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BY BRUCE SEELY, JOEL GARREAU, ALAN WEISMAN

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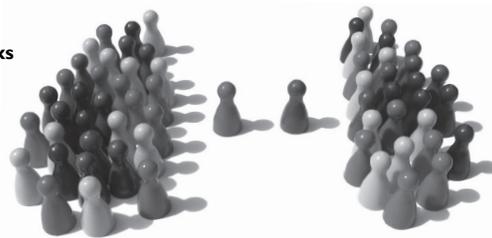
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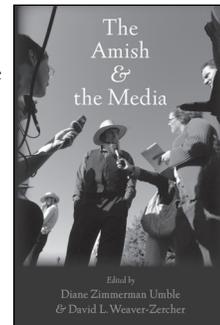


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edited by Diane Zimmerman Umble and David L. Weaver-Zercher

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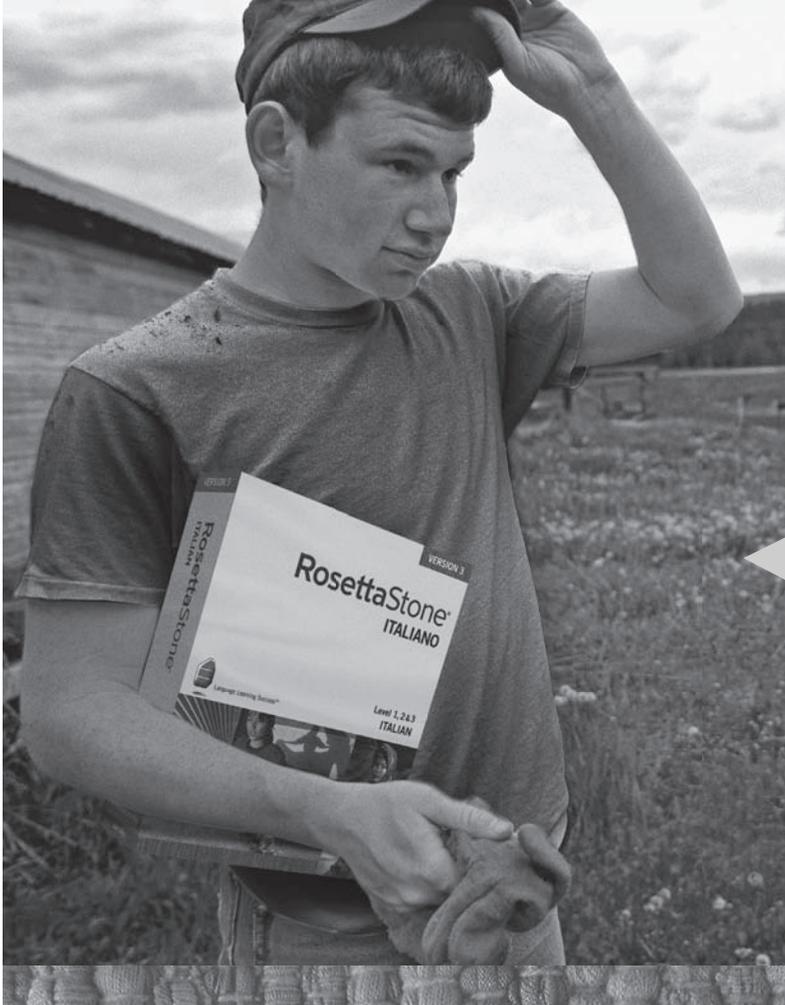
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*The views expressed herein are not necessarily those of the Woodrow Wilson International Center for Scholars.*

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# EDITOR'S COMMENT

## Whatever Does the Job

“The effect of the most perfect system of transportation is to reduce the distance not only between different places, but between different classes,” wrote the young French engineer Michel Chevalier after a visit to the United States in 1833. Chevalier’s observation is a reminder that the inert infrastructure that we so often take for granted—the national gristle of roads, bridges, wires—is in fact a powerful influence on our social, political, and economic existence.

In Chevalier’s day, Americans were thinly scattered over the land, and those most cut off from commerce and communication with the wider world were at a distinct social and economic disadvantage. His observation is quoted in a new book by historian David Walker Howe, *What Hath God Wrought* (reviewed on p. 99), which in part recounts America’s decades-long pitched battles over how best to build what were then called “internal improvements”—an issue as central to American politics in the first half of the 19th century as any but slavery. On one side were the Jacksonian Democrats, bitterly opposed to a significant role for the federal government in the construction of roads and canals, which they saw as a cause of high tariffs and economic change that could eventually undermine slavery. On the other side were the conservatives, following in the footsteps of Alexander Hamilton, who favored a muscular federal role in building infrastructure.

What a difference a few centuries make. Today, the political polarity has reversed, and it is conservatives who oppose a larger federal role in infrastructure development, liberals who favor it. Yet politicians’ occasional struggles over roads, mass transit, and other issues may obscure the fact that the United States long ago found many different ways to mix public and private action in order to meet national needs, from fresh water to Internet pipelines. To borrow from Joel Garreau’s article in our “Backbone” cluster, the best lesson history has to offer may be, “Whatever does the job, let’s do it. Now.”

—STEVEN LAGERFELD



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cooperative practice. (Although there are times when winning an argument rather than finding the truth is prized, that is not why most of us exchange arguments.)

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# LETTERS

## AFRICA'S FARMING REVOLUTION

G. PASCAL ZACHARY'S SUPERB article, "The Coming Revolution in Africa" [*WQ*, Winter '08], is a reminder of the forces that are shaping the African future and a vindication of 20 years of efforts to remove obstacles to individual initiative and collective action in rural areas. Unfortunately, the pace of change is still inadequate.

In the 1990s, the World Bank and the Food and Agriculture Organization suggested that agricultural productivity would grow by 4.5 percent per year if Africa were to meet its food requirements and build its export markets. The continent is almost there—3.7 percent from 2000 to 2005—but population growth is close to 3 percent in most countries, leaving little net progress.

Success is fragile. In southern Chad, farmers do not fertilize their major crop, cassava, if they live within sight of a road, because if it grows too high, army vehicles stop and soldiers steal the crop. Thus, farmers deny themselves some food and perhaps also a small surplus because the forces of order are spreading mayhem. For this reason, physical security, rights of redress, the rule of law, and human rights are as important as better seeds and cropping patterns for a dynamic farming sector.

Many of the current circumstances that are helping small farm-

ers gain confidence and income are the result of the much-debated and widely detested "structural adjustment programs" of the 1980s and '90s, which tried to shift the balance of economic power—or, as some economists put it, the internal "terms of trade"—toward rural areas. It is quite tragic that most African governments introduced such reforms reluctantly or incompletely, delaying the emergence of the local heroes Zachary describes so well.

**Robert Calderisi**

*Author, The Trouble With Africa (2006)*

*Montreal, Quebec*

ZACHARY'S ACCOUNT OF RURAL African farmers' experimentation and innovation illuminates a hopeful scenario for a continent more typically described with allusions to Joseph Conrad's *Heart of Darkness* and Thomas Malthus. But two gaps in his analysis stand out and deserve further attention.

The first missing piece is a consideration of how the changes he details in rural Africa compare to other agricultural revolutions. In Britain, for example, land enclosure, mechanization, and the development of a landless class of laborers contributed to the shift from an agrarian economy to industrialism by the 19th century. As readers of Charles Dickens well know, these changes triggered social upheaval, cultural trans-

formation, and widespread misery. Similar processes are under way in Africa, and, similarly, the benefits of this revolution are not shared equally by all Africans. The divisions between the rich and poor in rural regions continue to grow along the social pathways determined by years of colonial rule.

The second gap, which I found particularly striking given the article's examples of individual farmers and their production strategies, is the lack of any analysis of gender. Zachary asserts that "'a man with a hoe' remains an accurate description of nearly all who till the soil." Not so. "A woman with a hoe" is far more accurate. One cannot understand the dynamics of rural Africa, where husbands, fathers, and brothers own the land on which women grow food, without considering how agrarian change in Africa is gendered. This will, I think, be the major difference between the British agricultural revolution and the African one that Zachary envisions. The British revolution was about class; the African revolution, so far, has been about both class and gender. In many parts of Africa, cash crops for export (such as coffee, cotton, and cocoa) are typically produced by males, while women plant, tend, and sell crops for local consumption. Despite this reality, Zachary consistently emphasizes men and their ambitions.

The agricultural revolution in Africa isn't just about technical innovations in production and marketing,

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but about how people relate to one another across the boundaries of class and gender.

**Michael J. Sheridan**

*Assistant Professor*

*Department of Sociology and Anthropology*

*Middlebury College*

*Middlebury, Vt.*

IT IS GOOD TO READ AN ARTICLE about smallholders in Africa as upbeat as Zachary's. The endless focus on the crisis in African agriculture has come to be counterproductive, causing many to despair that farm production will ever keep up with the number of mouths to feed.

In the early postcolonial years, African leaders tended to take agriculture for granted and introduced price controls in vain attempts to keep food cheap for city dwellers,

who were expected to lead Africa's industrialization. The need for increased productivity was approached from a central-planning perspective, with extreme examples in socialist regimes such as those in Ethiopia and Tanzania. Even economies that were not centrally planned relied heavily on national development plans and state agencies. In practice, however, these regimes imposed unproductive overheads on producers, giving them less, not more, incentive.

The remedy was "structural adjustment programs" that were meant to make space for private enterprises to grow and take over the functions performed by government. This panacea was adopted far too quickly, leaving many services wanting because the private sphere was

not ready to move in quickly—or in some cases at all. The structural adjustment programs, in turn, went out of favor.

These repeated planning failures, most of which had been more or less imposed from outside Africa, led to the formation of the New Partnership for Africa's Development and its Comprehensive Africa Agriculture Development Program (CAADP) as instruments through which African leaders promote agricultural and rural development. The ethos of CAADP, unlike that of central planners of the past, is to support the kind of farming initiatives that Zachary describes.

It is not about telling agricultural producers, processors, or traders what is good for them, or trying to do it for them, but, rather, creating envi-



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Virginia Tech historian and Center fellow Matthew Dallek, whose research seeks to put contemporary debates on homeland security in historical perspective, recently has delved into primary sources, newspapers, and magazines from World War II. Today there are more research tools available than ever before. To help scholars such as Matthew navigate the potentially overwhelming resources at their fingertips, our dedicated library staff invest themselves in the topic at hand, identifying pertinent archives and books at the Library of Congress—the largest library in the world.

And being in Washington has other perks. What better way to learn about the Department of Homeland Security's development than by listening to Secretary Michael Chertoff's 2007 year-in-review address in the Wilson Center auditorium? For our scholars researching the Middle East, international trade, and European politics, what could be more valuable than hearing other recent speakers such as Turkish president Abdullah Gül and U.S. trade representative Susan Schwab?

The varieties of experience and expertise at the Center enrich everyone's individual projects, and fittingly it was Woodrow Wilson who famously quipped, "I use all the brains that I have, and all that I can borrow."

Meeting colleagues for a meal in the cafeteria, I never

know what kind of discussion I'm about to join. We have scholars researching issues ranging from how the Internet challenges liberal democracies to political representation in Latin America. Add a former adviser to six American secretaries of state, a veteran reporter for *The New Yorker*, and biographers of Mao Zedong and Wilson to the mix, and a fascinating lunchtime conversation is guaranteed. Many of our visiting scholars share my feelings. "The experience was extraordinary, both in facilitating my own research and writing and in exposing me to ideas and people from other countries and in other disciplines," historian Susan Hartman wrote when she left the Center to return to Ohio State University.

The exchanges here also provide a forum for differing viewpoints. Stick your head into a conference room or take a seat in the auditorium, and you will encounter more lively discussion and debate—cutting across ideological, cultural, and partisan lines—than you will hear almost anywhere else in Washington. I often tell friends of the Wilson Center that they will hear things they like and don't like in our meetings, but they will come away saying to themselves, "That is exactly how the dialogue of democracy should go forward." No doubt this is what prompted former *Washington Post* reporter David Ottoway to describe the Center as "a badly needed neutral meeting ground for scholars, politicians, and policymakers of all persuasions."

Most of our meetings at the Wilson Center are open to the public, and you don't need to be in Washington to enjoy them. You can watch lectures by prominent world figures online at our website ([www.wilsoncenter.org](http://www.wilsoncenter.org)), either live or previously recorded. The Internet also provides a gateway to our latest publications, whether they deal with U.S.-Mexican relations or reconstruction in Angola.

Each issue of *The Wilson Quarterly* offers a glimpse into the rich intellectual atmosphere our scholars help create, and gives you a sense of all the brains I'm fortunate to be surrounded by, and borrow from, every day.

LEE H. HAMILTON

*Director*



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ronments in which they can benefit from their own initiative, enterprise, and energy.

**Monty Jones**

*Executive Director*

*Forum for Agricultural Research in Africa*

*Accra, Ghana*

ZACHARY TRAVELS BY BUS, Jitney, and foot to find representatives of the millions of Africans who are pursuing new ways to increase farm production, provide educational opportunities for their children, and help turn around decades of economic deterioration. Had he looked, Zachary would have found similar news in Africa's cities. A growing number of entrepreneurs are taking advantage of new technologies and liberalized economic policies to develop businesses, and a burgeoning middle class is the result.

And yet, I have a nagging doubt in reading Zachary's account of these developments: The efforts to foster agriculture are not all new. Decades ago, aid agencies emphasized some of these same lower-cost techniques to improve yields. But when the aid ended, there was little lasting progress. Without governmental commitment to maintaining services, improving roads, reforming the economy, and, in some cases, opening borders, the benefits remained localized and soon disappeared. So what happens when, for example, Jeffrey Sachs's generously funded projects end? What will follow?

Some things have changed. Today, many African governments are indeed more focused on market reform, and there are several subregional arrangements that will open up trade across borders as well as domestically so that African farmers can reap the advantages of wider markets. But despite

their pledge to the African Union to spend no less than 10 percent of their budget on agriculture, few African governments have done so. Urbanization, as Zachary points out, has spurred agricultural growth. And he is right to cite the importance of China and India's growing interests in Africa's agriculture.

In the end, the promising spirit of innovation and initiative that Zachary witnessed will succeed on a broad scale if African governments continue in the direction of market reform and freer subregional trade agreements, if donor agencies agree to respond to droughts and other emergencies by buying more food from nearby rather than shipping it in, and if both donors and African governments invest in the infrastructure needed to open up more rural areas. When all of these factors fall into place, African farmers have shown they will respond with enthusiasm.

**Princeton N. Lyman**

*Adjunct Senior Fellow*

*Council on Foreign Relations*

*Washington, D.C.*

ZACHARY IS RIGHT THAT MUCH of the African countryside is prospering. But are we on the cusp of an economic revolution, as he suggests? I would argue that the jury is still out.

To be sure, rural sub-Saharan Africa is enjoying a boom, buoyed by the highest economic growth rates since independence. Much of the growth is more due to very favorable commodity prices and unusually good weather than it is to improved governance or better policies. It's not clear how long the current upswing will last. Dynamic, risk-taking farmers—like those Zachary interviewed—have always existed in the region. Yes, cell phones have had an enormous impact on African markets,

but their coverage of the countryside remains spotty at best. What else has really changed in recent years?

It is not just that too many African countries remain beset by scourges such as civil war and lawlessness, environmental degradation, and endemic diseases (not only AIDS, but also malaria and tuberculosis). Even in Cameroon and Uganda, which feature prominently in his essay, many of the old constraints on agricultural transformation have changed little in the last decade. Are farmers better served today than in the past by decent roads and access to credit? These are the prerequisites for economic growth.

In fact, the record is much more ambiguous than Zachary claims. Across Africa, smallholders remain ill served by their governments. Vice President Gilbert Bukenya in Uganda, the eloquent advocate for farmers Zachary features, is an exception.

Finally, Zachary might have mentioned the lamentable role of the West, whose donors have largely abandoned agriculture over the last two decades, and whose governments continue to preach free trade to Africa yet practice protectionism. Zachary mentions the promising growth of cotton production; he might have added that U.S. producers receive billions of dollars in government subsidies, and that the Bush administration has vowed to fight the World Trade Organization's ruling that the United States must stop these subsidies. In this area as well, one sees little change.

**Nicolas van de Walle**

*Director, Mario Einaudi Center  
for International Studies  
Cornell University  
Ithaca, N.Y.*

IT'S A PLEASURE TO READ GOOD news from Africa, in spite of the final poignancy. Readers should know that two books published last year, Paul Collier's *The Bottom Billion* and Alan Greenspan's *The Age of Turbulence*, posit less optimistic views. Zachary's tales—admittedly anecdotal—paint a brighter picture.

Zachary lauds market forces in aiding the improvements, but then turns around and applauds Gilbert Bukenya's protectionist duties on imported rice and suggests that "better farm policy" is required to continue the progress.

Almost any economist, regardless of ideology, would agree that such duties are a net negative. And most any reading of postcolonial African history suggests that a new government "policy" is not likely to advance the welfare of smallholders; any reported successes seem to be bottom-up.

Zachary's lack of skepticism in these matters makes me wonder whether the news he reports is as good as it seems—and whether he will be so hopeful after the effects of the new governmental policies become evident.

**Ron LaDow**

*San Francisco, Calif.*

## HOLES IN PAKISTAN'S POCKETS

SAMIA ALTAF FINDS AN AMUSING way to describe a painful situation ["Pakistan Picaresque," *WQ*, Winter '08]. For the last 15 years I have worked in the energy sector, trying to ensure that women benefit equally from new projects, and that the poor benefit as much as possible. As one of the "foreign experts" she describes, I have had similar experiences trying to figure out what can be done in impossible situations.

In India, where my team advised the government-run utilities to raise electricity prices substantially, subsidizing access for the poor was a hard sell. The utilities were nearly bankrupt, and the poor made up more than a third of the population. The "poverty reduction strategies" I was responsible for developing were always in conflict with pressure from lending agencies to demonstrate financial viability.

I agree with Altaf that the analysis of the social context of proposed initiatives is insufficient—foreigners generally do not understand the complexities of the local societies, and interventions are mainly decided on the basis of the donor's views of what is needed, rather than those of the partner organizations.

But they do try. Donor agencies put enormous effort into context analyses, "capacity assessments," and "results-based management," but it is difficult, if not impossible, to capture the complexities of a situation with management procedures such as these.

Another issue is the assumption that Western solutions are the ideal toward which everyone is aiming. The energy-sector projects I was involved in were meant to replicate Western systems and solutions in totally different settings. That was all well and good for the hardware—the equipment, wires, substations, and meters—but Western management and administration cannot be superimposed on existing systems that are completely different, with their own behavior patterns, intricate processes, and vested interests.

The donors try to ignore politics as much as possible, not wanting to enter the fray, but that only means they fail to appreciate the necessity and intricacies of the debates, even those about their own interventions.

What I have found heartening, in spite of difficulties such as those Altaf describes, is that some people do benefit in the end. Women who have been struggling by themselves for years realize that they can make changes when they form groups and speak out. I learned from one nongovernmental agency that it would begin to fight on behalf of the poor for access to modern energy services, a departure from its previous stance.

Maybe such small steps cannot justify the amount of money spent. But what is the alternative? Do nothing?

**Dorothy Lele**

*Kingston, Ontario*

SAMIA ALTAF'S ESSAY IS A BOLD attempt to explain the failure of international assistance to improve health care services in developing countries. It strikes a good balance, highlighting both the donors' lack of understanding of the social context in which they implement their programs and the structural challenges in Pakistan that prevent effective use of the foreign assistance.

One aspect the article does not emphasize is the catalytic effect such assistance has on corruption in the health care system. Donors do not evaluate or hold themselves and the recipients accountable for meaningful and measurable outcomes. The acquisition of equipment and staff relies on widespread nepotism and kickbacks, just as with any other public-sector endeavor in Pakistan. Because deliverables are defined as clinics built, equipment installed, and staff trained, rather than measurable health promotion and disease prevention, the loopholes for corruption remain open. Recruitment or delegation to a foreign-aided undertaking is considered lucrative by local civil

servants and project staff—a belief that encourages the use of bribes and political influence to get such appointments.

When foreign consultants and donor agency staff try to implement their plans amid this corruption, they opt for the less difficult and more pragmatic path of appeasing local politicians and high-ranking officials. They look the other way when obvious nepotism and mismanagement occur. In doing so, they strengthen and collude with the local exploitative system that benefits the rich and the powerful to the detriment of the poor and otherwise marginalized segments of the population.

While these facts are not new for those who, like Altaf, have personally observed the implementation of foreign assistance programs in developing countries, it is surprising how few taxpayers and policymakers in the donor countries are aware of these problems. The key to the success of foreign assistance in the health sector is not merely determined by how much money is given, or to whom it is given, but by developing accountability, curbing nepotism, and creating reliable auditing mechanisms. Without these safeguards, aid will continue to produce minimal results.

**Anjum Khurshid**

*Director, Health and*

*Behavioral Risk Research Center*

*School of Medicine, University of Missouri*

*Columbia, Mo.*

## THE SMALL WONDERS OF MICROCREDIT

CONGRATULATIONS TO *THE WILSON Quarterly* for publishing the fair and balanced article on microcredit by Karol Boudreaux and Tyler Cowen ["The Micromagic of Microcredit," Winter '08]. Though the authors refute the

idea that microcredit is a panacea for global poverty, they clearly demonstrate that it is an excellent way to empower the poor, especially women.

Poverty is a vast, complicated problem that will be solved in small steps. Microcredit is currently the best strategy available. Helping parents earn enough to send their children to school and improve their nutrition may not eliminate poverty overnight, but it will help families over time.

I differ with the authors on two points. First, I believe they neglect the importance of some of the services microcredit provides: business training, peer support, and health education that many clients receive at little or no additional cost. These resources may be more valuable to the borrowers than their loans. Second, the authors contend that high interest rates prevent borrowers from earning more. They incorrectly look to a comparison of business growth rates and interest rates as the relevant factor. The borrower benefits financially from the loan if the interest cost is less than the total of increased revenue and lowered expenses. In many cases, microloans increase profits by enabling the borrower to spend more hours at work, decrease the cost of goods by buying in bulk, and offer better inventory.

I agree with the authors that the promise of microcredit has been exaggerated by some proponents. And, like the authors, I also believe that microcredit offers real promise to improve the lives of hundreds of millions of individuals trapped in the web of poverty.

**Phil Smith**

*Coauthor, A Billion Bootstraps: Microcredit, Barefoot Banking, and the Business Solution for Ending Poverty (2007)*

*Tulsa, Okla.*

# FINDINGS

BRIEF NOTES OF INTEREST ON ALL TOPICS

## Presidential Poetasters

*Verse adversity*

Two ex-presidents published volumes of poetry, according to the Library of Congress. Both men were ousted from office after one term, and both discovered that literary critics can be even less charitable than voters.

When *Always a Reckoning, and Other Poems* appeared in 1995, *The New York Times*' Michiko Kakutani judged former president Jimmy Carter a "mediocre poet," whose "well-meaning, dutifully wrought poems . . . plod earnestly from point A to point B without ever making a leap into emotional hyperspace." Kakutani observed that "Mr. Carter's own life is his favorite subject." His poems include an account of his mother's visit to India, "Miss Lillian Sees Leprosy for the First Time," and his recollections of a strike by farm workers, "The Day No One Came to the Peanut Picker."

Carter got off easy compared to a predecessor in poesy, John Quincy Adams. *Dermot MacMorrough, or The Conquest of Ireland: An Historical Tale of the Twelfth*

*Century in Four Cantos* (1832) is "a moral tale," Adams explained in the preface, "teaching [readers] . . . the virtues of conjugal fidelity, of genuine piety, and of devotion to their country."



Make peace, not poetry.

Reading *Dermot MacMorrough* brings on "yawns innumerable, and a drowsiness most oppressive," wrote an unnamed, untamed critic in *New England Magazine*. "The whole affair is stale, flat, and unprofitable, without one single gleam of genuine poetry. . . . If [Adams] sometimes rises into strains that would do credit to the poetical contributor to a country newspaper, he sinks every now and then into a bathos that would disgrace a school-boy."

After quoting a few stanzas, the reviewer acknowledged that

"a work of genius cannot be judged by extracts, but *Dermot MacMorrough*, we are very certain, is one of that kind of fabrics which may safely enough be bought and sold by sample."

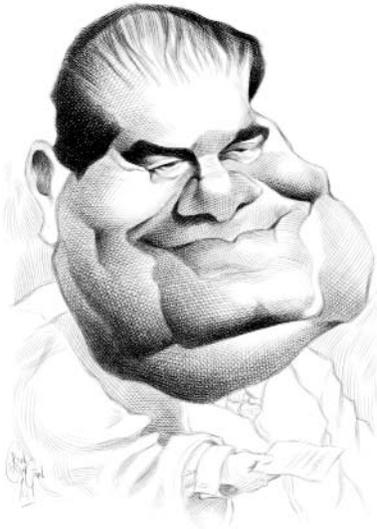
How did *Dermot MacMorrough* come to be published? The answer, the critic said, appears on the title page: "It is that short sentence of four words—*By John Quincy Adams*—to which *Dermot MacMorrough* will be solely indebted for all the attention it will receive."

Inspiration also struck George Washington, Thomas Jefferson, and James Madison, among others. But they had the good sense to let their poems remain unpublished.

## Bench Mouth

*Justice is a gas*

When a justice japes, Jay Wexler is there. Wexler, a law professor at Boston University, pores over Supreme Court transcripts and counts the number of times each justice makes a remark that's followed by the notation "(Laughter)." During the court's 2004–05 term, Antonin Scalia provoked



Court jester

the most laughs and Clarence Thomas the fewest. In *Yale Law Journal's* online companion, [www.thepocketpart.org](http://www.thepocketpart.org), Wexler reports the stats for 2006–07: Scalia and Thomas retain their positions as funniest and least funny justices.

Might the bon mot barometer reflect the number of times each justice speaks? During almost every oral argument, Scalia parries with lawyers while Thomas sits silent.

Wexler readily concedes the limits of his study. In fact, he characterizes it in terms seldom used by scholars, at least in regard to their own work: “profoundly flawed in almost every respect.”

## UN Says Potato

### *Tuber time*

In his meditation on mortality, *The Thing About Life Is That One Day You'll Be Dead* (Knopf), David Shields observes that “one-

quarter of vegetables eaten in America are french fries.” At least this year, Americans have an excuse: 2008 is the United Nations International Year of the Potato. The website [www.potato2008.org](http://www.potato2008.org) offers statistics, history, folklore, and a list of upcoming meetings. If you happen to be in Beijing in early April, don't miss the Third International Late Blight Conference.

## The Fast Lane

### *John Winthrop's guide to weight loss*

No french fries for the Puritans. Back then, Frederick Kaufman writes in *A Short History of the American Stomach* (Harcourt), fasting fit every occasion. Puritans fasted against storms, epidemics, insect infestations, and drunkenness. “In 1663 they fasted against the mildew on the wheat.” And they fasted against famine—in other words, “fasted against hunger.”

## Porn Patrol

### *OSHA versus XXX*

California's Department of Industrial Relations, known as Cal/OSHA, wants to clean up porn. The agency is applying its biohazard rules, developed for hospitals, to the sets where adult movies are filmed. Porn makers are trying to overturn the rules. If they fail, performers in some adult videos will be accessorizing not just with tattoos and piercings but with rubber gloves and safety goggles.

## Lost Patients

### *Seeking the truth within*

Even the most proficient physician can stumble. “We've all heard about cases in which a patient presumed to have died from acute myocardial infarction was discovered at autopsy to have had an aortic dissection,” write Kaveh Shojania and Elizabeth Burton in *The New England Journal of Medicine* (Feb. 28, 2008). You don't have to know infarctions to take their point: We need more autopsies.

Nonforensic autopsies are conducted when there's no reason to suspect foul play—think *House* rather than *Law and Order*. Like forensic autopsies, though, nonforensic ones can reveal previously unsuspected killers. In up to 10 percent of cases, nonforensic autopsies uncover major misdiagnoses, the kind that can hasten the end.

Unfortunately, nonforensic autopsies are becoming rare. An organization that accredits hospitals no longer requires them. Medicare doesn't cover them. Because of high-tech diagnostic testing, doctors wrongly think they have nothing to learn from them. Doctors also equate misdiagnosis with malpractice, a view that the authors term a “misperception,” though they don't elaborate.

Shojania and Burton recommend regional centers where nonforensic autopsies would be routine. Doctors might still bury their mistakes, but not as quickly.

## Short Shift

### *Melancholy baby*

Randy Newman's vapid lyric from the 1970s, "Short people got no reason to live," turns out to reflect a somber truth: Short men kill themselves at a disproportionate rate. According to a study of 1.3 million Swedish men, published in 2005, the probability of suicide falls as stature rises. For every additional five centimeters (two inches) of height, men's suicide rate decreases by nine percent.

A new study suggests that the likelihood of suicide can be calculated starting at birth. Ellenor Mittendorfer-Rutz and colleagues from Sweden's Karolinska Institute studied data on nearly 319,000 Swedish men born between 1973 and 1980 (Swedes keep good records). They report their results in the *Journal of Epidemiology and Community Health* (Feb. 2008).

More accurately than a man's adult height, his body length at birth correlates with the probability that he will attempt suicide, especially by violent means. (The 2005 study looked

at completed suicides; the 2008 study looks only at attempts.) The connection holds even for short babies who grow into men of average height. For any adult height, men who were undersized babies are likelier to try to kill themselves.

Other studies have found below-average levels of serotonin in suicidal people. Mittendorfer-Rutz et al. suggest that undersized babies may have underdeveloped serotonin metabolisms. More research is needed, but for now, a short start seems to be associated with a self-shortened life.

## The Book of Numbers, Revised

### *Ranks of the mostly faithful*

In 1955, Will Herberg titled his landmark study of American religion *Protestant Catholic Jew*. Today, he'd

have to call it *Protestant Catholic Unaffiliated Jew Mormon*. According to the Pew Forum on Religion and Public Life, 51.3 percent of Americans call themselves Protestant, 23.9 percent Catholic, 16.1 percent unaffiliated, 1.7 percent Jewish, and 1.7 percent Mormon.

Muslims now make up 0.6 percent of the population, falling between Hindus (0.4 percent) and Jehovah's Witnesses (0.7 percent), but they're on the ascent. A quarter of adult Muslims are between 18 and 29 years old, with another 40 percent between 30 and 49. (The same is true for Mormons.) Most mainline Protestants and Jews, by contrast, have reached AARP status. In both groups, just over half of adherents are past 50 years old, which they'd better hope hath truly become the new 40.

## No-No Names™

### *My word!*

Trademark laws stifle creativity and free expression. Or do they? To find out, check the trademark records at the U.S. Patent and Trademark Office:

**Trademark:** registered in 1999, for laboratory cabinets

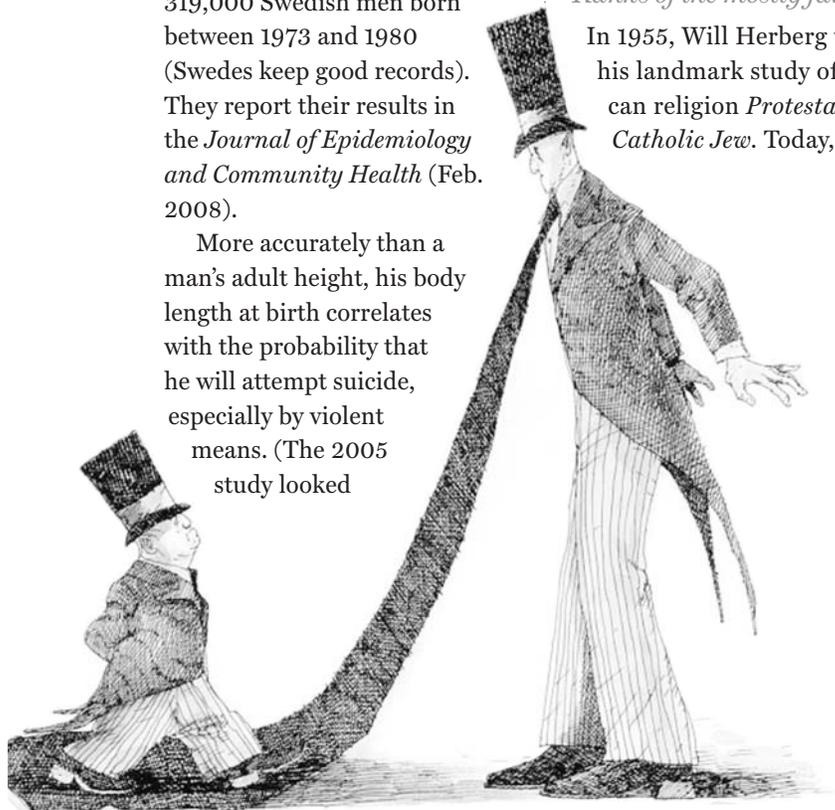
**Laws:** application filed in 2005, for public warning systems

**Stifle:** registered in 2004, for T-shirts

**Creativity:** registered in 2008, for light bulbs

**Free expression:** application filed in 2007, for wrinkle cream

—Stephen Bates



# Bad Rap On the Schools

*Bad schools are not going to sink the American economy. Despite what the headlines say, U.S. students fare well in international comparisons. It's the schools serving the poor that demand our attention.*

BY JAY MATHEWS

OH, LOOK. THERE'S A NEW FILM THAT PORTRAYS American teenagers as distracted slackers who don't stand a chance against the zealous young strivers in China and India. It must be an election year, when American politicians, egged on by corporate leaders, suddenly become indignant about the state of America's public schools. If we don't do something, they thunder, our children will wind up working as bellhops in resorts owned by those Asian go-getters.

The one-hour documentary, conceived and financed by Robert A. Compton, a high-tech entrepreneur, follows two teenagers in Carmel, Indiana, as they sporadically apply themselves to their studies in their spare time between afterschool jobs and sports. The film, called *Two Million Minutes*, cuts to similar pairs of high schoolers in India and China who do little but attend classes, labor over homework, and work with their tutors. *Two Million Minutes* has

JAY MATHEWS is an education reporter and columnist at *The Washington Post*. His latest book is *Supertest: How the International Baccalaureate Can Strengthen Our Schools* (2005). His next book, *Teach, Baby, Teach*, about the founders of the KIPP charter schools, will be published early next year.

become a key part of the ED in '08 campaign, a \$60 million effort by Bill Gates and other wealthy worriers to convince the presidential candidates to get serious about fixing our schools.

Most of the time, I cheer such well-intentioned and powerful promoters of academic achievement. I have been writing about the lack of challenge in American high schools for 25 years. It astonishes me that we treat many high schoolers as if they were intellectual infants, actively discouraging them from taking the college-level Advanced Placement and International Baccalaureate courses that would prepare them for higher education and add some challenge to their bland high school curricula. I share what I imagine is Bill Gates's distress at seeing Carmel High's Brittany Brechbuhl watching *Grey's Anatomy* on television with her friends while they make half-hearted stabs at their math homework.

Yet it is one thing to say that teenagers don't devote enough time to their studies and another to claim that American schools have fallen behind those in the rest of the world, crippling U.S. economic com-

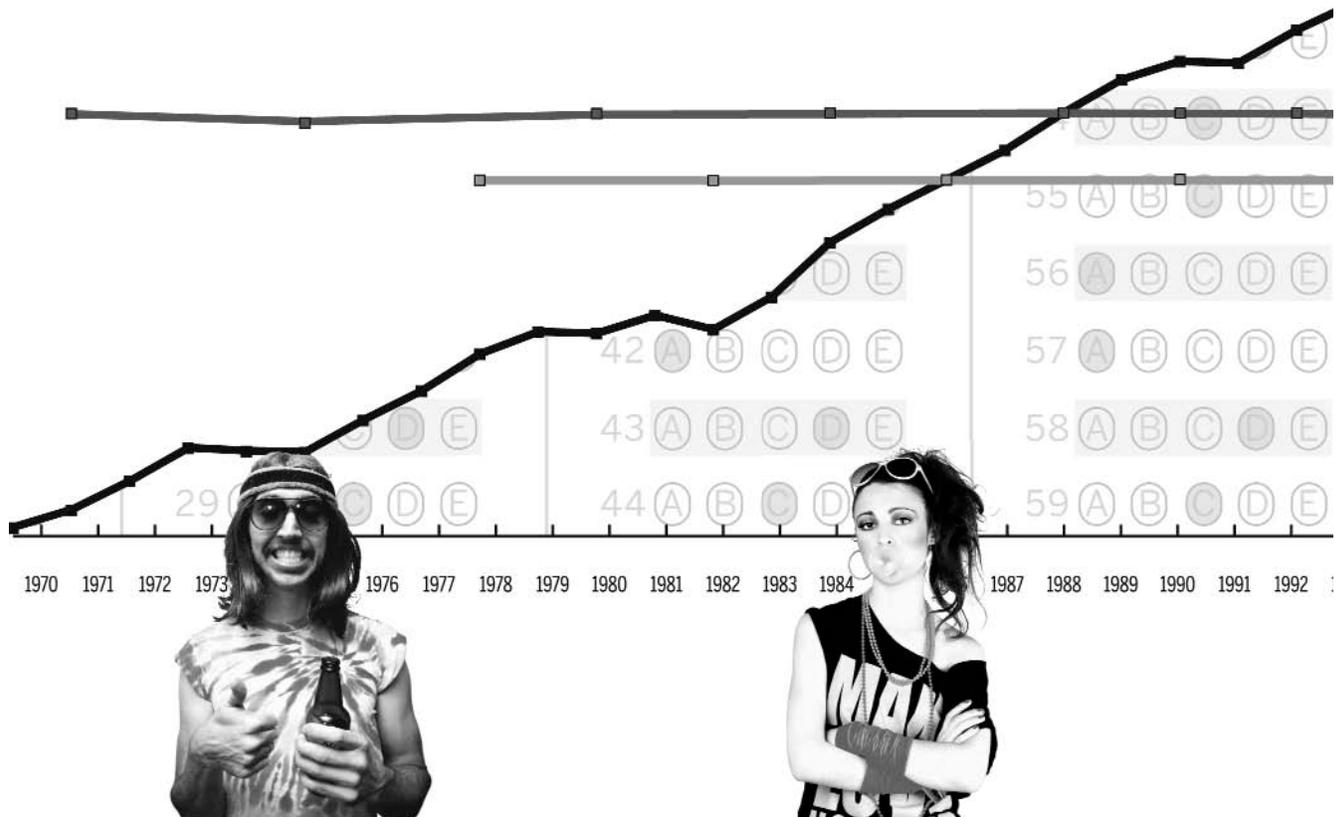
petitiveness. That is the argument of *Two Million Minutes* and a good number of very intelligent people, such as former IBM chief Louis V. Gerstner Jr., *New York Times* columnist Thomas L. Friedman, and former Colorado governor and Los Angeles school superintendent Roy Romer. Their misunderstanding is based on some truths: U.S. businesses are having trouble hiring skilled people and must often go abroad to find more. American high schools have, on average, shown no significant improvement in math and reading in the last 30 years. But the larger truth is that American education is vastly superior to the stunted, impoverished school systems of China and India, which, despite impressive surges of economic growth, are still relatively poor, developing countries.

Making voters angry about education by citing foreign threats is certainly one way to focus attention on the schools, but the flimsy argument is sure to collapse as intelligent people discover the holes in it. It would be better if those of us who want to improve the

schools went into this debate armed with the most potent argument: More than 50 years after *Brown v. Board of Education* (1954), we still have separate and unequal education.

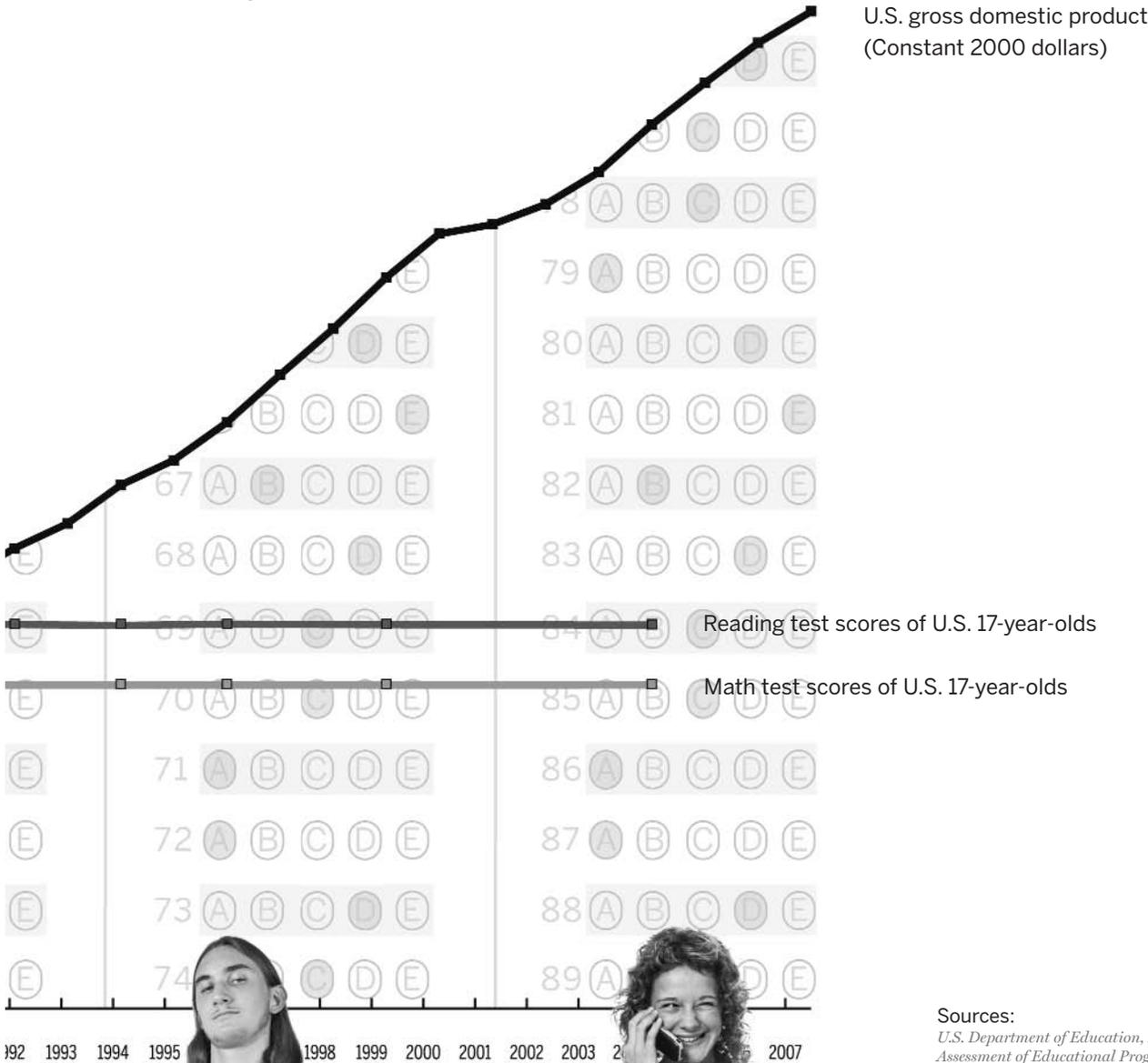
Our best public schools are first-rate, producing more intense, involved, and creative A-plus students than our most prestigious colleges have room for. That is why less-known institutions such as Claremont McKenna, Rhodes, and Hampshire are drawing many freshmen just as smart as the ones at Princeton. The top 70 percent of U.S. public high schools are pretty good, certainly better than they have ever been, thanks to a growing movement to offer Advanced Placement and International Baccalaureate courses.

Our real problem is the bottom 30 percent of U.S. schools, those in urban and rural communities full of low-income children. We



# A Correlation That Flunks

While student test scores, as measured by the National Assessment of Educational Progress, have gone nowhere since the 1970s, the U.S. economy has soared.



Sources:  
*U.S. Department of Education, National Assessment of Educational Progress*  
*U.S. Department of Commerce, Bureau of Economic Analysis*

have seen enough successful schools in such areas to know that many of those children are just as capable of being great scientists, doctors, and executives as suburban children are. But most low-income schools in the United States are simply bad. Not only are we denying the children who attend them the equal education that is their right, but we are squandering almost a third of our intellectual capital. We are beat-

600,000 engineers in the previous year, India graduated 350,000, and poor, declining America could manage only 70,000. The cover of *Fortune* showed a buff Chinese beach bully looming over a skinny Uncle Sam. The headline said, "Is the U.S. a 97-Pound Weakling?"

This argument became a favorite target for collectors of bad data, including Carl Bialik, *The Wall*

*Street Journal's* "Numbers Guy," educational psychologist and author Gerald W. Bracey, and a Duke University research team led by Vivek Wadhwa. The source of the China numbers seemed to be the *China Statistical Yearbook*, a Chinese government publication, which said that the country

**THOSE WHO RAISE HYSTERICAL  
alarms about American schools usually  
overlook the complexities involved in inter-  
national comparisons.**

ing the world economically, but with one hand tied behind our back.

**A**s even some of the experts who appear in *Two Million Minutes* note, the notion that the United States is losing the international economic race is implausible. China and India may be growing quickly, but they remain far behind and are weighed down by huge, impoverished rural populations. Both countries are going to continue to send many of their brightest young people to study at U.S. universities. Stupidly conceived and administered immigration laws give many of these foreign students little choice but to leave once they receive their degrees. Given the chance, many more are likely to stay in the United States, where the jobs pay better; creativity in all fields, including politics, is encouraged; and—another blow to education critics—the colleges their children would attend are far better and more accessible.

Most commentary on the subject leaves the impression that China and India are going to bury the United States in an avalanche of new technology. Consider, for example, a much-cited 2005 *Fortune* article that included the claim that China turned out

644,000 engineering graduates in 2004. But a subsequent McKinsey Global Institute report said that about half of those "engineers" would be no more than technicians in the United States. Bialik could not find a source for the 350,000 Indian engineers, but National Science Foundation officials told him that the real number was unlikely to be anywhere near that.

In a 2005 report, the Duke researchers concluded that the United States produced 137,437 engineers with at least a bachelor's degree in the most recent year, while India produced 112,000 and China 351,537. "That's more U.S. degrees per million residents than in either other nation," Bracey said in *The Washington Post*. Yet he found the discredited numbers still presented as fact by Secretary of Education Margaret Spellings, Secretary of Commerce Carlos M. Gutierrez, and Senator John W. Warner (R-Va.).

The *Fortune* article belongs to an emerging genre of news stories that raise hysterical alarms about the deficiencies of American education in international comparisons while completely overlooking the complexities involved in such studies.

In "More Than a Horse Race" (2007), Jim Hull, a policy analyst at the Center for Public Education, which is affiliated with the National School Boards

Association, analyzed four major studies of school achievement around the world. When Hull looked carefully at the numbers, he found that the United States did much better than the headlines suggest. In reading, only three nations' students did significantly better than their U.S. elementary and high school counterparts. "The reading performance of U.S. fourth graders was particularly strong," Hull said. "They scored above the international level . . . while our 15-year-olds scored slightly above the average." In science, fourth and eighth graders were above the international average, and only three countries did significantly better than the United States at the elementary school level. (It is worth noting that the studies Hull examined did not include India and China, in part because schooling is so minimal for so many children in these two countries that their performance isn't comparable.)

Hull also examined the frequent charge that American students fare well in international comparisons at earlier ages but fade as they enter their teen years. Some studies did show U.S. fourth graders doing relatively well, eighth graders about average, and high school students below average. But when the American Institutes of Research, a Washington-based think tank, did a more careful, apples-to-apples comparison, making sure the students were actually at the same grade level, those differences disappeared.

Bracey has detected the precise flaws that warp international comparisons. The Trends in International Mathematics and Science Study (TIMMS) of 1999, for instance, seemed to show that American high school students were far behind in advanced

math. But the alarming news accounts that followed the study's release—and the politicians who echoed them—failed to note an important caveat. A significant portion of the U.S. test takers, unlike the overseas students, had not yet gotten beyond precalculus. The U.S. TIMMS administrators included those students in their sample because, one told Bracey, "we just wanted to see how they'd do." They had not concerned themselves with how the results might look in the newspapers. When the TIMMS experts later re-analyzed the data, comparing overseas students only to American high schoolers who had taken Advanced



Placement calculus, the United States did much better. That news, however, wasn't widely reported.

Bracey found other differences that distorted international comparisons. In Europe, many teenagers who hold jobs are tracked into nonacademic schools, but American youngsters commonly combine traditional school and work. Bracey noticed that 55 percent of the Americans tested in the TIMMS study reported working more than 20 hours a week, the point at which, research shows, after-school jobs begin to hurt academic performance. Few European students seem to devote as much time to after-school jobs. In Sweden, the only country for

which Bracey found hard data, only 16 percent of students worked more than 20 hours per week.

There is, in any event, scant evidence that test scores have much to do with national economic performance. In the late 1980s, when Japan still seemed on its way to becoming the world's economic superpower, U.S. newspapers published glowing stories about the lofty test scores achieved by Japanese students and suggested that failures of American public education had helped bring on bad times in the United States. By 1998, despite the lack of any significant change in math and reading scores, the U.S. economy was back on top. The Japanese still had good schools, but the bottom had dropped out of their economy (which still hasn't fully recovered). No story.

Robert J. Samuelson, a columnist for *Newsweek* and *The Washington Post*, analyzed the disconnect between test scores and economic growth in a column reprinted in his 2001 book, *Untruth: Why the Conventional Wisdom Is (Almost Always) Wrong*. Samuelson told of the computer guru at *Newsweek's* Washington bureau who had an English degree but found, through a series of jobs that taught him new skills, that he had become a technological expert indispensable to Samuelson and his colleagues. "People don't learn only at school," Samuelson concluded. "If they did, we'd be doomed. In isolation, test scores hardly count. What counts—for the economy, at least—is what people do at work. . . . On the job, people learn from supervisors, mentors, coworkers, customers and—most important—experience. One Labor Department study estimates that about 70 percent of training in the workplace is informal. Culturally, this is America's strong suit." What keeps the American economy so productive, Samuelson said, is its flexibility. American companies "have more freedom to set pay rates, hire and fire, and alter work practices."

Other countries have job training too. The Germans are praised for bringing teenagers to a technical level that makes them valuable in the workplace right after high school. But the U.S. system excels all others in allowing enough freedom for people to flounder and fail and change jobs until they find the niche where their talents are put to best use. It's dis-

orderly and unbusinesslike, but it works.

American schools have the same ability to innovate on the run, even if not as freely as one might wish, and foreign educators have begun to realize that they may have something to learn from them. Some U.S. schools now regularly host visiting educators from China, Singapore, and Japan, who want to know how American teachers are able to produce such creative students. They have noticed that American schools produce Nobel Prize winners, and theirs don't. The Chinese have been particularly impressed by the fact that every Nobel laureate of Chinese descent was educated outside China.

None of this is to say that American schools don't have many flaws. But their worst failure is that they betray so many of America's talented young people. The few inner-city schools that are successfully raising the achievement levels of low-income children don't worry about beating the Chinese and the Indians. Their foes are the apathy and hopelessness that lead many young Americans, and their parents, to think they have no chance of getting to college or finding a good job. Yet the success stories show that we can provide these children the education they deserve. It takes, among other things, longer school days and more careful selection and training of teachers and principals. And it takes a commitment to deliver on the American promise of justice and equality.

The politicians and business executives who rail about foreign competition are aware of the needs of America's educationally dispossessed children, but they don't talk about them much. That wouldn't win them as much attention from the news media, and it wouldn't sell as many books. We need a *Two Million Minutes* that tells a different story, about students who are striving against the odds to make their way to academic success at charter schools in places such as Harlem, Anacostia, and Oakland. That would turn the debate in a more realistic direction and illuminate our real education challenge—not beating economic threats from abroad, but beating our doubts about our ability to help the American children who need it most. ■

# Indian Ocean Nexus

*The Atlantic and Pacific now dominate the world's politics and trade, but the Indian Ocean is emerging as a new locus of power that increasingly unites China, India, the Middle East, and Africa.*

**BY MARTIN WALKER**

THE SEAS HAVE TRADITIONALLY BEEN THE HIGHWAYS of trade, enabling the prosperity that tends to follow. From ancient times, the Mediterranean Sea facilitated the exchanges that nurtured the precocious civilization of Greece and fed Rome, then carried the Crusaders abroad and enriched Venice and Genoa. Later the Atlantic became the great highway of trade that fed the explosive growth of North America, and more recently trade across the Pacific has become the most lucrative of all. Now there are signs that the Indian Ocean is taking its place in this maritime and commercial tradition, and also in the strategic rivalry that usually accompanies the generation of the wealth and resources that trade brings.

The Indian Ocean laps the coasts of Africa and India, of Southeast Asia and the Persian Gulf states, of Indonesia and Australia. It flows into two of the great chokepoints of world commerce: the Red Sea, and thus the Suez Canal, and the Strait of Malacca, off Singapore, through which pass a thousand ships each week. Thanks to the thirst of China, Japan, and South Korea for the oil the tankers bring, the strait hosts close to a quarter of all world trade.

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The Indian Ocean is not new to the trading game. There are potent and even somber historical memories along its shores, from the Arab slave trade down the East African coast to Zanzibar and beyond, to the celebrated 15th-century oceanic explorations of the Chinese admiral Zheng He during the Ming dynasty. He was far from the first to exploit the Indian Ocean's potential. Some 1,500 years ago, Chinese pilgrims brought back Buddhist scriptures and sutras from India, and the Muslim explorer Sa'ad ibn Abi Waqqas, an uncle of Mohammed, reached China and established the first mosque there in the seventh century. China exported its porcelain and tea to the Arab world, and the small ports of what we now call the Persian Gulf sent pearls and gold to the markets of India and China.

But the trade that is now flourishing across the Indian Ocean is altogether different, in scale and in range of products, and in its economic and strategic implications. It is different above all in the flows of money and investment that are now binding the Indian Ocean nations and China into a potential new hub of the global economy. We might call it CHIMEA, for China, India, the Middle East, and Africa.

Like all of the great surges of trade in history, the explosion of Indian Ocean commerce is based on mutual needs. China and India need energy supplies from the

Persian Gulf states and oil and raw materials from Africa, and Africa needs the financial resources that the gulf states are accumulating in unprecedented quantities. And now that India has become a net food importer once again, China and India and the Middle East all have an interest in developing African agriculture as perhaps the last great untapped food resource of a world whose population looks set to grow from today's 6.5 billion to 9.1 billion by 2050.

**TWO OUT OF EVERY three people  
may soon live in the lands of the emerging  
Indian Ocean nexus.**

More than half of the world's population now lives in the CHIMEA countries, and if current demographic trends continue, the region will by 2050 account for two out of every three people on the planet. By then, according to Goldman Sachs projections, India could be the world's largest economy and China the second largest. Certainly, the current 11 percent of global gross domestic product produced by the CHIMEA countries will have grown dramatically.

**T**he combination of Middle Eastern energy and finance with African raw materials and untapped food potential and Indian and Chinese goods and services looks to be more than just a mutually rewarding three-way partnership. Wealth follows trade, and with wealth comes the means to purchase influence and power. Just as the great centers of Europe clustered first around the Mediterranean Sea until the greater trade across the Atlantic and then the Pacific produced new, richer, and more powerful states, so the prospects are strong that the Indian Ocean countries will develop greater influence and ambition in their turn. In the emergence of CHIMEA as a new factor in global commercial affairs, we may also be seeing the future contours of the world's geopolitical system.

Moreover, if one considers most of the projected growth rates for India and China, the CHIMEA connection appears likely to strengthen throughout this century. It could become the catalyst that finally hauls Africa from underdevelopment and poverty. Indeed, the surge of economic growth in sub-Saharan Africa, running more than five percent annually in the past several years, owes a great deal to Chinese, Arab, and Indian trade and investment. We are finally seeing

that expansion of South-South commerce that has been the dream of developing-world economists and political leaders—wary of the implicit exploitation they suspected would come from the North-South relationship—since the 1955

Asian-African summit at Bandung, Indonesia, in the early days of decolonization.

Each year, the United Nations Conference on Trade and Development (UNCTAD) publishes *World Investment Report*, an authoritative study of the patterns of investment that flow through the global economy in much the same way—and as vitally—as blood flows through the human body. The UNCTAD conferences of the 1970s provided the most prominent forum for complaints about North-South capital flows and the need for more South-South cooperation, so there was a discernible note of satisfaction in the most recent UNCTAD report. It found that South-South foreign direct investment (FDI) “has expanded particularly fast over the past 15 years. Total outflows from developing and transition economies (excluding offshore financial centers) increased from about \$4 billion in 1985 to \$61 billion in 2004; most of these were destined for other developing or transition economies. In fact, FDI among these economies increased from \$2 billion in 1985 to \$60 billion in 2004 [flowing] primarily from Asia to Africa.”

Although the United States, Japan, Britain, France, and Germany are home to 73 of the world's top 100 transnational corporations, those based in the developing world are also making their mark. In 1990, only 19 transnational corporations from developing countries were among the *Fortune* top 500 global firms, but 47 were in 2005.



In 2006, India and China ceremonially reopened their border crossing at the Nathu La Pass, a landmark of the ancient Silk Road that had been closed since the 1962 border war. Political tensions have eased even as the two powers increasingly compete for trade and influence in the Indian Ocean basin.

This change has come with remarkable speed, fueled by the sudden collision of two separate but connected trends—the acceleration of economic growth in China and India and the surge in energy prices that followed the onset of the Iraq war. The oil and gas export revenues of the Organization of the Petroleum Exporting Countries (OPEC) member states more than tripled in four years, from \$210 billion in 2002 to a record \$649 billion in 2006. And just over \$505 billion of OPEC's swollen 2006 revenues went to the organization's Arab members. Saudi Arabia alone earned \$194 billion from petroleum exports, according to OPEC's *Annual Statistical Bulletin*. This was the period when China crept up on Japan as the world's second-biggest oil importer, after the United States. The Chinese appetite more than doubled, while India's imports of crude oil tripled. In four brisk years, China and India alone increased global oil demand by 150 million tons, or 1.1 billion barrels.

With that kind of extra demand, prices naturally soared, and Arab revenues grew in consequence. The result, according to the Hedge Fund Research Group, is that the potential Middle Eastern capital available for investment is more than \$4 trillion—close to the total size of Japan's annual economic output. Much of this money is under direct state control, rather than in private hands, although the boundaries between private family wealth and state holdings tend to be blurred in Arab countries such as Saudi Arabia and the United Arab Emirates. The Abu Dhabi Investment Authority is almost certainly the largest single investing entity; this sovereign fund is worth \$875 billion, according to the investment bank Morgan Stanley.

Most of these Arab funds are invested in traditional Western vehicles such as Citibank and Airbus. Some, such as P&O Ports, have been bought outright. Vast sums are also invested at home. The current Saudi state budget, for example, calls for outlays of \$665 billion over the next



Thousands of years ago, traders in ships hugging the shore of the Arabian Sea plied the waters between India and the Middle East. Later travelers brought ideas, such as Islam, which spread to the subcontinent and Indonesia. Today, oil, investment, and migrants are creating new links across the Indian Ocean.

three years. Six new cities are under construction. The largest, King Abdullah Economic City, on the Red Sea coast near Jeddah, will have a new port equivalent in size to Rotterdam, 150,000 new dwellings, universities, industrial parks, and a financial center. Even if these ambitious projects are successful, they will barely make a dent in the explosive growth of the labor force, which, on the strength of births already registered, will more than double, to 15 million males of working age, by 2020.

**B**ut a careful analysis of recent Arab investment decisions reveals a new trend: a striking willingness to invest in Asia and, in particular, in other CHIMEA countries. Arab money is pouring into Asia, especially into predominantly Muslim countries, where Arab capital has been heavily committed to the development of banks that comply with Islamic law's prohibitions against interest payments. Arab companies have also been prominent in the energy sector, property

investments, and mobile telephony, three fields where they have considerable experience.

Trade and investment between India and the Arab countries has more than trebled, from \$7.5 billion in 2001–02 to \$24 billion in 2005–06, and is expected to reach \$55 billion by 2010. This excludes the oil trade as well as the annual \$20 billion sent home in remittances from the four million Indian workers in Saudi Arabia and the gulf states.

During a state visit to India last year by King Abdullah, Prime Minister Manmohan Singh opened the door to Saudi capital for Indian infrastructure projects. Now the fourth-largest recipient of Saudi oil, after Japan, the United States, and China, India secured a Saudi commitment to cofinance a refinery project with India's state-owned energy firm. India's Reliance Group will, in turn, invest in a refinery and petrochemicals project in Saudi Arabia. The king signed an ambitious "Delhi Declaration" that amounted to a broad strategic partnership stressing

energy and economic cooperation as well as joint efforts to fight terrorism.

The Saudi monarch flew to India directly from China, where he had signed an energy cooperation agreement providing for joint investment in oil, natural gas, and mineral deposits, and invited Chinese investors to take advantage of his country's privatization program and invest in the growing Saudi private sector. Already building—with Kuwait and other OPEC members—an \$8 billion refinery complex in Guangzhou, the Saudis have held regular political consultations with Beijing since 2004, when Sinopec, the Chinese state energy company, was given rights to explore for gas in Saudi Arabia's vast Empty Quarter. Although nervous about separatist movements in its western provinces, China agreed that the Saudi Development Bank could fund a large urban development project in the traditionally Muslim city of Aksu.

The Arab investment in Asia is logical, given Asia's stunning growth rates. The real surprise is elsewhere. The Asia-Africa Business Forum meeting in Dar es Salaam early in 2006 symbolized a new investment interest in Africa. Dubai Ports World has spent \$2 billion to buy Cape Town's port and waterfront, and is investing another \$1 billion in further developments. Deals announced in the past year included a \$500 million investment by Mobile Telecommunications in the Republic of Congo and another \$500 million property venture by Dubai Ports World in Kinshasa.

India, with a diaspora of 2.8 million ethnic Indians in Africa, is taking advantage of these historic connections and its British Commonwealth links to strengthen its ties and to negotiate new energy supplies. It helped establish Nigeria's military academy, and almost all senior officers of Ghana's military have attended Indian training courses. As they look increasingly outward, the big Indian corporations, such as the Tata Group, Reliance, and Ranbaxy Laboratories, have mostly focused on other countries that once knew British rule—South Africa, Nigeria, Egypt, and Kenya. These are also

countries where the products of India's Bollywood film industry, dubbed into English, are popular.

**O**n the whole, India has a far better reputation in Africa than China, which has been criticized for using predominantly imported Chinese labor in its African projects and for a cavalier attitude toward the human rights records of the regimes it deals with. But despite admirable measures, such as a pledge to develop a

**ARAB MONEY IS POURING into Asia, especially into predominantly Muslim countries, where it is being invested in energy, property, and mobile telephony.**

project to link remote African schools and medical centers to Indian institutions via the Internet, India could easily lose its superior reputation by succumbing to temptations such as a potential mining deal in Zimbabwe, home to one of the continent's least savory regimes.

After India brought 300 African delegates to New Delhi for an economic partnership conference in 2006, the Confederation of Indian Industry claimed that the event kicked off negotiations on \$17 billion in new deals in fields ranging from oil exploration to hotel construction. "We want to learn from India's experience," Amadou Dioffo, managing director of Sonidep Petrol and Gas Company of Niger, told the closing press conference. "Like us, India also has a colonial past. We want to know how and why it is doing so much better now."

India's commitment to Africa, however, is dwarfed by that of China, whose trade with the continent has grown from \$10 billion to \$56 billion since 2000. In that period, China has invested \$12 billion in Africa and built more than 100 food and raw material processing plants, 3,500 miles of highways, 1,600 miles of railways, eight power stations, and three ports. More than 800 Chinese companies are currently operating in Africa, which now provides 28 percent of China's oil.

Last year, China hosted the annual meeting of the African Development Bank in Shanghai, where it announced new credit and investment funds of \$3 billion and \$5 billion, respectively, and wrote off \$10 billion in bilateral debts. China will train thousands of African professionals and double the number of scholarships awarded to African students while sending more agriculture experts and youth volunteers to work on the continent.

The list of deals is long. Thirty-one percent of China's offshore contractor and engineering projects are based in

At current growth rates, poverty levels in Africa could halve by 2015, and if China and India are excluded, sub-Saharan Africa is experiencing faster economic expansion than the rest of Asia. Investors have benefited dramatically. Between 1995 and 2005, African stock markets showed an average compound annual growth of 22 percent, and torrid growth continues.

Impressive results are not confined to the financial sector. Nollywood, Nigeria's booming film industry, is the world's third-largest producer of feature films, after Bollywood and Hollywood.

In 13 years, it has grown from nothing into a \$250 million-a-year industry building on Nigerian entrepreneurship and digital technology. The industry now boasts some 300 filmmakers, who produce their films on digital cameras, using common

computer-based systems for editing. In many cases, these auteurs peddle DVDs directly to customers in the marketplace. Nollywood films are popular across English-speaking Africa, aired on African satellite television networks and even on stations in Britain.

Privatization has transformed the loss-making state-owned airline industries, crucial to a continent with poor roads and communications systems so locked into colonial patterns that phone calls and travelers between neighboring countries often had to be routed via Paris or London. All of this is changing fast. Kenya Airways, partially privatized in 1995 after years of troubles, is now the most profitable major airline in Africa. Upstarts Virgin Nigeria, South Africa-based Kulula, and Kenya's Flamingo Airways are opening new routes and catering to a newly empowered middle class. Nairobi airport is becoming a pan-African hub and a magnet for growers and other export enterprises—or was, until the recent outbreak of violence in the wake of the country's disputed elections. Even if a lasting political settlement is secured, higher energy costs are a threat to Kenya's exports, as well as those of other African countries.

An important factor in Africa's new growth has been the mobile phone industry, now worth close to \$10 billion a year. With subscriber growth across Africa running at 40 percent annually, prospects are so inviting that mergers and acquisitions have been

**INDIA'S COMMITMENT to Africa is dwarfed by that of China, with its investment of more than \$56 billion.**

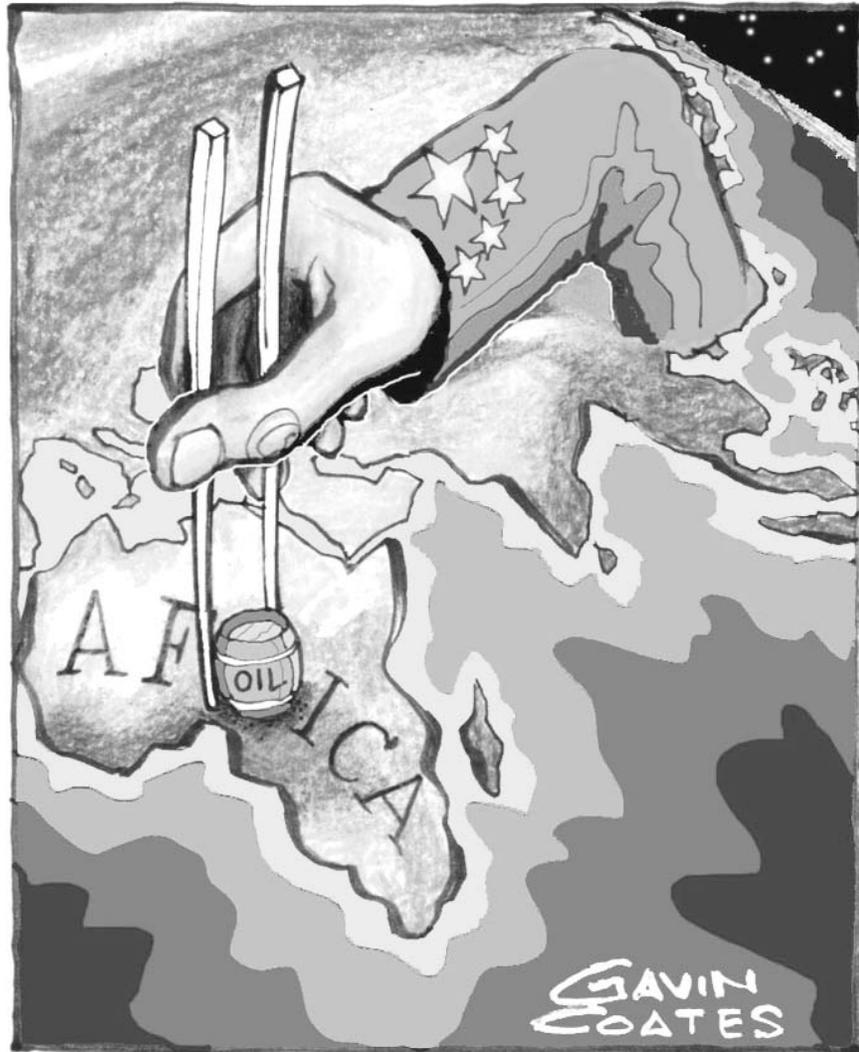
Africa. That figure will soon rise if a deal to provide \$2.3 billion to Mozambique for a new hydroelectric dam on the Zambezi River is completed. This is likely, not only because Chinese prices are low but, as President Hu Jintao has declared, "China's aid comes without strings." This policy has been appreciated in Sudan and Zimbabwe, to name but two of the most egregious human rights offenders. But there are signs of backlash against China's investments, notably in Zambia, where the opposition Patriotic Front made inroads in the 2006 elections by campaigning on an anti-Chinese platform. Its leader, Michael Sata, says the Chinese are "exploiting us, just like everyone who came before. They have simply come to take the place of the West as the new colonizers of Africa."

Nonetheless, the infrastructure that China has already built will benefit Africa for years to come, and has played a major role in what is starting to look like Africa's takeoff into self-sustaining growth. For once, Africa seems to be generating wealth without digging for it in the ground. Ghana, which has an English-speaking population and lower wages than India, was one of the first African countries to capitalize on the offshoring trend in business. The American outsourcing company ACS set up shop in Accra in 2000, employing 60 people. The work force has since grown to 1,800. Among other things, Ghanaians now process parking tickets for New York City's local government.

commonplace. Kuwait's Mobile Telecommunications paid \$2.8 billion in 2005 to buy Dutch-registered Celtel, which serves 15 African countries. In Kenya and Tanzania, mobile operators have swiftly become the biggest companies and largest taxpayers.

Mobile phones help small farmers, since access to real-time market prices means that intermediaries can no longer charge different rates or manipulate local markets. The phones have cut the need for costly and time-consuming travel and allowed farmers and contractors to deal directly with customers. Africa is far ahead of the United States in implementing the use of cell phones for banking tasks such as making payments and managing microcredit accounts and remittances from family members abroad. Applications such as these lower costs and attract new users; for instance, local surveys suggest that 50 percent of all bank accounts in South Africa will be administered via cell phones by 2011.

China may yet come to reconsider the way its investments have helped create future competitors. In many African countries, factory productivity in low-end manufacturing, particularly textiles, has risen close to Chinese levels. In Kenya, Tanzania, and Senegal, productivity in textile plants is



**China will soon replace Japan as the world's second-largest oil importer after the United States, and is eagerly prospecting for new sources in sub-Saharan Africa, which now supplies 28 percent of its needs.**

running at 80 percent of Chinese levels, and 90 percent of Indian levels. And African wages are currently less than half of those in Guangdong. The "total factor productivity" (including purchasing, selling, and distribution) of African firms is still much lower than that of competitors in China and India, but given decent management, African companies could catch up fast.

In his 2007 book *Africa's Silk Road: China and India's New Economic Frontier*, World Bank economic adviser Harry Broadman noted that exports from Africa to Asia had tripled since 2002, turning Asia into

Africa's third-largest trading partner (27 percent), after the European Union (32 percent) and the United States (29 percent).

"China and India each have rapidly modernizing industries and burgeoning middle classes with rising incomes and purchasing power," Broadman wrote. "These societies are demanding not only natural resource-extractive commodities, agricultural goods such as cotton, and other traditional African exports, but also diversified, nontraditional exports such as

in much of Africa, reaping a variety of positive changes. With all of its challenges, Africa is in better shape to face the future.

**W**hat is building around the Indian Ocean is far larger than simply Africa's future, and larger than Asian-African trade. The flowering of a commercial system is under way, a new form of that infamous triangular trade that helped finance Britain's 18th-century

**AS THE MEDITERRANEAN, Atlantic, and Pacific proved in their own periods of surging trade growth, commercial highways can easily become battlegrounds.**

industrial revolution, with cheap British beads and mirrors being sold in West Africa for slaves, who were shipped to the Americas, and the proceeds used to ship tobacco and sugar back to Britain. The new triangular trade of the Indian Ocean sees the Middle Eastern countries export oil to Asia, then use the proceeds to

processed commodities, light manufactured products, household consumer goods, food, and tourism. Because of its labor-intensive capacity, Africa has the potential to export these nontraditional goods and services competitively to the average Chinese and Indian consumer and firm."

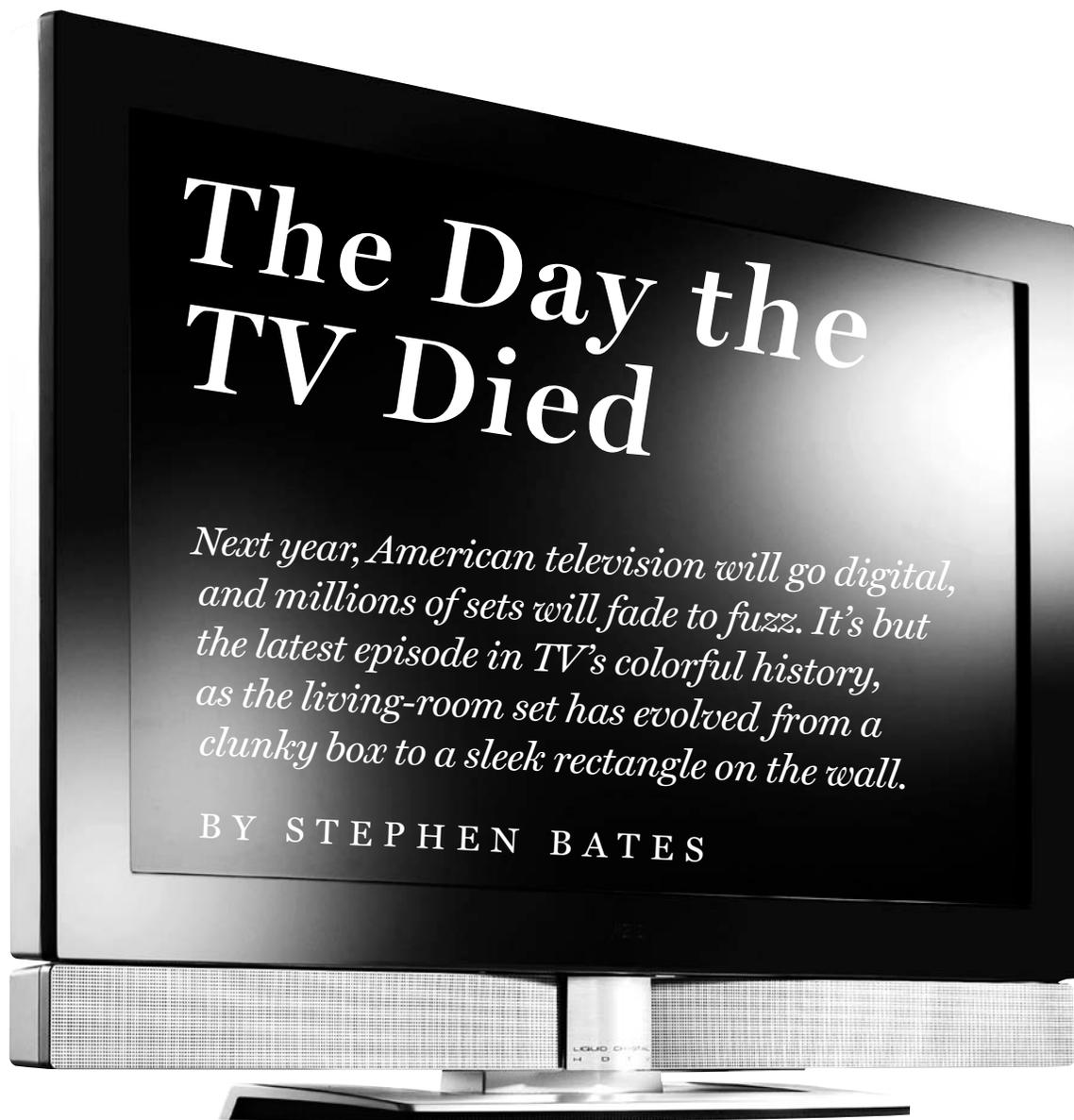
There are still severe constraints on Africa's growth potential, from the ravages of the HIV/AIDS epidemic to a legacy of poor governance, from the ominous threat of climate change and water shortages to a lack of education. UN figures suggest that 46 million African children—nearly half the school-age population—have never set foot in a classroom. But Kenya, Malawi, Mozambique, Tanzania, Ethiopia, and Ghana are among countries that recently abolished fees for children to attend school.

HIV still rages, but not as fiercely as it did. A decline in HIV prevalence among young women in Uganda has been under way since the mid-1990s. In Kenya, infection levels are dropping in urban centers in response to targeted intervention policies. Tanzania and Malawi have seen rates decline slightly or stabilize. Aid organizations have used the response to HIV as a way to rebuild a basic public-health system

export capital to Asia and Africa. Asia sends cash, consumer goods, and remittance workers to the Middle East, and investment capital, skills, and aid to Africa, which in turn sells oil and agricultural products to Asia, investing some of the proceeds in new industries, from mobile phones to Nollywood films.

But the rivalry for resources is intense. The Indian Ocean is also witnessing the beginnings of an arms race, with China building ports that can also serve as naval bases at Gwador, Pakistan, which is near the mouth of the Persian Gulf, and at Sittwe in Myanmar, on the Bay of Bengal. Alarmed by China's ambitions, India has been boosting its own forces with a new fleet of French-built Scorpene stealth submarines, a program to build three aircraft carriers, and development of the Agni-3 missile, which could, in theory, carry a nuclear warhead to Shanghai.

The economic promise of CHIMEA is dazzling, but the geopolitical and strategic implications are sobering. As the Mediterranean, Atlantic, and Pacific proved in their own periods of surging trade growth, commercial highways can easily become battlegrounds in their turn. And with the CHIMEA nations poised in this century to become the globe's center of gravity, the stakes in the Indian Ocean promise to become very high indeed. ■



# The Day the TV Died

*Next year, American television will go digital, and millions of sets will fade to fuzz. It's but the latest episode in TV's colorful history, as the living-room set has evolved from a chunky box to a sleek rectangle on the wall.*

BY STEPHEN BATES

“‘DTV’ IS COMING (AND SOONER THAN YOU THINK!)” proclaims the Federal Communications Commission website. With, perhaps, a touch of panic?

Digital television—DTV—will replace the venerable analog format on February 17, 2009, at midnight, time zone by time zone. The changeover won't affect most Americans who get TV by cable or satellite, or those who already own digital TVs or converters, or the handful of iconoclasts (less than two percent of households) who don't own TVs at all. But that leaves millions of people at risk of severe entertainment deficit.

By various estimates, between 10 and 15 percent of

American households watch over-the-air programming exclusively, relying on rabbit ears, rooftop contraptions, and other gear from the *I Love Lucy* era. A third of these People of the Airwaves don't know about the digital shift, according to a poll by the Consumer Reports National Research Center. If DTV arrived tomorrow, some 20 million Americans would turn on *American Idol* and find Randy, Paula, and Simon replaced by snow.

People will be able to continue watching over-the-air

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broadcasts on analog TVs if they get converter boxes, which currently cost around \$60. The Commerce Department's National Telecommunications and Information Administration is offering every household two coupons, each worth \$40 toward a converter. According to the poll, though, three-fourths of Americans haven't heard about the coupons.

That's not the only complication.

## HORATIO ALGER comparisons irked David Sarnoff, because he considered his ascent at RCA unparalleled.

After DTV Day, some households—about one in 20, according to FCC chairman Kevin Martin—will have to spring for new antennas to pick up the same channels.

The February 17 deadline doesn't apply to the nation's 2,100 low-powered TV stations, which include many rural and university-run outlets. If you want to watch those channels with a converter, you'll need a special one with "analog pass-through," or an antenna switch, or the patience to disconnect your antenna from the converter and connect it to the TV.

The digital converter replaces your TV's tuner, so it comes with its own remote. Unless you buy and program a universal remote, you'll use the converter's remote to change channels and the TV's remote to adjust volume—alongside, perhaps, the armamentarium of DVD and VCR remotes. Speaking of VCRs, if you want to record one program while watching another, you'll need two converters. If each of the converters happens to be, say, a Zenith model DTT900, then using the remote to change channels on the TV converter will also cause the channels to change on the VCR converter. "Yeah, that's a problem," a clerk at Circuit City told me.

The DTV disruption comes by federal decree, and Congress has its reasons. Because the digital format is far more efficient, it can produce sharper images, enable broadcasters to offer additional channels or data services, and free up spectrum space for wireless broadband, public-safety communications, and other uses. The United States isn't alone in this process. In Great Britain, the transition is already

under way, region by region, to be completed in 2012. Finland went all-digital on September 1, 2007. In most of the world, digital will soon be the television standard.

These transitions can be ticklish, as we're likely to discover next February. But standards themselves mostly make life easier. Standardization is "the liberator that relegates the problems that have been already solved to their proper place," insurance expert Albert Whitney wrote in 1928.

Back then, standardization had a long way to go. Imagine buying sheets when beds came in 78 sizes. Washers in household faucets, *The New York Times* said in 1927, were "almost impossible to replace, even in supply stores in large cities."

At the time, an engineer was striving to tame the anarchy. Shortly after President Warren G. Harding made him secretary of commerce, in 1921, Herbert Hoover established the Division of Simplified Practice. ("Simplified" was chosen, a Commerce official explained, because "standardized" sounded "Prussian.") The agency helped establish national standards for everything from pickaxes to grape baskets.

The federal simplifiers aimed to facilitate rather than dictate. In 1923, for instance, they assembled some 200 representatives of the lumber industry, who decided that the standard construction board would be 25/32 of an inch thick. Hoover called it "a splendid example of industry solving its own problems."

But the solution wasn't universally acclaimed. Companies that manufactured thinner boards, 24/32 of an inch, wanted their measure to be the norm. In "the battle of the 32nd"—Hoover's jocular phrase—they lost.

That's the common pattern. When standards are set, somebody wins and somebody loses.

In the major skirmishes over broadcast standards, David Sarnoff was the winner. Born in Russia in 1891, Sarnoff arrived in the United States at the age of nine, unable to speak any English. In his teens, he studied Morse code and landed a job at American Marconi Wireless Telegraph Company, first as an office boy and then as a telegrapher. When Guglielmo Marconi visited his

company's U.S. branch, Sarnoff connived to meet him and soon became his protégé. In 1919, the federal government voiced misgivings about British-owned Marconi controlling vital American technology. General Electric bought American Marconi and shifted its key assets to a new firm, Radio Corporation of America. Among those key assets was Sarnoff. He soared through the company's ranks, reaching the presidency a decade later.

Well before most executives and engineers, Sarnoff saw the future of TV—some reporters called him a “televisionary”—and he plotted to put RCA at the forefront, whatever it took. “Competition brings out the best in products and the worst in men,” he once remarked. Within the company, broadcast historian Alex McKenzie writes, Sarnoff's rages “could strike like a thunderbolt.” Sarnoff sought not just to make history but to ensure his place in it. Horatio Alger comparisons irked him, because he considered his ascent unparalleled. At RCA, he had copies of

his own memos bound in leather.

In 1930, when Sarnoff became head of RCA, a handful of American television stations operated on an experimental, noncommercial basis. But would-be viewers, mostly shortwave hobbyists, had a hard time tuning in. “Various frequencies were used, some in the standard broadcast band and some in the shortwave bands,” historians John Ryder and Donald Fink write in their encomium to electrical engineering, *Engineers and Electrons* (1984). “There were no standards for the number of lines or number of pictures per second used by these stations, and no attention was paid to the bandwidth required to carry the transmissions.”

Commercial TV, Sarnoff often said, was “just around the corner.” But the corner kept receding. In 1936, at one of Sarnoff's demonstrations, E. B. White watched the TV image jitter and undulate. “President Roosevelt's face not only came and went,” he observed,



CBS staged numerous public demonstrations of its color television, like this one in 1950 in Washington, D.C., but when the first color broadcast was made in 1951 amid much hoopla, hardly anyone saw it. Color equipment wasn't yet on the market, and black-and-white sets couldn't pick up the signal.

“it came and went *under water*.” The picture traveled from the studio by wire to RCA’s transmitter, then by ether to the screen in front of White. “The magical unlikelihood of this occasion,” he wrote, “was not lessened any by the fact that a stranger wearing a telephone around his neck was crawling about on all fours in the darkness at our feet. This didn’t make television seem any too practical for the living room of one’s own home, although of course homes are changing.”

Regulators agreed: TV wasn’t yet living-room ready. Members of the Federal Radio Commission and its successor, the FCC, hesitated to set broadcast standards. “Rigid



Whiz inventor Edwin Armstrong, shown here in the 1920s with a suitcase radio receiver, battled RCA until his suicide in 1954.

adoption of standards at this state of the art,” the FCC said in 1939, “may either ‘freeze’ the television industry, and thus retard future development, or may result in a high rate of obsolescence of equipment purchased by the public.” A year later, the commission warned that Americans “should not be inflicted with a hodgepodge of different television broadcasting and receiving sets.”

But without standards, a hodgepodge already existed. In 1938, Communicating Systems Inc. marketed TVs for \$150 (three-inch screen) and \$250 (five-inch screen), with one-year guarantees—not that the sets wouldn’t break, but that they wouldn’t become wholly obsolete. By the end of 1939, American Television, DuMont, Andrea Radio Corporation, General Electric, and RCA were selling TVs too. Everything from the number of channels to the hue of the images (black and white or black and green) varied from set to set. Gutsy early adopters bought TVs, but dueling standards and scant programming scared off most consumers.

In 1939, the FCC authorized television to take a small step forward. Experimental stations could adopt “limited commercialization”—that is, sell ads to pay for creating programs but not for broadcasting them. Commercial TV was to have a soft rollout. “No interests should be permitted to raise public hopes falsely,” the FCC stressed. In particular, “nothing should be done which will encourage a large public investment in receivers which . . . may become obsolete in a relatively short time.”

But self-restraint wasn’t Sarnoff’s style. He bought full-page ads touting discounted RCA sets, which could receive RCA’s shows but not those of some other broadcasters. The era of home TV wasn’t just around the corner, he said—it was *here*. This was precisely the sort of hype the FCC had tried to prevent. The commission suspended the limited commercial broadcasting and chastised RCA.

Sarnoff was unapologetic. In his view, consumers would willingly risk obsolescence in order to enjoy television. A TV buyer, he said, “is paying for the unique privilege of seeing what is important or interesting today in a program of news, information, entertainment, education, and sports events which he cannot witness tomorrow or next year, however great the technical improvements. . . . The miracle of sight transmitted through the air should not be treated on the [same] basis of obsolescence as a spring hat.”

A television costing hundreds of dollars is no spring hat. But under pressure from RCA, the FCC reversed course and decided to establish TV standards, even if they might

later have to be changed. The commission sought recommendations from broadcasters. The understanding was that if broadcasters could achieve consensus, the FCC, like Herbert Hoover's Division of Simplified Practice, would go along.

Broadcasters formed the National Television Systems Committee. The NTSC had barely gotten started when

CBS muddied the picture by announcing the development of color TV. Created by engineer Peter Goldmark, the CBS camera captured images through a rapidly spinning disc with red, blue, and green filters. This disc was synchronized with a disc spinning inside the TV. When the camera transmitted its red signal, the red filter on the receiver's disc was positioned in front of the picture tube's electron beam.

In NTSC sessions, Zenith and Stromberg-Carlson urged the adoption of CBS color, whereas RCA, General Electric, and other companies opposed it. Technical matters were secondary to "rival corporate interests," Joseph Udelson writes in *The Great Television Race* (1982). As newcomers to TV manufacturing, Zenith and Stromberg-Carlson could gear up to make color TVs with no added costs. The other firms had spent heavily on equipment to produce black-and-white TVs. They didn't want to have to start over. In the end, the majority ruled: Color was, for the time being, kaput.

Of the other issues confronting the NTSC, the most contentious was the number of lines per TV image. The more lines, the greater the clarity. RCA wanted 441, Philco wanted 800, and DuMont argued that with the technology still evolving, flexibility would be ideal—televisions should be capable of picking up broadcasts of anywhere between 400 and 800 lines. (Some of the first TVs had used 60 lines, producing an effect somewhat like watching actors through half-closed venetian blinds.) The NTSC rejected the wide



RCA president David Sarnoff appears on the first regular television broadcast, from the 1939 World's Fair in New York. Some dubbed him a "televisionary."

range proposed by DuMont, saying it would make TVs pricier and images fuzzier, and set a standard of 525 lines. According to *The Tube* (1996), by David Fisher and Marshall Jon Fisher, the number had no technical advantage. It was simply a compromise.

Over DuMont's protests, the FCC adopted the NTSC standards—the basic rules that have governed analog TV ever

since—and authorized stations to go fully commercial. RCA opened 10 service centers around New York where consumers could take their TVs to be retrofitted, without charge, to conform to the new standards. On July 1, 1941, RCA station WNBC (later WNBC) went on the air. Its first ad, which was sold for \$4, showed a Bulova clock as the second hand circled the face, to the tune of the *Minute Waltz*. The ticking seconds marked the beginning of the television era.

While the fight over television standards was raging, Sarnoff was also boosting TV through what *Fortune* later called "the biggest and bitterest behind-the-scenes fight" in radio's history—against a friend.

As an undergraduate at Columbia University, Edwin Howard Armstrong made commercial radio feasible: He found a way to amplify the output so that broadcasts could play through speakers instead of stethoscope-like earphones. The Armstrong method also allowed receivers to pick up transmissions from previously inconceivable distances, across the Atlantic and the Pacific. During World War I, Armstrong developed the "superheterodyne," with which radios and later televisions could be tuned precisely to broadcasts.

One of the people who saw Armstrong demonstrate his

amplifying invention, in a basement lab at Columbia, was Sarnoff. The two became friends. Armstrong frequently visited Sarnoff's house for morning coffee; Sarnoff attended Armstrong's wedding—to Sarnoff's former secretary. RCA bought licenses for some of Armstrong's patents and disputed the validity of others, which made for an odd friendship. When a decision in Armstrong's favor was handed down in one lawsuit, Sarnoff congratulated

The FCC assigned FM to the spectrum just below TV and authorized commercial operation in 1940. The commission also ruled that television broadcasts would use FM for sound. For the duration of Armstrong's patent, TV manufacturers would have to pay him royalties.

FM took off. Hundreds of thousands of people bought receivers. But after Pearl Harbor, the government halted production of FM radios. And, like the Soviet Union, the FCC switched sides during the war. Having earlier championed FM, the commission now skewered it.

On June 27, 1945, the FCC announced that sunspots and atmospheric conditions were interfering with FM broadcasts. An expected sunspot flare-up in 1949 and 1950 could

**WHEN THE FCC suddenly shifted the bandwidth at which FM was broadcast in 1945, a half-million consumers were left with obsolete equipment.**

him on the ruling even as RCA denounced it.

"I wish that someone would come up with a little black box to eliminate static," Sarnoff remarked to Armstrong at one point in the early 1920s. In *Empire of the Air* (1991), Tom Lewis speculates that Sarnoff envisioned a filter between a radio's receiver and its speaker. Instead, Armstrong found that he could eliminate static by modulating the frequency of a broadcast instead of its amplitude—that is, by using what we know as FM instead of AM. Like a 441-line screen and an 800-line one, FM and AM were incompatible. FM sets couldn't get AM, and vice versa.

In 1933, Armstrong demonstrated FM to Sarnoff, who recognized the discovery as both ingenious and perilous. RCA sold AM sets and owned two AM networks. With its clarity, FM could kill AM. (Armstrong thought it would.) In addition, Sarnoff was pushing television. FM and TV would inevitably compete for spectrum space and for consumer dollars.

Armstrong fine-tuned the technology, and experimental FM broadcasts began. *Time* rhapsodized, "The enthusiasts say that they hear music faithful to the topmost tweet, the bottommost woof; that speech seems to come from the next chair, instead of the next telephone booth; that if an announcer should scratch a match, listeners would hear it burst into flame; that between numbers there is no hum, no crackle, just black, velvety nothing."

prove disastrous. The commission had a point, according to Dale Hatfield, a telecommunications professor at the University of Colorado, Boulder. Sunspots have caused static on channel 2 of analog TVs, and FM was lower on the spectrum, where interference was likelier.

In response, the commission took three steps. First, it transferred FM up to its current bandwidth and assigned most of the old spectrum to television. Second, it ordered all FM stations to change to the new frequencies by the end of 1946, a lightning-fast transition. (Digital TV, by contrast, has been in the works for more than a decade.) Finally, and inexcusably, the commission refused to let stations broadcast on both old and new frequencies during the transition. (Currently, most TV stations are broadcasting in digital as well as analog.)

Although RCA was on record opposing the change, many people discerned the hand of Sarnoff. Build a better mousetrap, he once remarked, and somebody will develop "a virulent poison which is death on mice and there will be no longer any demand for mousetraps."

The FCC said it wanted to boot FM up-spectrum "before a considerable investment is made by the listening public in receiving sets and by the broadcasters in transmitting equipment." In truth, a considerable investment had already been made. As of mid-1945, there were 53 FM stations, and they were broadcasting to a half-

million receivers. The change of technical standards meant that broadcasters' and consumers' equipment would become obsolete soon and suddenly.

Perhaps coincidentally, perhaps not, the chair of the FCC resigned to become general counsel at NBC, a division of RCA, after the spectrum decision. It later emerged, too, that RCA had sent FCC commissioners free televisions during the FM hearings.

Armstrong and others fought the FCC's decisions to no avail. In order to receive FM programming without interruption, a consumer needed two receivers—one for the old bandwidth and one for the new—or a receiver designed to get broadcasts on both bandwidths. Broadcast stations had to retool their equipment, at an average cost of more than \$1 million apiece. Starting from scratch, most FM stations in the postwar years simply simulcast AM broadcasts, a move that diminished FM's appeal to consumers and advertisers alike. "Despite its later resurgence," Hans Fintel wrote in *The New York Times* in 1981, "FM never fully recovered from this blow. Neither did Armstrong."

The prediction that sunspots would devastate FM had come from Kenneth Alva Norton, a War Department engineer. When the sunspots flared, the interference on the old FM spectrum was minor. Armstrong asked Norton if he'd made a mistake. "Oh, certainly," Norton replied. "I think that can happen frequently to people who make predictions on the basis of partial information. It happens every day."

Armstrong's troubles weren't over. RCA next took the position that his FM patents were invalid, so he wasn't entitled to royalties from the sale of televisions that used FM for sound. Armstrong filed suit in 1948. During his deposition, David Sarnoff said of Armstrong, "We were close friends. I hope we still are," then insisted that RCA engineers had invented FM.

On January 31, 1954, with the legal struggle dragging on, Armstrong wrote a note to his wife, Marion: "God keep you and may the Lord have mercy on my soul." Wearing a suit, scarf, and gloves, he jumped out the window of his 13th-floor apartment.

Shaken upon hearing the news, Sarnoff unthinkingly told a friend, "I did not kill Armstrong." A few months later, RCA settled the lawsuit and agreed to pay Marion Armstrong \$1 million. RCA had licensed other companies to manufacture FM equipment, and those companies continued to fight, but one judge after another upheld the

validity of the Armstrong patents. In the end, Marion Armstrong collected another \$10 million.

**I**n the 1950s, another change in standards loomed. Though not at first, Sarnoff ultimately won. No fatalities were recorded.

The FCC in 1940 had cited "promising experiments with color television"—namely, the color disc developed by Peter Goldmark—but, heeding the NTSC's recommendation, declined to establish color standards. CBS tried again in 1946, but regulators adopted the same position they had in the 1930s concerning black-and-white TV: "The Commission must be satisfied not only that the system proposed will work but also that it is as good as can be expected within a reasonable time to come."

CBS color technology was incompatible with existing black-and-white TVs. If the FCC adopted CBS standards, older sets would continue to receive black-and-white programs but not color ones. To see those programs, owners would have to buy either a color TV or a converter projected to cost at least \$100.

When CBS again asked the FCC to adopt its system, in 1949, RCA announced that it had almost perfected a compatible, all-electronic version, without any "horse and buggy" spinning discs. The FCC demanded a head-to-head comparison, to Sarnoff's consternation. On RCA prototypes at that point, colors were produced separately and combined by a system of mirrors. The mirrors were easily jostled, throwing the colors askew. On test day, Sarnoff later recalled, "the monkeys were green, the bananas were blue, and everyone had a good laugh."

The prospect of obsolescence hadn't troubled Sarnoff in the past. With black-and-white TV, he had argued that consumers deserved to enjoy the technology right away, even if the equipment might soon be obsolete. The spectrum shift for FM, which seemingly had Sarnoff's backstage blessing, had rendered a half-million receivers outdated. Now Sarnoff found himself in a different position. RCA made TVs, and NBC broadcast to them. Compatibility was essential. "A compatible system in television," Sarnoff told *U.S. News and World Report*, "is more or less the same as a compatible marriage, where the husband and wife see the same thing at the same time and don't get into a lot of wavy motions."

Like Sarnoff, the FCC flip-flopped. "Obviously, it is essential that all receivers be capable of receiving all trans-

missions,” the commission had said in 1941, concerning black-and-white TV. Now it contended that, though compatibility would be optimal, consumers wanted color and CBS had the better technology. Goldmark’s disc became the official standard. Sarnoff fought the FCC decision all the way to the Supreme Court, unsuccessfully.

With color TV, as with FM a decade earlier, Sarnoff profited from war. When the Korean War escalated in 1951, the government barred nonmilitary uses of cobalt, a component in CBS color TVs. Manufacture of the new TVs had to be postponed.

Meanwhile, RCA engineers continued working. By the end of the war in 1953, RCA color was about the same as CBS color, and it was compatible with black-and-white TVs. RCA achieved compatibility by transmitting brightness and color separately. Black-and-white sets got brightness; color sets got both.

While developing compatible color, Sarnoff had also slashed prices and sold black-and-white TVs as fast as he could, in order to raise the political costs of an incompatible system. “Every set we get out there makes it that much tougher on CBS,” he said. The number of black-and-white TVs soared, from nine million in 1950 to 23 million in 1953.

The NTSC reconvened, compared the two systems, and recommended RCA color. In a gracious gesture, Peter Goldmark seconded the motion to kill his invention. Late in 1953, the FCC adopted the RCA standard. David Sarnoff had won again.

**F**or the typical technology, death comes slowly. Consumers chose VHS over Betamax two decades ago, but individual Betamax players continued to work. Though Toshiba, maker of HD DVDs, surrendered to Sony and its Blu-ray technology this winter in the high-definition DVD war, early adopters who guessed wrong still have functioning machines. Prerecorded HD DVDs may be few, and blank discs, like Betamax tapes, may disappear from stores, but the life span of the players won’t be affected.

Consumer products—video recording devices, vacuums, answering machines—die every day, but not by the thousands or millions, all at once. Mass obsolescence can occur when devices exchange information or value, and a central authority, usually the government, alters the standards of exchange. On many subway systems today, you can’t go anywhere without a fare card. Tokens, like prewar FM

receivers, have quit working. The old standards of exchange no longer apply.

Decisions about standards frequently reflect the clout of their proponents. “New machines are not accepted because they are, in some abstract sense, ‘better,’” Steven Lubar, a professor of American civilization at Brown University, writes in *InfoCulture* (1993). “They’re accepted because they fill the needs of some individual or group; and they are fought by people who feel that their economic or intellectual interests are at stake.”

By some accounts, CBS’s system of the early 1950s produced sharper color than RCA’s but broke down more frequently. “It’s very hard to say what’s a superior technology,” Lubar observes. “What we think is superior in retrospect is often what we’re used to, after a lot of money has been invested in it.” Following this pattern, the superiority of digital TV won’t be apparent to a lot of Americans next February—quite the contrary—but most of them will come around.

“We’re the pipes,” Sarnoff once said of broadcasting. He helped set the specs for the analog pipes that have served American TV for nearly 70 years. And no less important, he helped decide what flowed through them. During his lifetime (he died in 1971), the choices were limited: Uncle Miltie or Aunt Bea, Car 54 or Agent 99, Captain Kirk or Colonel Klink. Sarnoff thought the future would be different. The TV itself, he wrote, would be “a thin, flat-surface screen that will be hung like a picture on the wall.” As for programs, “every form of art and every type of entertainment will be readily accessible in the home. The range and variety . . . will embrace everything created by the human mind.”

On this, the visionary’s vision was clear. Today we have CNN, HBO, MTV, VHS, DVD, Blu-ray, MPEG, Netflix, and YouTube. Unwatched TiVo shows pile up like unread *New Yorkers*, network websites offer full-length programs, and iPhone users peer at 3.5-inch screens. Program choices are virtually limitless. That turns out to be bad news for Sarnoff’s NBC, along with CBS and ABC—their audience share has plummeted—but great news for viewers.

Some Americans, who have tuned out the urgency of the FCC in favor of the urgency of *CSI*, will be startled by static at midnight on February 17. For everybody else, digital TV will be pretty much the same as analog TV, just a bit sharper, with a few more channels.

The digital changeover is revolutionary for broadcasters. But for viewers, the revolution began years ago. ■

# Both Sides



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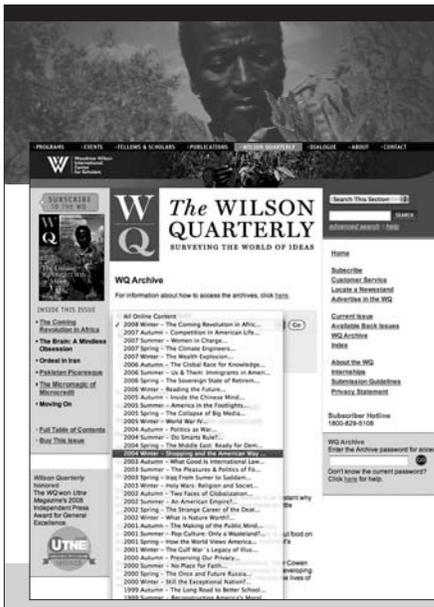
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# The Long Dance: Searching for Arab-Israeli Peace

*A veteran American negotiator derives seven rules of the road from his decades of experience in Arab-Israeli peace talks.*

BY AARON DAVID MILLER

“THE ONLY LESSON OF HISTORY,” THE BRITISH historian A. J. P. Taylor once observed, “is that there are no lessons.” Maybe Taylor was right. But even with all the hazards of making historical analogies, there has to be some value in looking to the past to avoid mistakes in the future. Certainly this is true in American foreign policy, in which, despite enormous continuity, historical memory is often willfully or casually washed away or hijacked in the service of preexisting agendas, especially with the arrival of a new administration. I well remember the sardonic quip of a senior Bush administration official a few years ago at the beginning of George W. Bush’s second term: “We aren’t going to make the same old mistakes on the peace process; we’re perfectly capable of making new ones on our own.”

Nowhere is the presence of the past greater than in America’s elusive search for Arab-Israeli peace. Having studied or worked on Arab-Israeli negotiations for the better part of 30 years, I know a thing or two about failure. We certainly can’t be prisoners of the past, but we can’t ignore it either. Our friends and enemies certainly don’t. William Faulkner was right when he wrote that the past is never really over, it’s not even past. He would have felt right at home during the many negotiating sessions when Arabs and

Israelis trotted out their familiar dueling narratives. “All the 1948 refugees were ethnically cleansed by Israel,” a Palestinian negotiator asserted on one such occasion. “No, they weren’t,” his Israeli counterpart replied. “They left of their own accord, or at the urging of the Arab states.” For an American negotiator steeped in a let’s-split-the-difference mindset, this historical tick-tock can get pretty tedious, particularly at three in the morning.

I went to work at the U.S. State Department in the late 1970s as a Middle East historian and intelligence analyst. In 1988, I joined a small group of Middle East advisers and negotiators who provided counsel to Republican and Democratic presidents and secretaries of state, until I left the government in 2003. From that experience, I’ve derived several rules that may be useful as the bumpy road of negotiations toward Arab-Israeli peace that resumed in Annapolis in November stretches out before us.

## NO BRICKS WITHOUT STRAW

It’s sometimes hard for big, strong, optimistic America to admit that it’s not powerful enough to fix the world’s problems. I keenly remember how much in control we American negotiators would feel as the secretary of state’s plane touched down on this or that Arab or Israeli tarmac, and a motorcade whisked us off to a fine hotel where at least two floors had been swept clean of electronic bugs and foreign nationals and equipped with

AARON DAVID MILLER is a public policy scholar at the Wilson Center. He worked in both Republican and Democratic administrations as an adviser to the secretary of state on Arab-Israeli negotiations. His new book, *The Much Too Promised Land: America’s Elusive Search for Arab-Israeli Peace*, was published in March by Bantam Books.



How can we divide it? In a Jerusalem marketplace, a Palestinian vendor and an Israeli haggle over a stem of myrtle, used in the Jewish holiday Sukkot.

all the modern amenities of a working State Department. But it's precisely when you begin to believe that you're in charge and can fix things that you need to be most careful. Too many times during my career I succumbed to what I'll call the fallacy of the negotiator's mindset: the seductive belief that all problems can be resolved through negotiations and that America can drive the diplomacy. In fact, we were frequently reminded that we were on the locals' timetables, subject to their agendas and at the mercy of their politics and preferences.

The first principle in finding a way to peace between Arabs and Israelis is that, because theirs is an existential conflict in which the stakes are physical and political survival, the core decisions belong to the parties, not to us. The biggest issues that divide Israel and the Palestinians—the future of Jerusalem, whether Palestinian refugees will return to Israel or a Palestinian state, and the precise borders of such a state—aren't called “final status” issues for nothing. And the stakes for

the locals, as the assassinations of Anwar el-Sadat and Yitzhak Rabin attest, can be very final indeed.

What this means in practical terms is that Arabs and Israelis rarely act in response to the entreaties and pressures of distant powers. They consider taking big risks only when local or regional calculations—prospects of real pain or gain—cause them to do so.

All the breakthroughs in Arab-Israeli diplomacy over the past five decades have followed this pattern. Without the October 1973 war, there would have been no disengagement agreements between Israel and Egypt and Syria over the next two years; without Sadat's trip to Jerusalem in 1977, no Egyptian-Israeli peace treaty in 1979; without the Persian Gulf War, no Madrid peace conference in 1991; and without the first Palestinian intifada in 1987, no Oslo process during the 1990s, which brought the first direct negotiations between Israel and the Palestine Liberation Organization (PLO).

If they're smart, tough, and committed, American

mediators can take advantage of shifts in the region's tectonic plates, but they can't make those plates move.

#### **BUT YOU STILL NEED A BRICK MAKER**

Even so, successful Arab-Israeli peacemaking isn't a matter of spontaneous combustion. In the history of Arab-Israeli negotiations, there are only two occasions in which Arabs and Israelis reached significant agreements without any substantive American involvement: the ill-fated Oslo agreements of 1993–95, which began the tortuous process of Israel's exchange of land for security; and the Israeli-Jordanian peace treaty of 1994. And even in these cases, the United States would come to play an important supporting role.

In every other breakthrough, serious and sustained American mediation was critical to success. The October 1973 war shattered the status quo, but it was Secretary of State Henry Kissinger's diplomacy that produced the disengagement agreements between Israel and the Egyptians and Syrians and the beginning of the very notion of a continuing peace process. Sadat's visit to Jerusalem in 1977 made Egyptian-Israeli peace possible, but it was President Jimmy Carter's single-minded focus and persistence that produced the Camp David Accords and laid the basis for an Egyptian-Israeli peace treaty seven months later. The Persian Gulf War and the collapse of the Soviet Union shifted the region's tectonic plates in 1991, but it was Secretary of State James Baker's diplomacy that took advantage of the changes and produced the direct Arab-Israeli negotiations in Madrid, the first in 12 years. Even the more modest Annapolis meeting in November wouldn't have occurred without Secretary of State Condoleezza Rice's persistence and focus.

There are many reasons why America is the brick maker, the almost inevitable mediator: the absence of contacts and trust between Arabs and Israelis; the need for an outside power to provide security and economic assistance to induce and support agreements; the parties' need to cite U.S. pressure as a justification for concessions that are politically unpopular at home; and, of course, the need for an effective broker to mediate, craft language, and even draft agreements. But if you asked me why the phone kept ringing all those years, I'd respond: the U.S.-Israeli relationship. The Israelis know that however divided they may be among themselves on this or that approach, their security and well-being depend on having a peacemaking process in which the United States is involved. The Arabs know, how-

ever much they may dislike some of our policies, that our close ties to Israel mean that there can be no serious and sustainable agreements without us.

When we use the U.S.-Israeli relationship effectively in our diplomacy (see Kissinger, Carter, and Baker), the United States can indeed deliver in ways in which everyone wins. When we use those ties unwisely, allowing Israel to unduly influence our tactics and strategy as a broker (see Bill Clinton), we can't possibly succeed. And when we permit our special relationship with Israel to become too exclusive (see George W. Bush), we have no chance to do effective diplomacy and no chance to succeed.

#### **PLAY THE PARTIAL MEDIATOR WISELY**

The secret of America's role in Arab-Israeli negotiations is the trust we've gained from Israel and the confidence we can engender among the Arabs when we use our relationship with Israel wisely. Let's be clear: The U.S.-Israeli relationship is closer than any tie we have with any Arab country or even with most of our allies. There are many reasons for this, including shared values, American public opinion, and, of course, the influence of the pro-Israel community, including millions of evangelical Christians.

Because of our intimate relationship with Israel, we really aren't an evenhanded broker in the technical sense. During negotiations, we rarely if ever adopt objectively neutral or equidistant positions between Israel and the Arabs. Indeed, we often operate on peace process software that automatically adjusts our position in light of Israel's needs and concerns. Even American leaders criticized at home as too tough on Israel are acutely sensitive to its interests: Jimmy Carter, for example, was determined to pursue a comprehensive peace at Camp David until Israeli prime minister Menachem Begin, along with the galactic challenges of bringing in the Palestinians, Jordanians, and Syrians, persuaded him not to.

This pro-Israel posture makes us a partial mediator. But because we do have Israel's trust, we can use our leverage as an advantage in negotiations, particularly when we find the right balance between reassuring the Israelis and pushing them to understand the needs of the Arab side. In these circumstances, we can be an effective broker and deliver agreements. That's what Kissinger, Carter, and Baker managed to accomplish.

Sadat was the first Arab leader to understand the advantages of this special American role. He banked on the capac-

ity of Kissinger and then Carter to get him what he wanted from Israel (a peace treaty and the return of the Sinai Peninsula, captured by the Israelis in 1967) precisely because America had Israel's trust. In the process, he also got a new relationship with America and large amounts of U.S. economic and military assistance. The PLO's Yasir Arafat and Hafez al-Assad of Syria saw the light after Sadat, but could never make as compelling a case with either the United States or Israel.

Perhaps the most difficult task for the Bush administration will be to find the right combination of toughness and reassurance.

Because it's spent seven years watching from the sidelines and giving Israeli leaders tremendous latitude to pursue their own agenda, often regardless of American interests, this will be difficult. The Bush administration's solid pro-Israel credentials and the president's personal relationship with Israeli prime minister Ehud Olmert give the administration a lot of currency in the bank with the Israelis. Should Olmert and Palestinian Authority president Mahmoud Abbas actually go for a deal and ask for American help, the president would need to make a decision about how much of this political capital he wanted to spend. Given his public remarks about not imposing an agreement, the odds that he will try to force one on both sides are slim to none. But the United States will need to press both sides hard. There hasn't been a successful negotiation that led to a sustainable agreement in which the United States didn't need to push both sides farther than they initially thought they would go.

#### FOCUS ON THE ENDGAME

However long the odds of producing an Israeli-Palestinian agreement on these core issues, Jerusalem, borders, and refugees must be the subject of serious negotiations. It's important to discuss the lesser "interim" issues—settlement outposts, checkpoints, Palestinian incitement of violence and terror—but without a focus on the ultimate goal, the entire Annapolis process will collapse. The Oslo process failed for many reasons, not the least of which was the absence of an effort to define such an endgame early, and to manage negotiations wisely when they finally began

at Camp David late in President Clinton's second term. Today, no one—not the Arabs, the Israelis, or the international community—believes anymore in a peace process that doesn't outline a final destination; nor are the various interested parties likely to participate in one.

Another lesson of the Camp David experience is that

## A SECOND FAILURE like Camp David in 2000 could destroy the very idea of a negotiated two-state solution.

pushing too fast or reaching too far in an effort to produce a quick presidential legacy, as Clinton did near the end of his term, will likely produce a failure we can't afford. Bill Clinton had the best of intentions, but he acquiesced to Israeli prime minister Ehud Barak's pressure for a high-profile summit where the gaps between Arafat and Barak would be too big to close, and without developing a fallback position or carefully thinking through the consequences of failure.

Weak leaders on both sides, deep disagreements over key issues, and divisions among the Palestinians don't augur well for success in the latest negotiations either, especially for a full peace treaty by the end of 2008, when the Bush administration will be all but over. Such a treaty would require marshaling billions of dollars to deal with refugees and security, and congressionally approved American security guarantees to Israel, probably including the deployment of U.S. troops in the Jordan Valley for years to come. More doable, but still extremely hard to obtain, would be a "framework" agreement. This could be a document of several pages spelling out the basic principles for resolving the core issues—Jerusalem as the capital for both states, the disposition of the refugees, and a return to June 1967 borders with land swaps for West Bank areas Israel wants to annex. The Bush administration could then pass this achievement on to its successor, which could help the two sides work through the details and provide them with the support they need. Above all, we must avoid another high-wire moment of truth like Camp David in 2000, in which we pushed for a breakthrough without the means to achieve one. A second failure of this

magnitude could well destroy for good the very idea of a negotiated two-state solution.

#### **BUT DON'T IGNORE THE SITUATION ON THE GROUND**

I'll never forget the feeling we all had as I left Washington with the small group of American negotiators for the fateful summit at Camp David in July 2000: If we couldn't deal effectively with the issues "on the ground"—security and settlements (and we couldn't)—how could we take on the core issues? Every Palestinian we talked to before Camp David made the same point: If Barak couldn't manage to return control over two villages on the West Bank close to Jerusalem, as Israel had pledged, how could they trust any promises he might make about the future of the capital itself?

One lesson of history is that the failure at Camp David was in part a product of the Clinton administration's failure to hold Israelis and Palestinians to the commitments they made at Oslo in 1993. The United States tolerated Arafat's acquiescence in violence and terror against Israel and put up with the Palestinian Authority's corruption, mismanagement, and failure to maintain the rule of law in Gaza and the West Bank. It relied on Israel to restrain settlement activity in certain areas but didn't seriously object when the Israelis continued building settlements in other areas, including Jerusalem. We largely kept quiet as Israel confiscated land and took steps to attract more Israeli settlers to the West Bank. Between 1993 and 2000, the settler population there doubled.

There is more trust between Abbas and Olmert than there was between Barak and Arafat at Camp David, but each side still has serious doubts about the other's desire and ability to meet its needs. The Bush administration's emphasis on the "road map" after the Annapolis summit shows that it understands the importance of getting each side to make specific commitments to improve the situation on the ground, but holding them to those promises will not be easy. The arguments the locals will use are ones we've heard before: Don't press too hard; if you do, we'll be weakened politically at home and won't have the support we need to take on the core issues.

However, the biggest threat to the Annapolis process is the schism within the Palestinian house itself. Abbas nominally controls 2.5 million Palestinians in the West Bank and the shell of the dysfunctional and weak Palestinian Authority. But Hamas won control of the authority's legislature at

the polls in 2006, and it reigns supreme over Gaza's 1.5 million Palestinians, who continue to blame Israel and America more than Hamas for their dire economic circumstances. As long as it retains the capacity to assault Israel with rockets from Gaza and terrorist attacks from the West Bank, Hamas makes any agreement almost impossible to implement. No Israeli prime minister can make existential concessions to a Palestinian leader who doesn't control all the guns. Right now, there are two masters on the Palestinian side. Abbas and Hamas have different patrons, and different visions of the future. Neither can knock the other out, and neither seems ready for reconciliation. The Israeli government finds itself in the bizarre situation of trying to make peace with one half of the Palestinian house even as it's engaged in a war with the other half.

The options for dealing with this difficult reality are few. Starving Hamas into submission hasn't worked; reconciliation between Abbas and Hamas isn't possible now because neither Abbas, Israel, nor the Americans want it; and forging an Israeli-Hamas accommodation seems almost unimaginable. That leaves two options: a major Israeli move back into Gaza to eliminate (at least temporarily) military infrastructure, or an Abbas-Olmert agreement on the core issues followed by new Palestinian elections, and probably Israeli ones as well, that secure broad public support for the agreement. That scenario would require an almost perfect alignment of the sun, moon, and stars—unlikely even in the land of revelations and miracles.

#### **IT'S AN AMERICAN NATIONAL INTEREST**

There was a time when I was convinced that resolving the Arab-Israeli conflict was the key to protecting American interests in the Arab and Muslim worlds. No longer. The Middle East is such a dysfunctional, screwed-up region that there is no single key to safeguarding what's important to us. The region has developed a potential perfect storm of looming disasters, none of which would be averted by the resolution of the Arab-Israeli conflict. The makings of these disasters include the ascendancy of a violent strain of Islamic radicalism, the possibility of another attack on the continental United States, the proliferation of nuclear technology, and an authority deficit that has given small actors such as Hamas and Hezbollah, as well as states such as Iran, the power to shape events in Palestine, Lebanon, Iraq, and other volatile countries.

Still, managing the Arab-Israeli issue must be an impor-



The author (right) in Washington with Mahmoud Abbas in 2004, the year before the longtime PLO figure was elected president of the Palestinian Authority.

tant front in any American strategy in the Middle East. Success would buck up our friends in the region and either help change the behavior of our adversaries or keep them on the defensive. It would prevent another Arab-Israeli war, relieve demographic pressures on Israel, draw Syria into an orbit of greater accommodation and cooperation, ease tension along the Israeli-Lebanese border, shore up both the Israeli-Jordanian and Israeli-Egyptian peace treaties, and boost America's credibility and its reputation as a force for positive political change in a region that has come to identify the United States with military invasion, torture, and counterterrorism. Most important, a resolution of the Israeli-Palestinian conflict would remove from our enemies' hands one of the most powerful weapons they have in marshaling supporters. Perhaps because the Arab world is so dysfunc-

tional and so divided on other issues, the Palestinian grievance resonates broadly and deeply in the Middle East. Yet we need to keep in mind that even if our post-Annapolis diplomacy ultimately succeeds, the Middle East is likely to remain fraught with dangers and challenges to our interests for years to come.

#### ABOVE ALL, DO NO HARM

Thinking back on my diplomatic career, I believe there ought to be a diplomatic equivalent of the Hippocratic Oath: Above all, do no harm. Avoiding costly mistakes is harder than you might imagine for presidents and secretaries of state concerned about their legacies, pressured by time, and lacking a full grasp of the dangers of overreaching at the end of their tenure. We also need strategies toward

the Middle East that are bipartisan and generational in conception, creating continuity between one administration and another. We should get over our obsession with doctrines and neatly packaged grand concepts. There is no single doctrine or concept that can encompass all the challenges that face us, particularly in this area of the world where so many

**WE MUST MAKE A FANATICAL commitment to seeing the world as it is, not as we want it to be or as others want us to see it.**

complex forces are at work. There is a risk of getting invested in strategies, such as regime change, democratization, and even the “war on terror,” that raise expectations that can’t be met, don’t work, or don’t even accurately describe the challenges we face.

Still, there is one thing that we must and can do: start maintaining a fanatical commitment to seeing the world as it is, not as we want it to be or as others want us to see it. It made no sense to go for a make-or-break summit at Camp David in 2000, for example. In analyzing incorrectly what would be required from each side to complete a deal, we made a serious mistake, with serious consequences.

**F**or the Bush administration, the challenge of seeing the world clearly is particularly acute because too much of its view has been shaped by a conception of reality that, in the cases of Iraq and even democratization, is not real or in line with the situation on the ground. Largely under Secretary Rice’s influence, the administration has finally tempered its *transformative* diplomacy (its notion that regime change and democratization would by themselves resolve the Israeli-Palestinian conflict) with a more conventional *transactional* diplomacy focused on actually negotiating the core issues. There are many who argue that having Arafat out of the picture was essential to any chance of successful negotiations, and there’s a good case to be made for that view. But that transformational change by itself was not sufficient. In the aftermath of Arafat’s death in November 2004 and the democratic election of

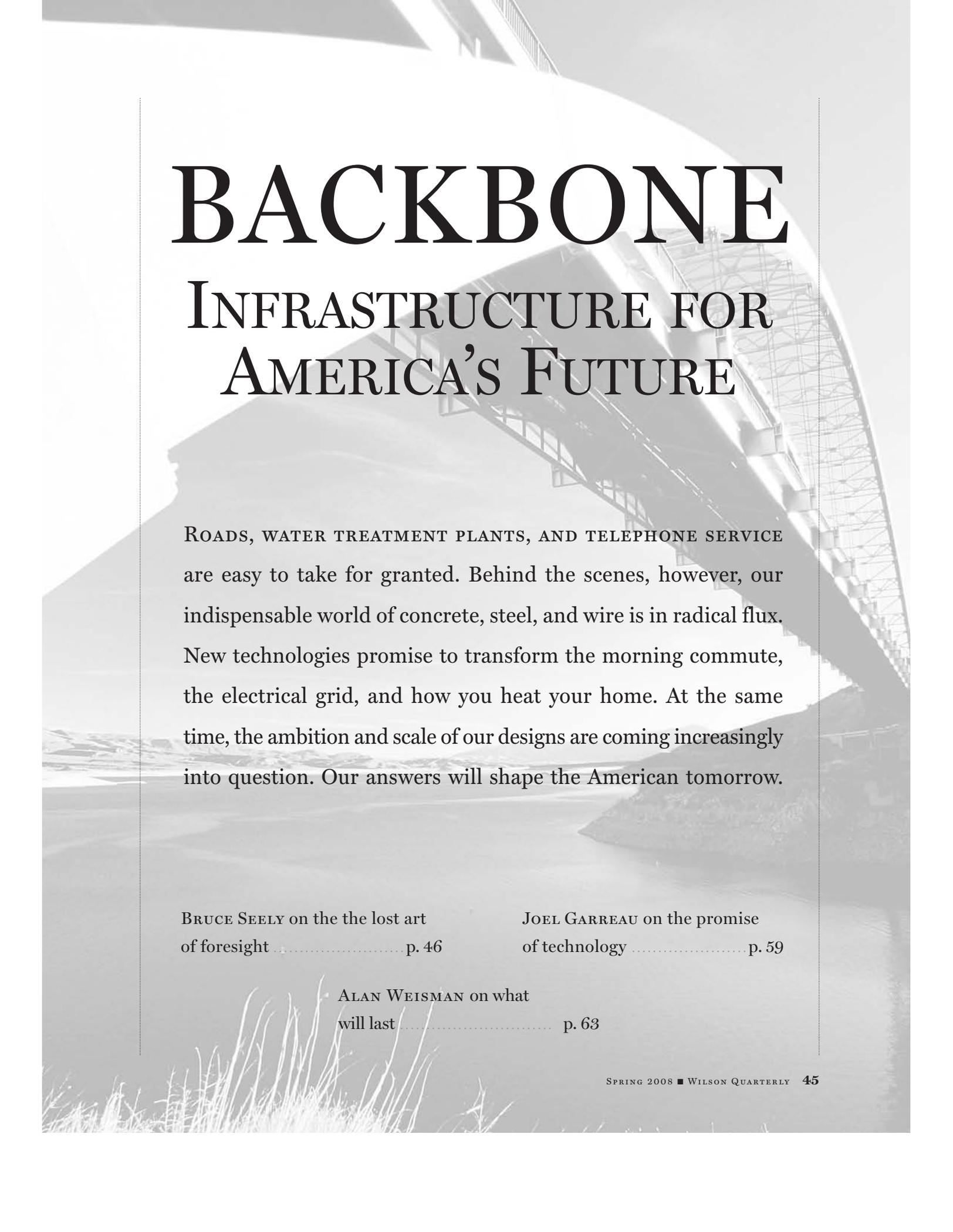
Mahmoud Abbas in January 2005, the Bush administration sat on the sidelines and did nothing to help the Palestinian Authority with the kind of economic aid and security assistance that would buck up Abbas, or to start a serious negotiating process. Our inattention (and Israel’s), as well as the flaws of Abbas’s own party, Fatah, laid the foundation for

Hamas’s election a year later and ushered in the seemingly irreparable split that now exists within the Palestinian community, a split that has massively increased the odds against implementing an Israeli-Palestinian agreement.

Now that it has succeeded in relaunching negotiations at Annapolis, it will take a great deal of hard work for the Bush administration to pass a working peace process on to its successors, let alone reach an agreement. If Secretary Rice can help broker a framework agreement on the core issues, so much the better. Such an achievement would ensure continuity, a negotiating process that the parties owned, and a commitment and investment from the next president.

The entire negotiating process set into motion at Annapolis will remain vulnerable, however, to a looming Israeli confrontation with Hamas. Such a clash is likely to waste time the administration doesn’t have, and lead to Palestinian civilian casualties, which are likely to weaken Abbas and anger the Arabs. In the face of this challenge, the Bush administration must do its part to keep the negotiating process honest and ongoing: It must push the Israelis and Palestinians to fulfill their road map obligations; work with the Arabs and the international community to prevent a humanitarian disaster in Gaza; strengthen Abbas’s security forces; and keep Israel and the Palestinians focused on the core negotiating issues.

With enough determination and luck, President Bush just might be able to hand off to his successor a working negotiation, an improved situation on the ground, and two other critical commodities: the hope that a two-state solution is still possible and the possibility that the United States can still be a major part of bringing it about. Given the hand the Bush administration inherited on Arab-Israeli peacemaking and the way it has played it for most of its two terms, that would be legacy enough. ■



# BACKBONE

## INFRASTRUCTURE FOR AMERICA'S FUTURE

ROADS, WATER TREATMENT PLANTS, AND TELEPHONE SERVICE are easy to take for granted. Behind the scenes, however, our indispensable world of concrete, steel, and wire is in radical flux. New technologies promise to transform the morning commute, the electrical grid, and how you heat your home. At the same time, the ambition and scale of our designs are coming increasingly into question. Our answers will shape the American tomorrow.

BRUCE SEELY on the the lost art  
of foresight ..... p. 46

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of technology ..... p. 59

ALAN WEISMAN on what  
will last ..... p. 63



The built environment can be as fragile as the natural one, as disasters such as last August's collapse of the I-35W Bridge in Minneapolis show.

# The Secret Is the System

*The United States has settled for a patchwork approach to infrastructure. To stay ahead in the global economy, it needs to build adaptable networks like the 1956 Interstate Highway System.*

BY BRUCE SEELY

THE DEATHS OF 13 PEOPLE IN LAST SUMMER'S dramatic collapse of the I-35W bridge in Minneapolis propelled the news media into one of their periodic examinations of the nation's infrastructure. State and municipal highway engineers across the country scurried to inspect suspect bridges, while pundits bemoaned the state of these key technical systems. But such eruptions of interest and activity seldom last much longer than the latest disaster bulletin. Mayor Michael Bloomberg of New York, criticizing his fellow politicians for letting the nation's transportation systems fall apart, stated a simple truth: "Infrastructure isn't sexy or glamorous, and it doesn't make for great headlines, but it is one of the most important issues facing our country. And make no mistake about it, we have an infrastructure crisis."

For more than 25 years, reports and studies have repeatedly warned about shortcomings in the nation's networks of bridges, roads, airports, docks, and rail lines; deficiencies in its public-transit networks; and potential failures in the water supply, sewerage, gas, and electric power utilities. A 2005

infrastructure "report card" by the American Society of Civil Engineers makes for horrifying reading, documenting the continuing decay in 15 different forms of infrastructure. The best grade it awarded was a meager C+, for landfills. It put the price of needed improvements at some \$1.6 trillion. Conservatives have fired back by denying there is a problem—*Crying Wolf* was the title of a 1996 study by the Surface Transportation Policy Project—and touting privatization and more emphasis on user fees (tolls) to avoid spending tax dollars on infrastructure.

It is fitting in a way that our debates over infrastructure have been so long and drawn out. The undertakings themselves are by definition large, expensive, and protracted. The latest effort to ensure an adequate water supply for New York City, for example, has already stretched through the administrations of six mayors. The project was conceived

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in 1954, but construction did not begin until 1970, and fiscal crises halted work several times. The city completed excavation for the \$1.75 billion second phase in 2006, leaving two more stages still to be done. Work will go on until at least 2020.

**CHANGING ATTITUDES toward the environment, growing skepticism about big government, and cost overruns all led to a decline of trust in expert judgment.**

Like virtually all undertakings of this kind, New York's tunnel is little remarked but essential. It will double the volume of fresh water reaching the city and allow the inspection and repair of two older tunnels for the first time since they opened, in 1917 and 1936, respectively. Hurricane Katrina brutally reminded us not only how vulnerable such complex systems are to natural disasters and terrorism, but how important they are to our daily lives and the smooth functioning of the economy. Yet still the bridges collapse.

There is nothing new about our reluctance to spend money on infrastructure. It is impossible to imagine San Francisco without its Golden Gate Bridge, but that iconic span was debated for decades before workers broke ground. It often takes special circumstances to end the financial and political inertia. That's what the Great Depression did, adding demand for job creation and economic stimulus to the existing arguments and sparking construction of many of the nation's most impressive public works, from the Golden Gate to Hoover Dam and the Tennessee Valley Authority. Many less glamorous jobs got done too: thousands of railroad grade crossings, parkways, trails in the national parks. Public-works relief funding from the federal government finally broke fiscal logjams.

Still, there is something significantly different about the way we build now. The political and finan-

cial environments have become much more difficult to navigate. Numerous reviews, rapidly rising costs, and blizzards of litigation are among the well-known symptoms. And there has been a subtler but very far-reaching change: the decline of respect for expertise.

Americans once accepted with little question the views of experts such as highway engineers and dam builders at the Army Corps of Engineers. The experts tended to speak with one voice, and they enjoyed a reputation as neutral specialists and servants of the general welfare. Their authority

made it easier for the public and Congress to accept the arguments, costs, and even the dislocations associated with such projects as the inevitable price of progress.

**T**he decline of trust in expert judgment has its roots in the 1960s. During that decade, projects grew in scale and cost, affecting more people in more dramatic ways (see, for instance, urban renewal). Changing public attitudes toward the environment, as well as growing skepticism toward big government and authority generally, also contributed. And, for the first time, experts themselves disagreed publicly about the merits of big projects.

The construction of nuclear power plants probably aroused the greatest controversy during the 1960s, but attempts to build new urban expressways directly touched the lives of more people. For decades after the inception of the federal highway program in 1916, highway engineers at the state and federal levels enjoyed a remarkable degree of public confidence, and that trust translated into unparalleled political autonomy. Decisions about highway location and priorities stirred political passions, but to an amazing extent Congress and the public deferred to the engineers on technical, financial, and other policy options, so long as they produced a growing network of roads. This faith in expertise reached its apogee with the authorization



A front-end loader is lowered into a huge water tunnel hundreds of feet below the New York City streets. Begun in 1970, construction will continue until 2020.

# Whose Road Is It, Anyway?

INDIANA HAS WORKED A MIRACLE. States everywhere are scraping the bottom of the barrel to build and maintain roads, but lawmakers in Indianapolis are flush with funds. Having leased out the 157-mile Indiana Toll Road for a cool \$3.85 billion, they've got cash to fund some 200 transportation projects.

Indiana's bounty may look great from afar, but on the ground, Republican governor Mitch Daniels is feeling the heat. The deal squeaked by in the state legislature in 2006. Since then, Daniels's party has lost control of the statehouse, and his current poll ratings portend trouble for his reelection campaign in the fall. The governor is incredulous. "We took a toll road that was losing money and turned it into \$4 billion of cold, hard cash." Within months, the up-front lease payment earned more in interest than the road itself had brought in over the previous 50 years, *Governing* magazine reported.

The contract for the Indiana Toll Road is 285 pages long and covers everything from the rate at which the tolls can increase to how quickly roadkill must be removed. On its face, \$4 billion for a road that ran in the red year after year seems like a great deal. After all, Indiana's entire state budget is \$13 billion.

But critics argue that the state gave away too much for too little. Indiana won't see any more money from the

road until 2081, when the lease expires.

Privatization of state toll roads started attracting attention in 2005, when the city of Chicago leased the Chicago Skyway, which links the city to Indiana, to a joint venture between Cintra, a Spanish company, and Australia's Macquarie Bank—the same two firms that later sealed the deal in Indianapolis. The 99-year agreement netted Chicago \$1.8 billion.

State and local governments are facing significant costs to maintain and improve infrastructure of all kinds. The U.S. Chamber of Commerce projects that by 2015, investment will fall short by \$1 trillion. The numbers are daunting for many states. A recent study by Pennsylvania's Transportation Funding and Reform Commission notes that the average state-owned bridge is 50 years old. Twenty-three percent of the state's bridges—nearly 6,000 crossings—are structurally deficient. The commission said that more than 6,000 miles of state-owned roads are in "poor" condition. It predicted a future funding gap of \$965 million annually for highways and bridges, and \$760 million for transit. Governor Ed Rendell is exploring plans to lease the Pennsylvania Turnpike, which could bring as much as \$1.6 billion annually—just about covering the estimated needs.

The crisis in funding both the maintenance and expansion of transportation infrastructure at the state level stems in large part from the

decline in revenue from motor fuel taxes. Forty-five percent of the money states spend on their roads comes from the federal government, funded mostly by the federal gas tax. However, Congress has left the tax rate untouched at 18.4 cents per gallon since 1993, even as the market has pushed prices at the pump over \$3 per gallon. In the last 10 years, the purchasing power of the revenue has dropped by nearly a third. And the income, once devoted exclusively to roads, is now also used to fund mass transit. The states have been reluctant to raise their own gas taxes. The rising cost of materials such as petroleum and steel, meanwhile, has contributed to ever-larger price tags. With huge tabs for Medicaid, prisons, and schools eating up most of their budgets, states have to find innovative ways to fund their transportation needs.

In lieu of leasing out whole stretches of road, some states are meeting new needs by working with private firms to develop dedicated lanes on congested roads. These lanes use variable tolls to regulate volume and allow cars to maintain higher speeds. In December, Virginia reached an agreement to build such high-occupancy toll (HOT) lanes along a 14-mile stretch of the traffic-choked beltway around Washington, D.C. Drivers will be able to pay a fee (estimated at no more than \$6) to leave the daily rush-hour slog

behind. Critics deride the new roads as “Lexus lanes.” Proponents counter that studies show commuters of all economic levels use such lanes—though presumably less affluent drivers use them only in emergencies. Cars with two or more occupants will be able to use the HOT lanes at no charge. Moreover, the revenue could fund transit projects that benefit everyone.

Financed through a public-private partnership (referred to as a P3 by those in the know), the new lanes will cost Virginia only \$400 million of the estimated \$1.4 billion total price tag. Most of the rest will come from Texas-based Fluor Transurban. Minnesota, California, and Colorado already have HOT lanes in places, and several other states are considering proposals.

Critics contend that bringing private equity into the management of America’s roads threatens the public’s long-term control over transportation infrastructure. Safety is also at issue. A study by two economists, Peter F. Swan of Pennsylvania State University and Michael H. Belzer of Wayne State University, found that privatizing a toll road in Ohio would likely result in more car crashes, as trucks seeking to avoid tolls shifted from the large highways to county roads not sufficiently lit or wide enough to handle the increased volume.

But the fundamental concern is whether privatization will actually help address the underlying budgetary problems or prove to be only a Band-Aid. Private firms will prefer to cherry-pick the potentially most prof-

itable, underperforming assets, leaving the states responsible for roads and bridges that cost more than they can bring in. In the end, someone needs to raise the tolls, or transportation infrastructure will become increasingly inadequate. The key question is, who’s going to be the bad guy? If state governments don’t want to incur voters’ wrath by raising tolls, they can pass the buck to private companies—although that approach didn’t spare Governor Daniels.

New Jersey governor Jon Corzine originally considered leasing some of the state’s major toll roads, including the iconic New Jersey Turnpike, but backed off last summer. “We’re working on a proposal where the public will continue to own and operate our toll roads that will give us some of the financial benefits that other states have achieved through privatization,” he promised, “We’re not going to privatize.” Instead, the Democratic governor is pushing an unpopular plan to raise the tolls by 50 percent every four years from 2010 to 2022, an increase of up to 700 percent overall (the tolls will also be adjusted for inflation). In February, 700 people rallied outside the New Jersey statehouse singing “We’re Not Gonna Take It.” But, as drivers will discover, you can’t have it both ways.

Americans have a particular attachment to their roads. In *The New York Times Magazine*, writer Ann Patchett observed, “Ours is a country of wide-

open spaces, and to cross those spaces with complete freedom is the modern cornerstone of our national identity.”

Perhaps leasing America’s roads to foreign investors in Spain and Australia violates some deeply held idea of what it means to be American. But America’s infrastructure—its roads, bridges, and tunnels—has always been created by combinations of private and public investment. In 1792, Pennsylvania chartered a company to build the first private turnpike, winding the 62 miles from Philadelphia to Lancaster. The nation’s railroads, the feat of engineering that stitched the nation together following the Civil War, were built by private companies subsidized by the federal government. In New York and other cities, investors cooperated with municipalities to construct subways and operate bus lines. And private ownership is not uncommon abroad. Cintra, for example, has a portfolio of roads in Spain, Canada, and other countries.

Perhaps HOT lanes and 75-year leases will pull the states out of their budgetary black holes. But if these experiments in private financing fail, 75 years will be a long wait to get those roads back into the public’s hands. Private investment is only one road to building and maintaining America’s infrastructure. There are lots of other roads out there—and they don’t all lead to the same place.

—*Rebecca J. Rosen*



**Thinking big:** A proposed North American Super Corridor would create a road, rail, and shipping system built around the existing spine of U.S. Interstate 35. Designed to stimulate trade with Mexico and Canada, the corridor is anathema to critics concerned about the effects of immigration and free trade.

of the Interstate Highway System in 1956, which eliminated annual battles over road-building budgets by creating the Highway Trust Fund, a revenue source that would be fed by dedicated federal gasoline taxes. It certainly helped that Americans were unambiguously enthusiastic about cars—historian John C. Burnham called the gas levy the only popular tax in American history. Now, highway engineers assumed, their charge was simply to build a nationwide system of limited-access, high-speed roads as quickly as possible.

Alas, while the engineers' full-speed-ahead approach worked well in rural areas, it ran into increas-

ingly angry public resistance when interstate expressways began to push into urban neighborhoods, threatening to displace thousands of people and wipe out entire neighborhoods. The Embarcadero Freeway in San Francisco (once Interstate 480) became the poster child for troubled urban highway projects when the city's Board of Supervisors voted to stop construction in 1959. The route was withdrawn from the California interstate map six years later. Protest later stopped road construction in Philadelphia, Miami, Washington, and other cities.

New laws such as the 1970 National Environmen-

tal Policy Act, which required environmental impact statements and public hearings for any project using federal funds, drastically altered the landscape of infrastructure planning and construction. Politicians responded to the public outcry against urban expressways by throttling back their enthusiasm for new roads and removing engineers from control of the nation's road-building programs. The man who had spearheaded the fight against Boston's inner road ring became head of the Massachusetts Department of Transportation in the early 1970s, while a journalist assumed control of the Mississippi highway program. At the federal level, political appointees replaced engineers as the key policymakers in the Federal Highway Administration.

These changes produced road programs that seemed more responsive to the wishes of citizens and to environmental considerations. Mass transit got more money and attention. It now claims about 20 percent of all federal expenditures on

transportation, much of it for operating expenses and subsidies.

Many younger highway engineers adapted to this new world of alternatives, scrutiny, and review, and considered later interstate projects, such as the section of Interstate 70 through Glenwood Canyon in Colorado (completed in 1992), much better designs because of their sensitivity to environmental and social considerations. But the engineers did not take well to the fact that money from the Highway Trust Fund could be "diverted" to the construction of bicycle paths, sound barriers, or environmental remediation projects. And older engineers resented the longer planning process and higher costs of the new regime. Most believed that the interstates could not have been built under the new rules.

As technical experts were removed from positions of administrative and policy authority, political figures came to play an increasingly dominant role in transportation policy decisions. Of course, politicians had often weighed in when big construction contracts

were awarded and locations of new interchanges were picked, but federal officials always sought to minimize overt political interference. With Washington's blessing, during the 1950s many states adopted rating systems that relied on "sufficiency formulas" to direct highway dollars to areas of greatest need, relatively free of political meddling.

By the 1970s and '80s, these approaches gave way to a more traditional political calculus. Witness Boston's \$14.8 billion Central Artery/Tunnel Project (the "Big Dig"), the product of a feat of political logrolling masterminded by Representative Thomas (Tip) O'Neill, a Boston Democrat who served in the U.S. House of Representatives as majority leader and

**EVEN AS TRANSPORTATION became more politicized, public opinion shifted against taxes and government spending.**

later as Speaker of the House. Members of Congress increasingly used earmarks to direct Highway Trust Fund money to favored projects in their districts. In the 2005 transportation bill, the Senate version included more than 6,300 earmarks totaling \$24.2 billion of the \$244 billion authorized for work between 2005 and 2009. Often the favored projects meet local needs, but these may not be the most urgent priorities from a national or systems perspective.

Even as transportation became more politicized, the tide of public opinion shifted against taxes and government spending, and against government itself as an authoritative institution capable of accomplishing public ends. The change affected spending much more in the states than at the federal level. By the 1990s few politicians anywhere could effectively advocate higher taxes of any kind. Congress has not increased the federal levy (18.4 cents per gallon) since 1993, and most states, with taxes now ranging from 7.5 cents per gallon in Georgia to 32.1 cents in Wisconsin, have been equally reluctant to act. Yet the purchasing power of

those pennies has steadily declined. As a result, Highway Trust Fund expenditures may exceed current balances sometime between 2010 and 2012, raising the specter of a return to the annual political battles over highways that were common before 1956.

A report earlier this year by the National Surface Transportation Policy and Revenue Study Commission proposes to tackle that and other challenges of the next five decades by increasing the federal gas tax by as much as 40 cents over five years. Secretary of Transportation Mary Peters and two other commission members dissented, but, somewhat surprisingly, Paul Weyrich, a conservative activist with long involvement in transportation, broke ranks to join the majority. Responding to the report, John Engler, a former Republican governor of Michigan who is now CEO of the National Association of Manufacturers, did not take sides, but warned that transportation bottlenecks now cost industry nearly \$8 billion annually. The United States, he said, “will

soon be facing a competitive disadvantage if we don’t develop a national plan to improve the quality of our infrastructure system.”

The commissioners confronted some uncomfortable facts: Traffic in the United States has nearly doubled since 1980, but highway capacity is virtually unchanged. (In technical terms, vehicle-miles traveled are up nearly 100 percent, while lane-miles are virtually the same.) And the decades-long trend of two to three percent annual growth in traffic seems likely to continue unabated.

Most opponents of higher gas taxes find the answer in alternative financing mechanisms such as public-private partnerships for roads and other infrastructure (see sidebar, pp. 50–51). In Dallas and a few other metropolitan areas, for example, corporations are eager to pay for the right to build privately operated toll highways that state governments have not been able or willing to finance. Technologies such as EZ Pass that make it possible to collect tolls and implement congestion-pricing fees without disrupting traffic are also part of the emerging paradigm.

These approaches can play a useful role, but they

**In Singapore, the world’s busiest container port is almost completely automated, one product of a global boom in infrastructure investment.**



also raise fresh questions. If user fees pay for one-shot solutions for the worst urban and suburban choke-points, where will the money come from for lightly traveled roads, especially in rural areas? Will a public that pays stiff user fees in order to see its traffic snarls eased support the higher gas taxes needed to build and maintain roads in distant areas?

This question points straight to a much larger issue: In order to be fully effective, transportation must be an integrated *system*, not just a patchwork of roads, railroads, and ports. Engler is not alone in arguing that a national plan is needed to keep the United States globally competitive. Other rationales for infrastructure investment, such as military preparedness, have occasionally served as rhetorical justification in Congress, but at bottom, roads have always been seen as a powerful economic engine. That approach has included a commitment to the development of a complete national network of roads, under the logic that the entire country benefits from such a system. For many towns and small cities, new highways have been the breath of life itself, connecting them to the regional and national economies. Fed-

eral policy was structured so that densely populated states such as New York helped underwrite highways in Montana and Wyoming. Federal and state highway engineers ensured that the growing web of roads had continuity at state borders. The same logic informed other federal transportation policies, such as subsidies early in the 20th century for a national aviation network. Yet this donor-donee structure has come under increasing attack, and states soon may get back every penny they pay, only one indication of the eroding support for systems thinking.

Worthy though their goals might have been, even the systems builders had their blind spots. They, and the nation generally, rarely viewed their individual efforts as contributing to a larger transportation whole. Just as we think of solving each road or bridge problem in isolation, we tend to think of each mode of transportation—roads, rail, air, water—as discrete and independent, designed to be operated and in some cases regulated without regard to the others. This approach reflects a mindset created in the 19th century, when business owners and the public reacted to what they saw as the stranglehold railroads had on transportation services and rates. Anger at the “monopolistic” railroads helped breed heavy-handed regulation and broad support for government efforts to bolster rival forms of transportation, from inland waterways to aviation, which many people saw as a way to check the railroads’ power. The committee structure of Congress, with a different panel assigned to establish policy and funding for each technology, reinforced this compartmentalized approach.

Predictably, the congressional committees backed regulatory policies that gave this vision meaning. Thus, railroads were barred from owning coastal or inland waterborne shipping and restricted from developing truck and bus operations. William W. Atterbury’s Pennsylvania Railroad and other rail carriers experimented in the 1920s with trucks and buses to supplement or replace rail operations, especially on lightly traveled branch lines, but eventually were blocked from ownership. When the Interstate Commerce Commission, longtime overseer of the railroads, gained responsibility for regulating buses, trucks, and inland waterways



# Shopping for Infrastructure

The American Society of Civil Engineers' *Report Card for America's Infrastructure* (2005) offers a daunting menu of future needs and calls for more than \$300 billion in additional annual spending. Among the recommendations:

**Aviation:** A 52 percent increase in traffic is projected by 2015 at the nation's 510 commercial airports. Funding comes chiefly from airport authority bonds and user fees, mostly channeled through the federal Airport and Airway Trust Fund. Needs are \$9 to \$15 billion annually. Increased user fees will be needed.

**Dams:** Of the 79,000 dams in the United States, more than 3,500 are rated unsafe, and real estate development is putting more people in harm's way. Federal dams, only five percent of the total, are in good repair. Needed investment: \$840 million annually.

**Navigable Waterways:** The U.S. Army Corps of Engineers maintains more than 12,000 miles of canals and other waterways, carrying one-sixth of the nation's intercity freight (at only a fraction of the cost of shipping by truck or train). But nearly half the corps' 257 locks are already functionally obsolete. All should be replaced, at a total cost of \$125 billion.

**Rail:** Growing freight traffic has created significant chokepoints for the first time since World War II. The industry will need to spend up to \$195 billion by 2025 to maintain and expand the system. Demand for Amtrak passenger service in the Northeast could be met by a \$6 billion investment.

**Transit:** Some 14 million Americans use public transit every weekday; traffic (measured in passenger miles) is growing about two percent annually. Outlays at all levels of government are rising, but investment is still short of the \$14.8 billion minimum.

in 1940, it was required by law to preserve the inherent advantages of each mode. Long after their supposed monopoly had vanished, railroads were still the bogeymen. In the 1950s, when they were already ailing shadows of themselves, the interstate highway program was developed by the federal government without any consideration of the impact on railroads. In 1967, Congress united many disparate government agencies in the field under the umbrella of a new U.S. Department of Transportation, but that did virtually nothing to advance policy conceptions of transportation as a whole.

A handful of innovators have nevertheless managed to pioneer new approaches. In the 1950s Malcolm McLean, a successful trucking operator, launched a company able to move sealed containers on oceangoing ships and deliver them to their destinations on trucks or railcars without any intermediate unloading and reloading of the containers' contents. The costs were a fraction of those associated with traditional shipping. McLean succeeded only because he was able to exploit a loophole in the regulatory system: Truckers were barred from owning shipping firms, but shippers were permitted to move truck trailers and containers. So McLean sold his trucking firm and bought a steamship company, which grew into the container pioneer Sea-Land Service. Slowly through the 1960s and '70s container shipping gained ground, eventually transforming the way all freight is carried over the oceans.

Not until 1991, with the Intermodal Surface Transportation Efficiency Act, did the federal government give priority to a true systems approach to freight movement. The bill allowed the states more authority to spend federal dollars on efforts to link different networks, such as the large intermodal terminal in Charlotte, North Carolina, which serves trucks, trains, and ships (located nearly 200 miles away, in the port of Wilmington).

But it has proven difficult to change traditional ways of thinking. The nation's trucking firms, railroads, and airlines have not been pioneers. The two exceptions, UPS and FedEx, can be described as the first and to some extent only intermodal freight com-



**Interconnected power grids carry electricity across the United States from facilities such as this coal-fired West Virginia plant. In 2003, a plant failure in Ohio cascaded into a blackout that affected 50 million people. A key cause: Three overburdened power lines came into contact with untrimmed trees.**

panies in the United States. They do not discriminate between different means of moving packages and shipments but seek the fastest and most efficient path—a single parcel may travel by truck, rail, and air before reaching its destination. UPS sorts 300,000 parcels an hour at one of its facilities; at the FedEx hub in Memphis, Tennessee, cargo jets often roar in at 90-second intervals, while packages leave by plane and truck.

FedEx, UPS, and all the elements that make them work are only pieces in what is increasingly a global transportation system. With its “just-in-time” delivery and digitally guided logistics and supply chains, the global economy rests on the ability to move containerized freight on amazingly tight and accurate schedules around the world by a variety of conveyances. America’s railroads are jammed with containers that start their journeys in China, enter the United States at Seattle or Los Angeles, move by rail to East Coast ports, and are loaded onto freighters bound for Europe, where they are carried to final destinations by trucks and trains.

Now some advocates are pushing for a North American Super Corridor, with an integrated network of road and rail links built around the spine of America’s Interstate 35 and running from Mexico to Canada. It has become a subject of enormous controversy, especially among opponents of the North American Free Trade Agreement, but it is a good example of the kind of carefully planned systems we need to consider. Whether you shop at Wal-Mart or Bloomingdale’s, you can thank the new hyperefficient global shipping network for a share of the bargains you see. But if U.S. facilities turn out to be a weak link in global supply chains, business will go elsewhere and the bargains will evaporate.

The global nature of today’s transportation structures is a key source of the concern among specialists about the level of U.S. investment in infrastructure. After running at about three percent of gross domestic product (GDP) during the 1950s and ’60s, such spending has averaged less than two percent since 1980. India and China, meanwhile, devote between five and nine percent of GDP to infrastructure—roads, power and water treatment plants, airports. Their investments will pay off well into the future, sometimes in ways that are hard to anticipate.

In the United States, the startling success of

upstart online retailers such as Amazon.com during the 1990s was linked to the rise of the nation’s fiberoptic network, an important new form of infrastructure. But equal credit belonged to the Interstate Highway System, which, in combination with the other pieces of the nation’s road network, had the enormous reach and capacity needed to allow the miraculously quick delivery of millions of parcels. None of the people who conceived the interstate network in the 1930s and ’40s envisioned anything like Amazon, but the system was complete enough, down to county and municipal streets, and flexible enough to do the job. That system was traceable in part to visions—and funding programs—that met the needs of entire networks.

Inadequate infrastructure has social as well as economic consequences. Lack of full access to vital networks—whether roads or broadband or running water—serves to reinforce existing patterns of economic growth and stagnation. It threatens to create new classes of haves and have-nots. Just as America would suffer if it were to be “unplugged” from the global economy, so individual Americans can be diminished by inadequate access.

**W**e all recognize that building effective, integrated infrastructure systems takes money and political will. But it also takes coordination on a scale that is not often provided by free markets alone. The people at FedEx and UPS, along with managers and entrepreneurs at every level of the American economy, have the luxury of picking and choosing among fundamentally strong transportation systems because of public-policy choices made long ago. We need to ensure that their successors have the same choices. John McQuaid, a Pulitzer Prize-winning journalist who has written about the Hurricane Katrina disaster, asked recently if America is “losing its knack for getting big things done.” Our own past suggests that such gloom is unwarranted, that in the end we have mustered the political will and the money when they were most needed. Those long trains of containers hauling goods from China are a good reminder that both the will and the money are needed now. ■

# Get Smart

*Pouring more concrete will not by itself answer our infrastructure prayers. Look instead to the transformative power of information technology.*

BY JOEL GARREAU

IN 1876, WESTERN UNION DECIDED THAT TELEPHONES would never replace telegram messengers. In 1971, AT&T turned down the opportunity to run the Internet as a monopoly. In 1980, Ma Bell concluded that cell phones would never replace landlines.

These moments come to mind as that painfully unglamorous word *infrastructure* is increasingly heard on Capitol Hill. Our roads and airports are jammed. Drought threatens from Tucson to Atlanta. Floods are a plague from the Chesapeake to California. Our air conditioners and computers are straining the capacity of our electrical grid.

*We can't go on like this*, goes the hand-wringing refrain.

Turns out that's true, in an ironic way. Our industrial-age solutions *are* approaching their limits. Not only are they crumbling into decrepitude, but they have reached levels of physical absurdity that spark kamikaze political resistance, from 17-story-tall electrical transmission towers despoiling rare and pristine landscapes to interstate highways approaching the width of the Bosphorus.

The business-as-usual interests lining up for more tax dollars rarely mention the impending obsolescence of their favored projects. Yet increasingly, infrastructure

depends as much on wires a few molecules wide, and biology that produces energy, as it does on steel and concrete. The means to fundamentally control matter, energy, and life itself are emerging so fast that it is hard to imagine any existing infrastructure technology not being shaken to its core in the next decade or two.

These game changers can be dated to 1965—six years after the first commercial computer chip appeared. An obscure physical chemist named Gordon E. Moore noticed that the number of transistors you could put on a piece of silicon at the cost of a dollar was doubling every year. He boldly predicted that these doublings would continue for 10 more years.

Little did he know. Moore, who would become one of the founders of Intel and a billionaire several times over, will probably be best remembered for what is now known as Moore's Law. That axiom, which has become the core faith of the global computer industry, is usually stated this way: "The power of information technology will double every 18 months, for as far as the eye can see."

A doubling is an amazing thing. If we think of progress as a staircase, it makes each step as tall as all of the previous steps put together. Such doublings every 18 months describe a geometric curve. The 20 years behind you are not a guide to the next 20 years; they are at best a guide to the next eight. And your previous 50 years are not a guide to your next 50; they are at best a guide to the next 14. For example, a single iPhone has more processing power than all the computers at the disposal of

JOEL GARREAU is a student of culture, values, and change, and a reporter and editor for *The Washington Post*. He is the author of a book on metropolitan futures, *Edge City: Life on the New Frontier* (1991). His most recent book, about the future of human nature, is *Radical Evolution: The Promise and Peril of Enhancing Our Minds, Our Bodies—and What It Means to Be Human* (2005).

the North American Air Defense Command in 1965, when Moore prophesied.

Even more startling is how Moore's Law opens entirely new vistas, especially in what I call the GRIN technologies, for the genetic, robotic, information, and nano processes. Each is following its own curve of exponential change.

When sequencing the human genome was first proposed in 1985, many thought it could never be accom-

plished, or would cost the earth. Yet scientists managed the feat by 2000, for a fraction of the anticipated cost. That's because the computers required to make it happen conformed to the inexorable price-performance curve of Moore's Law and accelerated the future into being. Soon you will be able to get your own genome sequenced—all 3.5 billion bases—for \$1,000. Nathan Myhrvold, the former technology chief of Microsoft, expects the price eventually to drop to \$10.

As the price of oil soars and the cost of computing approaches zero, there is an enormous spur to make infrastructure smarter. The industrial-age way to address congestion, for example, is to pour more concrete. But there is already vastly more capacity in the American road system than we remotely need. If we could find a way to fill the front passenger seat of just 20 percent of the cars on the road, traffic jams could be eliminated tomorrow.

How would you do that? One way would be to have your madly clever cell phone alert the world to your desire to go from here to there. The idea would be to create a market of trustworthy people heading in the right direction who might pick you up in the next five minutes in exchange for, say, the price of gas and tolls. Think eBay organizing rides on the fly.

Navigation systems already give directions to drivers—today's cars have far more computers than light

bulbs. Nissan and other auto manufacturers are well on the way to fielding smart cruise controls that communicate with other cars and with sensors on the road ahead to maintain high speeds, plan alternate routes to avoid traffic snarls, and prevent accidents.

The more urgent our problems—such as global warming—the more likely we are to reach out to our amazing new technologies for solutions. Oil at \$100 a barrel is a serious incentive. Already geneticists at companies such as LS9 Inc. are commercializing life forms that eat cellulose and poop gasoline for what is promised to be about a buck a gallon. Craig Venter, who sequenced the human genome in 2000, believes he will have a critter next year that will devour

climate-ruining carbon dioxide and turn it into gasoline.

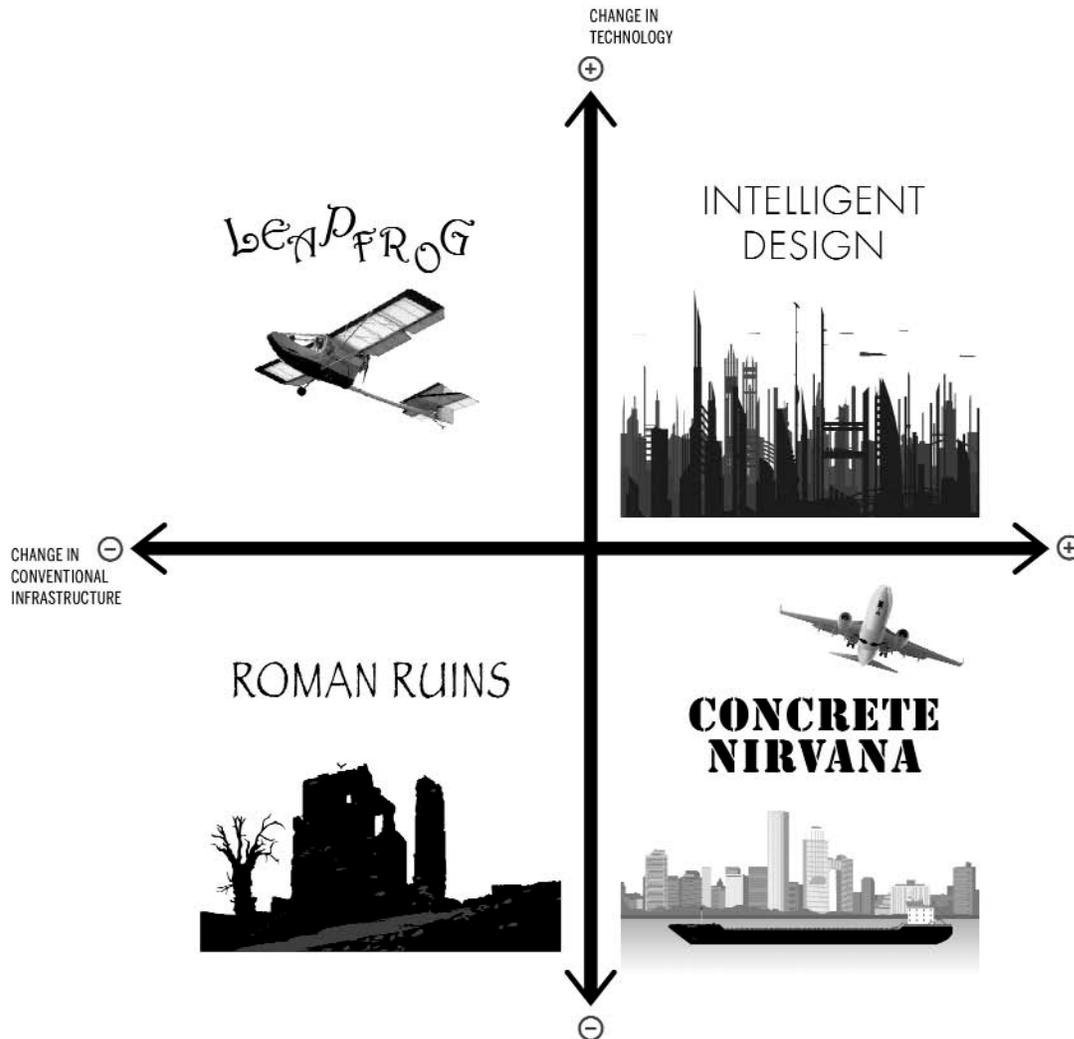
But solar power is the real solution to the energy crisis. As it happens, that low-hanging fruit is one of the first targets of nanotechnology. Several companies, such as Nanosolar Inc., are going commercial right now with processes that produce endless sheets of thin plastic with astoundingly tiny energy-converting semiconductors printed on them in nano-ink. If the technology rolls out as hoped, it will be able to turn sunshine into electricity priced as cheaply as power from coal-fired plants. A National Association of Engineers panel recently predicted that solar power will scale up to produce enough energy to meet the needs of everyone in the world in 20 years.

Would that profoundly change the infrastructure challenge? You bet. What is now a top-down hierarchy dominated by big generators, big transmission lines, and big coal would become a bottom-up network in which every consumer could also be a creator. Just as the Internet has chewed up the television, radio, movie, newspaper, music, and telephone worlds, distributed GRIN technologies could cause an upheaval in the world of utilities.

Slightly farther out on the commercialization horizon are nanotechnology membranes like those developed at UCLA that promise to slash the cost of desalinating water. Along with biotech, they also promise to mitigate the effects of pollutants. None of these are lab curiosities.

**THERE IS ALREADY VASTLY more capacity in the American road system than we remotely need.**

## Four Infrastructure Futures



Changes in technology and conventional investment will shape the future. In the “Intelligent Design” scenario both increase. In “Concrete Nirvana” investment grows but technology does not. “Roman Ruins” is the worst of both worlds. In “Leapfrog,” new technologies overcome crumbling infrastructure.

They are burgeoning businesses that are ramping up now. The question isn’t whether the technologies work, it’s whether the economics do. If so, they could affect quite a few dam, canal, and treatment plant calculations.

Will these game-changing technologies become commercially viable in time to solve all our problems? Who knows? But if they do, a transformation on the scale of

those that roared past Western Union and AT&T is a serious possibility.

**T**he prospects I describe pose two critical questions: First, will we quickly address all our infrastructure problems by pouring concrete and deploying all the

tried-and-true industrial-age solutions as fast as we can? There's a huge range of possibilities between yes and no. Second, will game-changing technologies come on line quickly, cheaply, and with no unanticipated consequences?

Graph those two uncertainties as axes (see p. 61), each with a negative and positive pole, and you get a vision of four possible worlds we might be entering in the next 10 or 20 years.

If we don't pour all the concrete, and the new technologies don't live up to their promise, we're looking at a minus-minus world one might call "Roman Ruins." Worst case, our cities contract, our fields dry up, our lowlands are covered by ocean, and our economies collapse. You've seen the disaster movies—*The Day After Tomorrow*, for example.

That's a serious scenario. Could happen. Look at New Orleans.

In another world—call it "Concrete Nirvana"—it turns out that the new technologies do not rapidly live up to their promises, but we do start listening to all the alarms from our belt-and-suspenders engineers, bless their hearts, who warn about rolling blackouts and empty faucets. In that world of one minus, one plus, we recognize that our civilization is at stake and rapidly decide that there are worse things than building scores of coal and nuclear power plants, waste treatment facilities, dams, and dikes. Roads are widened, rail undergoes a new renaissance, and dramatically enlarged airports and seaports attract awed visitors from around the world.

Again, could happen. All it takes is political will. And a lot of lobbying dollars.

Diagonally across from "Concrete Nirvana" on the matrix is the one-plus, one-minus world we might call "Leapfrog." In this world, new technologies come to market so fast that old infrastructure worries become quaintly obsolete. Now that cell phone service covers 98 percent of Bangladesh—thanks to Grameenphone, an offshoot of the Nobel Prize-winning microlending outfit Grameen Bank—can anyone remember why we ever worried about how much it would cost to cover the planet with landlines?

Diagonally across from "Roman Ruins" is "Intelligent Design." This is the plus-plus world in which we recognize all the problems, recognize all the possibilities, try everything we can dream up, and see what sticks. In this world, for example, we recognize ways to transform air

travel: deploy many more jet taxis like those already developed by Honda, Cessna, Adam Aircraft, Eclipse, and Embraer that are smart, efficient, and can safely and quickly make the hop from a short runway near your house to a short runway near your destination without needing massive hubs and enormous investments in air traffic controllers. Insurance companies mandate that the only way to travel on highly congested roads is to turn the driving over to smart navigation bots that never get drunk or distracted and are far better than people at avoiding accidents. As a side benefit, these bots safely pack many more cars—bumper to bumper, at speeds of 80 miles per hour—into the same amount of space as in the old world, ending traffic jams forever.

The way we get to "Intelligent Design" may be by recalling that, historically, the infrastructure solutions that work best are public-private partnerships. Think private passenger planes landing on public runways, or private cars traveling on public roads. All-private solutions, such as investor-owned toll roads, and all-public ones, such as subways, have their place. But they are specialized tools.

The public-private partnership I most want to see is the one that quickly provides "big broadband" of between 100 million and one billion bits per second to every home in the land. Between 1999 and 2006, the United States fell from third place to 20th in the International Telecommunications Union's measure of average broadband speeds, behind, oh, Portugal. This is disastrous for the American economy. It means the markets for next-generation information companies will be elsewhere. Just as with that earlier critical economic and social enabler, the telephone, there are few if any market reasons for private-sector providers to install fat information pipes the last mile to every home. That's why the governments of states such as California and Kentucky have stepped up to the plate, launching innovative public-private partnerships.

Whatever does the job, let's do it. Now. One idea—surely there are others—is for the federal government, the states, and the private sector together to spend on the task in each of the next four years about what it cost to build Boston's Big Dig. However we do it, the important idea is for all of us to hook up quickly to imagine mind-blowing solutions to our novel challenges together.

Is that a credible "Intelligent Design" scenario? You decide. ■

# Built to Last

*When our roads and bridges crumble and collapse, we have one kind of problem. When they don't, we have another.*

BY ALAN WEISMAN

THE FIRE STATION WHERE ERIN MOORE AND I have paused in our stroll through downtown Tucson won't fall apart anytime soon. Its bottom half is walled in 18-inch-thick concrete, which surrounds massive I-beams that frame tall, wooden double doors. The steel-clad upper two stories are faced in slabs of pale stone. "Now *that* one," Moore says, nodding approvingly, "will leave a very nice skeleton." A tall, light-haired architect in her early thirties, Moore has wide, alert eyes that absorb copious amounts of information in a glance. Through them she sees architecture in four dimensions, not the usual three.

"I don't see a structure as beautiful unless it has a graceful way to break down built into its future," she says, shading her eyes against the autumnal desert glare. Solid as this fire station is, she can envision how, if its destiny is left to time, the sun will loosen the grout and caulking that secure its facing, sending the stone crashing someday. The big doors will succumb as gravity and moisture undo their hinges, and its floors of concrete, poured over corrugated decking, will crack and flake apart. Slowly but inexorably, the building's base will disintegrate to sand and lime, eventually leaving only a rusting matrix of rebar and steel beams. Finally, that too will corrode, to iron oxide dust. Aesthetically, Moore says, the deterioration of this building will be far more

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interesting and pleasing than the fate of the tinted-glass-and-steel downtown boxes we've passed, doomed to collapse one day into messy piles.

"We live and build within a cyclical ecosystem, in which things mean as much in death as in life. When we show clients an architectural rendering, it's like when an OB-GYN shows expectant parents an ultrasound image—that's not what their kid will always look like. It's not just how something looks now, but how it *will* look. Architects should think of ourselves as choreographers. What we make will always be interacting with time, weather, chemistry, and with people's touch."

Across the street is a venerable example: one of Tucson's few remaining blocks of flat-roofed adobe houses. Replastered every few years, they last indefinitely; neglected, they melt attractively until all that remains is a pile of reusable window frames. Once, such natural mud constructions defined the entire city. Then railroads arrived, bringing sheet metal that could form low-maintenance pitched roofs. But that was only the beginning. Most of the Tucson of today won't dissolve charmingly back into the earth from which its walls rose. Instead, its legacy will be heaps of aluminum shower-stall parts; sun-cracked, faux-clay vinyl roofing tiles; cement-and-polymer hybrid siding advertised not to weather, but which does anyway as water infiltrates its nail holes; plastic and brass- or chrome-plated debris that once adorned façades and swimming pools; and lumps of polymer glop used to bind these items, that

won't break down for thousands of years.

Yet even if our cities were filled with totally biodegradable and recyclable architecture, we would still be faced with clutter that won't disappear in any reasonably human span of time, because every edifice and dwelling is linked by infrastructure intended to be resilient. Unlike buildings, whose durability isn't always a virtue—"You want a McDonald's to be ultrapermanent?" Erin Moore asks students at the University of Arizona, where she teaches—we get into trouble when entropy shreds the connective tissues of our civilization. We want our roads, bridges, tunnels, mass-transit rails, dams, pipelines, sewers, canals, and transmission cables to last. When they don't, the consequences range from irritation and anxiety to panic and disaster. But if we design infrastructure to endure forever, have we only created another kind of problem?

**O**n August 1, 2007, a Minneapolis bridge that forms part of our interstate highway system dropped into the Mississippi River—"without warning," newscasters said repeatedly. Though their shock was genuine, their analysis was mistaken. While I was researching my book *The World Without Us*, a bridge expert named Jerry Del Tufo had explained to me exactly why such events were predictable, if not inevitable.

**When trains stopped running in this Manhattan tunnel for a decade, a community of homeless people built shanties in the abandoned cavern.**





Del Tufo, a structural engineer with the Port Authority of New York and New Jersey, has at various times been in charge of several bridges linking New York's boroughs. One snowy February afternoon in 2005 he drove me to the Bayonne Bridge, which connects Staten Island to New Jersey. As we gazed up at the Bayonne's colossal underside matrix of steel bracing, Del Tufo explained that New York bridges such as the George Washington and this one, both more

enclosed ramp in Boston's recently completed Big Dig, a massive public-works project that rerouted snarled downtown traffic over a new bridge and through two tunnels—one of which is more than three miles long. Thousands who'd traveled the same route that day were stunned by the random good fortune of their near miss.

The dilemma of modern construction is summed up in an anecdote that Wernher von Braun, the scientist

who developed the U.S. space program, used to tell about John Glenn, the first American to orbit the earth: "Seconds before lift-off, with Glenn strapped into that rocket we built for him and man's best efforts all focused on that moment, you know what he said to himself? 'My

## CAN WE RISK building something enormously costly that might soon become obsolete?

than 70 years old, were built before computers were around to calculate the minimum amount of materials budget-crunched contractors could get away with. Back then, cautious engineers simply heaped excess mass onto the bridges they imagined.

"These bridges are so overbuilt, traffic's like an ant on an elephant," Del Tufo said. "The GW alone has enough galvanized steel wire in its three-inch suspension cables to wrap the earth four times. We're living off the overcapacity of our forefathers."

By contrast, the Minneapolis bridge, half the age of these robust older spans, was already known to be crumbling before it failed. At the time of its collapse, four of its eight lanes were closed for repairs to the roadway deck and to several weakened steel joints, the extent of their deterioration hidden from public view behind tarpaulins. Although no official cause of the calamity has been identified by the National Transportation Safety Board, the added weight of construction materials and cement trucks to evening rush hour traffic was apparently enough to break the I-35W bridge's back. That only 13 people died was considered miraculous.

A year earlier, just one car was crushed when a three-ton slab of concrete held in place by epoxy became unglued and fell from the ceiling of an

God! I'm sitting on a pile of low bids!"

And we've been driving over and under them. One obvious remedy is to spend more public funds to shore up our underpinnings. Yet this logic collides with an invisible obstacle—invisible because it lies beyond the horizon, that is, in the future: How can we know what kind of infrastructure will be necessary five or 15 years from now? Can we risk building something enormously costly that might soon become obsolete? And when it eventually does outlive its service, will we be able to afford to dismantle it without leaving huge, indelible gashes in the landscape, and reuse the stuff for which we paid so much to construct it?

**T**wo hundred miles west of Tucson, 300-year-old wagon wheel ruts marking the passage of Jesuit explorer Padre Eusebio Kino are still traceable in the desert caliche, just above the Mexican border. To the north, paralleling Kino's route, the 10-inch-thick, four-lane band of poured concrete ending at San Diego known as Interstate 8 will last far longer. But what if our search for energy-efficient, next-generation transportation were to produce a vehicle—say, a hovercraft—that rendered unnecessary



**This granite aqueduct in Segovia, Spain, built without mortar or cement, has endured for 2,000 years, but pollution and age are slowly deteriorating it.**

not only energy-gobbling transmissions and friction-prone rubber tires but possibly even roads themselves—and for that matter, tunnels and bridges?

What would we do then with the four million miles of pavement cross-hatching the United States alone? What would China do with its own ever-thickening, mostly brand-new weave of highways, already half the size of ours and spreading fast? Although concrete and asphalt can be recycled, their main application is to build more roads. Either way, reusing or removing implies vast, possibly prohibitive energy expenditures. Even leaving them intact for bicycles would become

extravagant once maintenance costs were factored in. Nature would eventually overgrow them—in a few centuries to a few millennia, depending on climate—but until then, they would bear accusing witness to how our century of motorized vehicular addiction scarred formerly sublime land.

Hovercraft may seem an unlikely scenario to us now (though at Chicago's 1893 World's Columbian Exposition, technology exhibits for the next century failed to predict airplanes, television, and personal computers). But another potential innovation that could supersede a significant part of our infrastructural legacy isn't so far-fetched. During the 20th cen-

tury, we wrapped much of the earth's landmasses in wire: electrical and communications lines that, if the United States' grids alone were strung in a single strand, would reach the moon and back, and nearly back again. Whenever storms or accidents sever their copper, aluminum, or optical-fiber lengths, we lose money and, temporarily, our sanity, as we wait helplessly for repairs to restore power or re-establish contact.

**NATURE WILL EVENTUALLY inter any infrastructure left standing. Vulnerable assemblages of concrete and steel may be the first to go.**

Yet increasingly we communicate wirelessly, with devices that require far fewer cables and antennae. With no small envy, we encourage developing nations to seize the chance to leapfrog our stage of technological advancement, with its unsightly tangle of overhead cables, and beam their telephony, voice and data alike, via radio bands. Although we can't yet substitute pulsing lasers for high-voltage power lines that require 150-foot steel-lattice towers every thousand feet to bear their ponderous weight, we already have technologies that could drastically reduce the sheer mileage of metal we've draped across continents, simply by generating electricity locally—possibly on every rooftop. All that copper and aluminum, if salvaged, might even slake our need to uproot entire mountain ranges and everything that lives on them just to rip more minerals from the ground.

Less easy to dismember, let alone recycle, would be the tons of concrete poured into forms spanning river canyons to create dams. Among the most immense and costly of all human creations, dams are an instant mix of blessings, which in time often become greater liabilities than assets. China's soon-to-be-completed Three Gorges Dam, the world's biggest, is but the latest such structure to provoke predictions, that the havoc

it wreaks on land, people, and ecology may only be resolved by dismantling it.

It wouldn't be the first. Along North America's coastlines, dams meant to electrify and irrigate so that people and crops might flourish have also clogged arteries through which irreplaceable organisms such as salmon flow. Not only are they commercially precious, but their disappearance causes such cascading losses of life (or livelihood, in the case of fishermen) that dams that

obstruct salmon spawning routes lately have been torn down at an expensive clip. Similarly, in the wake of catastrophes such as Hurricane Katrina, the wisdom of channeling rivers through concrete chutes so that cities can occupy their deltas is being reassessed. Once freed, a river heals surprisingly

quickly, burying under great loads of silt whatever unsightly scabble remains after we try to put nature back the way we found it.

As the massive cost of clearing the way for Boston's Big Dig suggests, should large numbers of roads ever become unwanted, it would simply be too expensive to do much other than bury them. In fact, in urban centers destined to be abandoned (or abandoned already, such as parts of Detroit), that job will probably be left to nature. As sewers become clogged with plastic bags and other debris, deserted streets are colonized by germinating weeds and trees, whose roots crack through the pavement as it disappears beneath leaf litter. Like sewers themselves, the cement and asphalt paths that formerly connected our lives to homes and workplaces will gradually sink out of sight, overlain by a spreading cap of new soil.

Given enough time, nature will also inter any other infrastructure still standing—most likely our oldest, built from large stones hewn directly from the earth, which will long outlast our more economical but far more vulnerable assemblages of concrete and steel. The ghost of a Mayan pyramid builder would be amazed to see his once monumental, seemingly indomitable kingdom swallowed by forests. So would we. ■

# In ESSENCE

REVIEWS OF ARTICLES FROM PERIODICALS AND SPECIALIZED JOURNALS HERE AND ABROAD

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## FOREIGN POLICY & DEFENSE

### Iraq's Forgotten Refugees

**THE SOURCE:** "The Iraqi Refugee Disaster" by Ben Sanders and Merrill Smith, in *World Policy Journal*, Fall 2007.

THE NEAR-TOTAL NEGLECT OF the two million refugees—about seven percent of the Iraqi population—who have fled since the American intervention in 2003 has had one perversely positive outcome, write Ben Sanders and Merrill Smith, editors of *World Refugee Survey*. The world's negligence has spared the Iraqis from being herded into United Nations-organized refugee camps, there to be trapped for years—or generations.

The tide of refugees from Iraq is far greater than that from the Vietnam War, but the American response has been weak. Between 1975 and 1980, the United States resettled 322,000 of the global total of 583,000 Indochina refugees. It paid for more than half of the budget of the United Nations High Commission for Refugees (UNHCR). But

Washington has accepted only about 2,000 Iraqi refugees for resettlement. It contributed about a third of the UN refugee budget in 2007.

America has been permitted such a response because this refugee crisis has been invisible—no overcrowded ships wallowing toward the Philippines, no desperate boat people being robbed by pirates. Instead, Iraqis have fled in cars and taxis, renting apartments in the slums of Damascus, Amman, Cairo, and Beirut. An estimated 40 percent of Iraqi professionals have left, trying to live on savings and jobs in the underground economy. In many families, the authors say, "chil-

The near-total neglect of Iraq's two million refugees has, at least, spared them from being herded into United Nations refugee camps.

dren are now the main breadwinners since parents have less fear of authorities catching them without papers."

[Since Sanders and Smith wrote their article, thousands of refugees have returned to Iraq, though UNHCR says the flow subsided in December.]

The world has about 14 million refugees—Eritreans who fled to Sudan since 1968, Burmese in Thailand since 1986, Palestinians living in camps since 1948. The camps are often wretched places, scenes of abuse of women and children, illness, and poverty. The militias and guerilla groups that control many of the camps use the international aid that keeps the refugees alive to prolong armed struggles. Once established, refugee camps are hard to close. Host governments and others want to keep aid flowing.

The United States can save the Iraqis from this fate, the authors say. It can join with other donors to reimburse host countries for the costs of education, health care, and other social services for the refugees—while insisting that the host nations allow them to work legally. The State Department recently gave \$30 million

toward the schooling of Iraqi refugee children in addition to the \$150 million already available for Iraqis forced from their homes. But such a sum is likely only a down payment. Jordan and Syria alone claim that hosting Iraqi refugees costs each of them \$1 billion a year.

FOREIGN POLICY &amp; DEFENSE

## The New Infantry Epoch

**THE SOURCE:** "Infantry and National Priorities" by Maj. Gen. Robert H. Scales (Ret.), in *Armed Forces Journal*, Dec. 2007.

AN EPOCHAL SHIFT IN THE immemorial cycle of war is under way, writes retired major general Robert H. Scales, the former commandant of the Army War College. The infantry is back. America's enemies have learned that they can't win blitzkrieg-age wars, so they no longer fight them. They have moved the battlefields to cities, jungles, and mountains, where the U.S. military's technologically superior machines are ineffective.

"The enemy chooses to fight as infantry because he can win the infantry fight," Scales says, and America's experience in Iraq and Afghanistan shows that the nation has no choice but to meet its opponent on uncongenial terrain.

In recent wars, he writes, infantry soldiers



Soldiers patrol near the Baghdad train station in 2005. America's enemies are forcing foot soldiers to bear the brunt of the latest iteration of war. Four-fifths of combat deaths occur among infantry.

have suffered four of five combat deaths even though they make up less than four percent of U.S. military personnel. In wars waged with armor, airpower, and other heavy armaments, the kill ratios were skewed in America's favor: In the World War II Pacific cam-

paign, 13 enemy soldiers died for every American killed; in Europe against the Germans, the ratio was 11 to 1; in Korea, 13 to 1. But in the second battle of Fallujah, in November 2004, the ratio in close combat narrowed to 9 to 1, and for soldiers fighting inside buildings, the ratios were "much closer to parity," Scales writes.

For too long, the Defense Department has spent a major share of its budget on aircraft and ships—big-ticket items made by big corporations. Now it needs to put its money where its casualties are, Scales writes. The country needs to invest more in lighter, fuel-efficient vehicles that can operate in distant locales for extended periods, low-flying aerial drones to protect the lives of

### EXCERPT

## Fathers of Defeat

*The American public, not the timeless nature of war, has changed. We no longer easily accept human imperfections. We care less about correcting problems than assessing blame—in postmodern America it is defeat that has a thousand fathers, while the notion of victory is an orphan.*

—VICTOR DAVIS HANSON, author of *A War Like No Other: How the Athenians and Spartans Fought the Peloponnesian War* (2005), in *Claremont Review of Books* (Winter 2007–08)

troops who search out the enemy and now suffer more than half of all casualties, light body armor, and telecommunications that allow foot soldiers to see and talk to their units.

Most important, Scales argues,

the Pentagon should pay infantrymen better. Compensation should reflect the risks soldiers face, not just their technical skills. Foot soldiers should also be allowed to retire earlier than other personnel. The infantry, he

says, should be manned by the military's best and brightest, because mature, intelligent, well-led, well-trained, and motivated soldiers are "far more effective in the close fight and far less likely to die."

## POLITICS & GOVERNMENT

# The Court's 'Right' Track

**THE SOURCE:** "A Tale of Two Justices" by Linda Greenhouse, in *Green Bag*, Autumn 2007.

PRESIDENTS RICHARD M. Nixon and George W. Bush had similar goals in appointing Harry Blackmun and John Roberts to the U. S. Supreme Court more than 30 years apart: to move the Court away from what they considered egregious liberalism.

Their choices were Republican sons of the Midwest and brilliant graduates of Harvard College and Harvard Law School with almost unassailable legal credentials.

But Blackmun traversed the ideological spectrum to become the Court's most liberal member by the time he retired in 1994. Is a similar ideological journey in store for Chief Justice Roberts?

Substantial recent scholarship suggests that the answer is a resounding *no*, writes Linda Greenhouse, the Supreme Court correspondent for *The New York Times*. Modern-era Republican-appointed justices who came from outside Washington have drifted to

the left on the bench, while those who were already Washington insiders with service in the executive branch when they were appointed to the Court stayed put on the liberal-conservative spectrum. Chief Justice Earl Warren, considered a conservative when he moved from California after his appointment by President Dwight Eisenhower in 1953, issued some of the landmark liberal rulings of the 20th century, including *Brown v. Board of Education* (1954). By contrast, Chief Justice William Rehnquist, elevated to the Court from service at high levels in the Justice Department, never veered from his conservative views.

Why? A move in midlife to such a prominent position in Washington,

Ideological drift is unlikely to infect Supreme Court justices such as John Roberts who have served in the executive branch.

an unfamiliar place and culture, is a profound personal disruption that fosters receptivity to new ideas and influences, Greenhouse thinks. Working in the executive branch in Washington, by contrast, is the "product of a process of self-selection and political dues paying that both reinforces and demonstrates loyalty to a set of principles."

So ideological drift is unlikely to infect the current chief justice, who is a veteran of the Justice Department, the White House, Washington private practice, and the District of Columbia federal courts, no matter how long he serves.

## POLITICS & GOVERNMENT

# Granny Goes Left

**THE SOURCE:** "Population Aging, Intracohort Aging, and Sociopolitical Attitudes" by Nicholas L. Danigelis, Melissa Hardy, and Stephen J. Cutler, in *American Sociological Review*, Oct. 2007.

WILL THE GRAYING OF AMERICA produce a more conservative electorate, resistant to liberal ideas about minorities, atheists, political dissenters, and gays? Not likely, say sociologists Nicholas L. Danigelis and Stephen J. Cutler, of the University of Vermont, and Melissa Hardy of Pennsylvania State University.

Americans over 60 are as likely as those under 40 to hold different views

on hot-button social issues from those of their predecessors at the same stage of life. More surprisingly, these older Americans' opinions are more likely have shifted left than right.

Opinion surveys of nationally representative samples of the English-speaking population show that the over-60 generation's responses to questions about minority groups, civil liberties, and privacy changed substantially between 1974 and 2004. The shifts occurred because of two factors—older members died and were replaced by new seniors, and beliefs gradually changed within the

surveyed group. The authors used complex statistical techniques to separate the two. Their findings concentrate on the changes that occurred because people changed their minds.

When asked questions about civil liberties for gays, members of the older generation are more likely to have altered their views—in the direction of increased tolerance—than those under 40. On the question of whether individual failings—such as a lack of motivation or ability to learn—are responsible for black Americans' problems, seniors are nearly three times more likely to have changed

their minds to disagree, blaming the gap instead on discrimination and poor education.

Older Americans haven't become more liberal in everything, or more liberal than the under-40s overall. Like their younger counterparts, they have grown more conservative in their view of premarital sex and divorce. And because so many older Americans started out with far more conservative views than those under 40, as a group they are hardly lefties. But the notion that age breeds conservatism is as outmoded as TV rabbit ears and maps of Upper Volta.

## ECONOMICS, LABOR & BUSINESS

# Annals of the Cubicle

**THE SOURCE:** "Birth of the Office" by Nikil Saval, in *n + I*, Winter 2008.

IF WILLIAM H. WHYTE WERE alive today to rewrite his 1956 book *The Organization Man*, he might well call it *Cubicle Being*. Nothing epitomizes the modern American office economy like the flimsy, fabric-covered partitions that enclose millions of employees throughout their working lives.

Ironically, cubicles started life as the Great Leap Forward of the white-collar world. An explosion of office jobs after 1945 had created battalions of jobholders doing new kinds of tasks—"knowledge work." But the bullpen layout of the 1950s workplace was a "wasteland," declared Robert Propst, an exuber-

ant art professor hired to head the research wing of Herman Miller, one of the biggest office furniture companies in the world. "It saps vitality, blocks talent, frustrates accomplishment. It is the daily scene of unfulfilled intentions and

failed effort." Propst set to work, writes Nikil Saval, assistant editor of *n + I*, to create flexible, open offices intended to promote communication among coworkers, flatten office hierarchies, foster individuality, and free what Saval calls the "ceaselessly inventive potential of the white-collar mind."

Propst's first design flopped when it debuted in 1965. Three years later came "Action Office II," designed for a smaller space, featur-



First free-range chickens. Then cows. Now a call from the cubicles for free-range workers?

ing lighter walls, and made of disposable materials.

A tax change in the early 1960s aided the cubicles' cause by allowing companies to write off the cost of their components after only seven years; traditional fixed-wall offices received far less favorable tax treatment. When one of Herman Miller's rivals launched a competitive modular system, Propst's innovation got the validation it needed. The revolution was on.

In the late 1970s and '80s, big business suffered a crisis of profitability, Saval writes, and the toiling masses in the cubicles paid the price. Between 1990 and 1992 a total of 1.1 million white-collar workers were laid off, a greater number than their similarly discharged blue-collar counterparts. Workweeks became longer. Vacation days remained stuck at an average of 9 to 12 a year, compared with 30 for workers in Germany. The cubicle, conceived as a liberating innovation, became a symbol of "transience, arbitrariness, and insecurity."

The cubicle revolution also made it possible for bosses to squeeze more workers into ever smaller spaces. Between 1999 and 2006, the average cubicle shrank from 90 square feet to 75. Michael Bloomberg, the current mayor of New York, allowed just four square feet to workers in the headquarters of his media empire in 1999—to increase "collaboration."

A few tech companies began to break out of the "cube farm" trend during the dot-com boom of the 1990s. But the defectors didn't treat

The much-maligned office cubicle was designed to free the "ceaselessly inventive potential of the white-collar mind."

their workers much better. Their whimsical workplaces, with their game rooms and free food, were designed to foster creativity—and workweeks of 80 to 100 hours. It was just another iteration of the white-collar sweatshop, Saval says.

Today, cubicle refugees face grim alternatives, often working at home and paying for their own workspace as well as health care and retirement, Saval writes. Office design theorists now burble about "space-less growth." It's foolish for white-collar workers to aspire merely to "graduate" from the cubicle to the corner office, Saval declares. The office landscape may change, but the real issues remain the same: pay, leisure time, job security, and the "autonomy that was promised, and perverted, by the cubicle."

ECONOMICS, LABOR & BUSINESS

## Secrets of the Senior Shopper

**THE SOURCE:** "Life-Cycle Prices and Production" by Mark Aguiar and Erik Hurst, in *The American Economic Review*, Dec. 2007.

IT'S NO SECRET THAT PENNY-pinching older people seem to get more for their money. Now two

economists have combed through 950,000 grocery receipts to produce mathematical proof and to show how seniors do it: They spend more than an hour and a half trundling their carts along the grocery aisles every week, compared with 58 minutes for the under-30 crowd; those 65 and older shop nearly eight times a month, compared with 6.5 times for young folks, and more than two-thirds take advantage of discounts, compared with about half of the younger group.

The result: Seniors save 3.4 percent on groceries compared with the average 25-to-29-year-old, according to Mark Aguiar of the University of Rochester and Erik Hurst of the University of Chicago's business school.

The economists wondered whether the mature shoppers were producing their bargain loaves and fishes by going to more discount stores, buying cheaper products, stocking up during sales, or cutting back on eating. Their answers: no, no, no, and no.

The older shoppers' secret is clear: They shop slightly more often and considerably more intensively, cruising familiar stores, and they spend more time at home in meal preparation.

At age 49, the prices people pay for food turn down. By the time their Social Security checks tumble through the mail slot, they're saving real money. If they shop twice as often as younger people, they can cut their grocery bills by as much as seven to 10 percent. They're making an economic substitution: time for money.

## ECONOMICS, LABOR &amp; BUSINESS

## Why Go to College?

**THE SOURCE:** "How Many College Graduates Does the U.S. Labor Force Really Need?" by Paul E. Barton, in *Change*, Jan.-Feb. 2008.

FEW BUT THE FOOLHARDY WOULD dispute the value of a college education. In addition to enjoying the intrinsic benefits of four years of education beyond high school, college graduates simply make more money—a lot more.

But Paul E. Barton, a senior associate at the Educational Testing Service, asks not whether higher education is good for you or me—it is—but whether more college graduates are necessary to American prosperity. That answer is far less clear. The

occupations that are expanding most, he writes, don't require a degree. The fields that *do* aren't adding large numbers of new jobs.

Take the government's estimates of the needs of the 10 fastest-growing occupations between 2004 and 2014. These occupations range from home health aide (No. 1) to computer engineer in applications (No. 5) and in systems software (No. 8). Only 39 percent of the jobs in the 10 occupations require a college education. That's 615,000 jobs. The total number of U.S. jobs is expected to increase by nearly 19 million.

The outlook is different when researchers study the 30 occupations with the greatest projected job growth in absolute terms, rather than percentage terms. These occupations, led by salesperson and registered nurse, are expected to need about 8.8

million new workers. But only 30 percent of these positions will require a college degree.

Overall, a mere 29 percent of all jobs required postsecondary education in 2004, and that proportion is expected to rise only to 31 percent by 2014. Such modest growth actually outpaces the norm. Between 1984 and 2000, a period when highly technical occupations became more numerous, the rise in the *number* of jobs in these occupations was so small that the average level of education needed for all jobs stayed exactly the same.

There is no question that higher education enriches society, but the real benefit is to the individual. Barton quotes the late political scientist Stephen K. Bailey: "I get an education so that later in life when I knock on me, somebody answers."

## SOCIETY

## Apology Mania

**THE SOURCE:** "Apologies All Around" by Gorman Beauchamp, in *The American Scholar*, Autumn 2007.

THE CATHOLIC CHURCH HAS apologized to Galileo, the Jews, Jan Hus (for burning him at the stake), and Istanbul (for sacking it in the Fourth Crusade, when it was known as Constantinople). It's weighing requests for similar action in the torture death of Knights Templar grandmaster Jacques de Molay in 1314. But what about the scattered heirs of the citizens of Jerusalem, massacred by

victorious Crusaders in 1009? Or poor Cecco d'Ascoli, burned at the stake in 1327 not by ordinary kindling, but by the flames of his own encyclopedias? Where does it stop? asks Gorman Beauchamp, a professor of humanities at the University of Michigan. It's not just the Catholic Church, he notes. A mania for apologies is sweeping the world.

Apologies offered for actions taken before the apologizers were born seem "vacuous and more than a little exhibitionistic," he writes. Actual victims—slave laborers in Nazi Ger-

many, Japanese Americans interned after Pearl Harbor, "comfort women" forced into prostitution by the Japanese—deserve an official apology and more. But apologies to the long-dead are "gestural feints toward now-empty victim categories."

The slavery reparations movement exemplifies the American version of the international apology craze. Who should pay restitution for slavery, and who should be paid? Should the nation exempt the millions of immigrants and their descendants who arrived in America after slavery was abolished? If slave descendants are compensated, why not compensate the heirs of the earliest cotton mill workers, 70 percent of whom died of brown lung disease? And if slavery is to be the subject of

compensation when practiced by dead white people, why passively stand by when the current Sudanese kidnap their black compatriots into servitude?

“We as a nation have grown and profited from the exploited labor . . . of people of every race, creed and condition of servitude, from the indentured servants of colonial days to the migrant workers of today,” Beauchamp says. “Can we even begin to imagine a social mechanism that could right wrongs of this magnitude that were committed so long ago?”

History offers so much to apologize for that it's hard to know where to stop. The towering 19th-century historian Lord Acton said that “neither paganism nor Christianity ever produced a profound political historian whose mind was not turned to gloom by the contemplation of the affairs of men.” History depresses, saddens, chastens, tempers, and rigorously instructs us. It's an essential process, Beauchamp says. But “no more apologies.”

## SOCIETY

## Shrink to Greatness

**THE SOURCE:** “Can Buffalo Ever Come Back?” by Edward L. Glaeser, in *City Journal*, Autumn 2007.

BUFFALO IS NOT THE ONLY old, cold city where urban fortunes seem stuck in reverse. Cleveland, Camden, and Detroit can tell the same tale. When cities shrink, increased poverty is a likely outcome. Declining areas with cheap housing become magnets for even more poor people, who drive up

demand for social services. Buffalo's advantages—good transportation, plentiful electricity, proximity to Niagara Falls—are historic. Its disadvantages—bad weather and a lack of jobs—are city wreckers of the most modern sort.

Buffalo's last boom occurred in the 1920s. It got its first great boost from the Erie Canal a century earlier, when it became a premier transfer point for wheat and other goods from the boats of the Great Lakes to the barges that traveled east on the canal. The invention of a steam-driven grain shovel made the city the world's leading grain port. So much wheat was offloaded that it became a flour milling center. Its transportation advantages attracted steelworks, and with its access to the electricity generated by Niagara Falls it began calling itself the City of Light.

But eventually trucks and efficient rail transport undermined Buffalo's *raison d'être*, writes Edward L. Glaeser, an economist at Harvard University. Its population, 580,000 in 1950, is now well under 300,000.

Since 1950, the federal government has invested billions upon billions of dollars in Buffalo and other failing cities, Glaeser says, but none of it has worked. The city “renewed” a district of its downtown. A 40-story bank headquarters designed by a famous architectural firm rose on its waterfront. A multimillion-dollar arena sprouted nearby. A \$500 million rail system running from the arena to the University of Buffalo took six years to build, but its ridership has been declin-

ing steadily for more than a decade.

The federal government should stop spending money on distressed *places* and instead use aid to help disadvantaged *people*, Glaeser argues. America's taxpayers should not be bribing people to stay in Buffalo. Washington should invest in people-based policies such as the Earned Income Tax Credit to improve the economic futures of children, whether they stay put in New York State or move to Las Vegas. If Buffalo is to rebound, private innovators will have to make it happen. Better schools and safe streets might improve its odds of survival. But Buffalo should accept life as a smaller but more vibrant community, Glaeser says. It should shrink to greatness.

## SOCIETY

## America Escapes Again

**THE SOURCE:** “Crime, Drugs, Welfare—and Other Good News” by Peter Wehner and Yuval Levin, in *Commentary*, Dec. 2007.

FIFTEEN YEARS AGO, CONSERVATIVE social commentators were predicting a precipitous and seemingly inexorable national decline. Former education secretary and drug czar William J. Bennett summed up the evidence most starkly: Since 1960 violent crime had increased 500 percent; out-of-wedlock births, 400 percent. The teenage suicide rate had tripled and the divorce rate had doubled. SAT scores had plunged by more than 70 points.

Then, “just when it seemed as if the storm clouds were about to burst, they began to part,” write Peter Wehner and Yuval Levin, fellows at the Ethics and Public Policy Center in Washington. The rates of both violent and property crime fell between 1993 and 2005, reaching their lowest levels since 1973, the first year for which data are available. Teenage drug use declined 23 percent from the rates of the 1990s. Welfare caseloads shrank 60 percent from their peak. Annual abortions decreased from 1.6 to 1.3 million. And the mean SAT score was eight points higher in 2005 than in 1993, the year Bennett issued his warning.

The change is “impressive, undeniable, and beyond what most people thought possible,” say Wehner and Levin. It appears that it flowed from changes in government policy combined “with a more-or-less simultaneous shift in public attitudes, with each sustaining and feeding the other.”

While policy changes played a clear role in the fall in the rates of

Crime, teenage drug use, welfare caseloads, and abortions underwent dramatic declines during the 1990s.

crime, welfare dependency, and drug use and in the rise in test scores, the authors write, the decrease in abortions seems to have grassroots causes. It was not a decision of the Supreme Court or the passage of legislation by Congress that affected the numbers, but rather that the “give and take of public discussion . . .

[prompted] a slow, subterranean shifting” of views. “All in all, not only has the public discussion of abortion been profoundly transformed, but younger Americans seem to have moved the farthest.” In September, a poll showed that Americans between the ages of 18 and 30 were the most likely of all

age groups to oppose abortion.

One institution still seems headed south, the authors say. Although better-educated Americans are less likely to get divorced than in the past, the marriage rate is down, the number of couples cohabiting without marrying is up, and so is the number of babies born out of wedlock. Will this change as other social indicators have? The authors say it could go either way. The family is so important, and the percentage of births to unmarried women so high (37 percent), that its problems could undo all the other signs of cultural progress. Or not. Sometimes traditional moral values begin in one social group—the well educated in the case of marriage—and become more universal.

But to those who still write off American society as “incorrigibly corrupt and adrift,” the authors say, young people are a powerful embodiment of America’s “surprising national resilience.”

## EXCERPT

### Be True to Your Crew

*By the time I became a professor I had developed the contempt that I think is widespread in academe for any institution that brings young men together to do groupish things. Primitive tribalism, I thought. . . . I'd have gladly voted to ban fraternities, ROTC, and most sports teams from my university.*

*But not anymore. . . . When we made the transition over the last 200 years from tight communities to free*

*and mobile societies, we escaped from bonds that were sometimes oppressive, yes, but into a world so free that it left many of us gasping for connection, purpose, and meaning. I began to think about the many ways that people, particularly young people, have found to combat this isolation. . . . Suddenly sports teams, fraternities, and even the military made a lot more sense.*

*I now believe that such groups do great things for their members, and that they often create social capital and other benefits that spread beyond their borders.*

—**JONATHAN HAIDT**, a psychologist at the University of Virginia, in response to the question “What Have You Changed Your Mind About?” in [www.Edge.org](http://www.Edge.org) (Jan. 2008)

## PRESS &amp; MEDIA

# Journalism's 'Gilded Disaster'

**THE SOURCE:** "Down With the Newseum!" by Jack Shafer, in *Slate*, Feb. 7, 2008.

NOW BELTWAY JOURNALISTS who tire of flattering D.C.'s political poo-bahs can soothe their own egos at a shrine to their profession. The seven-story Newseum, just off the National Mall, opened in April.

The steel-and-glass edifice on Pennsylvania Avenue took four years to build and cost \$450 million, mak-

ing it one of the most expensive museums ever erected. Among its impressive features are a multilevel Wolfgang Puck restaurant, 15 theaters, and a 50-ton marble tablet on which the First Amendment is chiseled. All told, the museum's 6,214 journalism artifacts weigh more than 81,000 pounds. (Most of these numbers are on the Newseum's website in a handy press release, a fact-minded reporter's dream.) But for all its opu-

lence, writes media critic Jack Shafer, the Newseum fundamentally misses the story.

The process of gathering and reporting the news isn't readily conveyed through "trivial" artifacts, he argues. Gazing on "fascinating curios"—such as the satchel, pencil, and eyeglasses that belonged to *Bismarck Tribune* reporter Mark Kellogg, who was killed in 1876 along with Lt. Col. George Armstrong Custer at Little Big Horn—"tells you what about journalism?" A museum can provide insight into the news industry—Shafer cites New York's Paley Center for Media—but the Newseum is all flash, a "gilded disaster." For the fortune it cost, the funders could have endowed a newspaper.



Money well spent? The Newseum, a \$450 million artifact-filled monument to journalism, opened this spring near Washington's National Mall.

And consider the source, Shafer cautions. The Newseum is underwritten primarily by the Freedom Forum (formerly the Gannett Foundation), and donors include many of the nation's leading media organizations and dynasties. Like the Smithsonian's National Museum of the American Indian, whose content was heavily determined by Native American tribes, "the Newseum suffers from the fact that curatorial power is invested in the home team." In other words, don't look for any exposités.

## PRESS &amp; MEDIA

## Can This Business Be Saved?

**THE SOURCE:** "Online Salvation?" by Paul Farhi, in *The American Journalism Review*, Dec. 2007–Jan. 2008.

THE BELEAGUERED NEWSPAPER industry, losing subscribers and advertisers like spring runoff down a steep mountain, has built a solid presence on the Internet and is banking on Web advertising to secure its future. But while such revenue has

more than doubled in the past four years, it may be too weak a financial platform to support the heavy costs of old media.

After years of healthy increases, the Internet audience is barely growing, and while newspaper websites draw a lot of traffic, visitors click on the sites to glimpse the offerings, rather than ponder them. The typical visitor to *nytimes.com*, a site that attracts more than 10 percent of the industry's Internet customers, spends about 68 seconds a day reading the paper online. And that is a far more leisurely visit than the typical newspaper site receives, notes Paul Farhi, a reporter for *The Washington Post* who writes frequently about the media.

The buoyant growth in Web advertising that has sustained the hopes of newspaper publishers in recent years has begun to evaporate. The rate of advertising growth started on a downward slide in 2007, and a worsening economy means the decline will likely continue.

Most at risk are local newspapers without a national brand name. Their traffic is decreasing, sometimes

sharply, as they face tougher competition from local television stations, which can quickly post video clips of breaking events and flog their websites relentlessly on air. Publishers who have enjoyed near-monopoly status in their communities now face literally millions of competitors online, though most of the challengers don't offer the range and depth of the smallest local newspaper.

Despite experiments with online "pay-to-read" news stories, partnerships with Internet giants, and inventive new categories and compilations of news, nobody has figured out a model that will permit newspapers to support the costs of gathering and presenting the news with the revenue generated from Internet advertising alone, Farhi says. One idea is to use the advanced technology available on the Web to target both news and advertising to readers whose viewing habits reveal an interest in certain topics. The challenge is to identify and post these features ahead of the competition. The 24-hour news cycle of journalism's glamour days used to seem frenetic. Now that's the speed of sludge.

## HISTORY

## The Barbary Precedent

**THE SOURCE:** "The United States and Barbary Piracy, 1783–1805" by Patrick J. Garrity in *Comparative Strategy*, Vol. 26, No. 5, 2007.

THE WAR ON TERROR ISN'T America's first battle against an amorphous Muslim "quasi-state."

In its first years of existence, the fledgling United States waged war against the Barbary pirate regencies. Buccaneers were their business, and the corsairs energetically targeted American merchant ships peacefully ferrying pickled fish and

wheat across the Mediterranean.

Today, the United States is hardly the feeble upstart it was around the turn of the 19th century, and the Barbary pirates look like puffed-up weaklings in comparison with Osama bin Laden. But the attempt to halt piracy illustrates the extraordinary level of effort required to deter quasi-states from attack when "prestige or religious obligation" is at stake, writes Patrick J. Garrity, a researcher at the University of

Virginia's Miller Center of Public Affairs.

Before 1776 the American colonies' British overlords provided at least one tangible benefit—England bought protection from Algiers, Tunis, Morocco, and Tripoli against piracy. After independence the British protective shield vanished, and it wasn't long before the four Barbary quasi-states were threatening U.S. ships and seamen. The corsairs not only brought home booty and captives who could be held for ransom, but also carried out the important religious mission of fighting the infidels.

In 1794, the government of President George Washington offered as much as \$800,000 to the Barbary

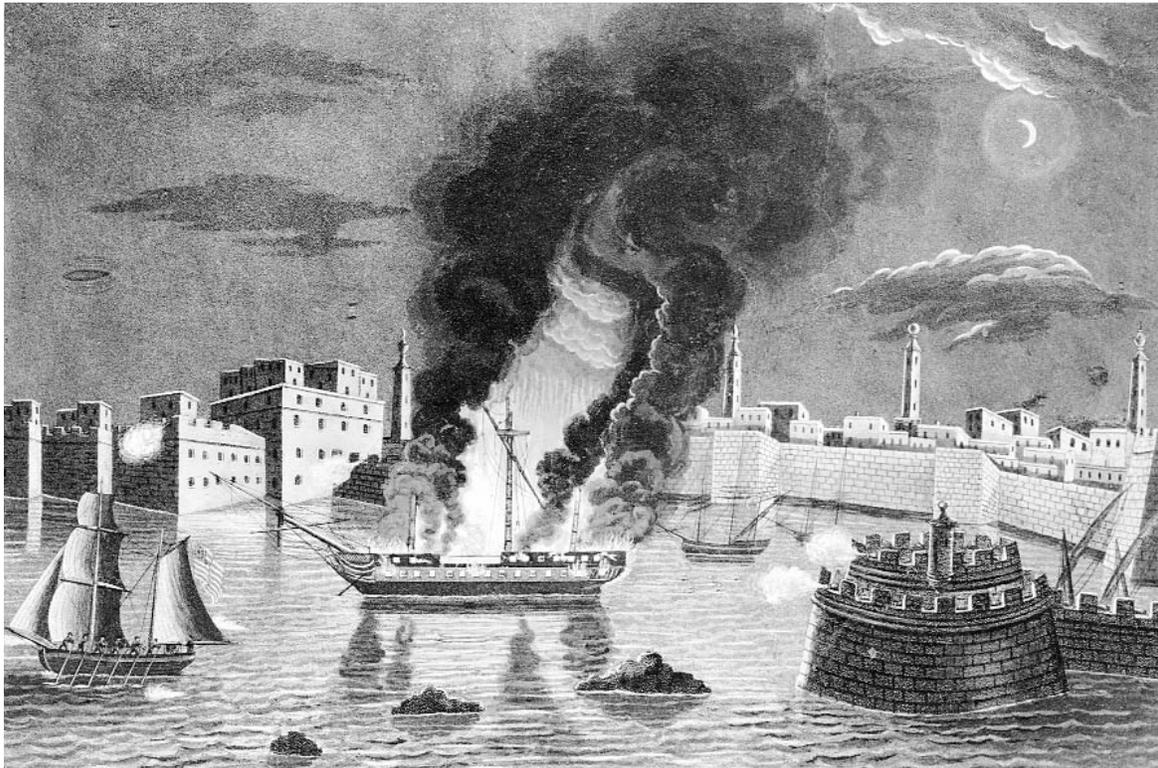
regents in ransom and protection money. Not incidentally, the United States also decided to build a navy. Diplomacy brought the emperor of Morocco to a settlement on easy terms. But the Dey of Algiers demanded \$2.5 million—more than the entire federal budget. Tunis then sought a similar settlement, and Tripoli demanded cash, presents, a naval vessel, and supplies. The Americans eventually paid something to all three, but gave Algiers pride of place and demanded that the dey keep the other regencies in line.

But the United States fell behind on its payments. When the frigate *George Washington* sailed into the harbor of Algiers in 1800 with overdue tribute, its commander, anchored under the city's bat-

teries, was forced to hoist the Algerian flag and take a \$40,000 side trip to Constantinople to carry out some business of the dey's. Meanwhile, Yusuf, the Pasha of Tripoli, having murdered one brother and ousted another in a coup, declared war on the United States. After struggles as confusing as those in modern Fallujah, the Americans eventually blockaded the harbor of Tripoli.

In 1803 the American frigate *Philadelphia* ran aground in the Tripoli harbor while trying to chase down a blockade runner, and the corsairs captured 300 men and threw them into prison. Yusuf demanded \$3 million in ransom.

Amid the tumult, William Eaton, the newly named Navy



An American naval assault force sneaked into the harbor of Tripoli in 1804 and torched the *Philadelphia* after it was captured by the Barbary pirates.

agent to the Barbary regencies, hit on a new strategy: regime change. Eaton met Hamet, Yusuf's deposed brother, in Egypt, and, with a few Marines and several hundred mercenaries, marched across the desert toward Tripoli. Faced with threats of mutiny and desertion (some from Hamet himself) and shortages of food and water, the force captured the coastal city of Derne in April 1805 and asked for help in negotiating the last stretch to Tripoli. Eaton intended to install Hamet on the throne and inflict a "death blow to the Barbary system." Any claim of mission accomplished, however, was premature.

The American consul general in Algiers, Tobias Lear, perhaps anticipating the "you break it, you own it" doctrine of Colin Powell, put his foot down. If the Marines installed Hamet as pasha in Tripoli, Lear argued, they would be saddled with propping up an unpopular and incapable ruler.

Instead, to secure peace, Lear agreed to pay a ransom of \$60,000 for the *Philadelphia's* crew and make a "gift" of about \$6,000 to Yusuf.

In the end, despite their extraordinary march (which is celebrated in the Marine Hymn), Hamet, along with Eaton and his Marines, were evacuated from Derne, leaving Hamet's allies in the lurch. Despite four years of war, 10 years of diplomatic negotiations, and millions of dollars in protection money, the Barbary pirates lived to rob again. A second war would be fought before Commander Stephen Decatur shelled Algiers into submission and quelled the Barbary threat—in 1816.

## HISTORY

## A Lincoln for Every Altar

**THE SOURCE:** "Lincoln and the Will of God" by Andrew Ferguson, in *First Things*, March 2008.

A FAMED 19TH-CENTURY mystic reported that President Abraham Lincoln levitated at a séance in Georgetown. Christian Science founder Mary Baker Eddy believed that the martyred president became a proponent of Divine Healing even before she discovered it. A California guru announced that the 16th president had once been a yogi in the Himalayas. Cardinal George Mundelein of Chicago identified the Great Emancipator as a closet Catholic. Episcopalians, Baptists, and Presbyterians (whose pews he occasionally warmed) have also claimed him as one of their own, as have atheists and Ethical Culturalists.

There has been an especially great hunger to believe that the martyred president was a devout and orthodox Christian, writes Andrew Ferguson, senior editor of *The Weekly Standard* and author of *Land of Lincoln: Adventures in Abe's America* (2007). Lincoln's secretary wrote that he "talked always of Christ, his cross, his atonement." A clergyman confirmed the secretary's account and added an enticing detail: Lincoln's last words to his wife had been, "We will visit the Holy Land and see those places hallowed by the footsteps of the Savior." But Honest Abe never

joined a church, and his purported "last words" about Jerusalem were delivered as he watched a trashy play at a slightly disreputable theater on Good Friday.

Simultaneously approachable yet remote, Lincoln had a personal magnetism that drew people to him, but his interior remained hidden, Ferguson writes. He made statements that seemed to reveal him as both a believer and a skeptic.

His law partner, William Herndon, said that Lincoln's response to the majesty of Niagara Falls was a deflating "Where in the world did all that water come from?" But in a note found after his death, Lincoln mused that he saw in the falls some immensity that human reason can't explain. According to the freethinker Herndon, Mary Lincoln, the president's widow, said he had "no hope and no faith," and was a "religious man" but not a "technical Christian."

Lincoln developed his own civil religion, Ferguson believes. In another note found after his death, the agonized president grappled to understand why the carnage of the Civil War continued when God "could give the final victory to either side any day." Lincoln's eventual answer, delivered at Gettysburg in 1863 and in his second inaugural address, was that the Union embodied the ideals of human liberty and equality, and the war was a test of whether these principles, as Ferguson puts it, "could be safely entrusted to human institutions."

We will never know for sure whether Lincoln believed in Jesus, his resurrection, the forgiveness of sins, or biblical truth, Ferguson concludes. But

the uncertainty has made Lincoln “our common property,” appealing to believers and skeptics alike. Yet it also means something “definable and concrete.” Lincoln

believed that America was the “carrier of a precious cargo.” We assent to Lincoln’s creed, Ferguson says, “when we think of ourselves as Americans.”

RELIGION & PHILOSOPHY

## Joke Morality

**THE SOURCE:** “What Is Offensive About Offensive Jokes?” by Jeanette Bicknell, in *Philosophy Today*, Winter 2007.

IT’S PERFECTLY OK TO TELL lawyer jokes, musician jokes, or almost any joke about a rich guy. But jokes about race, gender, ethnicity, religion, sexual orientation, or physical or cognitive ability are considered morally offensive. Why?

Philosophers have advanced two theories. “Cognitivists” say that jokes made at the expense of minority groups carry the suggestion that the jokester, deep down, believes them. “Consequentialists” argue that certain jests are morally suspect because they cause harm, or are likely to. But neither theory adequately explains what’s offensive, argues Jeanette Bicknell, a philosopher at Carleton University, in Ottawa. It is quite possible, she suggests, to tell a joke without embracing it as a truth—nobody believes that an elephant actually walked into a bar—but we suspend disbelief for the sake of a laugh. And almost *any* joke might cause harm to someone, sometime.

The main determinant of

whether a gibe is morally offensive is the “vulnerability of the group or individual joked about,” Bicknell argues. The moral fault lies in exploiting vulnerability for the sake of humor.

But vulnerability depends on context and time. Members of marginalized groups can make sport of themselves without condemnation, Bicknell says. Such humor can even have a salutary effect, such as encouraging group solidarity or exploring identity. After Bicknell’s article was published, for example, presidential hopeful Barack Obama was asked during a debate whether he agreed with author Toni Morrison’s characterization of former president Bill Clinton as “our first black president.” Obama said he would have to investigate “Bill’s dancing abilities” before he could

Humor ages poorly. The Museum of Humour in Montreal houses many “cringe-making” examples.

judge whether he was “a brother.” The audience cracked up, but it would have been shocked had Clinton made a similar jest about Obama.

Humor ages poorly, Bicknell observes. The Museum of Humour in Montreal preserves comedy routines from the earliest days of movies to the present. Some jokes are still funny, Bicknell writes, but “much of the remainder is cringe-making.”

RELIGION & PHILOSOPHY

## The War Against Luck

**THE SOURCE:** “Life, Chance, and Life Chances” by Lorraine Daston, in *Daedalus*, Winter 2008.

HUMAN BEINGS HAVE ALWAYS been uneasily aware of the wheel of fortune that sends both good luck and bad breaks their way, but they haven’t always seen it in the same light. Only recently has anybody even dreamed of stopping it.

Through most of human history, luck was not seen as purely arbitrary, notes Lorraine Daston, a director of the Max Planck Institute for the History of Science in Berlin. The wheel-spinning goddess Fortuna, for example, stood lower in Rome’s heavenly moral order than Justitia, the goddess of justice. Lives were ordered by the gods and gov-

erned by fate, the cycle of reincarnation, or divine providence. You might not like the hand you were dealt, but it was what you deserved.

That view of chance prevailed well into the 18th and 19th centuries, when something drastic came along to change it: statistics. As proto social scientists began to take the measure of human populations, unusual patterns began to emerge. Today we are struck by cases of people who defy the statistical odds—the chain smoker who lives to 100—but at the dawn of statistics, people were fascinated by the regularities. Why did almost the same number of letters end up in the dead letter file of the Paris post office every year? Why did virtually the same number of Englishmen commit suicide every year (and what did this say about the concept of free will)?

Then came the mountains of data sorting people into categories such as race, sex, and religion that

could be correlated with particular outcomes, from striking it rich to being struck dead by heart disease. Suddenly, Daston says, it became “possible to conceive of biographies in terms of life chances and society as a vast lottery.”

One response was noble: a new commitment to the principle of equality. How could the misfortune of others be tolerated if it was caused only by an accident of birth? The other response, though, was alarming: a powerful drive to conquer chance. “To exercise ‘control over one’s life’ has become perhaps the paramount goal of the well-off, well-educated, and well-placed minority,” Daston writes. It has fueled the desire for everything from chain hotels—no surprises, please!—to genetic engineering. “For those who yearn for control, to be surprised, however innocuously, is to be ambushed by life.”

There are many arguments

against making designer babies—the narrowing of human diversity, for one—but none more compelling to Daston than the need to preserve the role of chance itself. “Some contingencies may end in sorrow, others in joy, but almost all result in the discovery of something not known and not felt before. . . . Chance can also act as a catalyst to the making of new meanings, both for individuals and whole cultures. . . . Chance disrupts tidy lives, unsettles habits—and taps unplumbed resources, both personal and social.”

The philosopher David Hume said that in situations in which the chances of a positive outcome and a bad one are equal, people choose fear over hope. Today, that seems truer than ever. “The most secure societies seem by and large to be the most timorous, the most cowed by the prospect of future danger, whether probable or improbable,” Daston writes. Hope deserves a bigger role. Spin the wheel!

## SCIENCE & TECHNOLOGY

# Scientist in Chief

**THE SOURCE:** “Dr. President” by Chris Mooney, in *Seed*, Sept.–Oct. 2007.

A BARRAGE OF SCIENTIFIC questions will face the winner of the November presidential election. Should space be militarized? Can world pandemics be prevented without paralyzing international trade? Can diseases be cured without crossing moral lines? Should

America cede world leadership in physics to Europe, with its gigantic new particle accelerator?

America’s new president will be not only commander in chief but also scientist in chief, inheriting a \$150 billion research budget, 200,000 scientists, 38 research institutes, and dozens of related laboratories, writes Chris Mooney, a Washington, D.C.–based science writer.

The president will confront the issues of bioethics, climate change, nuclear proliferation, and energy. Momentous decisions about whether to sign treaties that might curb economic growth, which scientific facilities to build, and how many scientists the country needs are on the to-do list. The incoming president needn’t be conversant in the latest fruit fly research, but must know how to *learn* about technical matters that require a decision even before all the evidence is in, Mooney writes. “Americans’ public health, job security, well-being, defense, and qual-

ity of life” depend on it. So does the United States’ position as a global power.

The new chief executive should start early, says Mooney. A distinguished science adviser should be selected and standing on the Capitol steps with the vice president and congressional leaders during the inauguration. A strong director of the National Institutes of Health should be appointed promptly, along with a competent commissioner of the Food and Drug Administration. The message of the new administration, Republican or Democratic, should be: Science matters.

SCIENCE & TECHNOLOGY

## Brainpower and Bankruptcy

**THE SOURCE:** “Do You Have to Be Smart to Be Rich? The Impact of IQ on Wealth, Income, and Financial Distress” by Jay L. Zagorsky, in *Intelligence*, Sept.–Oct. 2007.

IT’S NOT NECESSARY TO BE smart to be rich, but it sure helps. Every additional IQ point correlates with an additional \$234 to \$616 a year in income among younger baby boomers, writes Jay L. Zagorsky, a research scientist at Ohio State University. But brains don’t necessarily protect people from financial distress.

People with IQ scores slightly higher than the average (100) are least likely to live beyond their means. Within both the

People with higher IQs have more than their share of financial woes.

below-average and above-average intelligence groups, however, the likelihood of financial distress generally rises with IQ scores.

Geniuses and near-geniuses—those with scores of 140 and above—are the most likely of all IQ groups to max out one or more credit cards and to miss payments or be more than two months late. They’re less likely to declare bankruptcy than the average person, though 14 percent of them do succumb.

Intelligence alone doesn’t explain why individuals succeed or fail in economic life. Behavior matters. For every additional year a person can grind out in school (beyond a certain point), the reward is more than \$2,200 in net worth. Divorce slashes worth by more than \$28,000. The real explanation for economic success may well rest on psychological factors, such as a person’s desire

### IQs and Finances

IQ score	Maxed credit card (%)	Missed payment (%)	Declared bankruptcy (%)
70	2.6	7.6	7.9
80	7.6	14.2	15.2
90	10.0	17.9	20.0
100	8.3	17.6	20.7
110	5.8	15.5	18.5
120	4.6	13.8	15.7
130	5.7	14.1	13.9
140	14.2	18.8	14.1

**In a comparison among 40-year-olds making \$45,000, higher IQs often meant more financial problems.**

for immediate satisfaction, tolerance of risk, or ability to reject social influence, Zagorsky says. And don’t discount luck, timing, and parents.

SCIENCE & TECHNOLOGY

## The Undersea Frontier

**THE SOURCE:** “The Last Great Landgrab” by Geoffrey Gagnon, in *Wired*, Feb. 2008.

FOR YEARS, RUSSIAN SHIPS have been plying the Arctic Ocean in search of irrefutable proof that the undersea Lomonosov Ridge is connected to the fatherland. When a robotic arm pounded a titanium tricolor into the seabed under the North Pole in August, Russian explorers announced success. Unfortunately, both Canada and Denmark already claim this spot on the ocean bottom as their own.

The world’s coastal nations are scrambling to stake out territory on the last international frontier—the shelves and mountain ranges that stretch hundreds of miles from their shores. Touched off by an obscure authorizing provision in the United Nations Law of the Sea Treaty, the breakup of polar ice that makes undersea mining feasible, and—not incidentally—the high price of oil, the last great land rush is under way, says Geoffrey Gagnon, a magazine editor and writer. Some specialists believe the Arctic contains more oil than Saudi Arabia.

For centuries, the Cannon Shot Rule limited a nation’s territorial

ambitions to roughly three miles, the range of a 17th-century cannon. In 1945, President Harry S. Truman unilaterally extended U.S. boundaries about 200 miles, to the edge of the continental shelf, in order to lay claim to offshore oil. But when other countries followed suit, confusion arose over the exact extent of each nation's shelf. Four decades later, the Law of the Sea Treaty allowed a nation to go beyond 200 miles by submitting evidence that its continental shelf extended past that limit. The treaty, minus America's signature, took effect in 1994.

Quietly, the University of New Hampshire's Center for Coastal and Ocean Mapping has been surveying U.S. coastal waters to arm American diplomats with evidence to claim additional territory if the Senate ratifies the treaty, as President George W. Bush has asked. This could allow the nation to grow by at least 386,000 square miles. Alaska's maritime boundaries would be pushed out 150 miles, and in the south, U.S. claims would reach to the middle of the Gulf of Mexico. The oil, gas, and other resources contained in the new U.S. territory could be worth at least \$1.3 trillion, Gagnon says.

It's tricky business delineating the rock of the continental shelf from the stone of the sea floor. For six years, U.S. marine geologists have been meticulously traversing the seas, in a back-and-forth movement like "mowing a lawn," mapping the floors of the underwater Arctic Ocean, the Bering Sea, the Pacific waters surrounding the Mariana Islands, the gulfs of Alaska and Mexico, and the Atlantic Margin off the East Coast. Nine coun-

tries have already filed claims to expand their undersea turf. But if dozens of countries try to "grow" simultaneously, many of them are going to be wrangling over the same rocks. Already Britain, Argentina, and Chile claim the same stretches of ocean floor—off Antarctica.

## SCIENCE &amp; TECHNOLOGY

## Biofuel Backfire

**THE SOURCE:** "Land Clearing and the Biofuel Carbon Debt" by Joseph Fargione, Jason Hill, David Tilman, Stephen Polasky, and Peter Hawthorne, in *Scienceexpress*, Feb. 7, 2008.

THE PROSPECT OF PAINLESSLY growing corn and sugar cane on spare land to reduce global warming always seemed too good to be true. And so it is, write Joseph Fargione of the Nature Conservancy and four coauthors from the University of Minnesota. Switching from oil to biofuels might actually make things worse.

The problem arises because plowing up large tracts of undisturbed land to plant biofuels could release vast amounts of carbon dioxide (CO<sub>2</sub>)—between 17 to 420 times more CO<sub>2</sub>—than the fossil fuels that are replaced.

New agricultural production

Plowing up undisturbed lands to plant biofuel crops could release far more carbon dioxide than simply burning fossil fuels.

generates a "carbon debt" by releasing long-sequestered CO<sub>2</sub> into the atmosphere as land is cleared—often by burning—and plants decompose. If, as is done in Malaysia, peat soil is drained to make way for palm tree plantations (palm oil is a source of biodiesel), environmental damage becomes even more severe because peat releases great amounts of CO<sub>2</sub> as it dries out. The "carbon debt" run up by growing corn on fallow midwestern grasslands to produce ethanol would take about 93 years to erase. The debt incurred by transforming tropical peatland into palm plantations would last for 840 years, Fargione and his coauthors estimate.

As America tries to wean itself from foreign oil, the newly enacted Energy Independence and Security Act mandates the use of more ethanol and other such products. Environmentally friendly biofuels might eventually be derived from perennial grasses and woody plants grown on degraded and abandoned agricultural lands that would remain unplowed. The byproducts of sustainable forestry and the stalks and leaves of corn and soybean plants are also promising sources of biofuels. (Other specialists note, however, that the needed processing technology is not fully developed.)

Biofuel crops could someday reduce reliance on oil from the unstable Middle East. But they also might have the disadvantage of raising grocery prices and shifting food crops to more ecologically vulnerable locales. The authors' conclusions are clear: Biofuels are no panacea.

## ARTS &amp; LETTERS

# French Fraud

**THE SOURCE:** "Scandale Française" by Ruth Franklin, in *The New Republic*, Jan. 30, 2008.

WHEN IRÈNE NÉMIROVSKY'S unfinished novel *Suite Française* appeared for the first time in English in 2006, critics and readers greeted it as a revelation. They marveled at how the author managed to create a penetrating, irony-tinged tale about the tumultuous events she was simultaneously experiencing in her own life during the German occupation of France in World War II. In the minds of many, the fact that Némirovsky, a Jew, was ultimately arrested and sent to Auschwitz, where she died in 1942, elevated the interrupted novel to the same level of prophetic poignancy as *The Diary of Anne Frank*.

That impression, *New Republic* senior editor Ruth Franklin writes, persists only because "very few readers in our day know anything about Irène Némirovsky." What makes *Suite Française* so astounding, Franklin asserts, is not that it resided undiscovered in notebooks held by Némirovsky's daughter for 60 years, but that its publication "posthumously capped the career of a writer who made her name by trafficking in the most sordid anti-Semitic stereotypes."

Némirovsky was born in Kyiv in

1903 and raised in an enclave of wealthy Russians, mostly by her French governess. The family spoke French at home, and reportedly never practiced Judaism. According to Franklin, Kyiv's Jews, many of whom lived in a poor neighborhood on the banks of the Dnieper, re-

pulsed Némirovsky; she described their children in a late novel as "swarming vermin." After World War I, the Némirovskys moved to Paris, where Irène's anti-Semitic writings were to achieve immense popular success. Her most notable early novel was *David Golder* (1929)—"an appalling book by any standard," Franklin writes—in which "all the . . . primary characters are Jewish, and all are despicable." She went on to publish novels and many short stories in *Gringoire*, a weekly that, Franklin says, "be-



The revelation of Irène Némirovsky's anti-Semitic writings has tarnished her posthumously published novel about the Nazi occupation of France. Shown in Paris in 1938, she later died in Auschwitz.

came notorious during the 1930s for its harsh anti-Semitic and anti-immigrant editorials.”

Némirovsky's defenders say her novels and stories merely reflect the historical context in which they are set, and she defended herself against contemporary accusations of anti-Semitism by saying of her Jewish characters, “That is the way I saw them.”

To Franklin, two things give the lie to this defense. One is that *David Golder* is no isolated instance. As a recent biography by Jonathan Weiss makes clear, Franklin reports, “Némirovsky was the very definition of a self-hating Jew.” The second damning bit of evidence is a personal letter Némirovsky wrote in September 1940 to Marshal Henri Pétain, leader of the collaborationist Vichy France government. “I cannot believe, Sir,” she wrote, “that no distinction is made between the undesirable and the honorable foreigners”—clearly placing herself in the latter camp. Her plea for exemption from the mounting anti-Jewish strictures was ignored, and publishers began rejecting her writings. After her arrest in July 1942, her husband, Michel Epstein, argued in a letter to the German ambassador that “it seems . . . unjust and illogical to me that the Germans would imprison a woman who, though originally Jewish, has no sympathy, and all her books show this, . . . for Judaism.”

*Suite Française*, Franklin argues, “was not just a chronicle; Némirovsky saw it also as a form of revenge” against the country that had abandoned her. The sympathetic portraits of many of the German characters in the novel clearly reflect the author's own feelings. But though numerous critics have admired her unflinching depictions of the French, forced by small steps into full collaboration with their conquerors, many readers have also noted, Franklin says, that “there are no Jewish characters in *Suite Française*.” The ironic detachment Némirovsky employed to such devastating effect against the French may have required too great an effort to encompass her own situation, that of a relentlessly anti-Semitic Jew crushed by cultural prejudices her writings helped perpetuate.

## ARTS &amp; LETTERS

## Bach the Unknowable

**THE SOURCE:** “J. S. Bach in the Twenty-First Century: The Chapel Becomes a Larder” by Harold Fromm, in *The Hudson Review*, Winter 2008.

THINK OF WOLFGANG AMADEUS Mozart and you might picture an abused little prodigy being ferried to performances across Europe by his greedy father. And many people can't conjure up Ludwig von Beethoven without seeing the irascible genius, completely deaf, having to be turned around to see the tumultuous standing ovation at the premiere of his Ninth Symphony. Compared with the fame of these two masters, the name Johann Sebastian

Bach produces no popular image at all.

Yet Bach (1685–1750) is the “father of Western music,” writes critic Harold Fromm. He's in the “very chemistry of Western musical blood, like red cells, white cells, and platelets in our material plasma.” Bach fails to cut much of a human figure simply because, apart from enough music to fill 160 CDs, he left so little behind. It doesn't help that he lived in Leipzig, far from the great centers of European culture.

Because his only surviving correspondence lies primarily in church and

## EXCERPT

### Holding a Space for the Theater

*The act of dedicating oneself to acting and speaking together—the act of forming some kind of collective theatrical organization—is inherently political. . . . This is no longer possible. . . . We have passed, perhaps not irretrievably, into a period that is postpolitical, postdemocratic, and post-tragic. The political task of theater, in the face of such a collapse, is somehow to hold open a tiny space between the collapsing walls.*

—NICHOLAS RIDOUT, professor at Queen Mary University of London and coauthor of *The Theatre of Societas Raffaello Sanzio*, in *Theater* (Fall 2007)

municipal ledgers, the great composer comes off as an “aggressive businessman whining about maltreatment and underpayment,” though in fact he lived a rich professional, social, and family life and earned considerable recognition. Ten of his 20 children died before adulthood, but four lived to become famous musicians in their own right.

Bach was born in Thuringia in present-day Germany, lost both parents by the time he was 10, and by 18 was employed as a professional organist. In 1723 he was named cantor and music director at a school and four churches in Leipzig, where he struggled to stage his compositions using mostly student singers and musicians.

In more than a thousand compositions, Bach perfected the contrapuntal (or counterpoint) style, in which two or more independent but

## EXCERPT

## Beyond the New South

*The Old South hurtled into the New within a single generation, and then—carried headlong by its own momentum—hurtled still faster into the New South as the commerce of corporate homogeneity swept across the region.*

—RICK BASS, author, in *Southern Review*  
(Winter 2008)

harmonically related melodic parts are played at the same time—a challenging proposition that music teachers sometimes describe to beginning students as akin to patting their heads and rubbing their stomachs at the same time. He changed the way music was played. Before Bach, the thumb had been only rarely used in keyboard playing, but he pioneered its far greater use (along with that of the little finger) to hold down a key

while the other fingers played around it. This made it possible to produce both dominant melodies and elaborate flourishes at the same time. It also made the music harder to play.

During his 27 years in Leipzig, Bach volunteered to compose a new church cantata of his own almost every Sunday for a period of five years. He continually recycled material, changing instrumentation, adding and deleting.

Two of his greatest works, the Mass in B minor (1748–49) and the *Christmas Oratorio* (1734–35), were “tweaked from mostly secular existing gems,” Fromm writes.

In Bach’s day, words mattered more in the Lutheran Church than music. This was liturgical music, after all. Today the words seem pietistic—even “deadly,” Fromm says, while the music is almost universally regarded as inspiring and astonishingly inventive.

## OTHER NATIONS

## An Energy Cold War?

## A SURVEY OF RECENT ARTICLES

AMERICANS ARE TOO ACCUSTOMED to sparring with the Russian bear to allow it to fade quietly into the ranks of demographically challenged second-tier nations. Now

the former Evil Empire roams the earth again as “corporate Russia,” fueled by oil and gas revenues, steered by a semi-authoritarian government with global ambitions, and equipped with a foreign-policy instrument called Gazprom.

It’s easy to see how such a threatening new poster child of energy aggression emerged, writes Andreas Goldthau, a RAND Corporation fellow, in *Policy Review* (Feb.–March 2008). Russia owns 27 percent of the world’s gas reserves (with energy giant Gazprom controlling most of that), and accounts for 22 percent of global gas production. It is home to 6.2 percent of international oil reserves and produces 12 percent of all crude oil. High prices for

energy have enabled an inefficient industrial nation to achieve a \$1 trillion economy that is growing by almost seven percent a year.

Russia has soaked its dependent foreign customers during frigid winters, sidled up to China in conflicts with the West, and used the government-dominated Gazprom to curtail gas flow to Ukraine and Georgia when democratic movements threatened the pro-Russia old guard in those countries. But all the aggressive posturing is nothing more than a “well-crafted piece of Russian PR,” Goldthau asserts. Russian leader Vladimir Putin has “limited ability” to use oil as a weapon because the Russian economy is as dependent on oil revenue as its customers are on its oil.

Moreover, Russia’s accessible energy supplies are gradually running out and Gazprom has been slow to develop reserves, in part because of the vast amount of capital this would require. Since the collapse of the Soviet Union, the company has coasted along on “legacy” gas from fields opened up and transmission lines built in the last two decades of the Soviet era, notes geographer Matthew J. Sagers in *Eurasian Geography and Economics* (Nov. 2007). But in recent years Gazprom’s output has been essentially flat even as demand increased, and its most promising reserves are on the Yamal Peninsula, a landmass above the Arctic Circle where conditions defy imagination. Winds can rise to a steady 90 miles an hour there, wind-driven water up to 33 feet deep covers low-lying coastal land several months of the year, and solid ground gives way to

friable sand that offers little support for drill pads, pipelines, and other infrastructure. The estimated cost of opening up the area is \$31 billion, if all goes perfectly according to plan.

Gazprom’s challenges are hardly limited to the technical realm, write B. Kuz’man, its chief personnel manager, and two colleagues in *Problems of Economic Transition* (Sept. 2007). In recent years, the company has been forced to sell natural gas at “dumping prices” inside Russia. Even so, nonpayment has been a big problem; the Russian Ministry of Defense is one of the “persistent” deadbeats. Gazprom’s interests are subordinated to socioeconomic and state problems, Kuz’man says. Until 2004 it was responsible for recreation centers, hospitals, airports, railroads, hotels, and farms that occupied almost as many of its workers (31 percent) as the transportation of gas (33 percent).

Nonetheless, rising energy prices have boosted the Russian state budget and fueled Russian aggression, according to Charlie Szrom and Thomas Brugato of the American Enterprise Institute in *The American* (Feb. 22, 2008). Citing an “aggression index” they compiled, the authors found that the higher the price of oil over the past seven years, the more likely Russia has been to sell arms to terror-sponsoring states, conduct threatening military exercises, and interrupt energy supplies to neighbors.

For Russia, Szrom and Brugato conclude, today’s high-priced oil and gas have supplied “liquid courage.”

## OTHER NATIONS

## A Tipping Point for GM Foods?

**THE SOURCE:** “Genetically Modified Rice, Yields, and Pesticides: Assessing Farm-Level Productivity Effects in China” by Jikun Huang, Ruifa Hu, Scott Rozelle, and Carl Pray, in *Economic Development and Cultural Change*, Jan. 2008.

SCIENTISTS HAVE BEEN WORKING on genetically modified (GM) plants for 25 years, but the developing world has rejected virtually every bioengineered food crop. Rice is one of the world’s great staples, for example, but only Iran markets a GM version. Now China may be poised to join it. And if China goes, competitive pressures may force the rest of the world to follow.

Time was when the ability of scientists to engineer seeds to fend off insects and disease was touted as the salvation of a hungry world. But that dream has collided with consumer concerns about “Frankenfoods,” strong antibiotechnology activism, and governments’ fears of trade retaliation. GM corn and soybeans are widely grown for animal fodder in the United States and Canada, but fierce opposition from these countries’ trading partners has checked growth. Industrial crops such as GM cotton and corn, however, are commonly harvested in other countries, including China and South Africa.

In China, four versions of GM insect- or disease-resistant rice have made it to the third and final stage of safety trials required by Beijing, write Jikun Huang and Ruifa Hu, of the Chinese Academy of Sciences, and Scott Rozelle and Carl Pray, of

Stanford and Rutgers, respectively. But until their study, little research had been conducted on whether the crops live up to their billing. After collecting data for three years from farmers in 320 households, the researchers concluded that GM rice increases farm productivity, mostly by cutting the cost of pesticides. They found that GM rice yielded at least as much per acre—and sometimes more—while requiring only one-eighth as much pesticide. That matters a lot to China, which faces

pollution and health problems as the world's largest pesticide user.

Chinese authorities, having already spent several billion dollars on agricultural biotechnology research and development, are “struggling” with the issues of biosafety and the acceptability of GM rice domestically and in international trade. Three years ago, the authors wrote that China was on the threshold of commercializing GM rice. In their current report, they make no predictions on when or

even if GM rice will be approved; they think China should “seriously consider” the move. Yet with rice consumption decreasing as affluence enables the Chinese to eat more meat and other foods, some researchers question the need for controversial GM rice.

Even so, given China's vast population, GM rice could help the poor and add \$4.2 billion a year to the economy, the authors write. It could also set off a global chain reaction, leading to the commercialization of GM rice, wheat, corn, and other crops, not only in China but around the world.



China boasts the developing world's largest biotechnology research program, but has yet to sanction the sale of genetically modified rice. If it does, the rest of the world may follow.

## OTHER NATIONS

## Strictly Merit, Indian Style

**THE SOURCE:** “In the Name of Globalization: Meritocracy, Productivity, and the Hidden Language of Caste” by Surinder S. Jodhka and Katherine Newman, in *Economic and Political Weekly*, Oct. 13, 2007.

THE MERIT PRINCIPLE HAS conquered India. Human resource managers of Indian companies say that the traditional bases of hiring—nepotism, regional ties, and caste—are not affordable now that India is becoming an economic powerhouse. But India has its own way of judging merit, write sociologists Surinder S. Jodhka of Jawaharlal Nehru University in New Delhi and Katherine Newman of Princeton. Virtually every hiring manager the two researchers interviewed emphasized that asking questions about family background was critical in evaluating a potential employee.

Such questions would be avoided like the plague by American companies fearful of lawsuits over employment discrimination.

A multinational Indian shoe manufacturing company, for example, looks for merit by assessing family characteristics such as the educational level of the parents, the employment history of brothers and sisters, and whether the applicant lives in the city or the country, says its human resources manager. Because it's impossible to delve very deeply into the character of a job seeker in an interview, "the successes of the rest of the job applicant's family stand in as proof that the individual . . . is reliable, motivated, and worthy," the authors write.

But the new Indian merit principle still makes it nearly impossible for Dalits, once called untouchables, and other disadvantaged applicants to be hired. The majority of India's 160 million Dalits are rural, landless laborers whose parents and siblings have not had access to a good education or stable job in the formal economy.

The new system also discriminates against the scions of the very rich, Jodhka and Newman write. Employers seek workers who are humble. Job candidates from wealthy families "have an inner pride within them which makes them arrogant," says the human resources director of a car manufacturing firm.

The language of meritocracy that has spread around the globe, Jodhka and Newman say, should, at least in India's case, be taken with a "heavy grain of salt."

## OTHER NATIONS

## Hanging Out With Hezbollah

**THE SOURCE:** "Sanctioned Pleasures: Youth, Piety, and Leisure in Beirut" by Lara Deeb and Mona Harb, in *Middle East Report*, Winter 2007.

WHEN THE REAL ESTATE MARKET took a dive in Beirut a decade ago, developers moved to diversify their investments by filling a new market niche. In the city's Hezbollah-dominated southern suburbs, they figured out a way for Shia Muslims to relax, piously.

They are building Internet cafés such as Café.Yet and hotel and restaurant complexes such as the al-Saha Traditional Village in the dense urban precincts where *hala islamiyya*, or Islamic ambience, prevails. Like their Christian counterparts in the United States, Lebanon's Muslim entrepreneurs are erecting summer camps and fitness clubs in hopes of attracting religiously minded young people. They open beaches, public gardens, and amusement parks that comply with Muslim customs. Snack bars and upscale restaurants feature modern décor, high-quality food, coffee, and hookahs, write Lara Deeb and Mona Harb, of the University of California, Irvine, and the American University of Beirut, respectively.

Rising incomes—powered by foreign remittances, high rates of return emigration, better education, and more stable governance in recent years—have created a generation of young, media-savvy consumers in the stronghold of Hezbollah—which is considered a terrorist

organization by the United States but runs municipal governments in parts of Lebanon.

The new shops and cafés forswear alcohol and nonhalal meat, and ban singing that is considered seductive and conducive to dancing. Commonly understood rules prohibit unrelated men and women from touching or sitting too close to one another. Women's beaches are screened from men's. Some women's pools are designed so that views from land, sea, or air are obstructed. A few Internet cafés feature booths where pious women can surf the Web with propriety.

Hezbollah has built "political entertainment" sites in Beirut, showcasing the exploits of its militia.

Hezbollah itself has built "political entertainment" sites, specializing in summer camps and exhibitions showcasing the exploits of its militia, the Islamic Resistance.

The party has tried to keep the Shia leisure industry, which took off between 1998 and the Israeli-Lebanese war of 2006, in line with Hezbollah's notions of correct Islamic behavior. It has encouraged informal boycotts of cafés and restaurants it considers too loose. Shia scholars regularly rule on whether certain establishments comply with religious law—although they often disagree on what is "appropriate." In a surprising number of instances, the authors report, young people have been tougher judges than the scholars.

Also in this  
issue:

Matthew Battles on  
libraries

Colin Fleming on  
Weimar Germany

Steven Lagerfeld  
on 19th-century  
America

Tim Morris on  
kitchen literacy

Barbara Wallraff  
on the father of  
Roget's *Thesaurus*

Christopher Merrill  
on George Seferis

Mark Reutter on  
trains

Daniel Akst on the  
wonders of corru-  
gated iron

# CURRENT BOOKS

REVIEWS OF NEW AND NOTEWORTHY NONFICTION

## The Corrosion of the American Mind

Reviewed by Wendy Kaminer

WHETHER THEY ANTICIPATE THE RAP-  
ture or the ravages of climate change, apoca-  
lyptic thinkers abound. Given the course of  
the 21st century so far, skeptics should be  
forgiven for viewing hope as more delu-  
sional than audacious.

For some aging intellectuals, the apoca-  
lypse is now. Like Nathan Zuckerman rail-  
ing at cell phones, they long for what was  
lost in the transition to a postprint culture  
and can't imagine what might be gained.  
Illiteracy, innumeracy, attention deficits,  
close-mindedness, civic ignorance, junk  
science, celebrity worship, anti-rational-  
ism, and outright disdain for intellectu-  
alism are some of the plagues Susan Jac-  
oby laments. In *The Age of American  
Unreason*, she mourns the end of civiliza-  
tion as she knew it.

Jacoby is a perceptive and prolific critic, a  
former journalist with a talent for social and  
intellectual history. Her most recent previ-  
ous book was *Freethinkers: A History of  
American Secularism*, and her critique of  
unreason immediately identifies religious  
fundamentalism as a "major spur to anti-

intellectualism," evidenced  
by the popular embrace of  
creationism and intelli-  
gent design. Not surpris-  
ingly, Jacoby also assails  
the mass media and what she considers the  
devolution from reading to viewing, and  
from writing to messaging. She has little  
patience for the contention that technology  
and new media are spawning new forms of  
intelligence, and she sees slim literary prom-  
ise in the disjointed reading and writing  
encouraged by computers or in their facilita-  
tion of "packaging-plagiarism," by book  
publishers as well as students.

Many of Jacoby's criticisms and com-  
plaints are familiar, but she doesn't aim to  
surprise us with her critique of unreason so  
much as she wants to alert us to its clear and  
present dangers. Jacoby envisions her book  
as a sort of sequel to Richard Hofstadter's  
relatively sanguine 1963 classic, *Anti-  
Intellectualism in American Life*. His judi-  
cious, cautiously optimistic analysis was  
written when intellectuals were either enjoy-  
ing or anticipating a renaissance, Jacoby

**THE AGE OF AMERI-  
CAN UNREASON.**

By Susan Jacoby.  
Pantheon. 356 pp. \$26

observes, but in the half-century since, our descent into unreason has been steep. Indeed, while Hofstadter regarded anti-intellectualism as a fluctuating force in American life, Jacoby suggests that it's now the fabric of our culture.

She looks back on the 1950s and early '60s—coincidentally, the years of her youth and television's infancy—as, if not quite a golden age for intellectuals, then a period of promise. Her own historical analysis of our intellectual decline includes a eulogy for mid-20th-century middlebrow culture—a “culture of aspiration” and

“effort” that provided a thought-provoking “alternative to mass popular culture.” While a typical middlebrow reading list omitted literary modernists, she notes, it included an eclectic mix of “classics” from

Homer to Dostoyevsky, as well as Irving Stone's historical fiction or William Shirer's history of the Third Reich.

In the spirit of this tradition, Jacoby deftly surveys the development of unreason since Ralph Waldo Emerson's unheeded call for intellectual independence in 1837. America's original sin, she suggests, was straying from the intellectual demands of the Enlightenment and liberal Protestantism to embrace the emotional comforts of “evangelical fundamentalist religion.” It is, she writes, one of the great historical ironies that the Founders' enlightened rejection of theocracy enabled revivalism and the flourishing of fundamentalist faiths.

Education didn't conquer unreason. Instead, she observes, in many areas of the country, especially the predominantly fundamentalist South, unreason conquered education. Regional religious differences contributed to great regional educational disparities and the emergence of superior schools in urban areas and in the North, especially New England. As a result of local control of public schools, “the content of education in

the most backward areas of the country would be determined by backward people.”

Still, educated Northerners were not paragons of reason. Jacoby singles out their attraction to the pseudoscience of social Darwinism in the post-Civil War period, noting that the popularity of this ideological rationale for “untrammeled capitalism” demonstrated the susceptibility of intellectuals to irrationalism, the confusion of sociology with hard science, and the dangers of a little knowledge: “Many Americans possessed just enough education to be fascinated by the late-19th-century advances in both science and technology, but they had too little education to distinguish between real scientists and those who peddled theories in the guise of science.” Jacoby rightly identifies pseudoscience and religion as two “critical ingredients” of unreason since then. Indeed, they often work in tandem: The “sciences” of mind cure and New Thought flourished, and Mary Baker Eddy “discovered” Christian Science in the 1860s. Then came Scientology, the “science” of positive thinking, and, more recently, New Age healer Deepak Chopra's nonsensical references to quantum physics.

Irrational belief systems such as these appeal to educated and uneducated people alike, regardless of political preference. But the anti-intellectual bias that irrationalism fuels has been highly politicized and generally directed against liberals. Justifiably irritated by the success with which right-wing intellectual elites have exploited “popular anti-intellectualism” to deride left-wing intellectual elites, Jacoby parses the political causes and effects of our stupefaction. She reviews the liberal intelligentsia's brief, mid-20th-century romance with communism's “social pseudoscience,” and the dynamics of McCarthyism and its indelible portrayal of liberal thinkers as godless anti-Americans. She revisits the 1960s, a complicated period that saw the consolidation of Richard Nixon's silent majority and the growth of fundamentalist churches, along with a revolution in civil rights and the rise of youth culture and the counterculture, as well as the New Left, which does not escape her critique. (The political

America's unreason, cultural critic Susan Jacoby suggests, grew after it strayed from the intellectual demands of the Enlightenment and liberal Protestantism.

performance art of the period was not exactly an exercise in reason.)

Jacoby easily skewers disgruntled conservative critics of social change, such as Allan Bloom, who couldn't even get his facts straight, but she recognizes the left-wing anti-intellectualism that appeared to justify his wrath: While campus protests of the late '60s were generally motivated less by concerns about the curriculum than outrage over higher education's military and corporate ties, she stresses, a "vocal, vulgar, and stupid" minority of activists busied themselves categorically denouncing the works of Dead White European Males. Their demands partly reflected what Jacoby condemns as "resistance to the idea of aesthetic hierarchy," which she regards as a

regrettably powerful legacy that helped shape the proud anti-intellectualism of celebrity culture today.

The frequently maligned relativism associated with the '60s had real effects in academia as well as popular culture (it helped make pop culture scholarship fashionable), but it was essentially a pose. Opposition to hierarchy, aesthetic and otherwise, which flourished among multiculturalists and other "progressive" descendents of this influential decade, focused much more on rearranging hierarchies than on destroying them. Identity politics and repressive codes regarding speech, civility, and harassment on college campuses exemplify the unthinking moral dogmatism of these putative relativists. The distressingly ubiquitous codes typically give administrators broad discretion to punish speech they consider offensive or insensitive, in the interest of building diverse communities in which everyone can feel "safe"—so long as they practice safe speech.

In fact, identity politics, enforced by speech

codes, creates highly irrational, unsafe environments for people who violate its strictures, as the three Duke University lacrosse players famously and shamefully indicted for a rape that obviously never occurred might testify. Their accusers assumed their guilt, ignoring the facts of the case and focusing instead on the students' identity as relatively affluent white athletes, who insensitively hired a black female stripper for a team party.

Unaccountably, Jacoby does not address the virulent unreason of identity politics on American campuses today or the pervasive liberal academic embrace of censorship, both of which pose obvious threats to free inquiry and the knowledge of civics for which she longs. Discussing the dire, "long-term problem" of civic



"Do you have 'Intelligence for Idiots?'"

illiteracy, Jacoby bemoans public ignorance of First Amendment guarantees, but she doesn't seem to recognize how effectively that ignorance is exacerbated when students are taught to expect protection from "offensive" speech and not taught to value or engage in the rough-and-tumble of debate.

It's not that Jacoby ignores anti-intellectual trends on campus: She worries about the prevalence of courses devoted to popular culture that "allow students to continue aiming their minds at low objects." And she discusses a notorious example of de facto speech and idea policing—the controversy over former Harvard president Lawrence Summers's injudicious speculations about women's scientific aptitudes—but she embarks on this discussion only to lambaste his "junk thought" about cognitive sexual differences. Jacoby is right to debunk unsubstantiated assumptions about sexual difference but wrong to frame the vilification of Summers as a victory for reason. His comments were not simply

disputed; they were treated as unfit for public expression or consumption and exploited in an eventually successful campaign to oust him.

What are the prospects for a new age of reason in America? Jacoby makes the obligatory attempt to end her profoundly pessimistic critique with a stab at optimism, but it's appropriately halfhearted. The de facto publishing rule that critical analyses of serious problems must conclude with proposed solutions reflects the intellectual shallowness that is the subject of Jacoby's book. She does not yield to it. "To seize

the moment," she writes, "Americans must recognize that we are living through an overarching crisis of memory and knowledge, involving everything about the way we learn and think." In other words, Americans must reason their way through the crisis of unreason, like people learning to walk on atrophied limbs. No wonder she's discouraged. It takes more than reason—it takes faith—to rest on improbabilities.

WENDY KAMINER is the author of several books, including *Sleeping With Extra-Terrestrials: The Rise of Irrationalism and Perils of Piety* (1999), and is a blogger at [thefreeforall.net](http://thefreeforall.net).

## Reading in the Dark

Reviewed by Matthew Battles

OLD AS WRITING, THE LIBRARY IS AN INSTITUTION and an archetype. Its symbolic dimensions embody the contradictions of civilization: It's a token of authority that threatens to undermine regnant powers, a figure of memory and forgetting, an object of longing and loathing. With its promise of comprehensive wisdom, it forever reminds us of the incompleteness of our knowledge, the limits of our vision. But it's also a physical place—a home for books and a workshop for those who read and care for them.

Like the world itself, the library dichotomizes. Books are included or excluded; they are free for all or reserved for the select few; some enjoy attention and acclaim, while others lie shrouded in obscurity—just as after nightfall, light falls on open volumes while other pages remain in darkness. In Alberto Manguel's evocative formulation, it's this last either/or—the turning of day into night—that reveals the library's tensions. And he recalls Virginia Woolf's useful distinction between two types of readers, the scholarly and the casual. While the former, Woolf tells us, "searches through books to discover some particular grain of truth upon which he has set his heart," the latter eschews the impulse to read systematically, which "is very apt to kill . . . the more

humane passion for pure and disinterested reading." What to Woolf is a matter of taxonomy, however, for Manguel is a question of diurnal rhythm.

"During the day," he writes, "the concentration and system tempt me; at night I can read with a lightheartedness verging on insouciance." When night falls, amid pools of lamplight and glittering books his library in France seems to float like a ship on the sea; it becomes "a universe of self-serving rules that pretend to replace or translate those of the shapeless universe beyond."

Like Manguel's best-known work, *A History of Reading* (1996), *The Library at Night* is a sentimental history. That earlier book introduced a wide circle of readers to the revelation, previously appreciated only by historians of the book, that reading has not been the same thing in all times and places, but that its textures change with alterations to culture and the nature of the individual consciousness as much as with changes in the media of writing and publishing. In *The Library at Night*, Manguel's point is a different, nearly opposite one: All libraries partake of the same dream of completeness. Behind and

### THE LIBRARY AT NIGHT.

By Alberto Manguel.  
Yale Univ. Press.  
373 pp. \$27.50

beyond each collection of books is an ideal, shimmering and unrealizable, which haunts the sensitive reader.

Ranging through history and mythology, Manguel searches for the library's avatars. "The Tower of Babel collapsed in the prehistory of storytelling," he writes; "the Library of Alexandria rose when stories took on the shape of books, and strove to find a syntax that would lend each word, each tablet, each scroll its illuminating and necessary place." That syntax, the ordering of books on the shelves, is a dynamic to which Manguel is drawn throughout a book whose chapters take the form of meditations on a series of similes: "The Library as Shadow," "The Library as Chance," "The Library as Oblivion." Again and again, Manguel's imagination returns to the labor and compulsion of putting books together and making them talk to one another. In the ordering of books, Manguel senses a tension that lies at the heart not only of library making but of the project of civilization itself. Although the universe we live in may be characterized by a "dearth of meaning and lack of discernible purpose," we build and arrange collections of books as if they could represent a universal order, or will one into being as if by sympathetic magic.

The powers and tensions of the library as symbol have played havoc with our understanding of libraries as institutions. For libraries are not one and the same thing across cultures, in all times and places. A private book collection is a very different thing from a public library, speaking to different orderings of power and privilege, access and understanding. A research library, likewise, differs fundamentally from an ecclesiastical one, despite their historical ties. A public library in Nazi Germany or the American South under Jim Crow differs in crucial ways from mid-western Carnegie libraries or the great urban public libraries of Boston, New York, and Chicago. Libraries aren't always used for the purpose of opening minds; those that exclude certain kinds of books and readers can be instruments of oppression and alienation.

Manguel, however, is less interested in the poli-

tics of library history than he is in its poetry. His historicity is of a distinctly literary cast: allusive, magpielike, unafraid of anachronism and Whiggish teleology. *The Library at Night* is larded with fascinating figures, telling anecdotes, and library lore. Michelangelo and Melvil Dewey, Antonio Panizzi and Sextus Propertius, George Orwell and Caliph Omar I all make appearances. Manguel writes evocatively of libraries that sprang up at the intersection of ancient trading routes, such as

Chinguetti in Mauritania, which over the centuries became a trove of collections devoted to the learning of Islamic poets, scholars, and scientists; and Dunhuang on the Silk Road, where works from China, Tibet, and India mingled with treasured texts of Persia

and the Hellenic world. Elsewhere, he tells of 17th-century Iceland, where the people, impoverished by their long, cruel vassalage under Denmark, ransacked the libraries to supply themselves with paper and vellum for insulation and clothing. In 1702, King Frederick IV of Denmark had the remnants of the destroyed books exhaustively retrieved, reassembled, and shipped back to Copenhagen—where, less than 30 years later, they were destroyed in a fire.

There are odd errors here and there. At one point, Manguel asserts that the Internet makes banned books accessible to readers in Rhodesia (it became Zimbabwe in 1980). Elsewhere, he reports that Google has abandoned its controversial project to digitize the world's books with the cooperation of numerous university and public libraries; in fact, the program continues to grow. This last error is telling, for it betrays Manguel's reluctance to see the Internet as the epoch-making phenomenon that it is.

The physical collections to which Manguel devotes his book bear the traces of their makers and readers, intrinsic markers of ownership and

On the Web, books talk to one another of their own accord as their owners and readers scan them, tag them, annotate and hyperlink and mash them up, and blog about them.

experience. Such traces are harder to discern on the Web, where books talk to one another of their own accord as their owners and readers scan them, tag them, annotate and hyperlink and mash them up, and blog about them. Not only Google and Amazon.com, but the Open Content Alliance (a group of libraries that have opted to digitize materials without Google), LibraryThing (a site where members make and share their personal electronic book catalogs), Project Gutenberg (a large collection of free electronic books), and a host of other initiatives ensure that books will enjoy a rich life in the digital age. The ongoing digitization of books promises an apotheosis of sorts, as the world's printed matter merges into One Big Book, an encyclopedic vade mecum.

Networked text is marvelously malleable stuff, and its ease of manipulation grants greater scope for invention and expression. Using the Internet, we're able to build vast personal libraries. They may lack the savor and heft of physical libraries, but they enrich and complicate the world of texts as a whole. On the Web, we're able to register the shifts in direction our sensibility takes as we move from book to book, and we find and delight in the

traces of migrations undertaken by others. Far from supplanting or destroying the kind of library Manguel values most highly—a private library that tastes of the universe—the Internet makes possible a multiverse of reading, knowing worlds.

But Manguel can be forgiven if he underestimates the value and beauty of the Internet. The strength of his book doesn't lie in scholarship and analysis, but in humane meditation. Like Montaigne, who had a tower-ensconced library of his own, Manguel revels in the possibilities of the word "essay." His chapters are tries, trials, takes. Reaching into the vast store of books in his shadowed memory, he pulls down volume after volume, trying the weight and feel of one against the other. The success of *The Library at Night* rests largely on Manguel's own fulfillment of a trope familiar from antiquity: the human mind as library. *The Library at Night* is the product of a mind made by reading, and the realization of its own essential argument: The library is a mirror in which we find ourselves and our world reflecting and interpenetrating.

MATTHEW BATTLES is senior editor at the Museum of Fine Arts, Boston, and the author of *Library: An Unquiet History* (2003).

## Culture Clash

*Reviewed by Colin Fleming*

LINES WERE EVERYWHERE IN WEIMAR Germany—in radically chic art forms, in the façades of bold architectural designs, between political groups. And demarcations are what both defined and destroyed the Weimar Republic, as the German state during the period 1919–33 is popularly known. Though this interval is sometimes dismissed as an intermission between the country's ignominious defeat in World War I and the rise of Adolf Hitler, *Weimar Germany* presents us with a republic that unleashed enough developments on our modern world to rival those of fin-de-siècle Vienna or impressionist France at its height.

The story of the Weimar Republic is the story of Germany's journey from fallen Old World power to the ultimate symbol of modern horror—of cutthroat politics, lingering postwar resentments, new freedoms, and modernist art. Eric D. Weitz, a University of Minnesota historian, sorts through this knotty mass of narratives in order to describe how German consciousness was uprooted from the Bavarian forests and ushered into the ferocity—and beauty—of the machine age. The book focuses on Weimar's culture,

**WEIMAR  
GERMANY:**  
Promise and  
Tragedy.

*By Eric D. Weitz.*  
Princeton Univ. Press.  
425 pp. \$29.95

rather than examine it merely as a bridge to the “juicier” subject matter of Hitler, as A. J. Nicholls does in *Weimar and the Rise of Hitler* (1968) and E. J. Feuchtwanger in *From Weimar to Hitler* (1993). But if a historian intends to fashion a book that is both a primer and a near-definitive single-volume account, he better be a master assimilator. Fortunately, Weitz has a knack for levelheaded synthesis.

After World War I, political factions in Germany’s nascent democracy grappled for power—veritable start-up groups, each with its own ideological “product.” Weitz makes it plain that this incarnation of Germany was doomed from the start, a battleground for agitproppers and conservatives so militant that the Right was often to the left of the Left, as though the political spectrum had lapped itself. The only thing the various factions of the Right and Left could agree on was that the victorious Western powers were greedily gouging the German economy (already struggling to adjust after the war) for reparations. The extreme nationalists—the branch of the Right the Nazis appealed to—preferred a kind of suicide course: “Let everything—economy, society, the republic—crash to smithereens rather than deal with the reality that Germany had started the war, had lost the war, and now had to pay for the war.”

Despite political and economic turmoil, Weimar culture blossomed. It is this paradox that binds the disparate elements of Weitz’s book. Sleek department store façades, photograms, cabaret smut, jazz, expressionist cinema, sex manuals—“all had their roots in the dual sensibility of the vast destructiveness of war and the powerful creativity of revolution.” In the cities, the factory became “a symphony, or perhaps a collage,” and the blinding colors emanating from nightclubs and theater houses replaced agrarian life’s “natural rhythms of sunrise and sunset.” Germany was cutting loose. This was fertile ground, of course, for a despot looking to leverage power with the right platform, but also fertile ground for the artist.

To set the scene, Weitz adopts the modus



So many modernist artists gathered at Berlin’s famed Café des Westens, shown here in 1931 and later destroyed by Allied bombs, that the place earned the nickname “Café Megalomania.”

operandi of Walter Ruttmann’s *Berlin: Symphony of a Great City*, the canonical 1927 silent film that presented the German capital as modernist symposium, with all its attendant hubbub. In essence, *Weimar Germany* is a walking tour, with plenty of jump cuts to get us from one point to another, starting with Berlin. “Weimar was Berlin, Berlin Weimar,” Weitz writes. Paris had café society, but in Berlin life was found in the cabarets. Cabaret music deftly fused folk, Broadway, and jazz forms, exhibiting the same penchant for amalgamation that informed classic modernist Weimar texts—such as Thomas Mann’s novel *The Magic Mountain* (1925)—with their chock-a-block layerings of plot and internal monologues.

Visual artists fed the scene as well. Hannah Höch, the creator of photomontages of vivisected animals, Hollywood starlets, sleek gymnasts, and newspaper cutouts, gets quite a bit of coverage as one of the republic’s newly liberated women. To the casual observer, much of Höch’s work possesses a disarming ambiguity—which is why this kind of imagery was easily pressed into the service of the Nazis. But Weitz defends works of hers

such as a collage titled *The Peasant Wedding Couple*, which some might call racist: “It can also be read as satirical commentary on racial ideology and on the right-wing idealization of the peasantry. Nothing could be more outrageous to German conservatives than a peasant wedding depicted as the union of an African man and a woman with a caricatured gorilla face topped with the quintessential braided blond hair.”

Weitz makes a case for Germany’s fragmentation as the source of this artistic bounty. Without any prevailing—or even constant—ideological or political viewpoint, thinkers, artists, and progressives were free to fashion new dogmas that would address the republic’s problems and shape its future. Savvy creators were open to inspiration wherever they could get it; continuous evolution—social, political, artistic—was the ultimate directive. Even in sexual matters, a good chunk of

Historian Eric D. Weitz makes the case that Weimar Germany’s fragmentation was the source of its cultural bounty.

German society was ready to tap into what were seen as fresh opportunities and to let the id have its day. “With so many men killed and ravaged by bullets, shells, and gas,” Weitz writes, “so many women left without

loved ones or reduced to caring for the seriously maimed—why not indulge life’s pleasures when possible? Why wait for the official sanction of marriage to sample sex?” You could make a mint in Weimar with a well-considered, quasi-scientific (for that hint of legitimacy) sex tutorial.

Perhaps no single medium in the Weimar Republic was more suggestive of this propensity toward ideological communion and shape shifting than expressionist cinema, and Weitz keenly probes its depths. Robert Wiene’s *The Cabinet of Dr. Caligari*, the 1920 film about a somnambulist and a doppelgänger, is the “sterling example,” he writes. Just about everything Wiene did was supremely theatrical, and *Caligari* features sets of nothing more than painted cardboard. This movie of murder and madness “presented viewers with a

highly ambiguous picture of reality and motivation. . . . Are dream worlds more ‘real’ than ‘reality?’” The schema of the war front and the battlefield trench had shifted to the contours of the mind, where physicality came to die. A drawing room, a crypt, a psychiatric ward—all with painted backdrops—became projections of the overheated imagination. In Wiene’s pioneering work, Romantic art was cut with 20th-century brutality.

Internalization marked even the buildings of Weimar, down to its apartments and storehouses. Weitz delivers a capable overview of the work of architects who studied at the Bauhaus school, founded in 1919 by Walter Gropius, who believed that a modernist aesthetic would lead to a better life. The Bauhaus designers had a penchant for curvilinear patterns that de-emphasized bulk, and rows of recessed windows. This sensibility was to influence just about every school of architecture to follow—even if that influence was evident in a school’s highly conscious disassociation from the Bauhaus style—and has informed typography, graphic design, and even electronic music as well.

A discussion of Gropius leads Weitz to Hungarian-born photographer and montagist László Moholy-Nagy, an artist who, happily, will become known to more people with this book. Struck by some of Moholy-Nagy’s work he saw at an exhibition, Gropius hired him as an instructor at the Bauhaus school. In his own art form, Moholy-Nagy saw utopian possibilities. “A few more vitally progressive years, a few more ardent followers of photographic techniques,” he wrote, “and it will be a matter of universal knowledge that photography was one of the most important factors in the dawn of a new life.” His conception: Do away with the camera altogether—place objects directly onto photographic paper and expose them to light. The method produced line-based, ghostly x-rays of subjects that had never been alive—a superimposition of silhouettes and gaseous emulsions, as if some sprite had relayed a glimpse of the era to come.

COLIN FLEMING writes for *The Times Literary Supplement*, *Smithsonian*, *Spin*, and *The Nation*, and is at work on a novel.

HISTORY

## The Age of Jackson Minus Its Leading Man

Reviewed by Steven Lagerfeld

AFTER A LONG RUN OF POPULAR books about the American Revolution and its heroes, Founders fever may have run its course. *What Hath God Wrought* is a compelling invitation to move on to the next great epoch of American history. The period from the end of the War of 1812 to the conclusion of the inglorious Mexican-American War in 1848 was defined less by its leading figures—from Kentucky statesman Henry Clay to abolitionist Frederick Douglass—than by the rapid expansion of population and industry that transformed the United States into a modern democracy.

Daniel Walker Howe, an emeritus professor at the University of California, Los Angeles, and Oxford University, takes his title from the message that Samuel F. B. Morse, inventor of the telegraph, tapped out in 1844 when he demonstrated his creation to national leaders in Washington. It was the climactic moment in a revolution in communications, Howe writes, that “laid a foundation not only for widespread economic betterment . . . but also for political democracy: in newspapers and magazines, in post offices, in nationwide movements to influence public opinion, and in mass political parties.” Tellingly, the telegraph had its first practical application in reporting the results of the Whig Party convention that year. The other revolution of the age was in transportation: Canals and the booming railroads unified the nation as never before. Andrew Jackson arrived in Washington for his 1829 presidential inauguration in a carriage and left eight years later on a train.

But Howe is having none of the convention that dubs this the Jacksonian Era. Universal white male suffrage, the great political achievement of the era, owed little to Old Hickory.

### WHAT HATH GOD WROUGHT:

The Transformation  
of America,  
1815–1848.

By Daniel Walker Howe.  
Oxford Univ. Press.  
904 pp. \$35

Howe's Jackson is a vain, strutting, power-hungry figure, an imperial president if ever there was one. A die-hard white supremacist, he worked to extend slavery and regarded the rising abolitionists as “monsters.” When the new printing and paper technologies gave rise to a vigorous abolitionist press, Jackson successfully connived with his postmaster general to prevent delivery of its publications in the South, perhaps “the largest peacetime violation of civil liberty in U.S. history.” With guns and bogus treaties, his brutal policy of Indian removal drove some 46,000 Native Americans from their lands east of the Mississippi to make way for white settlers. “The president personally intervened frequently,” Howe writes, “always on behalf of haste, sometimes on behalf of economy, but never on behalf of humanity, honesty, or careful planning.”

Many academic historians only grudgingly acknowledge the influence of religion in American history, but Howe is careful to trace its powerful currents. The reforming Protestant spirit animated the nation's belief in progress, rationality, and science—it was no accident that Morse chose a phrase from the Bible for his message—and reform campaigns such as those against slavery and Indian removal. The era's final year saw the birth of the modern drive for women's rights at the Seneca Falls Convention in upstate New York, sparked in part by the Quaker evangelist Lucretia Mott (who thought the ordination of women a more important goal than suffrage).

Howe illuminates the era's great debates—should the federal government promote economic modernization by investing in roads and other “internal improvements,” operating a second Bank of the United States, and maintaining protective tariffs?—and shines a welcome light on many less known subjects, such as the Anti-Masonic movement. He incorporates material from the past few decades’ “history from below,” with brief excursions on subjects as various as slave rebellions, the advance of dentistry, and minstrel shows, but never fails to keep his eye on the larger events, trends, and people that defined the era.

Connoisseurs of scholarly debates about the period will find plenty of delicacies, but Howe's arguments—America really is an “exceptional” nation, for example—are submerged in his masterly narrative. Even at more than 800 pages, this book is somehow still a marvel of compression, with vast amounts of scholarship integrated into a vivid history that shows Americans their nation in all its greatness, and its occasional squalor.

STEVEN LAGERFELD is the editor of *The Wilson Quarterly*.

## Eating Our Words

Reviewed by Tim Morris

WHILE I WAS READING ANN Vileisis's *Kitchen Literacy*, I bought a pie pumpkin at a supermarket in Arlington, Texas. Its tiny label asserted no fewer than five times that the pumpkin was organic, invoking both the USDA and the Oregon Tilth, and it came with a return address in LaFarge, Wisconsin. The label also informed me that the pumpkin—or perhaps its parent company—was “independent & farmer owned.”

Two hundred years ago, Ann Vileisis observes, I might have grown that pumpkin myself. A hundred years ago, I might have met its grower in a farmers' market and known enough about horticulture to discuss how it was raised. Fifty years ago, supermarkets would have taken pains to conceal the pumpkin's provenance. Today, we know more about our food supply than at any time in the last century. We read labels to learn where our food comes from; we read books to interpret the labels.

Vileisis goes back to primary sources—diaries,

cookbooks, print advertisements, government documents, and news stories—to trace American food epistemology from the early Republic to the present day. She does her best work in recovering the mid-20th century, that fast-receding era when knowledge of food was lost most quickly and definitively. *Kitchen Literacy* gives us a keen sense of why big canners, dairies, meatpackers, and grocers of the post-World War II period didn't want us to know what was making its way into our food—chemical preservatives and pesticides, as well as artificial extenders, conditioners, flavors, and colors—and how they kept that knowledge from us.

But food illiteracy was not foisted on an abject public. We didn't want to know the life history of our vegetables; we were content to let the Jolly Green Giant worry about that. Vileisis acknowledges the power of our mothers' and grandmothers' desire for clean-looking, reliable food. Grandma wasn't trying to poison us with chemical cake mixes, after all. Quite the opposite: She was aiming for safety and consistent quality. “The bride who takes advantage of canned and frozen foods, packaged mixes too, need not apologize,” assured a 1950 article in *Good Housekeeping* aimed at novice cooks. “She's smart.”

What Grandma didn't know, though, could have killed us. Fear of poison was finally strong enough to overcome Americans' reluctance to worry about their victuals. Vileisis charts the growing public and legislative concern during the 1950s and '60s about possible carcinogens in the food supply, and the accumulation of DDT in the

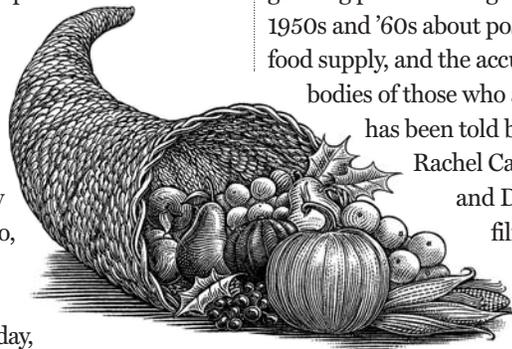
bodies of those who ate from it. This story

has been told before—notably, in Rachel Carson's book *Silent Spring* and Deborah Koons Garcia's film *The Future of Food*—but Vileisis situates it in the larger context of a loss and recovery of food literacy. Neither as activist as *In Defense of Food* author Michael Pollan nor as belligerent as Barbara Kingsolver in *Animal, Vegetable, Miracle*, Vileisis still hails from their wing of food politics, striving to know

### KITCHEN LITERACY:

How We Lost Knowledge of Where Food Comes From and Why We Need to Get It Back.

By Ann Vileisis. Island Press. 332 pp. \$26.95



more about her meals and to grow what ingredients she can herself. "I have no delusions about my dependence on the larger food system," she writes. But she remains "troubled by a nagging awareness that much of my food depends on distant, unknowable farms and cheap petroleum."

When I baked my "independent & farmer owned" pumpkin into a pie, the resulting dessert was stringy and tasteless. But I felt good about eating it. I wonder, after reading *Kitchen Literacy*, if I am much different from my grandmother. She opened cans of processed, residue-laden pumpkin and felt good about her predictable pies because the labels promised garden freshness. I open an indie pumpkin and feel good about the parlous results because the label promises sustainable human happiness. We differ mainly in our reading tastes.

TIM MORRIS teaches English at the University of Texas at Arlington and frequently writes about food.

## History Writ Small

Reviewed by Aviya Kushner

FOR ONE MONTH IN 1936, my grandfather worked in a bar in Bremen, Germany. The owner of that bar, who was not Jewish, risked plenty to pay my teenage grandfather for drying glasses and sweeping the floor. Decades later, he did my grandfather another favor, telling a committee in Bremen, "Yes, I knew Zigmund Traum. He worked for me in my bar. On this and this date." Because of that testimony, my grandfather received reparation checks for the rest of his life. The money could not compensate for the murders of two parents and four brothers, but it was an acknowledgment of what had happened.

Such small episodes—my grandfather's month of illegal work, the bar owner's walk to the reparation committee's headquarters—are part of the Holocaust's history, too. In *Good*

*Neighbors, Bad Times*, Mimi Schwartz tells the stories "that history has no time for as it paints the broad brush strokes of the past." These stories take place in Benheim (Schwartz changed the name), the German farming community where her father was born in 1898, when half the town's 1,200 residents were Jewish.

After he emigrated to Queens in 1937, Schwartz's father insisted that once his hometown "was the best place for Jews!" At the same time, he spent hours on the phone persuading others to help him in efforts to assist Jews still stuck in Hitler's Germany to leave, and fast. Schwartz, a professor emerita of the writing program at Richard Stockton College in New Jersey, takes us into the kitchens and gathering places of Germans and Jews alike, accepting drinks, cakes, and stories, in an effort to separate truth from lies in her father's account of good neighbors in a German village.

A hand-typed article by her father that she discovers tucked in an old file after his death describes life in the village before Hitler, when it was common practice for neighbors to help each other with feeding the chickens, milking the cows, and stoking coal. Orthodox Jewish residents who commuted by train to Pforzheim regularly converted one car into a prayer car, Schwartz's father wrote, "much to the astonishment of Christian travelers. No one shied away from laying tefillin [leather boxes Orthodox men strap on their arms and heads during morning prayers]; one prayed as if one were in a synagogue."

But as the Nazis' power grew during the 1930s, many Benheim Jews fled. After her father's death, Schwartz seeks them out to learn what happened in the place they left behind. In Israel, she hears about Benheim Christians who rescued a Torah during Kristallnacht in 1938. From survivors in Vermont, she learns that there

A Jewish daughter tells stories of Benheim, the German farming village where her father was born in 1898.

### GOOD NEIGHBORS, BAD TIMES:

Echoes of My Father's German Village.

By Mimi Schwartz.  
Univ. of Nebraska Press.  
279 pp. \$24.95

are actually two extant Benheim Torahs. And she hears stories that confirm that brave acts by non-Jews weren't confined to her father's village. One Benheim survivor, a woman named Ilse Loew, tells Schwartz about a woman from Holland she met recently who had hidden Jews during the war: "One day someone knocked on her door—it was either the Dutch police or a Nazi—and demanded she hand over the Jews. She offered him a cup of coffee and while he drank, she got a gun and killed him." An undertaker friend stowed the body in a coffin with another corpse.

But good neighbors are not the whole story, either. There were many seemingly nice local ladies who moved into vacant Jewish homes and live there still, tending flowers. Gradually, Schwartz pieces together the story of who let who hide whom. The pharmacist who initially sheltered Loew and her future husband during Kristallnacht soon sent them out into the streets, where Nazi thugs roamed. Benheim men sent to Dachau all returned in March 1939—thin, but alive. Most sent to concentration camps later did not return. Of the 89 Benheimers who were deported in 1940–41, 87 were murdered.

Those who read widely in the crowded field of Holocaust studies will find some facets of this book familiar. Like Daniel Mendelsohn, author of *The Lost: A Search for Six of Six Million* (2006), Schwartz goes to elderly neighbors and relatives, and finally travels thousands of miles, to hear the stories she was "allergic to" as a kid. These stories may be less reliable than historical data, she admits, but "I liked how one person's memory bumped another, muddying the moral waters of easy judgment." This book of moments and little stories surprises and horrifies, soothes and disturbs. But it is, above all, a beautiful read by a charming writer. And it reminds us that behind every story is the flawed human being who told it.

AVIYA KUSHNER is the author of the forthcoming book *And There Was Evening, And There Was Morning*, about the experience of reading the Bible in English for the first time after a lifetime of reading it in Hebrew.

## ARTS &amp; LETTERS

## Organization Man

Reviewed by Barbara Wallraff

WE OWE A GREATER DEBT TO mental illness than is commonly recognized. An inmate in an asylum for the criminally insane made important contributions to the *Oxford English Dictionary*.

The eminent lexicographer Samuel Johnson exhibited "odd

compulsions, such as pausing to touch every lamp-post as he walked down Fleet Street," as Joshua Kendall mentions in *The Man Who Made Lists*. The subject of Kendall's biography, Peter Mark Roget, exhibited obsessive-compulsive behavior more than a century before his diagnosis was coined. Evidently, people with mental illness are gravely at risk for compiling language-reference books.

Not that Roget (pronounced ro-zhay) thought of his 1852 *Thesaurus of English Words and Phrases* as anything so modest. His ambition was to classify all knowledge. His wasn't the first book of English synonyms—that was published in 1766 by one John Trusler—but it was original in that it listed the user's options without commentary or editorializing. An English physician and scientist born in 1779, Roget lived in an age when much science consisted of classifying and taxonomizing—plants, animals, "electrical bodies," human intellectual faculties, and so forth. Kendall writes,

Just as his hero, the 18th-century naturalist Carl Linnaeus, divided animals into six classes, Roget divvied up his one thousand concepts as follows:

- I. Abstract Relations
- II. Space
- III. Matter
- IV. Intellect
- V. Volition
- VI. Affections

That outline for the thesaurus, together with the range of Roget's accomplishments, might lead one

**THE MAN WHO MADE LISTS:**  
Love, Death, Madness, and the Creation of Roget's Thesaurus.

By Joshua Kendall.  
Putnam, 297 pp. \$25.95



Peter Mark Roget

to suspect the good doctor of megalomania—though the truth is more nearly that he was just doing what well-educated men of the time did. Over the years, Roget developed a new laboratory test for arsenic poisoning; published a mathematical paper on the slide rule, inventing the log-log scale, “the centerpiece of the modern slide rule”; discovered that “the retina typically sees a series of still images as a continuous picture,” thereby laying the theoretical groundwork for movies; and, as the capstone on a successful career as an academic physiologist (though some accused him of plagiarism and playing favorites), published a 250,000-word treatise on animal and vegetable physiology that earned him renown in America for the first time. Not until he was 73 did he get around to publishing his thesaurus, and he edited new editions of it until his death 17 years later, in 1869. This retirement project of his has gone on to sell nearly 40 million copies.

Roget traveled in interesting circles. As a young man, he worked for the jurist and philosopher Jeremy Bentham and the chemist Humphry Davy. He crossed paths with Samuel Taylor Coleridge and William Wordsworth, Madame de Staël, and Erasmus Darwin, Charles’s grandfather, who not only translated Linnaeus but set him to verse. He met William Franklin, Ben’s son, and chatted with

him about kites and electricity. He helped to organize a book club that Isaac D’Israeli, Benjamin Disraeli’s father, was invited to join.

Obsessiveness, anxiety, and depression can shadow even the sunniest of lives, but into Roget’s life much rain did fall. He was four when his father died, more or less permanently unhinging his mother. Over the years, he watched his mother and daughter go mad and his sister battle chronic depression, and he had much to reproach himself for when his beloved uncle, Sir Samuel Romilly, committed suicide by slitting his throat with a razor. Cancer robbed him of his wife after less than 10 years of marriage. Kendall emphasizes—even harps on—Roget’s MO of using intellectual activity to cope with emotional problems and tragedy.

As befits a book about a man who strove to help us find exactly the words we want, *The Man Who Made Lists* is for the most part elegantly written. Occasionally, though, Kendall’s brain goes on autopilot, with results such as “the entire city was then down in the dumps” and “By August, Peter’s recovery was in full swing.” And I would have preferred if Kendall had either used his imagination less or told us where he got scene details such as “After saying a quick goodbye to his mother . . .” and “Roget’s jaw dropped.” But these are cavils/quibbles/trivial objections, to quote from the illegitimate offspring of *Roget’s* that resides on my computer. All in all, *The Man Who Made Lists* is an absorbing account of a remarkable man.

BARBARA WALLRAFF writes columns on language for *The Atlantic Monthly* and King Features Syndicate, and is the author of *Word Fugitives* (2007), *Your Own Words* (2004), and *Word Court* (2000).

## Net Gains

Reviewed by David Robinson

TWO YEARS AGO, CULTURAL critic Lee Siegel found himself thrust by his editors at *The New Republic* into the rough-and-tumble world of blogs, where anonymous readers could (and did) level harsh attacks against his every word. He rightly saw these

### AGAINST THE MACHINE:

Being Human in the Age of the Electronic Mob.

By Lee Siegel.  
Spiegel & Grau.  
182 pp. \$22.95

attacks as a form of thuggery, though the remedy on which he settled—assuming an alias to join the exchange in his own defense—was as bad as the disease. Eventually, he was found out. He lost his blog but gained a book contract, and *Against the Machine* is the result.

Siegel's thesis is that blogs, YouTube, Wikipedia, and other recent upsurges of so-called user-generated content are culturally harmful. Those who think otherwise he dismisses as "Internet boosters" who respond to skepticism about this new smorgasbord by "crying 'free speech' and 'democracy' and 'don't fight the future.'" Many advocates of the Internet are, of course, more thoughtful than Siegel's straw men—and in neglecting to engage them, he shows that the uncharitable style of online argument he decries is no more appealing in print.

Nonetheless, Siegel has acute questions about the role that commerce plays in Internet culture. Others have cited the emergence of free resources such as the volunteer-written Wikipedia and open-source software as evidence that the Internet shrinks the domain of commerce, but Siegel says that's only half the story. These new projects encourage people to see economic value in their leisure pursuits. Those who post videos of themselves on YouTube, for example, regard attention itself as a valuable commodity; to them, "doing their thing and doing business in the marketplace are the very same activity."

In Siegel's eyes, this phenomenon owes something to books such as Malcolm Gladwell's *The Tipping Point* (2000), which argue that life "is wholly driven by commercial concerns." He blames Gladwell's book for creating the trend that it merely describes, namely, "populariz[ing] the idea of popularity as the sole criterion of success. Once the 'tipping point' became an established concept, the easy hijacking of the Internet by commercial interests was almost a foregone conclusion."

It's debatable how far this trend has extended—do online popularity hounds really think they are "doing business" in a "marketplace"?—but Siegel is right that we have traveled some distance down the road of conflating usefulness with intrinsic value.

The mindset that makes the most sense online, in other words, may threaten "our freedom to live apart from other people's uses for us, and from ours for other people."

But if economics has been stretched to cover notions such as popularity and pleasure, and love, then economic terms are no longer purely pecuniary. Siegel fears that we may come to view love as an act of commerce, but when the two are blended, perhaps we will recognize commerce itself as more humane. The social goods that can be found in markets—the nobility of self-reliance, the creativity and freedom inherent in launching a new venture, the solid fairness of an even exchange—seem to strike Siegel as bastardized virtues, because commerce itself is morally suspect. Then again, perhaps the isolation of commerce as a neatly separate sphere of human activity—an isolation whose end this book laments—will turn out to be something we are just as well off without.

DAVID ROBINSON is associate director of the Center for Information Technology Policy at Princeton University.

## Art and Statecraft

Reviewed by Christopher Merrill

THE RELATIONSHIP BETWEEN literature and politics is necessarily fraught. This is especially true for writers engaged in matters of state. If writers try to articulate questions central to the human condition, diplomats must provide answers. The responsibilities of these vocations almost inevitably conflict, for the writer's commitment to truth may test the diplomat's instructions. But a precious few have managed to excel in both spheres. The tradition of literary diplomats reached its zenith in the early 1960s, when three Nobel Prizes for Literature were awarded to writers who had also served as diplomats—Saint-John Perse of France, Ivo Andric of Yugoslavia, and George Seferis of Greece.

War is the ultimate test of diplomatic skills and literary vision. And World War II, which for politi-

### A LEVANT JOURNAL.

By George Seferis.  
Translated and edited  
by Roderick Beaton. Ibis  
Editions. 173 pp. \$16.95

cal reasons marked the end of the diplomatic careers of Perse and Andric, is the starting point for *A Levant Journal*, Seferis's account of his days and nights in Egypt with the Greek government in exile and then as ambassador to Lebanon, Syria, Jordan, Iraq, and Britain. Translated by Roderick Beaton, who published an acclaimed biography of Seferis, these selections from Seferis's notebooks, from 1941–44 and 1953–56, offer a portrait not only of critical moments in places that continue to make headlines, but also of a singularly talented writer whose grasp of contemporary issues—the fallout from the 1948 Arab-Israeli War, for example, or the consequences of Cypriot independence—was informed by his historical sensibility. *A Levant Journal* is that rare book that will appeal to aesthetes and politicians alike.

Writing was how Seferis maintained a difficult balance in diplomatic circles. In one entry Seferis bitterly notes, “Whether the entire population of my country is wiped out, or only half of it, will now depend upon the idiocies of the British generals.” Elsewhere he confides that “seriousness and politics are two perfectly separate things.” Yet in the poems that emerge in these pages, often from observations of simple things like water lilies, Seferis yokes his artistic insight and long experience in the drawing rooms of power. “Whatever the hands of man take up with love is holy,” he notes. His writings, for example.

What counters his despair at the progress of the Second World War is his determination to record without sentimentality his impressions and encounters. Here is a delightful sketch of Churchill on a visit to Cairo in 1942:

In the ballroom, . . . hunched up like Rodin's *Thinker*, except for his head that was watching and following everything, sat Churchill. He wore mauve dungarees; held in his hand, like a stubby pencil, was a long cigar. With all this crowd around him, he looked somehow smaller, as though at the far end of an enormous lecture-theater. Then he spoke and came closer. At the end, when it was time for questions, some reporter wearing a fez asked him what he thought of Rommel.

“That is the way of generals,” he replied, “sometimes to advance, sometimes to retreat. Why, no one knows . . .”

*A Levant Journal* is also lined with departures, sometimes hastily arranged, and in the pages devoted to the poet's ambassadorial duties, which required that he be constantly on the move, he exhibits a keen understanding of history's changing course. As befits a man whose life was marked by exile—from his native Smyrna, when Greece and Turkey exchanged populations in 1923; from Athens during the German occupation, and again during the military junta that began in 1967—he had a better grasp than most of the consequences of the dislocations that would shape the region in which he served.

“Impossible to imagine the human capacity for making a mess of things,” he laments. But in these intimate writings, Seferis bears witness to our folly with such care and precision that we may begin to understand some of our own mad impulses. And if this is a liberating truth, it is of a piece with his life and work, which is why his funeral, in 1971, brought throngs of people into the streets of Athens, in defiance of the junta. They sang a forbidden song based on one of his poems, with the policemen looking on.

CHRISTOPHER MERRILL directs the International Writing Program at the University of Iowa, and is the author of *Things of the Hidden God: Journey to the Holy Mountain* (2005) and *Only the Nails Remain: Scenes From the Balkan Wars* (1999), among other books.

#### CONTEMPORARY AFFAIRS

## Back on Track?

Reviewed by Mark Reutter

IN 1983, JOHN STILGOE published *Metropolitan Corridor*, an important book with fresh insights on the spatial and social impact of railroads on 19th-century America. *Train Time* is billed as a sequel to that work. According to Stilgoe, railroads

#### TRAIN TIME:

Railroads and the Imminent Reshaping of the United States Landscape.

By John R. Stilgoe.  
Univ. of Virginia Press.  
281 pp. \$29.95

are on the cusp of ending the tyranny of highways in the United States and will reclaim their birthright as the premier mover of people, freight, and mail.

“When the railroad returns, not *if*,” Stilgoe declares, America will be transformed. “Return [of train travel] will alter everyday life more dramatically than the arrival of personal computers, Internet connections, or cell phones.” His certainty about a rail renaissance is surprising. Passenger trains are few and far between today; in 2005, Americans traveled 900 miles by private vehicle for every mile by intercity rail. The disconnect between Stilgoe’s

Are we witnessing “the final, sickly sweet blossoming of the automobile”?

vision and reality is just evidence of “the final, sickly sweet blossoming of the automobile,” he argues, which only “masks the desperation

of real estate developers terrified that people will not buy the last of the structures built according to automobile thinking.”

Some books are of interest because they reveal a mindset that is part of the problem that the author is trying to correct. So far, train advocates have been unsuccessful in wresting America’s heart from SUVs and three-car garages. Despite \$3-a-gallon gasoline and worry about global warming, debate over transportation priorities hasn’t figured in this year’s presidential campaigns. Convincing taxpayers that trains could save them money and improve the environment is a subtle educational task.

Stilgoe, a historian of landscape at Harvard, swings a sledgehammer against anyone who does not share his opinions. And some of his opinions are idiosyncratic. In 1962, he writes, the wise men of the Kennedy administration recognized the “futility” of building more highways, but they were thwarted by Lyndon B. Johnson and his Great Society program. (For the record, today’s Northeast Corridor got its start with the 1965 High Speed Ground Transportation Act, signed by Johnson, who also spurred the development of Washington, D.C.’s Metro subway.) More often, the arguments are simplistic. Amtrak, Stilgoe declares, was organized as an “elegant means of keeping railroad innovation under the control of a Congress controlled

by road and airline industries—and by the military.”

After exhausting his prophecies and conspiracy theories, Stilgoe addresses various aspects of train service with more success. There are interesting chapters about the poor state of mail delivery after the Post Office Department abandoned railway transportation in the 1960s and the revival of freight traffic in the past 20 years with the growth of global trade. But the book sidesteps the crucial issue of how we get from here to there—from Amtrak’s threadbare service (outside the Boston-Washington Northeast Corridor) and freight railroads’ clogged infrastructure to 200-mile-per-hour passenger trains and just-in-time product shipments. Or, more realistically, how we can build strategic rail links, ranging from 50 to 200 miles, that complement highways and relieve the worst of traffic congestion and pollution.

Stilgoe forsakes footnotes and offers instead a laundry list of sources at the end of each chapter. Inexplicably, he fails to cite the work of a number of recognized experts, including Maury Klein, Albro Martin, Joseph Vranich, and a forebear, John W. Barriger III. Back in 1956, Barriger published *Super-Railroads for a Dynamic American Economy*, in which he asked why “super-highways and super-markets and super-everything-else [are] part of modern America’s burgeoning economic life, while there are no super-railroads.” That question has yet to be adequately answered.

MARK REUTTER, a Wilson Center fellow during 1994–95, is the former editor of *Railroad History*.

## RELIGION & PHILOSOPHY

### Turn That Smile Upside Down

Reviewed by Sarah L. Courteau

ADD TO OIL GUZZLING, OUT-size coffee drinks, and celebrity malfunctions another American addiction. Happiness, if we’re to believe Eric G. Wilson, is “an obsession that could well lead to a sudden extinction of the

**AGAINST HAPPINESS:**  
In Praise of Melancholy.

By Eric G. Wilson.  
Sarah Crichton  
Books/FSG. 166 pp. \$20

creative impulse,” a disaster he compares to those foreshadowed by global warming and other apocalypses. Once he’s clucked over his Chicken Little scenario, Wilson, an English professor at Wake Forest University, lays out the case for allowing a little rain to fall into our lives.

In the pursuit of happiness, Americans pop pills and read step-by-step guides as never before, cheered on by the popular new field of “positive psychology.” In a 2006 Pew Research Center poll, nearly 85 percent of Americans said they were at least moderately happy, a finding that dismays Wilson, given the world’s woes (see global warming et al.) and life’s irritations (see this morning’s spousal spat at breakfast). Might these inane “happy types,” with their taste for McMansions, televangelists, and Cool Whip desserts, lure the holdouts to the bright side?

What most alarms Wilson is the specter of a “police state of Pollyannas” that could deprive us of the creative frisson we experience when we careen between agony and ecstasy. He fears the birth of a nation “denuded of gorgeous lonely roads and the grandeur of desolate hotels, of half-cracked geniuses and their frantic poems.” Or, put more epigrammatically (he has a weakness for variations on his refrain): “The blues are clues to the sublime.”

There’s a powerful argument to be made that the brave new world of psychiatry could extinguish a certain creative genius that shows up in people we label depressed. Wilson is at no loss for historical examples of writers, painters, musicians, and others who complained of symptoms that would get them a clinical diagnosis today. (In a letter to a friend at the tender age of 16, Ludwig van Beethoven revealed that, in addition to asthma, he suffered from “melancholy which for me is almost as great an evil as my illness itself.”) As for the rest of us, Wilson argues that a healthy helping of “pervasive gloom” will heighten our appreciation of life and of who we are.

The best retort to Wilson’s thesis is Peter Kramer’s book *Against Depression* (2005), which Wilson’s title clearly references (though only in

*Against Happiness’s* bibliographical notes, a useful digest of the literature on happiness and depression, does Kramer’s book merit a mention). Kramer argues that Western society has romanticized a condition that ought to be treated aggressively, like any other debilitating disease. Depression itself, he holds, bestows no special generative magic. His is an extreme stance, but important to remember when we wax poetic about tortured poets.

Wilson says he is not questioning therapy for “lost souls” who might harm themselves or others or who simply find existence unbearable. But that leaves a lot of pain to be celebrated rather than medicated. Though he wrings his hands at our tendency to treat everyday sadness as if it were a disease, Wilson makes the opposite mistake of failing to engage with the dark side of darkness. After a few pages cataloging the devastation many of his creative heroes wrought in their own lives and others’, he blithely concludes that “out of their suffering emerge things rich and strange.”

Perhaps Wilson’s bigger mistake is that he underestimates the resilience many “happy types” display in the face of life’s miseries, large and small. In that Pew poll he cites as evidence of Americans’ shallow bliss, only a third of those surveyed claimed to be “very happy.” Another 50 percent characterized themselves as only “pretty happy,” which could easily describe folks who, despite the recent death of Fido, yesterday’s parking ticket, and a fraught relationship with Mom, just grin and bear it.

SARAH L. COURTEAU is literary editor of *The Wilson Quarterly*.

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## SCIENCE & TECHNOLOGY

### Peddling Metal

Reviewed by Daniel Akst

PEOPLE ARE FOREVER DEBATING which inventions have had the greatest impact on the world, but it’s safe to say that few make much of a case for corrugated metal. Now this humble yet versatile material

#### CORRUGATED IRON:

Building on the Frontier.

By Adam Mornement and Simon Holloway. Norton. 224 pp. \$60



Japanese architect Shuhei Endo's innovative use of corrugated steel strips makes even a public toilet an arresting work of art.

has found its advocates in architecture writer Adam Mornement and engineer Simon Holloway.

To judge by its cover, *Corrugated Iron* is just another oversized, design-fetish coffee-table book, and in fact it is packed with full-color images that will make it catnip to architecturally minded modernists. Yet from the outset it's clear that the authors mean to present not just the accidental visual glories of shantytowns (or the premeditated ones designed by pros) but the biography of a building material that crops up everywhere. Corrugated steel, mostly, as well as other wavy metals (the authors intend "corrugated iron" generically), can be found on hillside shacks in South Africa and South America as well as in iconic, industrial-chic homes in Southern California and Sydney. Cheap, light, and sublimely reflective, corrugated iron shimmers sexily when new, burns only in slow motion as it ages (by rusting), and is even biodegradable.

"Corrugated iron is a material of the frontier,"

the authors write. "It makes life possible in places that would otherwise be uninhabitable, whether due to extreme climate, inhospitable terrain, the scarcity of local building materials, or the sheer scale of demand for shelter."

Invented in England in 1829, corrugated iron proved vastly stronger than its flattened antecedents and thus quickly found use in train stations, shipyards, and factories, which required great expanses of covered space without a lot of expensive and cumbersome support structures. Before long, empire and industrial revolution made it the material of choice for cheap, adaptable buildings that could be shipped in parts and rapidly erected to house gold miners, soldiers, stores, churches, and practically anything else.

The book is replete with fascinating reproductions of posters, catalog copy, and architectural renderings showing buildings such as the charming "East India Villa," a prefabricated house clad in corrugated iron and marketed to emigrants headed for Australia. Colonization

and war made the material ubiquitous, especially in the form of the World War I-era Nissen hut and its famed American descendant, the Quonset hut of World War II. Corrugated metal also permitted “the epic scale of airship hangars.”

Despite its early role in London as a cutting-edge material, corrugated metal has always had a somewhat raffish image, for it lacks the solidity of stone or the natural warmth of wood (though these shortcomings are somehow never held against vinyl siding). Shanties the world over are made from corrugated metal, and humanitarian organizations make extensive use of it to house refugees and people who live in disaster zones. Yet it has also won favor with famous architects, including Jean Prouvé, Frank Gehry, and Norman Foster. Corrugated iron is especially prominent in Australia, where Glenn Murcutt’s lyrical use of it to clad high-design homes no doubt helped him win the prestigious Pritzker Architecture Prize.

*Corrugated Iron* is a wonderful book, even if the authors are sometimes scarily indefatigable in their fervor for the subject, which is perhaps inevitable given that the book’s back flap says Holloway has a “great passion” for “researching and communicating the history of corrugated iron.” But if the historical text flags occasionally, the stunning color images hold our attention. Especially striking are the ornate chapel built in Scotland by Italian prisoners of war, the shockingly modern Sheerness Boat Store (c. 1860) in England, and the many photos of sinuous structures by Japanese architect Shuhei Endo, which are by themselves worth the price of the book.

I live in a corrugated-steel house and can attest that the stuff has its quirks. It tends to vaporize the geraniums by reflecting the sun’s heat, for example. And whatever you do, don’t forget to install lightning rods. As someone wrote of the British consul’s corrugated-iron house in Panama in 1855, it’s “a great target for all the artillery of heaven.”

DANIEL AKST, a recent public policy scholar at the Wilson Center, is a novelist and essayist living in New York’s Hudson Valley.

## Bad Seeds

Reviewed by Flora Lindsay-Herrera

RECENTLY, I ATTENDED A presentation at Cambridge University by an agricultural economist who sang the praises of biotech crops—genetically modified organisms (GMOs)

engineered for traits ranging from insect resistance to herbicide tolerance. Several audience members recited the familiar objections to GMOs, which make up a majority of corn, soybean, and cotton crops in the United States: consumer health risks, poor crop performance, and the financial burden on farmers who must buy or license patented seed varieties every year. The economist shouted that his questioners were engaging in “subjective scaremongering and ranting.”

Sadly, this was a fairly typical exchange in the GMO wars. Though purportedly about matters of scientific fact—do these crops help or harm us and our environment?—the debate is dominated by the clash of mutually uncomprehending values and cultures. For every agricultural specialist extolling GMOs’ virtues, there is a Claire Hope Cummings, who alleges in *Uncertain Peril* that GMOs were “created by industry, for industry.”

*Uncertain Peril* joins the passel of books denouncing industrial agriculture for its role in “extinguishing agricultural diversity.” The plight of our seed supply was highlighted when the Global Seed Vault opened in Svalbard, Norway, in February. Of all the food crops humans have ever cultivated, more than 75 percent have disappeared, most in the last 100 years. Concern that we are losing seeds—perhaps with strains of resistance or other traits that will be vital in the future—prompted an internationally funded group called the Global Crop Diversity Trust to establish a “doomsday vault,” in which seeds from the world’s food plants can be stored for future retrieval in the event of a global calamity, such as climate change, or when war or natural disasters damage the holdings of regional seed banks (as recently occurred in Iraq).

Seed banks are useful, Cummings contends, but

**UNCERTAIN PERIL:**  
Genetic Engineering  
and the  
Future of Seeds.

Claire Hope Cummings.  
Beacon. 232 pp. \$24.95

the principal solution to the loss of diversity is to encourage local seed saving and privilege farmers' rights to develop locally adaptable crop varieties. Currently, she argues, those efforts are stymied by companies that market only a few crop varieties, and by the widespread practice of patenting seed genomes.

Cummings's background in environmental law and journalism serves her well as she acquaints readers with the contours of the seed debates. But her activist bent is evident in her reduction of the issues to a two-dimensional standoff, and her slim bibliography in some cases simply refers readers to the general websites of groups such as "Organic Consumers Association" and "Genetic Resources Action International."

Cummings's biases are clear when, for example, she attacks Monsanto—one of the largest distributors of GMO seeds and a company often criticized for aggressively filing lawsuits against farmers it suspects of violating its seed patents—for monopolizing agribusiness. She bases her case primarily on the stories of a few farmers Monsanto sued, and on information provided by the Center for Food Safety, a nonprofit organization dedicated to "challenging harmful food production technologies and promoting sustainable alternatives."

One of the strangest omissions in *Uncertain Peril* is any mention of Norman Borlaug, the Nobel Peace Prize-winning agronomist who introduced a high-yield wheat in the 1960s that was the forerunner of today's more sophisticated biotech crops. Borlaug remains an iconic figure for GMO advocates (Monsanto recently donated \$5 million to the Borlaug-founded World Food Prize for its "Borlaug Dialogue" program on global food security). He believed that better agricultural technology could help feed earth's growing population, an argument that remains a cornerstone of agricultural biotech's defense. Whatever Cummings thinks of his ideas, a thorough discussion of GMOs cannot leave them unaddressed.

After running through industrial agriculture's dystopian fields, Cummings arrives at the hopeful paradise of GMO-free organic farming. She proposes promoting sustainable agriculture by

renouncing our domination of nature and returning to the "cooperative reciprocal relationship" of pre-agribusiness days. Yet she poses a false choice between relying on the judgment of the "techno-elites" and using "our common sense and moral compass" to guide public policy. Yes, "stories can mend our broken world," but only if they aspire to persuade—not drown out—opponents. Until scientists can engineer a second planet, biotechnology specialists and organic farmers must find a way to coexist on this one.

FLORA LINDSAY-HERRERA is a former researcher at *The Wilson Quarterly*.

## Fowl Sport

Reviewed by Mark Jerome Walters

LIKE MOST GOOD HISTORIES, Scott Weidensaul's fascinating account of birding in America dispels many myths. While most histories of American ornithology begin with the early-19th-century luminaries Alexander Wilson and John James Audubon, Weidensaul points out that birding on this continent was pioneered by "field ornithologists" who were here long before: "the Indians, of course, whose knowledge of birdlife was based on deep association, long observation, and at times lifesaving necessity."

Weidensaul also challenges often-cited federal estimates that there are between 46 million and 68 million U.S. birders—a term that, loosely construed, describes even people who hang a bird feeder on the porch. Only about six million people can identify more than 20 bird species, according to the U.S. Fish and Wildlife Service; the rest hardly deserve the badge of a true "birder." However birding is defined, it is one of the fastest-growing outdoor activities in the United States. It's an inexpensive pursuit for retirees and appeals to the growing number of people interested in the environment.

Weidensaul patiently and methodically sketches the scientific and artistic contributions of the most famous early birders, including Mark Catesby,

**OF A FEATHER:**  
A Brief History of  
American Birding.

By Scott Weidensaul.  
Harcourt. 358 pp. \$25

William Bartram, and John James Audubon, as well as many less known figures. Woven into this history are interesting subplots, such as the evolution of field guides from crude identification tools into the colorful and comprehensive identification books (and other media) of today.

Weidensaul saves some of his most entertaining writing for his descriptions of modern birders, who can be highly competitive and yet rely on the honor system as they race to list the species they have seen. At the World Series of birding, in the unexpected state of New Jersey, contestants sprint “from hot spot to hot spot, careening around the state like pinballs. . . . Participants have kept on birding despite hurricane-force winds, flat tires, sleep deprivation, serious traffic accidents, and virulent food poisoning.”

The hunt had a darker side in days past: the deadly competition for specimens of vanishing species. The Carolina parakeet and ivory-billed woodpeckers were both highly imperiled by the 1890s. “The rarer they became, the greater the frenzy to get them for museum collections,” Weidensaul writes. “Roughly 660 parakeets from Florida were shot and stuffed for collections in the last two decades of the 19th century.” And what collectors could not get themselves, they paid for. From 1892 through 1894, one collector and his

workers killed 44 ivory-billed woodpeckers in Florida (a significant body count for a fading species), and are said to have wiped out the bird entirely along the Suwannee River, where it was once common.

Weidensaul’s glimpses into what modern technology has made possible for the sport are exhilarating. An iPod can store “a continent’s worth of bird-song,” a handy tool in the field. If you’re a birder with a cell phone, “you can find a rare bird, ‘phonescope’ it by holding your cell phone’s camera to a spotting scope, [and] send the image instantly to a friend who will post the photo on the Internet, so that in minutes birders in every corner of the world can know about your discovery.” In the future, computerized binoculars may “scan the image of a distant raptor and offer an identification. And if we’re not quite there yet, no one will be surprised when such a gizmo hits the market, probably week after next.”

Whatever the future of birding, Weidensaul suggests that these magnificent creatures—winged presences for so long in our daily lives and our psyches—must be protected if they are to delight succeeding generations of birders.

MARK JEROME WALTERS is a veterinarian and an associate professor of journalism and media studies at the University of South Florida, St. Petersburg. He is the author of *Seeking the Sacred Raven: Politics and Extinction on a Hawaiian Island* (2006), among other books.

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## PORTRAIT



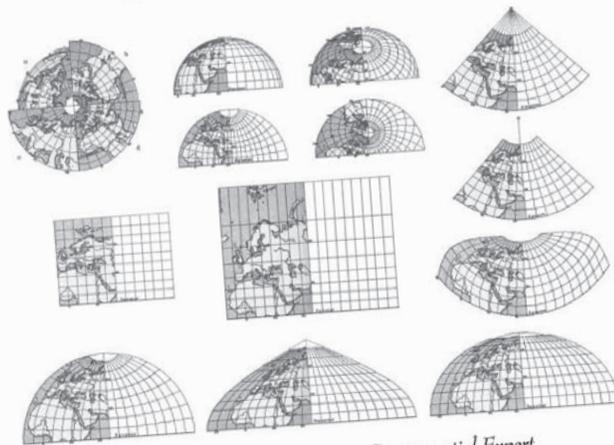
*George Wheelwright III,  
ca. 1933*

### *The Polaroid Snapshot, RIP*

Polaroid announced in February that it will stop producing film for its iconic instant cameras by year's end. Like Bill Gates, inventor Edwin Land dropped out of Harvard and, with his physics professor, George Wheelwright III (shown above demonstrating the firm's early light-polarizing technology), launched a company whose stock became the toast of

Wall Street. For decades, boxy, white-framed Polaroids graced refrigerator doors across the country—though memories of waiting impatiently for each picture to magically reveal itself may be sharper than the fading images themselves. Ultimately, sleeker and more efficient deliverers of instant photographic gratification spelled the end of the Polaroid's reign.

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