because the investigation is ongoing, said agents from the FBI's cyber division are looking into the text of some of the messages and checking to see how many e-mails were sent and how many computers were used. They also are looking to see if some of the teens who were sent messages will cooperate with the probe.

Senate Democratic Leader Harry Reid of Nevada called the Foley case "repugnant, but equally as bad is the possibility that Republican leaders in the House of Representatives knew there was a problem and ignored it to preserve a congressional seat this election year."

Hastert maintained at first that he had learned only last week about the e-mails. But Rep. Thomas Reynolds, head of the House Republican election effort, said Saturday he had told Hastert months ago about concerns Foley sent inappropriate messages to a teenage boy. Reynolds, R-N.Y., is under attack from Democrats who say he did too little to protect the boy.

Hastert acknowledged over the weekend that his aides had referred the matter to the House clerk and to the congressman who was chairman of the board that oversees the page program. But Hastert's office said it had not known the e-mails were anything more than "over-friendly."

Reaction from gay observers covers wide range

McClatchy Newspapers

MIAMI — "He was a homophobe who needed to be exposed," said journalist Michael Rogers, whose Web site, www.blogactive.com/, reported on Florida Rep. Mark Foley for three years.

"I first started to report on Foley in March 2003," said Rogers, who is gay. "The reason why — he's antigay. He voted for the Defense of Marriage Act and has not renounced that vote. He refused to acknowledge that he supported the repeal of 'don't ask, don't tell.' ...

"He is an enemy of our community, yet he wants to step into our community and put us at risk. He puts every one of us in a bad light."

In 1996, The Advocate, a gay newsmagazine, outed Foley. During his 2003 run for U.S. Senate, several Florida newspapers reported the old Advocate story. Foley has never publicly said he is gay.

Rogers said Foley's problems come from being in the closet: "I do believe that he had unhealthy sexual advances to these guys because he was living his life as a closeted gay man. Healthy gay men who are mature and dealing with their sexuality in a mature way don't hit on kids who are 16 years old."

Finance writer Andrew Tobias of Miami, who is gay and treasurer of the Democratic National Committee, said:

"I am sad for Mark and I hope he doesn't go to jail. The last time I saw Mark, he was 19 years into a relationship. That was sad that it had to be hidden."

"It's a tragedy for him and his family," said Matt Foreman, executive director of the National Gay and Lesbian Task Force. "I don't want to get into the pain of the closet. It's irrelevant if he's gay or not."

Runoff election to be needed in Brazil

BRASILIA, Brazil (AP) — Brazil's leftist president faces a runoff for a second term after voters denied him an outright victory Sunday amid last-minute allegations his party engaged in a scheme of electoral corruption and dirty tricks.

The Oct. 29 runoff was announced by election officials after 98 percent of the vote was counted, with President Luiz Inacio Lula da Silva getting 49 percent, compared to 41 percent for center-right Geraldo Alckmin, Sao Paulo state's former governor.

It was a stunning defeat for Silva, after polls less than a week ago predicted him trouncing Alckmin with 59 percent of the vote — far more than the 50 percent plus one vote needed to win the contest in the first round.

Although Silva said earlier Sunday he had been confident of a first-round victory, his campaign manager, Marco Aurelio Garcia, said the president and his campaign staff "always prepared ourselves for a two-round election."

Silva saw a commanding lead plummet on the eve of the vote afterallegations that his Workers' Party officials tried to buy a mysterious dossier that apparently contained incriminating information about a political rival.

Elections elsewhere:

■ **BOSNIA:** Bosnians appeared split in key elections on the country's future, with Muslims and Catholic Croats voting for politicians who want to unify the Balkan nation, but Serbs backing a candidate who advocates ethnic division, early results showed.

■ **HUNGARY:** Opposition parties made big gains in municipal elections after two weeks of protests over the prime minister's admission that he lied about the economy. Ferenc Gyurcsany, who has resisted weeks of demands that he step down, vowed to continue reforms and austerity measures despite the electoral setback for the coalition parties.

■ **AUSTRIA:** Austria's opposition Social Democrats won nationwide elections, swinging the country to the center-left after more than six years of influence by the extreme right, final unofficial returns showed. With all but absentee ballots counted, the center-left bloc had 35.7 percent of the vote and the People's Party trailed with 34.2 percent.

— The Associated Press

Crash deaths confirmed

BRASILIA, Brazil (AP) — Authorities said Sunday there were no survivors among the 155 people aboard the Brazilian jetliner that crashed deep in the Amazon jungle.

Rescue workers began to pull bodies out of the twisted wreckage.

GOD IS PRO-LIFE

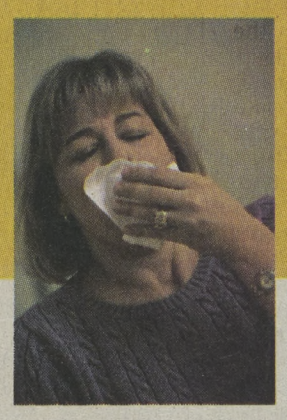
Thy hands have made me and fashioned me: give me understanding, that I may learn thy commandments.

Psalm 119:73

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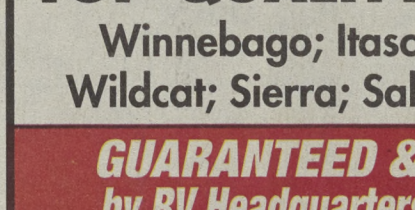
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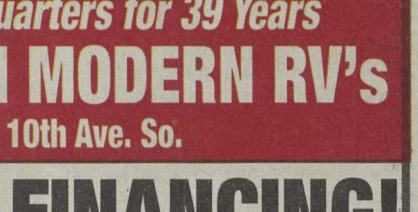


SALEM 22FSLE #691 23'7" SLEEPS 6 SOFA, DINETTE, DBL BED, FULL KITCHEN & BATH

$11,999

WINNEBAGO 331C #622 31' LARGE SLIDE-OUT, SLEEPS 8, REAR QUEEN BED, SOFA, DINETTE, OVER CAB BED, STEREO, TV

$59,998





WILDCAT 24RL #758 LARGE SLIDE-OUT, 25'9" QUEEN BED, REAR LIVING ROOM, TWO SOFAS, STEREO, LARGE LAVATORY

25,986

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New and Used Auto Loans

No Payments Until 2007

Rates as low as 6.00% APR* on Pre-Approvals

Automatically Entered in a Drawing For A $500.00 Gift Card

YOU CAN JOIN!**

**Applies if you live or work in Cascade, Choteau, Pondera, Judith Basin, or Teton County

*Annual Percentage Rate; O.A.C., Terms to 72 months, Purchase Transactions Only, Recreation & Seasonal Equipment Loans Are Also Eligible For These Terms, Limited Time Offer.

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Post
P-1
Feb. 25, '70

IRONICALLY SPEAKING — we've had a lot of conversation lately about the phrase, "in irons," as it applied to the Intrepid. Capt. S. J. Standahl reminds us the term dates back to windjammer days. When the wind put a sailing ship in such a spot that she couldn't tack, she was "locked in irons."

...represent dealer...

...the range within which the securities could have been sold (bid) and bought.

	Bid	Ask
BANK & TURST		
Bankam	59	59½
ErckCit	31	31⅜
stNBox	72	72¾
stPaPhl	57¼	58
rankCp	36½	37
elInPit	54	54¾
atNAm	28	30
cRacB	38	38½

	Bid	Ask
ConnGen	70½	71
ContALf	23	26
ContMtg	24¼	25
CritIns	65	66½
CrumFo	35⅝	36⅛
CrmF pf	56	57½
DurhLife	18¼	19
ERCCp	45	46
EastnLf	9	9¾

	Bid	Ask
IntersCp	11⅜	11⅞
Kemper	19	21
KyCenLf	7	8⅛
LACOP	12	13
LamarLf	33	33¾
LibNtLf	24¼	24¾
LifeFla	3¼	3¾
LifeInGa	20	22
LifeInv	21¼	21¾

	Bid	Ask
PaLife	49	49½
PeoplPr	3½	4½
PhilaLf	18	19
PiedmM	23	25
PrefRisk	19¾	20¾
Protect	15⅝	15⅞
ProvLfe	17	17
ProvLfA	64	65½
Pyram	14	15½
RanLife	19¾	20¾