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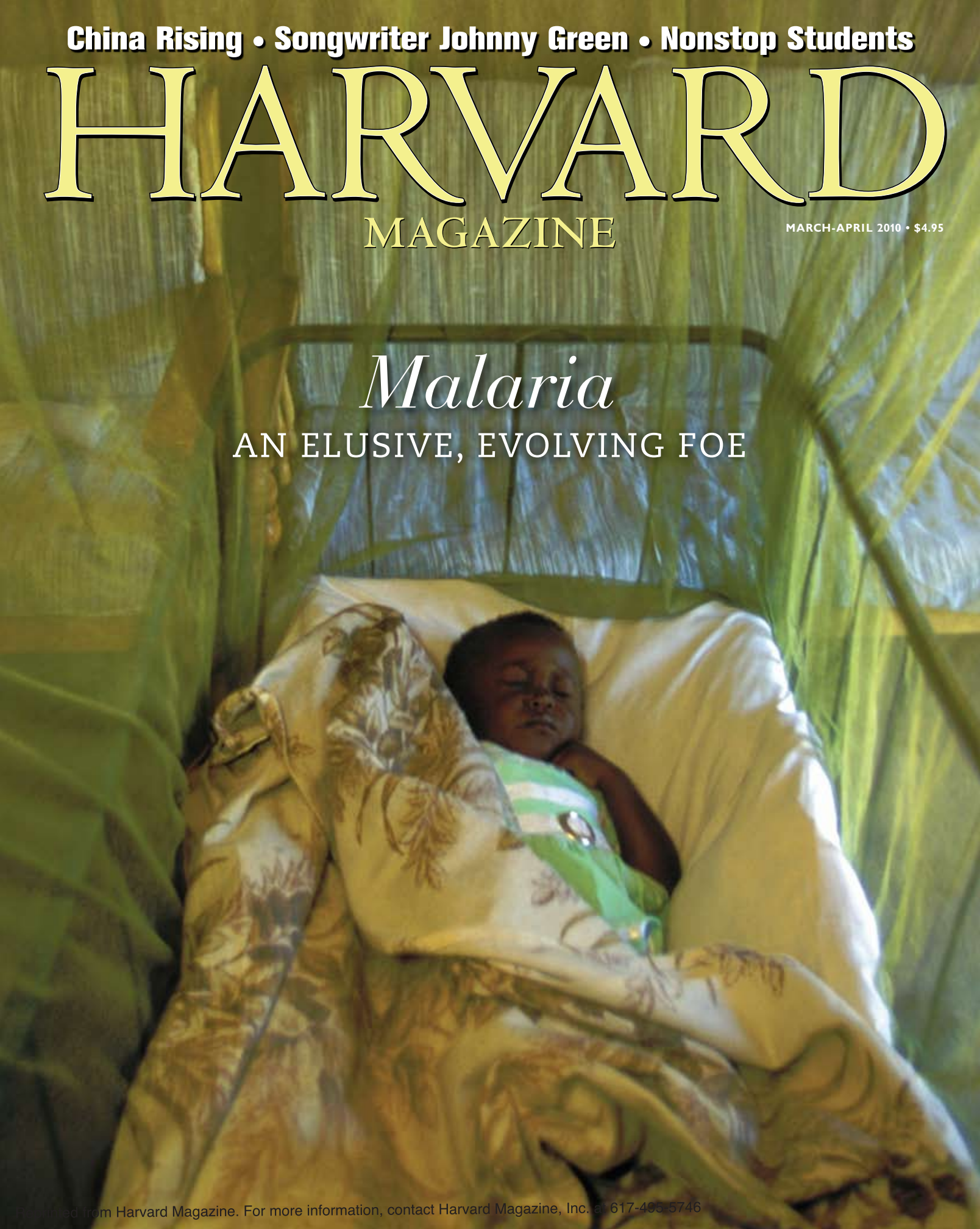
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MAGAZINE



JIM HARRISON

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On the cover: Bed nets in use near Kisumu, Kenya. Photograph by Karen Kasmauski/Science Faction/Corbis



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47 John Harvard's Journal

Arrested development in Allston, Law School and art museum projects proceed, a scholar who loves to hate the Romans, online news briefs, overalls as campus chic, changing personnel—and perhaps more—on the Harvard Corporation, courtly Commencement speaker, Faculty of Arts and Sciences budget progress and challenges, the Undergraduate and faculty fellows finally break bread, blazing badminton birdies, a wrap-up of winter sports, and memories of gridiron grit

Cambridge 02138

Samuel Beer, Ayn Rand, football facts

ART SAVIORS

I WAS DELIGHTED to read "The Art Army" (January-February, page 36) and look forward to reading Robert Edsel's book. The subject is truly important and the saving/salvaging of Europe's art treasures is a real tribute to those dedicated men who worked tirelessly to make it happen. Happily, many were from Harvard.

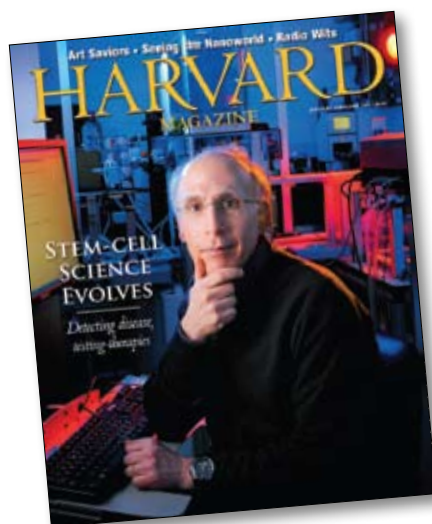
Anyone interested in this period will also enjoy *The Rape of Europa: The Fate of Europe's Treasures in the Third Reich and the Second World War*, by Lynn Nicholas. All those mentioned under "Harvard Art Allies" (page 75) are included in that book except for Langdon Warner, who worked in Japan, and Otto Wittmann, who was with the Office of Strategic Services and not the Monuments Men.

"The Art Army" brings much deserved credit to a group who received virtually none at the time.

ROBERT L. WILEY '52, M.B.A. '57
Mercer Island, Wash.

HARVARD ALUMNI did indeed do much to locate and restitute the vast numbers of artworks confiscated by the Nazis. Unfortunately, however, the men of the Monuments, Fine Arts, and Archives section of the U.S. Army were only able to complete part of the job. There remain today tens of thousands of artworks stolen from Jews and others that have yet to be identified and restituted to their original owners or their heirs.

The main Jewish organizations active in the restitution of property looted from victims of the Holocaust—the Conference on Jewish Material Claims Against Germany (Claims Conference) and the World Jewish Restitution Organization (WJRO)—focus on urging governments and institutions to improve and create



processes to enable more owners and heirs to recover their property. We issued a report a few years ago on U.S. museums' progress in reviewing their collections' provenance, and I am pleased to note that the Harvard Art Museums have done quite a bit in this regard (the report is available at www.claimscon.org).

This past June, as part of its presidency of the European Union, the Czech Republic organized a major Conference on Holocaust Era Assets that was held in Prague with the participation of 47 governments. The United States delegation was headed by Ambassador Stuart Eizenstat, LL.B. '67. The Claims Conference/WJRO presented worldwide overviews of looted art and looted Judaica prepared by our director of research, Wesley A. Fisher '66, with the assistance of other staff members, including our senior restitution specialist, Arie Bucheister, J.D. '78. And there was presentation of a survey we are sponsoring of the records of the *Einsatzstab Reichsleiter Rosenberg* (ERR), the primary Nazi looting agency, that is being prepared by Patricia Kennedy Grimsted of Harvard's Ukrainian Research Institute.

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LETTERS

Harvard and Harvard alumni continue to play a major role in restituting the works stolen in the greatest art theft in history.

GREG SCHNEIDER, M.P.P. '95
Executive vice president, Conference on Jewish
Material Claims Against Germany
New York City

I AM PUZZLED by your omission of my grandfather S. Lane Faison Jr., A.M. '30, from the sidebar, "Harvard Art Allies."

EDWARD FAISON, M.F.S. '06
New Preston, Conn.

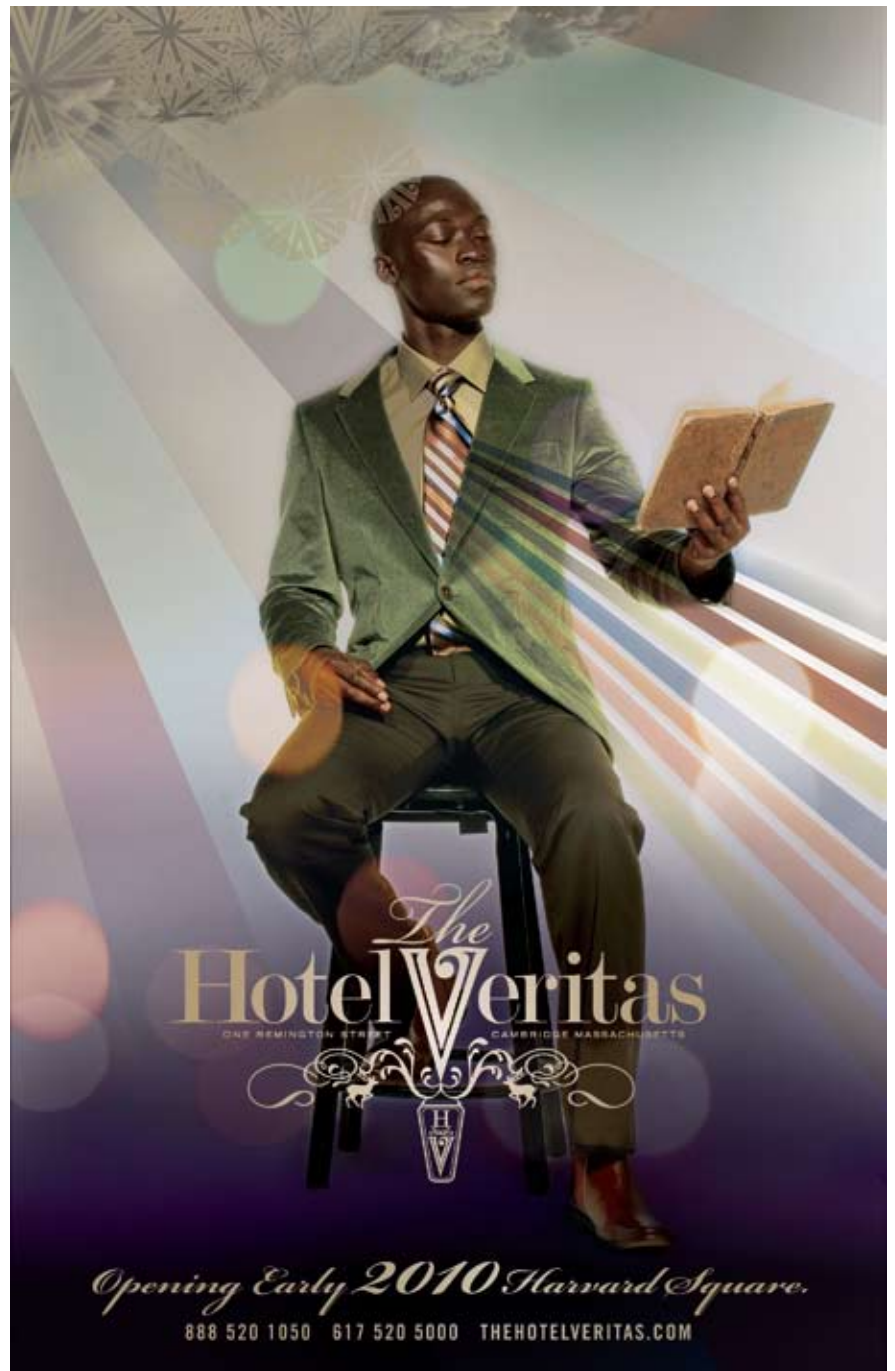
Editor's note: We regret the omission of S. Lane Faison Jr.'s name. He is referred to four times in *The Monuments Men*, most vividly in the author's note (pages xv-xvi), where Robert Edsel movingly describes an almost-three-hour visit with him only 10 days before his death on Veterans Day 2006. But the book omits his Harvard connection, and his name wasn't included in Harvard-affiliated Monuments Men material sent by the foundation. The introduction to that sidebar noted, "Harvard men... included," and it invited readers to share data about MFAA members with the foundation, in hopes other Harvard affiliates might be recognized and eventually acknowledged in these pages.

THE ARTICLE contains one factual error. Neuschwanstein Castle is in the Bavarian (German) Alps, not the Austrian Alps.

YALE RICHMOND
Washington, D.C.

FUNNY TELEPHONY

AS A PROFESSIONAL physicist trained at Harvard, I have often been shocked at the scientific illiteracy revealed in newspaper and magazine articles. I was very disappointed by the photograph that illustrates Craig Lambert's "Radio Wits" (January-February, page 13), since I am an enthusiastic fan of *Wait, Wait...Don't Tell Me!* and of *Harvard Magazine*. The picture shows a tin-can telephone linked by a slack string, but any scientifically knowledgeable child knows that a taut string is required to transmit the sound vibrations from one can to the other. Perhaps the editors can prevail upon a scientist to review each issue of the magazine, from cover to cover, in order to correct egregious scientific errors. It is probably hopeless to try to raise the level of publications in general,

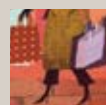
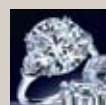


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but surely all publications associated with Harvard University can aspire to scientific literacy.

RICHARD SAH, Ph.D. '70
Moranga, Calif.

THE TIN-CAN-AND-STRING communication system between Carl Kassel and Peter Sagal won't work; the string has to be taut!

HAROLD GREENLEE, Ph.D. '47
Fort Myers, Fla.

Editor's note: The photograph, provided by NPR, is meant to be *funny*.

PROFESSOR BEER

I WAS A STUDENT in Social Sciences 2 in my freshman year, 1954-1955 ("Two Masters," College Pump, January-February, page 64). Following a legal career in private practice and federal and state govern-

ments, I began teaching at the University of Maryland School of Public Policy in the mid 1990s. What I learned from Professor Samuel Beer was always close to me as I designed graduate and undergraduate courses in American political institutions and the rule of law; and specifically, the interplay of fact and theory. Abstract theory by itself lacks a grounding in reality; facts by themselves lack structure that convey meaning. Beer showed me, and I hope my students, the rich understanding that comes from using theory to explain facts and using facts to develop theory.

DAVID FALK '58
Washington, D.C.

Editor's note: As to matters of fact, Dick Bloom '76, of West Chester, Pennsylvania, writes, "If you check, I think you'll find that his middle name was Hutchison."

SPEAK UP, PLEASE

Harvard Magazine welcomes letters on its contents. Please write to "Letters," Harvard Magazine, 7 Ware Street, Cambridge 02138, send comments by e-mail to yourturn@harvard.edu, use our website, www.harvardmagazine.com, or fax us at 617-495-0324. Letters may be edited to fit the available space.

AYN RAND'S VISITS

I AM A BIT AMUSED at the implication by Jennifer Burns '97 (Vita, November-December 2009, page 32) and correspondent Michel Choban '66 (January-February, page 5) that Ayn Rand's first speaking gig at Harvard was in October 1962. Rand had spoken at Harvard at least once earlier. The talk that I attended was during the 1961-1962 academic year, at the invitation of the Harvard Business School's Student Association. Her remarks were before a standing-room-only crowd in Baker Library's main lecture hall. I do not pretend to have the recollection of what Rand said that Mr. Choban does about her later appearance, but I do recall that she discussed (with alarm) the state of American politics and the threat from international communism. Notwithstanding an audience generally sympathetic to her antipathy for Keynesian economics, not all attendees warmed to Rand's crusty, unwelcoming persona. Her style was definitely not that of the Mr. Rogers persuasion.

WILLIAM P. MACKINNON, M.B.A. '62
Santa Barbara, Calif.

HEROES

"ABOVE AND BEYOND" (November-December 2009, page 69) and "Veterans Day Salute" (January-February, page 63) took me back to my own undergraduate years in the early 1950s. Then, often in Dunster House library, instead of pursuing assigned course reading, I turned to browsing through *Harvard Alumni Bulletins* in the magazine rack, and it was at that time that I first read detailed reports of the losses in Korea of Marine Corps Lieutenants Douglas H.T. Bradlee '50, George C. Lee '51, and Medal of Honor recipient Sherrod E. Skinner Jr. '51 (whom I had met briefly in my freshman year) and of the probable similar fate of Franklin P. Dunbaugh '51.

Years later, in the 1970s, when, as a professional staff member of the U.S. Senate Committee on Appropriations, meetings and conferences now and again took me to the Pentagon, I rarely missed including in my day a visit to the Medal of Honor commemorative exhibit, specifically to salute there the name and heroism of Lieutenant Skinner.

Throughout my years in the Marines, I always attempted, however imperfectly, to emulate his selfless concern, dutiful com-

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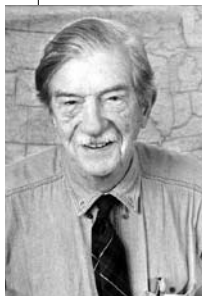
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LETTERS

mitment, and dedicated leadership. My memory of this son of Harvard's shining example and exceptional valor will be everlasting.

Semper Fi!

ARTHUR DAVID LEVIN '54, M.B.A. '60
Greenfield, Mass.

PLAINER LANGUAGE

WHILE I LAUD Bruce Corsino's efforts to promote "usable, efficient, and transparent" writing for all Americans ("Plain Speaker," January-February, page 60), I was taken aback by his comment that "nobody wants to go home after they've had a hard day...." My sense is that "nobody" is singular and that, thus, "they" cannot claim it as an antecedent. As James Kilpatrick used to say in his nationally syndicated column, "The Writer's Art," "Sometimes you have to recast the sentence."

RONALD E. GRAVATT '69, PH.D.
Buena Vista, Va.

Editor's note: We make allowances for spoken English, hoping to receive the same.

ISRAEL'S ORIGINS

WHILE I COMMEND Laura Wharton '83 for her Rosa Parks-inspired efforts to desegregate the Jerusalem bus system ("Insider Activist," The Classes, January-February, page 641), I was dismayed to learn that her youthful inspiration to move there after college was founded in her fascination about the "re-formation of a state out of nowhere." Her fascination was, of course, not based in fact.

The immigration movement—and the undeniable suffering and courage—which made the re-formation of that state possible took place at first in a "somewhere" called the Ottoman Empire, and later in the "somewhere" of Britain's Palestine mandate. That Harvard graduates, their favorite magazine and, indeed, most of American society, persist in this "nowhere" story is key to the denial which maintains that part of the world in seemingly perpetual turmoil.

Do we learn historical revisionism singing at Commencement of our school being the "first flower of their wilderness?" "Our ancestors' worth" was similarly fostered by a place the Wampanoags called not "wilderness," but "home."

ALAN WEAVER '69
Augusta, Maine

FOOTBALL FANDOM

THE RECENT PLEASANTRIES in the Yale Bowl ("Stinging the Blues," January-February, page 56) caused me to wonder what living Harvard alum had seen the most Yale games, as participant or spectator. That alum used to be given a large H flag to wave at the Game, but that honor is now awarded on more subjective grounds.

November 21, 2009, was a glorious day at the Bowl, but I missed it, leaving my attendance at 36 games, well out of the running for any attendance record. Will claimants please step forward and, incidentally, inform us whether the Harlow teams were as good as the Murphy juggernauts?

SPENCER ERVIN '54
Bass Harbor, Maine

Editor's note: Mr. Ervin refers to the "Little Red Flag," covered in a sidebar within the article on the Stadium's centennial ("First and 100," September-October 2003, page 42). Any claimants? Please come forward.

As for gridiron giants, correspondent "Cleet" weighs in (literally): "I don't think there's much question that teams of the Dick Harlow era (1935-1947) would be out of their league against Tim Murphy's outfits, if only because of the difference in physical size. The five interior linemen on the 1938 team averaged 187 pounds; the offensive line of last fall's team averaged 282, so the Harlovians would be giving away almost a hundred pounds per man. A 200-pounder was still a rarity in the 1930s. And size is just one parameter. Today's players benefit from strength and conditioning drills and equipment unheard of in Harlow's day, and of course the techniques and tactics of the game have advanced greatly. Consider that in the 1941 Game, Harvard attempted just four forward passes. And completed one."

OTHER ALUMNI

IN "INTELLECTUAL ENTREPRENEURS" (January-February, page 15), the magazine neglected to mention *New York Times* film critic A.O. Scott's Harvard class affiliation: '88. I greatly enjoyed "Radio Wits," about National Public Radio's *Wait, Wait... Don't Tell Me!* Another Harvard connection: Elizabeth Novey '05 is the Web producer of the show.

DAVID GURA
Associate editor, NPR
Washington, D.C.

Right Now

The expanding Harvard universe

NETWORK POWER

Complexity and the Wealth of Nations

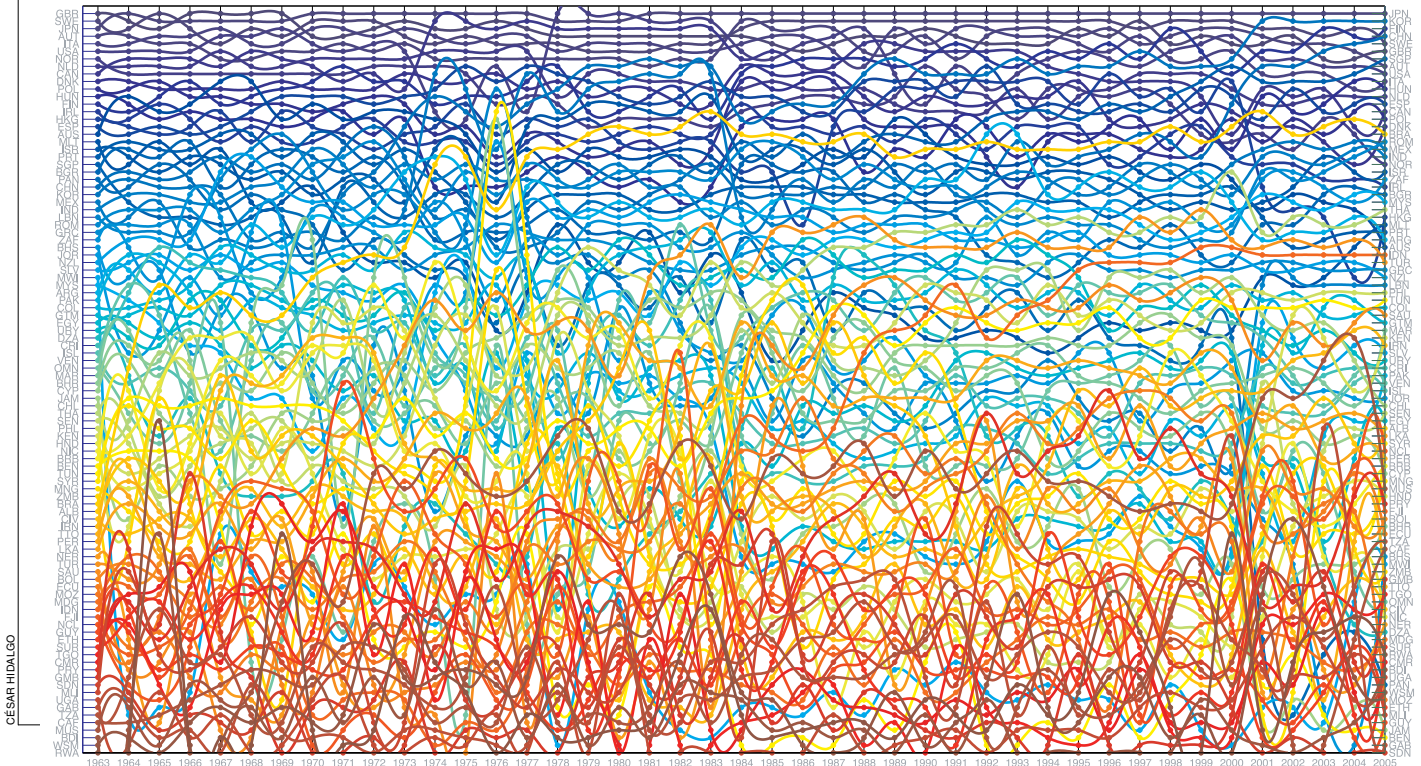
A TRUISM ABOUT the benefits of international trade holds that countries that specialize in producing goods that they are best at manufacturing will enjoy the greatest prosperity. But a recent study of economic complexity provides a different take on the wealth of nations. Using “network science,” a method of analysis that examines

webs of connections in complex systems, Ricardo Hausmann, professor of the practice of economic development and director of Harvard’s Center for International Development, and CID research fellow César Hidalgo, a physicist by training, have shown that the richest countries are those with the most complex economies—and actually produce the greatest diversity of goods.

“Firms and individuals specialize, countries diversify,” emphasizes Hausmann.

Why is complexity correlated with wealth? “Suppose countries differ in the variety of capabilities they possess, while products differ in the variety of capabilities their production requires,” says Hausmann. “Then you would expect countries with more capabilities not only to be able to make more products, but also to make products that few other countries can make.” Rich countries do just this, the data show, accumulating capabilities (in so-

The complexity of nations’ economies changes over time. César Hidalgo used network science to graph the phenomenon, as shown below for 99 nations between the years 1963 and 2005.



phisticated electronics, for example) and then developing new products that require mastery of their use.

In order to gauge a country's economic complexity, Hausmann and Hidalgo used as a proxy the number, variety, and rarity of goods that it exported. Though this metric doesn't include services, it nevertheless provides a much more granular view of an economy than traditional measures such as GDP (gross domestic product), or capital and labor.

Hidalgo and Hausmann say they were not surprised to find that their measures of economic complexity weren't perfectly correlated with each country's level of income. "What really surprised us," Hidalgo

says, "was that the imperfections actually predicted future growth. Countries that we expected to be richer at a given point in time exhibited faster growth in subsequent years. It is as if countries converge to the level of income that their complexity can support." Among countries catching up to their own complexity, he cites India, China, and Ukraine.

But countries whose economies are not already complex face a chicken-and-egg problem. "Developing the capacity to make new, more complex products is difficult because the requisite capabilities may not be present," explains Hausmann. "By the same token, accumulating new capabilities is difficult because the products that require them may not yet exist."

The current research builds on earlier work by Hausmann that mapped "product space" by depicting clusters of product groups according to their relatedness (see graphic at left). As an analogy, he says, "Think of a product as a tree and firms as monkeys. There are rich and poor parts of the forest. What you want is to have the monkeys jump from the poor part to the rich part. But in some places, the trees are close together, so it is easy for the monkeys [firms] to move around. In other places, the trees are far apart—this is where the capabilities that go into making one thing don't help much in making the next thing." Thus his map of product

goods such as machinery and chemicals, with similarly dense clusters around electronics and garments. Rich countries are active in these clusters. Mining, by contrast, is an isolated industry. "Africa is only in the sparse part of the forest," explains Hausmann. "Countries get trapped because they are in a sparse part of the product space."

When a country with many complex capabilities adds a new capability, that can create a range of new possible products. But adding a single new capability in a country that has few to begin with won't leverage an existing matrix of capabilities in the same way—it might not produce any new products at all.

The field of economics has dealt with the obvious complexity of the world by summing things up with aggregate measures such as GDP. But "as you aggregate, you destroy information about the structure," Hausmann points out. "In some sense, what we are finding is that the level of production is explained by the structure of production." Their research implies that economic-development strategies should focus on helping countries find ways to coordinate the generation of linked capabilities and products—preferably by establishing clusters in the denser parts of the product forest.

—JONATHAN SHAW

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www.ricardohausmann.com

The international
"product space"

space shows a large cluster
around capital-intensive

TORMENT AND GUILT

The Power of Torture

NOWHERE IN THE pages of the *Malleus Maleficarum* (The Hammer of Witches), a fifteenth-century German book that served as a kind of witch-hunt manual, is there any guidance on what one should do if the witch is innocent. "The idea, apparently, was to keep going until the witch confesses, at which point, you burn her," says Kurt Gray, a Ph.D. student in social psychology.

Modern victims of torture face similarly poor odds of convincing their tormentors

of their innocence, says Gray. In a recent study published in the *Journal of Experimental Social Psychology*, he and professor of psychology Daniel Wegner found that subjects who underwent "torture" and expressed pain appeared guiltier to those complicit in their torment.

Research participants who showed up for what they believed was a study on morality were introduced briefly to a "partner" (an actress) and then escorted, alone, to a nearby room, where they were told the woman might have cheated in a die-roll

experiment to win more money for herself than for her partner. They were also told that the truth is often admitted under stress, and that they'd hear the woman being "tortured" by having her hand immersed in ice water for 80 seconds.

Participants heard one of two scenarios. In the first version, the actress remained stoic throughout, noting the cold, but showing no pain. In the second, she expressed increasing pain: at 10 seconds, she hissed; at 20 seconds, she complained that the water was much colder than she'd expected; at 40 seconds, she "couldn't wait for it to be over"; at 60 seconds, she "didn't know how much more she could take."

Neither version featured a confession, but participants who heard the woman in pain reported a higher likelihood of guilt

Daniel M. Wegner and Kurt Gray are conducting research into perceptions of torture. In an experiment recreated at left, a “victim” pretends to be tortured by having one hand immersed in a cooler of ice water while a study participant listens nearby.

figuratively closer to her—the researchers offer “moral typecasting” to explain the second outcome. Under that theory, Gray explains, people are seen as either evil agents inflicting pain or blameless victims: “Typecasting suggests that those in victim roles who are harmed and experience pain should be seen as incapable of being immoral.” When study participants had no need to justify their own actions, their sympathetic response of moral typecasting could operate freely.

The study, which Gray says was inspired by real-world torture allegations at Guantánamo Bay, offers an explanation for both government approval, and public disavowal, of such tactics. “In our research, we had people right next door [to the “victim”], but you could imagine the same psychological processes working for someone who feels complicit [for

than those who listened to the woman when she remained unfazed. This result, explain Gray and Wegner, reflects cognitive dissonance—those who took part by listening to the “torture” had a psychological need to justify their complicity, and therefore believed that the pain must be something the tortured person deserved.

But determination of guilt, the study found, is a matter not just of pain, but

also of place. In an alternate version of the experiment, participants simply listened to a recorded version of the ice-water “torture.” In this case, the results were flipped: The more pain the victim evinced, the less guilty the participants found her to be. Where cognitive dissonance offered the necessary justification in the first experiments—in which the observer had met the victim and was literally and

FRED FIELD



STEPHANIE SPRAY MTS '04, FIFTH-YEAR DOCTORAL STUDENT, CONDUCTING RESEARCH IN NEPAL

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giving] the go-ahead for torture. You see these terrible pictures come across your desk in some confidential dossier, and you think, 'These guys are really in pain—they must be guilty.' But for those of us who had no say in torture and don't feel complicit, when we see those images on our TV screens, we say, 'Oh, that is terrible—those innocent men.'"

Gray says the experiment suggests that governments that initially advocate torture—or passively allow it—will see it as more justifiable, and thus are more likely to advocate for its use in the future. "You can see the feedback cycle," he explains: if torturers see their victim's pain as a sign of guilt, then the approach seems effective and it makes sense to torture more people. In reality, though, he notes, the pain that torture causes "just changes our perception" of the victim, not our knowledge of the facts of the case.

~DAN MORRELL

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Pleasure by Proxy

YOUR PARENTS RECOMMEND taking a Caribbean cruise and tell you about a discount deal. You've never taken a cruise and aren't so sure you'd enjoy it, so you dig up some information on the Web and even watch a couple of videos. You recollect the times you've been on ships, and your past visits to Caribbean islands—rum drinks, aqua waters. But will you really enjoy an eight-day cruise? Turns out there is a better way to answer this question: ask anyone who has just gotten off a cruise boat—a total stranger is fine. That way, you'll be 30 to 60 percent more likely to accurately predict your own experience than by basing your decision on painstaking research and inner speculations.

That's the upshot of new work by professor of psychology Daniel Gilbert, author of the bestselling 2007 psychology book *Stum-*

bling on Happiness and host of the recent PBS television series *This Emotional Life*. In a recent issue of *Science*, Gilbert and his coauthors—psychology graduate student Matthew Killingsworth, Rebecca Eyre, Ph.D. '05, and Timothy Wilson, Aston professor of psychology at the University of Virginia—reported findings on "surrogation": consulting the experience of another person, a surrogate, in deciding whether something will make you happy. They discovered that the direct experience of another person trumps the conjecturing of our own minds.

The surrogate's verdict is a useful guide because we are far more similar to each other than we realize. "If you look at other human beings, we seem amazingly varied," Gilbert explains. "What we for-



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get is that if a Martian came and looked at us, he wouldn't be able to tell any of us apart." The same holds for our inner reactions. "One of the ways we're quite similar is in our hedonic or emotional reactions to events," he continues. "Yes, it's true that you may like strawberry ice cream more than chocolate, whereas I prefer chocolate. But that shouldn't obscure the much bigger point: *everybody* likes ice cream more than they like gall-bladder surgery. Everybody prefers a weekend in Paris to being hit over the head with a two-by-four." Economic markets exist for this very reason: to a large degree, people like the same things.

Gilbert volunteers a thought experiment: ask a random person to list all possible human experiences, ranking them from best to worst. Then ask another randomly chosen individual to do the same. Gilbert predicts, "You'd see 99 percent overlap in their arrangements." That's why surrogation works. (It isn't, however, a perfect guide, only better than the alternatives. Surrogation's a poor strategy in those rare circumstances where human emotional re-

sponses vary widely—e.g., to a question like, "What's your favorite number?"

In one experiment to test surrogation, the psychologists asked a sample of women to predict how much they would enjoy a "speed date" with a particular man. Some

women saw his personal profile and photograph; others learned nothing about him other than how much another woman (a stranger) had enjoyed her speed date with him. The second group predicted their en-



ILLUSTRATION BY MARK BREWER



KATHLEEN FOLEY '10 OF WORCESTER, MASSACHUSETTS, AND SOPHIE MORGAN '10 OF NORTH PALM BEACH, FLORIDA

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joyment far more accurately than the first. Both groups had expected the reverse, and oddly enough, despite the outcome, both groups preferred to have the profile/photograph for their next date.

This suggests that ideas trump reality. But in predicting your *likings*, even someone else's direct experience trumps

mental hypotheses—which is why surrogation works. But to be helpful, the surrogate's experience must be *recent*. "People are very poor at remembering how happy they *were*," Gilbert says. "So it's not very useful to ask, 'How much did you like something you experienced last year?' People get most questions about happi-

ness wrong. But there is one question they get right: how happy are you right now?"

~CRAIG LAMBERT

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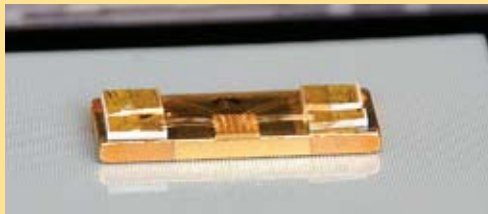
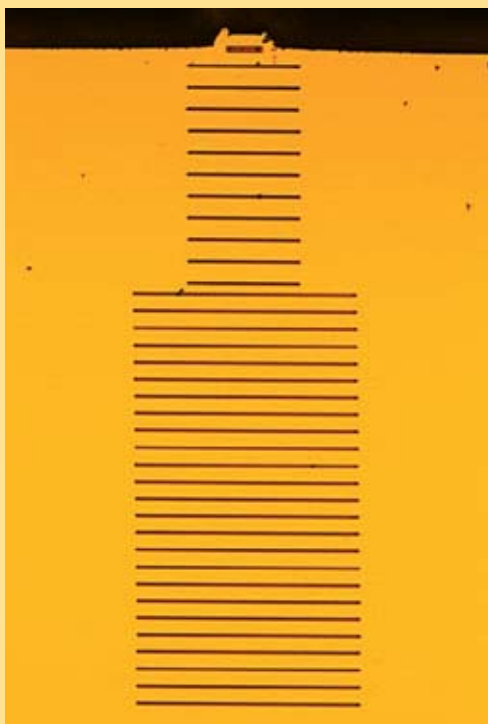
www.danielgilbert.com

WORKING THE WAVEFRONT

Many Lasers from One

A TYPICAL LASER is supposed to emit a tight monochromatic beam of coherent light. That's the common view. But Wallace professor of applied physics Federico Capasso and postdoctoral researcher Nanfang Yu, Ph.D. '09, have created tiny semiconductor lasers that can emit many beams of laser light in multiple wavelengths from a single source. Their breakthrough work, conducted in partnership with Hamamatsu Photonics and ETH Zurich, may find application in high-throughput analysis of chemicals found in the atmosphere or on the ground, the monitoring of greenhouse gases, or even the detection of hazardous biological or chemical agents on the battlefield.

Yu and Capasso have been working on manipulating laser light wavefronts in a variety of ways. Their work takes advantage of a special property of light: it moves along the surface of certain materials, such as gold. Creating an aperture in the laser's facet (the face of the semiconductor from which the light is emitted) that is smaller than the wavelength of the light being emitted causes the light to diffract in a cone that originates at the aperture (think of a pinhole camera). A fraction of this light actually diffracts 90 degrees along the surface of the gold-coated facet in the form of electromagnetic waves—so-called surface plasmons. If they etch nanoscale grooves into the gold facet at intervals that are precise multiples of the wavelength of the laser light, the light "trips" into the grooves and is then emitted as a new beam, parallel to the original, from the surface of the facet. Such collimation—the creation of a parallel beam of light—is



Wavelength scale grating (above) on the facet of a tiny semiconductor laser (below) creates multiple laser beams parallel to the original.

typically achieved with glass lenses. Yu and Capasso's approach obviates that need.

Further manipulations of beam characteristics such as intensity and direction are possible by altering the length of the grating (i.e., the number of grooves) that scatters the surface plasmons, and by

changing the spacing (or "periodicity") of the grooves, respectively. By patterning two gratings side by side and controlling their respective distances to the laser aperture, one can even create two overlapping beams with 90-degrees phase difference. In this way, the two become a single circularly polarized beam. Such a rotating beam, says Yu, could be used to detect the chemical handedness (chirality) of biological molecules such as sugar, DNA, and proteins.

There are practical advantages to producing multiple beams from a single laser. Rotch professor of atmospheric and environmental science Steve Wofsy, for example, uses lasers developed by Capasso in his research because he considers them "uniquely capable" of making high-resolution sections of the atmosphere that provide new data about the locations and strengths of emissions of greenhouse gases. But to conduct such mass spectrometry in the atmosphere requires both a probe beam and a reference beam. The former interacts with an atmospheric sample and then recombines with the reference beam to reveal the sample's properties. Today, this requires two separate lasers. Having both beams originate in a single laser will halve the weight of Wofsy's measuring device.

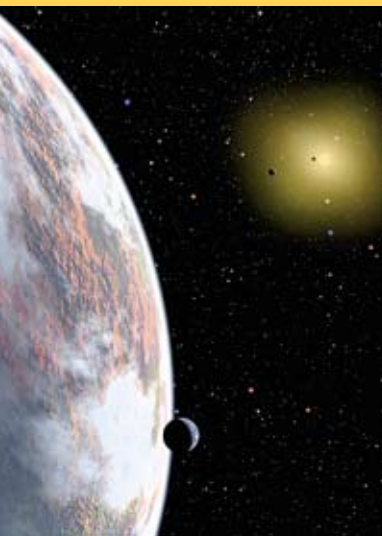
Capasso's 1994 development of the quantum cascade laser led to commercial applications a decade later. If past is prologue, the innovative techniques he and Yu have developed for wavefront manipulation will likewise eventually appear in consumer electronics. ~JONATHAN SHAW

FEDERICO CAPASSO WEBSITE:

www.seas.harvard.edu/capasso

New England

REGIONAL SECTION



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www.ofa.fas.harvard.edu/arts

617-495-8676

• April 29 through May 2

The annual **Arts First festival** hosts events throughout Harvard Square and honors the 2010 Arts Medalist: visual artist, writer, and curator Catherine Lord '70.

THEATER

www.americanrepertorytheater.org

617-547-8300

• Through March 20

First produced in 1935, *Paradise Lost*, by Clifford Odets, probes the effects of money and greed on family, business, and love amid a national financial crisis.

DANCE

The Harvard Dance Center

www.ofa.fas.harvard.edu/dance

617-495-8683

• April 27

Judith Jamison, artistic director and former principal dancer of Alvin Ailey American Dance Theater, talks about her life and work.

FILM

The Harvard Film Archive

<http://hcl.harvard.edu/hfa>

Visit the website for complete listings.

617-495-4700

• March 26-28

Screenings of *Games of Love and Chance*, *The Secret of the Grain*, and *La Faute à Voltaire* by French-Arab filmmaker Abdellatif Kechiche, who will receive the Film Center's 2010 Genevieve McMillan Award for distinguished work.

EXHIBITIONS

Harvard Art Museum—Sackler

www.harvardartmuseum.org

617-495-9400; 485 Broadway

• Opening March 19

Rubens and the Baroque Festival features an exhibition and several events, including an April 16-17 symposium, "Art, Music, and Spectacle in the Age of Rubens."

Peabody Museum of Archaeology and Ethnology

www.peabody.harvard.edu

617-496-1027

• Opening March 25

Translating Encounters explores colonial-era global mobility and exchange among the peoples of Europe, Africa, and the Americas.

• April 24 at 10 A.M. and 2 P.M. (advance reservations required; call 617-495-2916)

Family Program: Conservation Clues!

(For children ages 7 through 12.)

• Opening April 29

Spying on the Past: Declassified Satellite Images and Archaeology highlights the work of Harvard students exploring sites in Mesopotamia and South America.

Harvard Museum of Natural History

www.hmn.harvard.edu

617-495-3045

• Through April 18

Domesticated: Modern Dioramas of Our New Natural History offers visual artist Amy Stein's view of the tenuous relationship between animals and humans within our built civilization.

ANNIVERSARY CONFERENCE

Radcliffe Institute for Advanced Study

www.radcliffe.edu/events.aspx

617-495-8606/8600

From left: The Center for Astrophysics presents "Searching for Planets with Kepler," the topic of the March 18 Observatory Night. The Alvin Ailey American Dance Theater's Jamar Roberts in Judith Jamison's *Among Us (Private Spaces: Public Places)*; Jamison speaks at Radcliffe on April 27. From *Domesticated*, a series of photographs by Amy Stein on display at the Harvard Museum of Natural History.

DAVID AGUIAR/HARVARD-SMITHSONIAN CENTER FOR ASTROPHYSICS; PAUL KOLNIKH/HARVARD UNIVERSITY DANCE PROGRAM/OFFICE FOR THE ARTS AT HARVARD; AMY STEIN/HARVARD MUSEUM OF NATURAL HISTORY



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NEW ENGLAND REGIONAL SECTION

- April 15 and 16
Inside/Out: Exploring Gender and Space in Life, Culture, and Art.
Registration required.

LIBRARIES

www.hcl.harvard.edu/info/exhibitions

Houghton Library

617-495-2439/2441/2449

- Through April 30
John Keats and Fanny Brawne looks at the couple's relationship and its legacy.

Countway Library Center for the History of Medicine

617-524-2170

www.countway.harvard.edu/chom

Continuing: *The Scalpel and the Pen: The Life and Work of Oliver Wendell Holmes, M.D.*

NATURE AND SCIENCE

The Harvard-Smithsonian Center for Astrophysics

www.cfa.harvard.edu/events

617-495-7461; 60 Garden Street

- April 24 at 7:30 P.M.
The center celebrates 80 years of public lectures and observatory nights with *The Universe: 2010 and Beyond*, guided by CFA director Charles Alcock.

MUSIC

Sanders Theatre

www.ofa.fas.harvard.edu/boxoffice

617-496-2222; all concerts begin at 8 P.M.

- March 6: The *Harvard Glee Club* and *Radcliffe Choral Society* celebrate Junior Parents Weekend.
- March 26: The *Harvard-Radcliffe Collegium Musicum* performs Haydn's *Missa Cellensis*.
- April 10: The *Harvard Jazz Bands* perform with saxophonist James Moody.
- April 24: The *Harvard-Radcliffe Chorus* sings Fauré's *Requiem*, and other works.
- April 30: The *Harvard Glee Club*, *Radcliffe Choral Society*, and *Harvard-Radcliffe Collegium Musicum* honor retiring choral director Jameson N. Marvin with the world premiere of Robert Kyr's "Song of Awakening."

Events listings also appear in the *University Gazette*, accessible via this magazine's website, www.harvardmagazine.com.



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“Eisenhower 2.0”

Harvardians boost clean, green travel from Canada to Key West • by Nell Porter Brown



ELIZABETH BRODY '53 and Linda Cabot Black '51 biked around Cambridge during their Radcliffe years, but they never met until last November, while logging upwards of 20 miles a day on a cycling tour of the scenic East Coast Greenway (ECG) trail in northern Florida.

Both are longtime supporters of non-motorized transportation and have spent years helping the ambitious ECG project—a 3,000-mile series of linked pathways from Canada to Key West—become a reality. “I believe a horse, a boat, or a bike are the most satisfying ways to get from point A to point B,” says Black, a director of the Boston Lyric Opera. “Cars are a very bad habit. Anything we can do to get people out of their cars is better for the environment and, of course, for exercise. It’s so ironic that Americans spend all this money on spas and gyms and they don’t even

Above: While cycling the East Coast Greenway, Linda Cabot Black and Elizabeth Brody pause for some Florida sunshine. Right: In Boston, David Read keeps fit and cuts pollution by cycling to work.

walk or bike or take the train to work.”

Brody, a retired attorney living in New York City, sees walking and biking on trails as a way to promote community bonds and truly explore and experience the natural world. “It’s a wonderful way to meet people,” she says. “People are just happier when they are active.” Such sentiments, say proponents of “active transportation,” are growing and fueling support for projects like the ECG, which planners envision

will ultimately offer commuters, travelers, and recreators safe, car-free, handicapped-accessible routes through 15 states and 25 cities along the Eastern seaboard.

Advocates and city planners both report seeing a rise in bike use across the country, especially in urban areas. Solid statistics for New England are hard to find, but in New York City, where the transportation department has collected data at entry points to Manhattan since 1980, the number of commuters who cycle in daily has more than doubled in the past seven years, to 28,300 people in 2009. The most popular route is the 13-mile Hudson River Greenway, the local section of the ECG, which is virtually car-free.

“The ECG is a more daily, urban sister to the Appalachian Trail, and one that will be more accessible to and navigable by many more people,” says David Read, M.P.H. '94, of Topsfield, Massachusetts, vice chair of the East Coast Greenway Alliance (ECGA; www.greenway.org), which oversees the whole project. Read, Brody, and Black—

along with Georgia board member Jim Langford, M.B.A. '84, Stephen A. Davis '59 (a Boxford, Massachusetts, selectman who chairs the group helping to build the 3.5-mile ECG trail through his town), and active members James M. Sharpe, M.B.A. '76, and Deborah Stein Sharpe, M.B.A. '81, of Canton, Massachusetts—are among a large number of Harvard alumni who have contributed or still provide significant volunteer time and money to the project. They believe, as Read says, that “the ECG has deep implications for cultural and economic changes in the United States. Public health, economic development, climate change, energy security—this project touches on all of those and promotes a new way of urban planning, around active transportation.”

NEARLY 20 YEARS in the making, the ECG is now fully mapped out and its current proposed route has been field-tested by very experienced cyclists—but there is still a long way to go before the whole vision is realized. Only about a quarter of the 3,000-mile trail is already off-road. Of the 818 miles of routes mapped out in New England, 165 miles (20 percent) have been completed, all off-road. Connecticut leads the way with nearly 50 miles, followed by Rhode Island, with 24; New Hampshire is last, with none. The heavily populated corridor between



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NEW ENGLAND REGIONAL SECTION

Three New England Trips on the East Coast Greenway

These trails are all in development, meaning that stretches are either paved or surfaced with crushed stone, dirt, or railroad ballast. Check website maps and contact the ECG for updates before heading out to a trail.

Eastern Trail: (www.easterntail.org). Perhaps the fastest-developing New England ECG section is the 69-mile stretch in Maine from South Portland to Kittery. The trail follows the old Eastern Railroad corridor, which linked Boston and Portland until 1944; only 16 percent of the trail (11 miles) is car-free now, but another 10.5 miles may be as well by the end of the year. A special bike/pedestrian bridge in Scarborough is part of one especially stunning section that runs through a 6,000-acre wildlife sanctuary. A state-approved bridge for bikes and pedestrians over I-95 in Biddeford is also slated for 2011. Southbound travelers can cross the Piscataqua River to Portsmouth, New Hampshire, using the current bridge's sidewalk, but the ECGA will not consider that part ECG-worthy until the bridge has safer bike/pedestrian features.

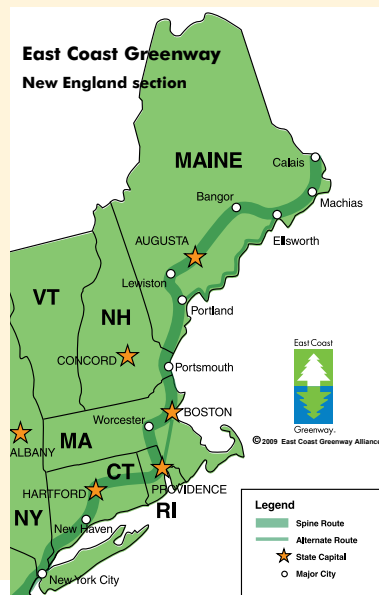
Blackstone River Bikeway: (www.blackstoneriverbikeway.com). This trail—a projected 20 miles in Rhode Island, 28 in central Massachusetts—will run from Providence to Worcester, linking 15 municipalities in all. It winds through or near some of the nation's most historic landscapes and past memorials to the Industrial Revolution, like the new Captain Wilbur Kelly House Museum in Ashton (in the state park) and Slater Mill in Pawtucket, and also through sparsely traveled rural areas. In Providence, bikers can take city

streets to connect with the fully off-road 14.5-mile East Bay Bike Path along Narragansett Bay—a great trip for families, too.

Rhode Island, where popular and government support for the ECG is strong, is way ahead of Massachusetts in construction, with more than 10 miles of paved, off-road pathway already, through Woonsocket, Central Falls, Lincoln, and Cumberland. Though Massachusetts has 2.5 miles of trail completed in southern Worcester and Millbury, the rest is progressing slowly; the Commonwealth ranks near the bottom of the list of states developing trails and paths for non-motorized uses. Although millions of dollars have been dedicated to design and engineering of the route, right-of-way problems exist in some sections and discussions continue about exactly where the final trail should go.

Farmington Canal Heritage Trail: (www.fvgreenway.org and www.farmingtoncanal.org). This 84-mile trail system (not shown on the map) runs from New Haven, Connecticut, to Northampton, Massachusetts. Most is currently navigable with a hybrid or mountain bike, although construction is intermittent. Significant sections are paved and off-road; one runs 14.2 miles between New Haven, Hamden, and Cheshire; another, 12.3 miles in Farmington, Avon, and

Simsbury. The route passes through the Yale campus and a city park before heading out past sites along the old Farmington Canal to the Lock 12 Historic Park and Museum, a prime spot for picnics. Cheshire, a destination spot, is a small, pretty New England town with a one-time slogan that captures its aesthetic bent: "City Spirit, Country Charm."



NEW ENGLAND REGIONAL SECTION

New Haven and Portland will be more than 50 percent off-road within a few years, if funding levels continue.

Each local ECG subsection has its own name—which can be confusing, especially while gaps between trails are still being plugged. Thus, the 30-mile Border to Boston Trail (organized by the Border to Boston Trail Coalition, chaired by Read) joins eight communities in Essex County, Massachusetts, running from Danvers north to Salisbury, on the New Hampshire border, where it will eventually link to the New Hampshire Seacoast Greenway. The stretch offers stunningly diverse views, from woodlands, marshes, rivers, and distant coastal beauty to busy highways, town centers, and a range of residential neighborhoods. Read says the recently completed 1.1-mile Clipper City Trail in Newburyport, which connects the train station with downtown, is already a popular non-car option for commuters and families. Now he and the local and re-

gional planning agencies must figure out how to connect that trail to Salisbury's Old Eastern Marsh Trail, across the Merrimack River. Read is also busy with negotiations to complete the New Hampshire Seacoast Greenway, which would run around the Seabrook nuclear power plant's property.

In his own town, Read is helping develop a four-mile trail. The mile-long Topsfield stretch already completed—its stone-dust surface also suitable for horseback riding, a popular local activity—now connects schools, churches, the post office, local stores, and the fairgrounds, home to the country's longest-running agricultural fair (dating to 1818), which draws long lines of traffic each fall. Read and other trail volunteers spent weekends last fall putting up safety railings and decking on an old railroad bridge over the Ipswich River that will become yet another section of the trail once environmental approvals are in place to ensure wetlands protection. "It was so

good to get out and do something physical on the trail, instead of sitting in all these planning meetings," he says.

Given his training in epidemiology and his job as chief administrator of medical oncology at the Dana-Farber Cancer Institute, Read emphasizes the public-health benefits of non-motorized travel. In the United States, where one person in 12 now has diabetes, the associated healthcare cost, he reports, is \$174 billion a year. Moreover, approximately nine million children (15 percent) in the country are obese—twice as many as in the 1960s. "It just makes so much sense for this country to promote active transportation," he says. He is himself a prime example of how bike trails can directly contribute to improving health. When he lived in Watertown, he commuted daily by bike to the Harvard School of Public Health. But when he moved to the North Shore, he stopped biking, "gained a lot of weight, and felt terrible." Now he takes the commuter rail to Boston's North

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NEW ENGLAND REGIONAL SECTION

Station and then cycles along the Charles River Bike Path to work. "I lost 10 pounds and, at 50, I feel much better than I used to," he says. "I love riding along the river and sometimes going faster than the cars inching along during rush hour—and I feel great when I get to work."

While many commuters will use the ECG to get to work, others will spend their vacations on it. The northernmost section of the ECG, in Maine, is a uniquely wild,

87-mile path, entirely off-road, that begins at Ayers Junction and runs to Ellsworth, near the entrance to Acadia National Park. Along this Downeast Sunrise Trail (www.hpcme.org/transportation/sunrise), cyclists, hikers, walkers, cross-country skiers, and snowmobilers (this is one remote section that allows them) travel through or near remote forests, blueberry barrens, swamps, and ponds, as well as towns like Machias (on the coast) and Cherryfield (inland), where restaurants and lodgings are available. Forty miles of the trail are complete, surfaced with crushed stone (suitable for wider-tired bikes, although this will likely change to accommodate touring bikes); the balance is due to open this fall.

In Connecticut, the ECG achieved a major breakthrough recently with a proposed 37.5-mile route that will follow the scenic Merritt Parkway, one of the few highways on the National Register of Historic Places. The state department of transportation agreed—after a decade of advocacy for

the ECG route—to move forward on a pilot mile of trail in Stamford that has been designed, but not built. With the Merritt route completed, people could pick up the trail at various points throughout Fairfield County and ride all the way to the New York border—and then link to another ECG section taking them into Manhattan.

But to understand the countless factors complicating every mile of ECG construction, says ECGA executive director Dennis Markatos-Soriano, consider that even though the Merritt Parkway has an unusually wide (300-foot) right-of-way, the Merritt Trail has to be far enough from the road to avoid noise, but not too close to homes; must avoid disturbing old trees or environmentally sensitive areas; work around tricky rock outcroppings; and navigate various bridge crossings. Not to mention the negotiations necessary with state and local planners, engineers, elected officials, business owners, and abutters in all the towns involved.

The Eastern Trail's bike and pedestrian bridge respects the animal and bird life of the marshlands in Scarborough, Maine.

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NEW ENGLAND REGIONAL SECTION

With its staff of six and an annual \$500,000 budget, the ECGA oversees the entire project, supporting and working closely with smaller, local grassroots organizations trying to develop pieces of the trail in their own communities. (A Fairfield County Bike-Ped Alliance, which will take on the Merritt Parkway project locally, was being organized at press time.) “We have *hundreds* of stakeholders that we need to talk to and get approvals and cooperation from for the ECG to be successful in the long run,” Markatos-Soriano asserts. “But that’s the way it should be. People always fear change. It’s up to us to communicate the positive attributes of greenways”: improving local economies by drawing tourists and other visitors, boosting housing values, fostering community-building through outdoor activity on public land, decreasing the nation’s dependence on oil, and promoting physical exercise and health.

Board member Jim Langford sees the

ECG as the first of many bike/pedestrian trails that will become an interstate system linking many major cities and attractions, not to mention neighborhoods within towns and suburbs across America. “If, in 1910, you’d said to people, ‘In the coming years, you’re going to be able to drive from your paved driveway on paved roads all across the country and go anywhere you want in a car,’ they would’ve said you were nuts,” says Langford, head of the nonprofit MillionMile Greenway in Georgia (www.millionmilegreenway.org), which helps establish pilot local greenway initiatives. “Well, these greenways are the reverse of that. One day, you will be able to walk from your house or work to a greenway in your neighborhood and bike or walk or go in a wheelchair on trails that are *not* highways, and get to the store, your friends, the train—wherever you want to go.” Markatos-Soriano calls this vision the “Eisenhower Interstate System 2.0,” recalling that era of dramatic motorized highway expansion.

In the meantime, however, all involved in the ECG project acknowledge the complex work ahead. Continued monetary and political support is critical. The ECGA, based in New York City, had to lay off its communications coordinator last year, and depends on many volunteers like Read, Brody, and Langford to keep pushing the project forward.

Economic stimulus funds have been awarded to about 28 miles of new ECG trails; other trail-project applications are pending. Increasingly, Markatos-Soriano tries to shore up state and federal support (he met last fall with U.S. Department of Transportation deputy secretary John Porcari, who seems ready to promote non-motorized traveling options more actively). Yet he says, “Though many of us in the health, environment, and energy-security community see the ECG as one of the top infrastructure projects in our country—and we are making great progress with our federal, state, and local transportation

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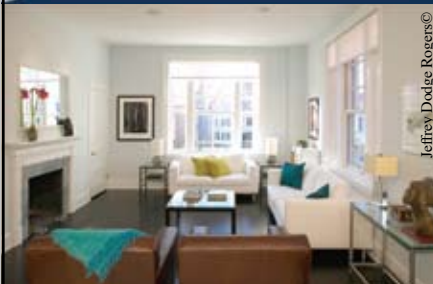


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The ECG is not just for walkers and cyclists; even in winter, the Downeast Sunrise Trail in far northern Maine can be enjoyed by skiers and snowmobilers alike.



leaders—we have a way to go to get that level of support and priority” for federal transportation funding.

Car-catering infrastructure is exorbitantly expensive, Markatos-Soriano notes: each mile of highway demands millions of dollars. The new Woodrow Wilson Bridge spanning the Potomac River, for example, cost \$2.4 billion (about \$300 million per mile for the 7.5 miles of roadway over the bridge). Compare that to a mile of greenway, which costs, on average, between \$100,000 and \$250,000. (Costs can rise to \$1 million if bridges are required.) “All we need is another \$2 billion—less than the cost of that one bridge—to complete many of the remaining ECG trailways,” he points out.

For Langford, the time is right for the ECG. He believes Americans have reached a tipping point on two counts: understanding the impact of health problems and the need for daily recreation and fitness; and understanding the need to conserve green space. “Some communities get the concept more than others,” he says, “but there is a general premise now that preserving green space for humans is critical.” Many developers, he adds, now see that trails and greenways are useful amenities, while business leaders have seen that greenways are good for local economies. “This has led to a more symbiotic relationship between citizens and local governing boards,” Langford maintains. “It’s no longer two groups fighting each other, it’s two groups finding that these greenways are really good things for communities, and working together to figure out how to find the money and make greenways happen.”

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CAMBRIDGE, MA

West Cambridge just off Brattle Street is this Mansard Victorian, c. 1872, with classic period details. Features of the house include over 9' ceilings, bay windows, 3 marble mantels and a grand staircase. There is a spacious two-bedroom third floor apartment and parking.

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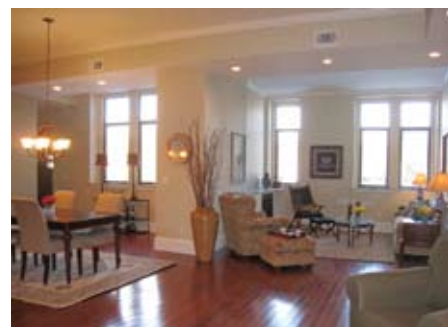
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This impressive, renovated 14-room Mansard Victorian, c. 1867, on Brattle Street is on 1/4 acre of elegantly landscaped grounds. It has a wide, wrap-around porch, magnificent curved staircase, exceptional eat-in kitchen, family room w/ custom cabinetry & 2-car garage plus parking.

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CAMBRIDGE, MA

This 5-room condo has a living room with bay, dining room with bay & built-in, renovated kitchen with maple, granite & stainless; pantry; a master plus study/guest bedroom. Laundry & storage area in basement; rear porch & large backyard. Near Davis Square, Alewife & Fresh Pond.

\$379,900



SOMERVILLE, MA

Davis Square – On a tree-lined street with handsome Victorian homes, this spacious duplex condo features an open living/dining room, maple kitchen, 2+ beds, 2 baths, in-unit laundry, skylights, deck & garage.

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Sweet and Savory Souk

A small, original café featuring Eastern Mediterranean noshes



carpet in a lush field and feasting on an array of the noshes and flatbread sandwiches this unusual establishment offers.

In urban America, it is hard to launch a truly original restaurant, but Ana Sortun, who opened Sofra in an unlikely area of West Cambridge in 2009, seems to have pulled it off. The James Beard Award-winning chef, who has operated the Mediterranean-oriented Oleana restaurant in central Cambridge since 2001, has a longstanding fascination with that region's cuisine; Sofra (also a synonym for generosity or hospitality) draws its inspiration from the food of Lebanon, Turkey, and Greece. It's open daily for all three meals. The breakfast menu makes no nod to American standards: even something as basic as a doughnut is "Persian-spiced" here. Lunch and dinner are built around stuffed flatbreads, *shawarmas*, and an elaborate "mezze bar" of pâtés and spreads; you can order

a five-item sampler (\$9), as we did, making your own selection from a dozen or more offerings.

There's also a bakery that features cookies and specialty sweets like Syrian shortbread (\$4) and chocolate hazelnut baklava with cocoa honey (\$4), plus small cakes (vanilla and bay leaf, or almond rose, for example) and tarts. The menu even includes a "crackers" section—with four options. You'll also discover beverages like *salep*, a Turkish steamed milk drink flavored with cinnamon and orchid root.

Sofra is small: its nine tables resemble squat, copper bongo drums. At busy hours you'll find it challenging to get a seat, which may be one reason why the place does a brisk take-out business. Some eat their meals standing up at marble-topped counters; the blonde-wood décor feels clean and welcoming.

Sofra's lamb *shawarma* (\$8), its shredded meat stuffed into a flatbread with pickled cabbage and a tahini yogurt sauce, was a generous wrap for someone in a seriously carnivorous mood. In a sausage wrap (\$7) with cumin and orange, tangy green olives, hot peppers, and feta, the peppers struck the dominant flavor note. Kohlrabi pancakes (\$5)—crisp, delicate, and blackened, served with feta and yogurt—went a level beyond potato latkes. The cheese *börek* was a savory, layered pie with cheese, egg, milk, and *yufra* pastry that emerged from a pizza oven; topped with nigella seeds, it had the springy, chewy texture of a dumpling. From the *mezze* bar we sampled items like a delicious Armenian bean and walnut pâté involving ground kidney beans and pomegranate molasses, and the aforementioned

beet tzatziki, whose crunchy beets played off beautifully against the smoothness of yogurt. It was a splendid indoor picnic. —C.L.

T IRED OF FLAPJACKS? Try a Turkish breakfast: soft-boiled egg, cucumber, tomato, olives, feta, seasonal "spoon sweets" like fig compote, and thick yogurt with honey (\$8). Bored with ham-and-cheese? At lunch, test-drive some *mezze*: smoky eggplant with pine nuts, feta cheese with apples, Moroccan-style goat cheese with cilantro, or Greek beet tzatziki, a dip made with yogurt and herbs. The sheer number and variety of dishes at Sofra Bakery and Café entertain both eye and palate. The name comes from an ancient Arabic word meaning dining table, picnic, or kilim, and one can well imagine rolling out such a

Clockwise from left: Sofra's mezze bar; a sampler of five, from more than a dozen, pâtés; a tart and cookies.

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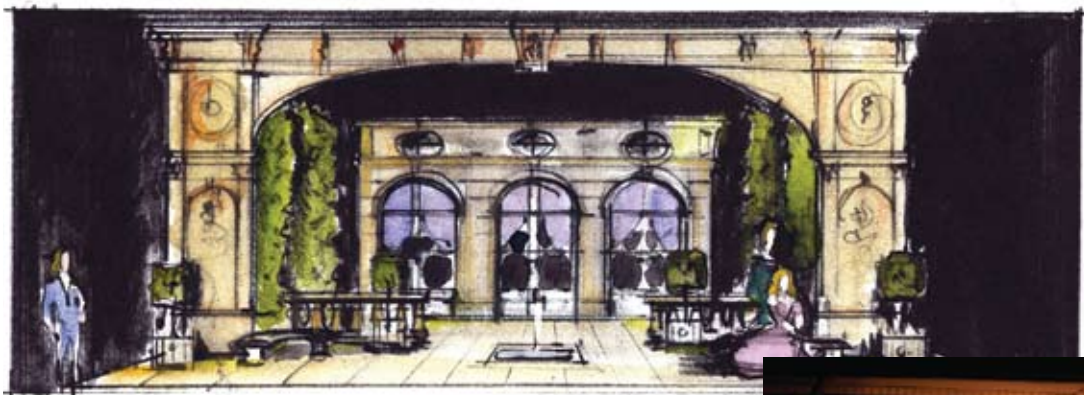
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Visual Conjuror

Carl Sprague designs the look behind the drama.

by CRAIG LAMBERT

CARL SPRAGUE '84 did plenty of theater at Harvard, though he didn't act much ("I'm a terrible actor—very wooden," he says). Instead, he directed shows in the Houses, at the Loeb Ex, and even a production of Euripides' *The Bacchae* in Harvard Stadium. "I had a hard time finding designers for the shows," he recalls, "and a couple of people bailed out on

me, which meant I had to build it myself. It turned out that was the part of directing I enjoyed the most." Twenty-five years later, he has become a highly respected designer and art director for both theater and feature films (see www.carlsprague.com); his credits include Martin Scorsese's *The Age of Innocence* (1993), Steven Spielberg's *Amistad* (1997), David Mamet's *State and Main* (2001), and Wes Anderson's *The Royal Tenenbaums*

For Molière's *The Misanthrope* at Berkshire Theatre Festival in Stockbridge, Massachusetts, Sprague's sketch (top) became a model (left) later built as the play's set (above).

(2001). He also worked on several films scheduled for 2010 release, among them *The Company Men* (with Tommy Lee Jones '69), and *Salt* (with Angelina Jolie).

The design process for theatrical sets and motion-picture settings parallels the sketching a fashion designer does for a couture dress that later, with the aid of a seamstress, takes form in fabric, plastic, metal, or other materials. For theater, after reading the play and hashing out ideas



For the 2001 film *The Royal Tenenbaums*, Sprague sketched a graveyard (top) that director Wes Anderson used in the movie (below, with Sprague at work, lower left).

with the director, Sprague sketches some set designs; he'll take those that pass muster and turn them into drawings that can be built. The work has elements of architecture and presents practical problems to solve. A door-slamming Feydeau farce, *13 Rue de L'Amour*, at Shakespeare & Compa-

ny in Lenox, Massachusetts, required scene changes in "five seconds, and there was no wing space or fly space, only room for a wall of flats," Sprague explains. He made the whole set a "series of hinged flipper panels that could, in a few seconds, transform from a doctor's office into a dress shop." Sprague enjoys both generating and executing visual ideas ("There are things you figure out with your pencil instead of your head"), though if he had to choose, he would come up with ideas and del-

"I wouldn't spend \$500 in theater without some kind of metaphor, or vision, or idea of what it means."

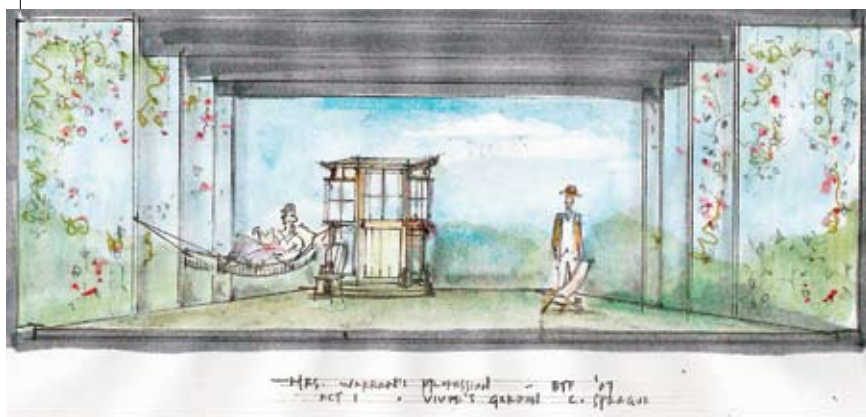
set out to detail and build his visions.

For a theatrical show at the Berkshire Theatre Festival (near his home in Stockbridge, Massachusetts), Sprague might make five or six pages of construction drawings, but a movie can require 10 to 50 times that many. In Hollywood, there are more job titles—art director, set designer, model builder—each with specialized skills and its own labor unions. On a feature film, the top position—"the title to aspire to," says Sprague—is "production designer," a designation first granted to William Cameron Menzies on *Gone with the Wind* (1939), for which he sketched all aspects of the movie, including costumes, and conceived the overall "look" of the production. Sprague has been production designer for a half-dozen films.

Movies can sometimes "spend \$100 million without having thought through an approach, or really even having a concept for the project," he says. Yet, some Hollywood designers can build great sets "just by waving their hands around and talking on a cell phone," he notes. "People achieve amazing results doing just that.

"In theater, you have to have *some* idea to work at all," Sprague continues. "I wouldn't spend \$500 in theater without some kind of metaphor, or vision, or idea of what it means." For *A Christmas Carol* at the Berkshire Theatre Festival, mounted on a "vest-pocket stage," Sprague made

For the Berkshire Theatre Festival's production of *Mrs. Warren's Profession*, by George Bernard Shaw, Sprague's sketch (left) became an engaging set (right).





Sprague's sketch for a bedroom set (top) was realized (above) in the film *The Last Harbor*, scheduled for release this year.

the whole set revolve around Scrooge's bed (with the four-poster's curtains forming another stage within the stage), at once solving a practical problem and making a conceptual statement about the piece.

In general, he says, design work on the East Coast is more theatrically based; in the Berkshires, his own work at the Berkshire Theatre Festival has ranged from *The Misanthrope* to *American Buffalo*, *Night of the Iguana*, and *Glass Menagerie*. "The opportunities for doing theater locally can be pretty exciting," he says.

The Berkshires also provide the setting for his next big project, a film adaptation of the short novel *Summer* that Edith Wharton, who lived for years at The Mount in Lenox, wrote in Paris during World War I. Sprague has drafted a screenplay and plans to direct; he is raising money with a "beautifully impatient" producing partner. "The novel is a big, juicy mash note to the Berkshires," Sprague says. "There's a lush, beautiful romantic vision of a steamy small town in prewar rural New England. Externally, it's a very bitter story about a love triangle that ends up not working out for anyone, but it's also a very sexy, sweet summer romance. It's an enormous pleasure to conjure up that world." ♡

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A Man in Motion

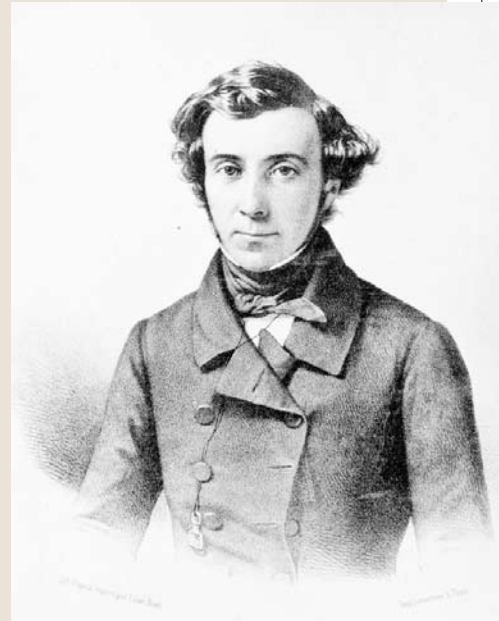
still younger Charles Darwin set sail on the *Beagle* in December while the Frenchman toured the Mississippi. In *Tocqueville's Discovery of America* (Farrar, Straus and Giroux, \$27), Bernbaum professor of literature Leo Damrosch recalls the young explorer who later wrote, "In America I saw more than America; I sought there an image of democracy itself..."—his origins, his traveling companion Gustave de Beaumont, and the young nation they explored. From the preface:

Tocqueville met and questioned hundreds of Americans on his journey, some famous—Daniel Webster, John Quincy Adams, Sam Houston—and some obscure; many important ideas in *Democracy in America* were originally suggested by people he talked with. He wrote to his brother after his first few weeks in New York, "Ideas come in, as it were, through our pores, and we learn as much in drawing rooms or taking walks as when we're shut up in our study." He soon discovered that whereas in Europe it was impolite to ask probing questions, the typical American was "a pitiless questioner" and perfectly willing to answer such questions as well as to ask them. As for Tocqueville, Beaumont said about him, "He had the very rare talent of knowing how to listen well just as much as how to speak well..."

Tocqueville was not just a great listener; he was a man in motion, and it is no accident that he found his way to his masterpiece by traveling. Beaumont especially admired the energy with which his friend pursued his quest. "Repose was contrary to his nature, and even when his body wasn't moving, his intelligence was always at work... The slightest loss of time was unpleasant to him..." He was interested in everything, and tireless in acquiring knowledge. He once told Beaumont, "You are always on fire, but you catch fire for only one thing at a time, with no curiosity or interest for everything else.... I have an ardent and insatiable curiosity that constantly pulls me off my path to the right or the left..."

Tocqueville was a sensitive, ambitious, and at times troubled young man taking in a nonstop barrage of impressions in a strange land. The America he encoun-

tered was no abstract embodiment of democracy, but a turbulent, competitive, rapidly changing society. During the 1830s the nation was still young. It had recently elected its first populist president in Andrew Jackson, it was expanding aggressively westward, and it was deeply conscious of class, regional, and racial tensions, forebodingly aware that



A reserved Alexis de Tocqueville, portrayed when he was in his thirties—some years after his momentous American travels.

civil war might one day tear it apart. This book seeks to bring that traveler and that world to life.... By accompanying him on his journey, we can share in his personal discovery of America during an era of immense significance in the history of our nation, yet one that has received little attention amid the outpouring of books on the Revolution and the Civil War.

Erik Alexander, MD, Assistant Professor of Medicine, teaches students Andy Schissler and Xin Gao, both HMS Class of 2011, during their hospital rotations.

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Theatrical Chiaroscuro

In 1970, the British theatrical photographer Angus McBean (1904-90) sold Harvard his oeuvre: a collection of 40,000 glass-plate negatives, weighing eight tons, that has become the most-requested archive of visual material in the Harvard Theatre Collection (part of Houghton Library). McBean (pronounced *McBain*)

worked through the glory years of British theater from the 1930s to the 1960s; his career encompasses the early work of Laurence Olivier, Vivien Leigh, and Alec Guinness, as well as the next generation of stars, like Richard Burton, Audrey Hepburn, and Elizabeth Taylor. McBean shot Mae West and Noel Coward as well as *West Side Story* and the cover of the Beatles' first album, *Please Please Me* (1963).

The Theatrical World of Angus McBean (David R. Godine, 2009), by Fredric Woodbridge Wilson, curator of the Theatre Collection, is a handsome volume bringing together some of the photographer's memorable images, all in black-and-white. (McBean, who was skillful at retouching his portraits, avoided color because it was far more difficult to alter.) He was "in nearly every sense a conservative," Wilson writes in his introduction, noting that "in a photographic age that came to embrace the strobe light, the light meter, and the hand-held, small-format film camera, he employed cumbersome floodlights and a view camera that relied upon six-by-four inch glass plates [which Kodak stopped manufacturing during McBean's lifetime]. He gauged his exposures by eye." Yet those large glass plates could



McBean's favorite model—and muse—was Vivien Leigh (1913-1967), here photographed for a 1951 production of George Bernard Shaw's *Caesar and Cleopatra*. (At left) Bruce Ingram, publisher of the *Illustrated London News*, posed in 1950 with bound volumes of every edition of the paper since 1842.

capture 30 times the detail of a 35-millimeter negative. As opera scholar Richard Traubner writes in an introductory essay, they recorded "the fabulously dark blacks, Velázquez-like in their density, and the dramatic chiaroscuro effects that were McBean's hallmarks." The result is a book bursting with visual drama. ~C.L.

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Indie Film Blues

The skinny on ciné

by KEVIN HARTNETT

MYNETTE LOUIE '97 is an independent film producer based in New York City. Since beginning her career with a post-college weekend stint as a production assistant, she has co-produced Andrew Bujalski's critically acclaimed *Mutual Appreciation* (2004) and produced several narrative short films by minority women directors. Her most recent feature film, *Children of Invention* (www.childrenofinvention.com), about two Chinese-American children left to fend for themselves after their mother is arrested, premiered at the 2009 Sundance

Film Festival and has won Grand Jury Prizes at festivals from Newport to Los Angeles. Despite that success, the movie has struggled to find an audience or turn a profit in an uncertain time for the independent film world.

KH: Explain what's so challenging for independent filmmakers about the current environment.

ML: The do-it-yourself movement has revolutionized filmmaking and made it really cheap for people to make movies. Everybody's doing it now. There's a glut



Producer Mynette Louie on the set of her film *Children of Invention*

WILL SEBER



STEPHANIE WU

Louie and director Tze Chun check a monitor during production.

of content, so it's a buyer's market for distributors.

A lot of movies are not getting distribution—and if you can't get distribution, it's really hard to make back your budget and recoup your investors' money. So investors are now pulling back because they realize there are a lot of films sitting on people's shelves.

Films were getting bought out of Sundance for lots of money above their production budgets. People were getting rich off of indie film. There was a hedge fund craze, where all these funds were putting up production financing. As a result I think indie films started turning into basi-

A production still from *Children of Invention*, with Crystal Chiu as Tina and Michael Chen as Raymond



WILL SEBER

cally low-rent studio films. They adopted the same formulas and they were not that interesting.

KH: You've been selling DVDs of the film at festivals and on your website—an unusual step for a film that has not been distributed yet. What went into that decision?

ML: Going into Sundance, our expectations were realistic. We understood that distributors don't know what to do with a movie with no stars and Asian-American actors. We consulted with our executive producer,

Dan Cogan [91] of Impact Partners. It was his idea to start selling DVDs on the festival circuit. We were very hesitant about it. In previous years, if you did this, you were tainting your film. Selling DVDs prior to a theatrical release was basically an admission that you couldn't find a distribution deal. We've done quite well selling the film to audiences at our festival screenings, and actually doubled the advances that any of my friends have been offered for a film. It's still going to take a couple years to break even.

KH: Day-and-date distribution, in which a film is simultaneously released in the theater and on DVD, is generating a lot of interest. What do you think of it?



Visit harvardmag.com/extras to view a film clip from "Children of Invention"

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ML: I think it's brilliant. The challenge is theater owners who are very old-school. They really believe you do theatrical first, a few months later you do DVD, a few months later you do video-on-demand [VOD], and then TV.

But I totally believe in collapsing all of those. It makes sense because studios don't make any money selling tickets at the theater. People have acknowledged that theatrical releases are really just for marketing, and to get that *New York Times* review. It's a marketing expense to play in a theater, so if you have a DVD and VOD in place, when that *Times* review hits, you have a lot of people reading that review, saying I want to see that, and I can buy it right now.

KH: New delivery methods have disrupted content production in every type of media. How have they affected independent film?

ML: With TiVo, VOD, iPhones, et cetera, as well as a glut of content, audiences are much more fragmented and people have shorter attention spans. I think because of

“Theatrical releases are really just for marketing and to get that *New York Times* review. It's a marketing expense to play in a theater.”

that there's been a resurgence in short-form and episodic content. You are seeing a lot of film people migrate to TV. Martin Scorsese, in fact, has a new HBO series [*Boardwalk Empire*, scheduled for broadcast this year].

It's because there is more money that can be made developing episodic dramas. [In] the episodic series you can have your short, contained episodes for easy consumability, and you can build character and story, too—over a series of episodes. Everyone is saying that TV is where the best drama is happening today, and I agree.

KH: A longtime indie film executive recently said there's a silver lining to the fragmentation of media,

and it's that because buzz—good or bad—spreads so rapidly, there's a growing demand for quality films. Is that something you've noticed?

ML: People thought *Snakes on a Plane*, for example, was going to make so much money. But then when people actually saw it and saw how bad it was, they blogged about it and it didn't end up doing as well as they expected. Word spreads like wildfire now, on the Internet and everywhere else, so if something does

suck, you're probably going to be dead in the water. I don't know that the appetite for good content is different. I just think that people kill bad content.

Kevin Hartnett '03 is a freelance writer in Philadelphia. *Children of Invention* opened in Boston for a “hometown run” on February 26 at the Brattle Theatre. It debuts simultaneously on March 12 in New York City (as part of a double bill at BIG Cinemas Manhattan) and in Los Angeles (at the Downtown Independent).

An Ageless Voice on Aging

Shakespeare on time's passage—and potency

by ADAM KIRSCH

IN THE TEEMING UNIVERSE of Shakespeare's plays, you can find people of any and every age. There are young children like Mamillius, the king's son in *The Winter's Tale*; teenage lovers like Romeo and Juliet; and men in their prime, like Henry V.

But as Maurice Charney, Distinguished Professor of English at Rutgers and past president of the Shakespeare Association of America, reminds us in *Wrinkled Deep in Time: Aging in Shakespeare*, a surprising number of the plays' most powerful characters are very old. There is King Lear, of course,

“fourscore and upward, not an hour more or less,” who at the beginning of his play announces his intention to “unburdened crawl toward death,” and by the end seems cosmically ancient: “The oldest hath borne most; we that are young/Shall never see so much, nor live so long,” Edgar predicts. There is Falstaff, the fat old knight, who keeps flirting and boasting despite his gray hair: “Have you not



Orson Welles produced, directed, and starred in the 1952 *Othello*—a tale of jealous and declining potency.

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a moist eye, a dry hand, a yellow cheek, a white beard, a decreasing leg, an increasing belly?" another character demands, to which Falstaff replies, "The truth is, I am only old in judgment and understanding." Then there is Lady Capulet, who after learning of her daughter's tragedy declares, "O me, this sight of death is as a bell/That warns my old age to a sepulcher."

But wait—Lady Capulet, old? In the first act of *Romeo and Juliet*, we learn that Juliet is about to turn 14, and her mother, trying to convince her to marry Paris, reminds her: "by my count, I was your mother much upon these years /That you are now a maid." In other words, Lady Capulet should be around 28 years old—a little early to be speaking about "my old age," even in the sixteenth century, when life expectancy was much shorter than it is today. This is a dramatic example of the way Shakespeare manipulates our sense of time, and aging, in the plays. As Charney puts it, the plays make use of "double time" or "long and short time,"

in which the passage of time from scene to scene appears much more rapid than the span from the first act to the last.

Another way of putting it is that aging, in Shakespeare, is not chronological but psychological: "characters seem to age in relation to the logic of the dramatic action rather than the logical progression of the narrative." Perhaps the most famous example is *Hamlet*, which gives conflicting accounts of its hero's age. At the beginning of the play, Hamlet has just been called home from the University of Wittenberg, suggesting that he is a young man, in his teens or early twenties. In the fifth act's graveyard scene, however, we learn that Yorick—the jester who "hath borne me on his back a thousand times"—has been lying in the earth "three and twenty years," which would seem to make Hamlet closer to 30.

Such contradictions never trouble the au-

*Wrinkled Deep in Time:
Aging in Shakespeare*, by
Maurice Charney '49
(Columbia University Press, \$29.50)

Off the Shelf

Recent books with Harvard connections

Wrong Place, Wrong Time: Trauma and Violence in the Lives of Young Black Men, by John A. Rich, M.P.H. '90 (Johns Hopkins, \$24.95). The author, now a professor at Drexel University School of Public Health, offers a gritty, sobering view—sometimes from the blood-soaked ER—of epidemic shootings, stabbings, and street beatings.

Paleoclimates: Understanding Climate Change Past and Present, by Thomas M. Cronin, Ph.D. '77 (Columbia, \$95). Lest anyone doubt that there is science involved in assessing climate change, the author—a geologist associated with Georgetown University and the U.S. Geological Survey—delivers a dense text on the hard (rock) evidence.

The Ideological Origins of American Federalism, by Alison L. LaCroix, Ph.D. '07 (Harvard, \$35). "Federalism is every-

where and nowhere in American legal and political history," observes the author, a lawyer and historian now professing at University of Chicago Law School. Intrigued, she has sought out the ideas that resulted in a federalist government, before their inclusion in the Constitution.

A Vision for Venture Capital, by Peter A. Brooke '52, M.B.A. '54, with Daniel Penrice (University Press of New England, \$29.95). A memoir of a life in finance by the founder of TA Associates and Advent International, who has his eye clearly on the economic value of investment, global growth, and a world untainted by excessive debt and quick-buck financial engineering.

Flawless, by Scott Andrew Selby, J.D. '98, and Greg Campbell (Union Square, \$24.95). A breathless "inside," blow-by-blow, if not actually how-to, account of "the largest diamond heist in history" (\$128 million)—in Antwerp, naturally, on Valentine's Day weekend, of course.

The Upside of Turbulence, by Donald Sull '85, M.B.A. '92, D.B.A. '96 (Harper Business, \$27.99). A business-strategy

dience, Charney notes. For one thing, when you are seeing the play instead of reading it, you don't have time to do the math. Shakespeare wants us to pay attention not to the calendar, but to the inner growth Hamlet has undergone since the beginning of the play. We sense that "Hamlet now seems much older than he did when the play be-

Othello becomes a tormenting parable of loss and aging.

gan," not because he looks different, but because of the newfound maturity that allows him to look calmly on death: "If it be now, 'tis not to come; if it be not to come, it will be now; if it be not now, yet it will come: the readiness is all."

At other moments in the plays and poems, Charney shows, our sense of what it means to be old is unsettled by the very different way the Elizabethans thought about

life and its stages. Not only did they not expect to live as long as we do, they did not expect to stay *young* as long. One of the major themes of Shakespeare's sonnets is the poet's advice to his friend to get married and have children before he gets too old and his beauty is destroyed. The prospect of wrinkles is especially terrifying in these poems: they "dig deep trenches in thy beauty's field," they are reminders of "mouthed graves" and "Time's thievish progress," they "[delve] the parallels in beauty's brow." Yet the deadline Shakespeare sets for this physical ruin, in Sonnet 2, is "When forty winters shall besiege thy brow."

This foreshortened lifespan also helps to explain why love and lust, in characters whom we would see as not even middle-aged, appear to Shakespeare as a kind of affront to nature. This is especially true when the characters are women. In his chapter on "Powerful Older Women," Charney examines the dreadful, proto-Freudian scene in which Hamlet confronts Gertrude in her bedroom. We never learn



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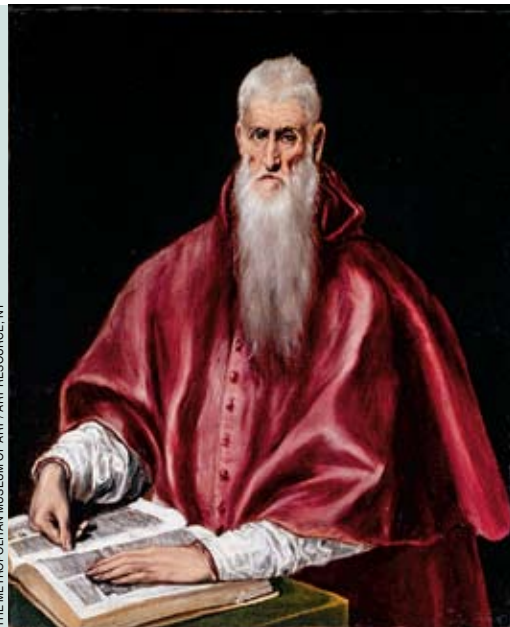
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El Greco's *St. Jerome as a Scholar* (c. 1610) shows horizontal elongation of the hands as well as the familiar vertical distortion.

illustrated, by a retina specialist and an art-minded fellow ophthalmologist, who interpret the eye and vision as seen through the works of, and by their effects on, Seurat, Matisse, Titian, Chuck Close, and others.

King of the Lobby, by Kathryn Allamong Jacob (Johns Hopkins, \$40). The curator of manuscripts at Radcliffe's Schlesinger Library provides a colorful look at Sam Ward, who parlayed good food, fine wine, and dinner conversation into power in Gilded Age Washington, D.C., pioneering the art of lobbying in a

scandal-marred era.

Historic Photos of Harvard University, text and captions by Dana Bonstrom '77 (Turner, \$39.95). A gallery of black-and-white archival images, especially of buildings and architecture, from a panorama of pre-Business School Allston to Lowell House under construction to Churchill reviewing cadets in the Yard, and more.

book aimed at "seizing opportunity in an uncertain world" (prospective audience, these days: everyone), by a former McKinsey consultant, now a professor of strategy at the London Business School.

The Artist's Eyes: Vision and the History of Art, by Michael F. Marmor '62, M.D. '66, and James G. Ravin (Abrams, \$40). A sort of forensic aesthetics, copiously il-

What's New on the Web

HM IN THE last issue, the editors introduced a new feature called “Your Take” and asked readers to join an online discussion about how work-life concerns had affected career choices. Among the responses:

“My failure to take into consideration work-life balance kept me single and caused me to miss the boat for having a family of my own. Women should not be afraid to discuss this.”

“As a child of the '60s, I find this dilemma most unsettling. The Women's Movement was supposed to liberate all of us from gender roles that were too confining. It feels like women got liberated from nothing, and men got liberated from it all.”

Visit harvardmag.com/extras to answer this issue's “Your Take”

question: Alumni, current students, and parents, *how do your experiences compare* to those described in the feature article “Nonstop” (page 34), which explores the unremittingly hectic lives of Harvard College students today?



STU ROSNER

And don't miss this issue's other Web Extras:

► **an audio interview** with Harvard psychology professor and happiness expert Dan Gilbert



ROBERT ADAM MAVER

► **a video tutorial** on analyzing horse racing with Steven Crist '78, publisher of the *Daily Racing Form*

► **background** on the experts who participated in the roundtable on China

See harvardmag.com/extras for these and more.

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MONTAGE

exactly how old Gertrude is meant to be, but since Hamlet tells her, “at your age/ The heyday in the blood is tame,” Charney deduces that she is “beyond her child-bearing years.” That such a woman can still feel sexual desire is shocking to her son: “Nay, but to live/In the rank sweat of an enseamed bed,/Stewed in corruption, honeying and making love/Over the nasty sty,” he rants.

To be fair, however, it is not only middle-aged women whose sexuality is dangerous in Shakespeare. We tend to think of Othello as being in the prime of life, a warrior and lover whose passions are his undoing. But as Charney reminds us, he is actually meant to be on the cusp of old age. Othello describes himself as “declined/Into the vale of years,” and he specifically tells Desdemona's father that he no longer feels lust: “I...beg it not/To please the palate of my appetite,/Nor to comply with heat—the young affects/In me defunct....” Once we see Othello as an aging

man, perhaps in his sixties, to the twenty-something or even teenage Desdemona, the whole character of the play changes: it becomes a story of the tormenting loss of potency, a parable not just of jealousy but of aging.

Wrinkled Deep in Time, by reading the plays closely and thinking clearly about them, offers many such insights. “It seems to me now,” Charney writes in his introduction, “that Shakespeare was preoccupied with issues of aging that must have had an acute relation to his own sense of growing old.” Charney himself is “approaching Lear's age,” he says, and “there is a certain autobiographical element” in his work; the match between Shakespeare's preoccupations and his own has allowed him to produce a fine and useful book. ▢

Adam Kirsch '97 is a senior editor at the New Republic and a columnist for the online magazine Tablet. His most recent collection of poems is *Invasions* (Ivan R. Dee).

Chapter & Verse

Correspondence on not-so-famous lost words

Vann McGee would like to discover the origin of the following declension: “I am firm. You are stubborn. He or she is mule-headed.” He has heard it attributed to Bertrand Russell, but acknowledges that that might be just a rumor.

Richard Barbieri hopes someone can identify the book by a contemporary social scientist that begins with the thesis that everyone in the field is seeking a definition of what makes us human, but that it is unwise to publish one's theory until late in life, so that one may die before critics take the theory apart. The book, he adds, “naturally continued with the author's theory, but I forget what that was.”

“Learning about normal functioning from extreme cases” (September-October 2009). Camille Norton traced this assertion by Sigmund Freud to his essay “Femininity,” in *New Introductory Lectures on Psychoanalysis*, translated and edited by James Strachey (1965). The

quotation reads: “Pathology has always done us the service of making discernible by isolation and exaggeration conditions that would remain concealed in a normal state” (page 107).

“I have spent sleepless nights that others might rest” (November-December 2009). Charles Miller, who submitted the original query, curious about a quotation in an essay by the late Harvard Law School professor Paul Freund, writes that he has “discovered a ‘near enough’ source for the internal quotation. The ‘German historian’ referred to is Theodor Mommsen. The quotation is from a eulogy to Mommsen composed in 1903 by the theologian Adolf von Harnack: ‘His sleepless nights have brightened our day.’ Harnack himself was quoting Goethe on Schiller.”

Send inquiries and answers to “Chapter and Verse,” *Harvard Magazine*, 7 Ware Street, Cambridge 02138, or via e-mail to chapterandverse@harvardmag.com.



A Harvard Magazine Roundtable

CHANGING, CHALLENGING CHINA

IN MID MARCH, Harvard Business School and the Harvard China Fund will formally inaugurate a substantial center in Shanghai—one of the University's largest international facilities—to support faculty research, visiting students, and teaching programs. Given this tangible evidence of the University's academic engagement with one of the world's most important and dynamic countries, *Harvard Magazine* at year-end invited seven faculty and alumni experts to discuss China's history, culture, and contemporary challenges:

MARK ELLIOTT is the Mark Schwartz professor of Chinese and Inner Asian history. He focuses on the Qing dynasty and the historic and continuing relations between China and Inner Asia.

WILLIAM KIRBY, T. M. Chang professor of China studies, Spangler Family professor of business administration, director of the Fairbank Center for Chinese Studies, and chairman of the Harvard China Fund, is an historian of modern China, and of contemporary Chinese business history and organization.

ARTHUR KROEBER '84 has lived in Asia since 1987, served as correspondent of the Economist Intelligence Unit for a decade, and is now a Beijing-based managing director of Dragonomics, an economics research and advisory firm.

Old Beijing and new: traditional homes and encroaching high-rises

EVAN OSNOS '98 is the *New Yorker* correspondent in Beijing.

DEBORAH SELIGSOHN '84, based in Beijing, is principal adviser to the World Resources Institute China Climate and Energy Program.

EDWARD STEINFELD '88, Ph.D. '96, an associate professor in the department of political science at MIT, directs the MIT-China program and is co-director of the China Energy Group. His new book, *Playing Our Game: Why China's Rise Doesn't Threaten the West*, is forthcoming from Oxford.

XIAOFEI TIAN, professor of Chinese literature, specializes in early medieval Chinese literature and cultural history. She has also published on late imperial China and modern Chinese literature and culture.

See harvardmag.com/extras for further background on the participants. Edited excerpts of their discussion follow. A report on the presentations scheduled for the opening of the Harvard Shanghai Center will appear at www.harvardmagazine.com and in a future issue of the magazine.

Balloons—and tightly managed state stagecraft: the sixtieth-anniversary celebration of the People's Republic of China, held last October



MODERATOR: The People's Republic of China today seems a growing giant with powerful economic momentum, unlimited human capital, and apparently unlimited financial resources—that's how it portrayed itself in a very choreographed way for the 2008 Olympics and its sixtieth anniversary celebration in Beijing last October. In many senses, perhaps that image is true. But China also faces significant internal challenges and problems, many of long duration, that have been exacerbated by sweeping changes in the twentieth century and continuing today: the end of the imperial government—although not of the empire—in 1911, war and civil war, revolutionary upheavals, and even the effects of its current growth.

KIRBY: You made the transition between the last dynasty, the Qing, and the era of the several republics. Mark, our Qing historian and scholar of China's borders, might be the logical person to get us going on this.

ELLIOTT: I've just co-taught a course on comparative empire and nation in Russia and China. This notion of "empire" for most of the last several decades has been something of a dirty word.

Part of what China is struggling with today is, in fact, this very problem of *what* it is. Is it the continuation of an empire, a modern nation-state, or something in between? It has inherited a lot of the legacy of the old empire, but at the same time is struggling to reconcile what we expect of nation-states in terms of national or cultural or religious unity—trying to reconcile that with the ethnic and political diversity within its current borders. In a way, it comes down to trying to reconcile the current Chinese state with historical notions of what China is, where China is, who's

Chinese—very complicated and sensitive issues, needless to say.

OSNOS: In answer to the very provocative question of who is Chinese and what constitutes Chineseness, I've been noticing the significant population of foreigners who are settling in China. In Guangzhou today, there are large populations of African migrants who have come simply because it's a better place than where they're from. China is suddenly thrust into the uncomfortable position of being a destination. And that means it has to begin to figure out if there is a philosophical and ultimately an administrative mechanism for incorporating those newcomers into the Chinese identity. The idea of Chineseness itself may be in flux.

STEINFELD: This issue of integrating outsiders is so tied up with empire, I think it may be worth considering the parallels between the Chinese and the American experiences.

Most Americans probably wouldn't view their own country as an empire—although plenty of outsiders do. But if you think about the development of American power over 250 years, we have a story of urbanization, industrial revolution, incorporation (violently or otherwise) of different kinds of minorities and outsiders, political change—all kinds of ugliness and violence, as well as triumph.

While I'm not a fan of crude comparisons, I think it's fair to say that the Chinese experience has all these elements—industrial revolution and demographic revolution, urbanization, political change and political revolution—but condensed in some respects into a period of 20 or 25 years. It's empire and revolution on "speed"—along with globalization at the same time and, compounding a lot of these factors, technological change. To

me, that's what is so spellbinding and head-spinning about this place.

TIAN: But there's one interesting difference from the American experience. Can those African immigrants get Chinese citizenship? Would they be treated as African-Chinese, or Chinese-African in some ways?

In recent years, these forces of globalization are pushing China even more strongly to look for the Chinese identity. I taught a course a few years ago called "Being Chinese." A lot of students—Asians, Chinese Americans, but also, increasingly, undergraduates coming directly from Chinese high schools—are very curious and eager to find out what being "Chinese" means. It is a question that had no meaning before the nineteenth century. Now they think about this very intensely exactly because of the forces of globalization. They're encountering a lot of foreigners now, and that makes them even more intensely aware of being Chinese—and then they start asking, "What does this mean?"

STEINFELD: You were asking whether an African immigrant could ever be Chinese. I was wondering, can a Tibetan really ever be Chinese, or a Chinese citizen? Can a Uighur? But I also ask myself, are Native Americans truly American citizens? Today, yes, they're American citizens, but are they truly Americans, as many of us think of Americans?

These are challenges that China, as you say, hasn't resolved.

ELLIOTT: There was a story recently about a young Uighur fellow who was traveling in Manchuria, in northeast China. He couldn't get a hotel room, because he was assumed to be a foreigner. And then when it was understood that he was a Uighur, that was even worse. He basically ended up down at the public security office, pleading to be treated like any other citizen. This is the point at which the system is still inadequate to meet the needs of people who find their place in Chinese society challenged in that way.

Non-Han people in general find themselves face to face with a default Han identity that is similar in some ways to the default white identity that historically has defined what it means to be American.

SELIGSOHN: Even though it has minorities, China is essentially an ethnically based country, whereas the United States is not. The contemporary European experience in absorbing immigrants probably indicates some of the continuing challenges that China will have over many decades in trying to deal with this.

We also have to remember that *citizenship* does not necessarily imply *equality*. The Chinese have legally established that the Tibetans and the Uighurs are citizens. They just aren't treated very equally.

KIRBY: When Peter Bol [Carswell professor of East Asian languages and civilizations] and I teach the "Rice Paddies" course [Historical Study A-13, "China: Traditions and Transformations"], we start with a question, "What is China?" And we pose this argument: China is a great and ancient *civilization*, but it in fact is a very new *country*—there was no state formally called "China" before 1911. As late as 1934, in a survey done outside of the capital city of Nanjing, people were asked the name of their country. Almost no one gave the official name, *Zhonghua Minguo* ["Republic of China"]. Some said *Zhongguo* ["China"]. A majority said simply, *Daguo* ["big country"]. Today, I think almost everyone around Nanjing would know both the official and generic name of their country. Their conceptions of citizenship have evolved

from being (vaguely) subjects of a great, multinational, multicultural empire under the Qing and even the early republic—which was, at least by its flag, a state of multiple, equal ethnicities—to the situation today, in which everyone is a *Zhongguo ren*—that is, everyone is "Chinese," as a citizen of the People's Republic of China—whether they're Han or Uighur or Tibetan or Mongol.

Yet at the same time, you still have President Hu Jintao talking, as he did at the sixtieth anniversary, about the recovery, or *fu xing*, of the "great race" of the "Chinese" people, by which I'm sure he doesn't actually mean Uighurs.

KROEBER: Even among Chinese citizens, so many of the 100 million or 150 million migrant workers who've moved from the countryside are unable to participate in the full range of urban life, because they work in an export factory, they live in the company dormitory—and they aren't allowed to have a residence permit in the city that enables them to bring their family in and take advantage of schooling and other social services. They're second-class citizens. China really has two classes—urban citizens and rural citizens—and they live very different lives.

What Kind of Politics?

KROEBER: I wonder if I could turn the conversation a few degrees, to talk about a problem in terms of China's political development—which is also a problem in the conversation between China and people in other countries *about* China's political development.

Someone alluded to the anxiety felt outside China by its emergence as this large force. One way this anxiety gets expressed is in the dialogue about political reform or political repression and human rights. This is a conversation that I find increasingly difficult to have even *within* China. There are lots of highly educated people in Chinese cities who may not be happy with specific things the government does, or in general terms with a lot of aspects of the government. But they're probably *more* unhappy with foreigners talking as if there is a single right way to organize a polity, and that China is falling short of some universal ideal.

In every country that has emerged from the European tradition, there is a very strong intellectual history of talking about politics—meaning negotiations among different interest groups within a society, all of which are assumed to be equally valid.

The main discourse in China is not about *politics*, but about *governance*. The crucial issue is not negotiations among autonomous interest groups—because the state is seen as an absolute sovereign over *all* interest groups, rather than being itself a compromise *among* interest groups. Instead, the key issue is the responsibility of the people sitting atop the state structure to ensure the country is governed justly.

Clearly, the fundamental issue today is that we've had tremendous economic development and the creation almost overnight of what on the surface seems a very modern society. But although there have been substantial modifications in the mechanisms and procedures of Communist Party rule, the political system has not developed commensurate with the degree of economic development.

Somehow, China is going to have to figure out over the next few decades what kind of political system it wants. One big difficulty is that most of the vocabulary for talking about political systems has been developed in the West, and that vocabulary is

quite alien and arguably not relevant to most Chinese people's experience. It's going to be hard to create a successful polity in China based purely on those imported concepts. You're going to need to take advantage of the Chinese intellectual tradition of discussing what makes a just government.

But unless you're at the *Zhongyang Dangxiao*, the Central Party School, where the Communist Party trains its leaders, you're not allowed to talk about these things in any public way.

That's the internal problem. The external problem is that Westerners who frame everything in terms of politics tend to argue that improvements in governance—which are real and important—are meaningless because they haven't been accompanied by political reform. And many Chinese resent that.

TIAN: I absolutely agree. I think political system reform is very important for China's future. I'm Beijing University class of 1989, and I was there in the student movement at Tiananmen Square—it's been 20 years now. I keep thinking about what people wanted at the time: democracy and reform in the political system. Now increasingly I feel that education is the key—not overnight revolution but a long-term thing that can actually help China change. China cannot change or reform its political system if its citizens, the people, do not reform China itself. If the ideas come from outside, you will meet a lot of resistance.

It will be very hard to achieve reform—especially when the Chinese government is rather successful in instilling a lot of nationalism and nationalistic patriotism in its citizens, from primary and secondary education all the way through the test-oriented higher-education system. There has been a lot of *aiguo zhuyi jiaoyu* [“education in patriotism”], coupled with this anxiety about Chinese identity that we were discussing. So I think the one thing the Chinese government wants to try to get across is this idea of being a *Zhongguo ren*, literally, “a person of China”—that is, not being a Han Chinese in terms of ethnicity, but rather being a Chinese person in terms of national identity.

The government controls a huge amount of money and resources. As long as the ministry of education and the state planning committee control the educational system, it's very hard for other opinions and ideas to get into the younger generation. They have become increasingly nationalistic, buying into all this stuff they've been getting from their teachers and from radio, TV, and the Internet—everywhere. It's very different from the 1980s, which was much more liberal, open-minded, and tolerant of foreign things. Now I feel China is becoming more closed up, in the sense that it becomes more self-absorbed. It's kind of a regression, compared with the huge economic leap forward.

SELIGSOHN: I think those comments make sense to people who know China well, but they can be widely misunderstood by others. When I started teaching in Beijing in 1984, there was a lot more control. There were still neighborhood committee peo-

ple checking in when a foreigner visited. It was at the end of the “spiritual pollution” campaign, and people were getting arrested for simply talking to a foreigner in a train station.

That kind of petty interference in personal life has not happened since 1992 [when Deng Xiaoping's *Nanxun*, or “Southern Tour,” promoted trade-led economic growth, overcoming conservative objections to market-oriented reforms]. So in that sense, people are much freer than they used to be.

But in the '80s there was a discourse about whether the way to reform was political or economic. So people felt equally free talking about politics and economics—and equally unfree in both areas. It was *not* so simple to talk about banking and getting rich. That was really politically risky, whereas by the mid '90s, of course,...

ELLIOTT: You could have those conversations in a restaurant.

SELIGSOHN: Yes, very easily. So there is this complexity about having the conversation about degrees of control within China versus outside China. I think it gets misinterpreted all the time.

There are ways in which the central government can control things tremendously effectively. And there are areas where it can't control anything at all.

It is interesting to explore this contrast between *politics* and *governance*, because relative to every other developing country, China has very effective governance. It's *much* more able to implement policies.

TIAN: They've been perfecting bureaucracy for thousands of years.

SELIGSOHN: Right. When I'm trying to figure out what's going on, I find that if you don't think about the political system, but just about the bureaucratic system—and I used to work in the U.S. federal bureaucracy—it's very easy to figure out what's going on, because China's bureaucrats act like bureaucrats anywhere in the world. It's all negotiations between offices, between ministries, rivalries between divisions. If you figure out who's controlling the budget, you have a pretty good idea of who's fighting with whom.

That doesn't imply that China can't control what happens within its borders—it clearly does. But there's clearly a diversity of interests which are mediated in a very bureaucratic system. The degree of control over what happens at the local level varies by topic and by the interest of the central government.

TIAN: I agree. But I just remember, when I was in Shanghai, talking to a friend who is a professor at East China Normal University, whose child is in high school. The child came home and told him the teacher was criticizing the government in class, as a digression. And the next day, the teacher discovered that he had been informed on to the local police by a student in that class. You're right that government control is very varied. But this kind of incident is something to be worried about. It's different from institutionalized control in the form of the local committee supervising the citizens on the street. I find that a student from a very good Shanghai high school informing on the teacher for criticizing the government—and feeling very righteous and very patriotic because they think that any criticism of the government compromises the great enterprise which is China—illustrates the ideological influence that's seeping into people's consciousness and the discourse.

If China keeps closing in—and government is spending so much effort and money and energy on promoting “national learn-

“I feel China is becoming more closed up, more self-absorbed. It's kind of a regression, compared with the huge economic leap forward.”

ing” and Confucianism—basically, no diversity there—I’m very concerned about the attempt to make it monolithic, despite all the diversity among the populace and on the local and regional levels.

Nationalism and Internationalism

KIRBY: Xiaofei, the question that you raised implicitly is really about the strength and capacity of the government and the security or insecurity of the regime. Here we have a regime that, as Debbie said, is really much more effective in governance than that of virtually any other developing country. It has enormous capacity to get things done. Look at the infrastructure: the new highways, the magnificent airports, and the enormous growth of universities—there isn’t a major university in China that hasn’t added one or two new campuses in the last 15 years—that is, in the same time period that Harvard acquired, and built nothing, in Allston. In this regard, visiting China can be a humbling experience. One sees a government that is of course incredibly bureaucratic, but perhaps more effective because it’s a bureaucracy of *engineers*, as opposed to a bureaucracy of *lawyers*, which is what we have.

So you have this country in which, in terms of infrastructure and economic development, things appear to be going remarkably well—particularly in a year of global economic meltdown.

But at the same time, at least from an external perspective, the celebration around the sixtieth anniversary was marked at least as much by anxiety and insecurity as it was by pride of accomplishment. And often enough when China may appear to be prideful and “arrogant,” which is how the U.S. press portrayed the situation during President Obama’s visit in November, we might also see the Chinese actions in terms of government insecurity in a rapidly changing environment, in and outside of China.

OSNOS: Over the last year, because of the financial crisis, you started to see a strange conjunction as the official narrative about the nation has merged with the facts on the ground. About a year and a half or two years ago, I began to encounter a growing sense among the young elite—young bankers and political scientists—a kind of triumphalist feeling that the Chinese system was thriving despite the efforts of the West to hem it in.

In response to things like the failed effort by a Chinese oil company to buy an American oil company [Unocal, in 2005], that triumphalism reinforced the feeling that China’s only philosophical refuge was nationalism—that the only place they could really be strong was if they rallied around the flag. That’s only been confirmed by the events of the last 18 months, because you find this belief that China had participated in the global financial system that was defined by Washington, and to the degree that it did so, it was vulnerable.

STEINFELD: It’s worth thinking about governance in two ways that aren’t necessarily related. One is, governance as the ability to *deliver stuff*. Increasingly in China, many people are impressed by the ability of their government to deliver stuff—as Bill said, infrastructure, technology, all kinds of things.

But then there’s also governance as *process*, involving issues like inclusion: Who’s included? Who’s not? What are the procedures? What’s the level of participation?

We might look at the healthcare debate in the United States and say the governance is a mess: we’re not really delivering anything. But on the other hand, we’re seeing good governance:

Chongqing: the urban-rural interface in a burgeoning city in central China



there’s a lot of inclusion; everybody’s lobbying; every voter is writing in.

In China, governance in the sense of the capacity to deliver stuff has gone way up. But governance in terms of inclusion has lagged.

We have no idea how those two kinds of governance truly interact over time in any country, just as we don’t really have any idea how economics and politics really interact over long periods of time: whether economic change really drives political change, or vice versa.

So I’m rather cautious about drawing conclusions about where China is and whether there really is a gap between politics and economics. Arthur’s characterization of China as having had this economic leap forward (pardon the term), without a commensurate political change, makes sense to me. But had I been there, I probably would have described Korea in the 1970s, and Taiwan in the 1970s under the Kuomintang, as fitting that description. And I also would have said then that *they* certainly didn’t have the public space or the terminology to debate issues of politics in either place. But both of those places are now vibrant democracies.

On so many dimensions, socially and economically, China seems to be marching down a road that looks somewhat similar to what its immediate neighbors have done. Whether the politics is truly lagging, I’m not sure we’ll be able to say that in 20 or 30 years.

KROEBER: I think that’s true in one sense, but there are a couple of key differences. One is just size. China is *enormous*—the sheer size of the country and duration of the civilization make it a different thing. And geopolitically, China is an independent actor, whereas South Korea and Taiwan were essentially vassal states of the United States. Size complicates the development process by stretching it out and embedding large inequalities for longer. And the stakes are higher because China is an independent geopolitical actor.

ELLIOTT: I agree that the big debate on what kind of a country the Chinese people want hasn’t really happened yet. There

are places where it's happening, but these are not public debates. They're not carried out in newspapers or on television, or even openly in films.

The unresolved question, of course, is, What is going to replace Communism? You see *none* of the sorts of political "lines" that you used to see even in the mid 1980s—stock references to the proletariat and capitalism. Everybody seems to be willing to just look the other way, to put off the debate about what kind of political society is going to shape the country going forward.

In the meantime, nationalism is a ready-made solution. It fills the gap. But it is a very slippery thing for the party to try to control, not least because of its many different meanings—getting back to what we said before about what it means to be Chinese. Does it mean being a citizen of the People's Republic of China? Does it mean that you're Han? How are you going to buy in? People could buy into Communism regardless of who they were, but that's not so easy for people to do today. Debbie made the point that China is an ethnically based state. Demographically, certainly, it's more homogeneous than a lot of states. But in terms of geopolitics, half the country is not Chinese, if by "Chinese" we mean territory historically occupied by the Han.

One other point, about what Ed was saying about changes in Korea or in Taiwan. The Chinese political tradition is extremely rich, and there's no shortage of examples of politics of negotiation—even if the idea of a "loyal opposition" is weak. But the lack of opportunity to sort through the past in an unfettered way, without fear of retribution, really hampers the efforts by a lot of very talented, well-meaning people to try to sort out what system will work in a country that really is a continent.

After all, China is like Europe. China's *not* like France, it's *not* like Germany. It's like *all* of Europe in terms of most scales that we want to think about. And no experiment on that scale has succeeded yet. We're seeing efforts to create a unified Europe now, but think of all the blood that was spilled on the way. The task that lies ahead is not easy—and it's not made any easier by the fact that people can't talk freely and openly about the challenges they face.

STEINFELD: It's understandable that many Chinese citizens today have tied up their identity with China's whole developmental process. Lately it's been a successful process, and you could trace back that identity with modernization and development to the May 4th Movement [early in the twentieth century], and even earlier. So that kind of wrapping oneself up with a national mission, a modernization mission, isn't unique. It's understandable, and not necessarily offensive.

There's a different kind of nationalism, though, that we've associated historically with other places—Japan and Germany prior to the Second World War—with tying up the individual to a sense of national or countrywide victimhood, and a sense of having to right the wrongs of this victimhood by tearing apart the rules and making new ones. Certainly everyone around the table has heard or seen aspects of that nasty nationalism in China.

But I've heard a lot more of the sort of patriotism that involves wrapping up the individual with China's developmental mission. When I see China trying to exert itself nationally, or insert itself on the world stage, I think it's that desire to be at the table, to participate, as often as it's that kind of elbows-out, righting-the-wrongs-of-the-past kind of offensive nationalism.

In other words, I think in many of these instances, Chinese

citizens like their government. They want to be at the table. And that's a relatively progressive development, because basically it's *our* table.

SELIGSOHN: Well, they want to be at a table that sets the developmental mission for themselves and the world, which is positive. They also want to *reset* the table.

STEINFELD: I don't think it's a wonderful situation, but it's a lot better than it could have been. And in many ways, it's a situation that many people in the United States have wanted for decades.

KIRBY: One of the most consistent and professional ministries in post-imperial China, but also dating back to the late Qing, is the *Waijiaobu*, the foreign ministry. It has pursued a very broadly consistent set of policies designed to promote China's national interests, which start with the defense of the borders inherited from the Qing. If you look at China's involvement in the League of Nations, and in the United Nations today, and in many global bodies, it has been one of the most responsible parties. It has interests everywhere, and needs to be taken seriously on every matter of importance. Its interests have also been consistently *limited*, with very little of the adventurism that has marked recent American foreign policy, or at times that of the former Soviet Union.

KROEBER: Will that continue to be the case, though, with China's vastly increased international engagement, in terms of both trade and investment? Because the reality is that China hasn't *had* to be adventurous before, because they had no overseas investments. We are just at the very beginning.

KIRBY: That's a real question to watch. If you look at China's combining of foreign policy, investment, and energy decisions in Africa, there is much to complain about, or to criticize. But at present it doesn't come close to matching recent decades of American interventionism, when foreign policy, energy needs, and military capacity have come together to redefine—not always for the better—the American role in the world.

KROEBER: You can't compare China now to the United States now, after the U.S. has had 100 or more years of doing this. China is more or less where the United States might have been in 1890 in terms of its international profile.

KIRBY: Or maybe the 1950s, in terms of propping up shahs and so on.

SELIGSOHN: It does suggest that the United States and other foreign powers ought to be focusing on the positive side of Chinese internationalism, because China wants a seat at the table. Being part of writing the rules for the next 50 or 100 years is going to make it more likely that they continue to have a non-adventurous approach overseas—if they feel comfortable with those rules, if they feel that they're being treated fairly. There is a self-perception in China that they don't interfere in foreign states, that they're fairly conservative, that they look out for long-term economic interests. Those are positive self-perceptions to encourage.

KROEBER: Right. But it's also fair to point out that most Americans have exactly that same set of perceptions—and the rest of the world would see those American perceptions as self-delusions.

Polling data from the Pew Global Attitudes Project support this. If you ask Chinese citizens how they feel about their role in the world, and whether people like them, they say, "Everyone likes us." But if you go everywhere else and ask, "Do you like the

Shanghai: the Pudong International Container Terminals, a tangible sign of China's export prowess



Chinese?” the answer is, “No, not really,” or “We’re suspicious, we’re concerned.”

So, as Ed said earlier, there are similarities between the United States and China. They’re both big countries.

TIAN: They both think that they’re the center of the universe.

KROEBER: They both think they’re the center of the universe. They think they’re benevolent, and everyone likes them because they have a good sense of humor and so forth. But sitting at this table, we have some doubts.

TIAN: It’s nice that China is sitting at the table. I think it’s crucial to note that China always feels *misunderstood*. Every Chinese visiting scholar or student I talk to always says, “We have a great civilization, a great history, a great culture. We’re just always misunderstood by the entire world.” There are grains of truth to that. But conversely, I don’t think China has been making huge efforts to understand the world.

Growth and Legitimacy

MODERATOR: Whatever the political system turns out to be, whatever internal factors affect China’s external position, let’s talk about what some of the stakes are in China. This is a country that has had tremendous growth in the last 30 years, physical transformation, internal migration and urbanization that are off the scale, and changes in family relationships with the one-child policy and people leaving ancestral homes for cities. Along with the growth has come significant economic inequality, which ran against the grain of the ideology when the growth started. That’s a lot for the society to absorb, along with the introduction

of technology, exposure to the rest of the world, the end of state and company social supports in terms of housing and the “iron rice bowl” of economic security, more pollution, and a rapidly aging population.

Other than their daily lives and getting richer, what are the issues that the Chinese people care about, that the government cares about, and what are they doing about them?

OSNOS: That brings me back to the Pew poll. The most interesting finding is not the satisfaction level in China, or what China thinks the rest of the world thinks of China, but rather the *gaps* between the perceptions at home and the perceptions abroad. When those gaps are exposed, as they inevitably are, you get pivot points and very dramatic moments.

For instance, the average person on the street in China believes the image of the country abroad is as a friendly, benign figure in the world. In the spring of 2008, in the run-up to the Olympics, around the time of the uprisings in Tibet, it was shown to them that that was not the case—or at least that the image of China abroad was much more complex. It was in that gap that you saw this enormous energy released, in that space between reality and perception [as Chinese spontaneously assailed foreign critics of the government’s use of force in Tibet].

You can see a similar effect in the polling data on overall satisfaction with the government and the quality of life. Among the Chinese population, the satisfaction “with the direction their government is taking them,” or “the direction the country is taking,” is always very high—somewhere around 70 or 80 percent. In the United States, we’re way down in the 30s.

That looks reassuring for China's government—like they have a deep well of support that they're heading in the right direction. But that in some ways masks a very brittle sense of satisfaction—and I think the government knows that very clearly. That satisfaction is predicated on economic growth. If you lose that growth, you really start to see the gap between that number and what may be the deeper feelings of insecurity below.

SELIGSOHN: The Chinese government knows its legitimacy is fairly heavily wrapped up in continuing to deliver prosperity. One problem is that the way people mainly feel prosperity is through job creation and job opportunity. But that's not what the government measures. They look at the straight Gross Domestic Product numbers, not at the types of economic activity that would yield more jobs. They would do better if their economic programs were better designed to look directly at job creation. That's the same as saying they need to rebalance the economy, moving away from this heavy-industry focus toward more services and a more diversified economy, where there are more jobs per unit of GDP.

One of the big challenges is that they *do* need to continue to generate jobs, of ever higher quality. They've done this incredible job of increasing higher education, as Bill noted, but now the marginal graduates of secondary colleges and universities are having a tough time finding jobs. That may not be a macroeconomic problem, but it is a political-stability problem.

And the structure of the economy is also their largest environmental challenge, because if they can shift away from overemphasis on heavy industry, they will also have a cleaner economic structure. They've done a fairly good job in terms of doing something serious about air-pollution abatement. They have a long way to go on water pollution—their largest single environmental challenge in terms of human health.

The Heavy-Industry Economy

MODERATOR: Americans looking at China's compound 8 or 9 percent growth may not understand the job-creation problem, or why it isn't trivial to "rebalance" the world economy by saying the Chinese should consume more while we consume less. How does that economy work?

KROEBER: The Chinese economy has expanded at a rate of about 10 percent a year since 1980. It's very impressive. But China's experience is not that different from that of other East Asian economies. It's roughly comparable to the expansion of Japan after World War II. The difference is that China is just so much bigger that the process lasts longer, and the number of people involved is much greater.

The process in China, as in Japan, Korea, and all of these successful East Asian economies, was driven partly by demographics. There was a big fall in the birth rate—it began well before the one-child policy. When you have a sharp fall in the birth rate in an agrarian society, you get a big increase in national saving. And if you have a banking system controlled or heavily directed by the state, those national savings can be assembled and funneled into industrial development and infrastructure. Germany pioneered that model in the late nineteenth century. The East Asian countries have done the same thing since World War II.

This is a very successful model, but at a certain point, you need to move beyond it and get a more diversified economy. All the evidence we have suggests this is a long, slow, and difficult process. It's not like flipping a switch saying, "Yesterday it was exports and investment—tomorrow it will be consumption."

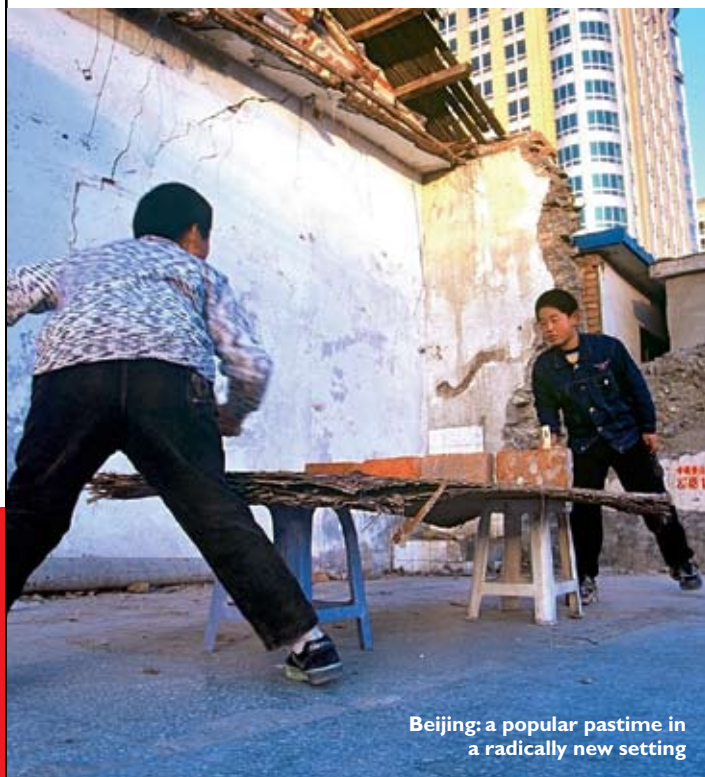
You need a mechanism to create more diversified growth. Over time, capital has to be made more pricey so you are much more careful about how you invest it. And to achieve that, you have to construct a modern financial sector. That means creating stock markets, bond markets, reforming the banks, and so forth. That's a very complicated process—it will take at least 10 years.

Touching on some broader social issues, this development process is really about transforming a society that was basically rural and agricultural. As late as 1980, 80 percent of the Chinese population lived in the countryside and was involved in agricultural activity. Today that proportion is down to approximately 50 percent. And by 2030, only about 30 percent of the population will be rural and 70 percent will be urban.

But as I said earlier, to create a more diversified economy, you have to create *real* urbanization, with those millions of migrants becoming urban citizens who can bring their families in and start to consume services at an urban level. That's one of the key challenges that unlocks not only economic development, but also creates a healthier society and a healthier political environment.

MODERATOR: In the meantime, the government is very vulnerable if it has to keep people employed as the world economy falters, given the long, difficult transition you outlined to effect structural change.

STEINFELD: I agree with Arthur's extraordinary description of what's going on. It's probably easy for many present-day Americans to think of modernization in any country, at least in the abstract, as a benevolent process, where all the beneficiaries get rich at the end. But modernization in reality has always been an incredibly brutal process. It's deracinating. It crushes a rural lifestyle. It enriches people, but also yanks them out from their



roots. It often involves all kinds of hierarchy and oppression and nastiness.

In China, we've seen analogs to all of that. On one hand, there's this sense of Chinese triumphalism. On the other, there's also a sense of a government that's barely holding on, or barely trying to fight all the different fires that erupt through this modernization process—social tension, labor abuses, environmental destruction and degradation.

And all the while, the government, and the people themselves, are ratcheting up expectations of what their lives should be like. Increasingly, they feel their lives should be like those of Europeans or Americans. Should even those relatively modest goals be met, that will have—is already having—incredibly potent effects on the global economy, environment, institutions, and resources. Even in the best of all cases, this is a truly Earth-changing, very turbulent, very unpredictable process.

Adaptation and Managing Modernization

MODERATOR: When the economic limits were taken off 30 years ago, did anybody imagine that there would be hundred-story buildings in Shanghai and subway lines and cars everywhere? The process feels almost experimental. Is that a fair characterization?

KIRBY: I would disagree, in the sense that the broad process of Chinese modernization goes back well before the People's Republic. We finally see the vision of Sun Yat-sen in the 1920s—the internationalization of China with foreign as well as Chinese capital—being realized, and we see the dream of Chinese engineers to physically reshape the Chinese landscape being fulfilled.

This modernizing effort has now been successful under a political system that is, or is seen to be, responsible for *everything*. It can work as well as it has in the last 20 or 30 years because it has had remarkably good leadership, by and large. The political system is so centralized in certain areas that when it has good leadership, it can be remarkably effective. When it has catastrophic leadership, as in the era of Mao Zedong, it can be remarkably disastrous, even criminal. When things go wrong in the United States, it isn't always the government's fault. But when things go wrong in China, it's *somebody's* fault—usually local or provincial government, rather than central. But the government is responsible at the end of the day for almost everything.

STEINFELD: That's such a great point. But precisely because the government is ostensibly responsible for everything, that has given it an incentive recently to hive off certain things to civil society. Whether it's rural elections, or tolerance for organizations of homeowners or apartment owners in cities, this does represent an effort to shift responsibility to other parties. I think that's a good development. It's a back-door way toward, if not democratization, at least pluralization of the system.

SELIGSOHN: I would agree that there's this grand, long-term vision. Even the Three Gorges Dam was originally suggested by Sun Yat-sen, before they had the technology to build it.

But China has also been remarkably good at using pilot projects and pilot cities to speed its modernization. It is able to try laws out in one city or one location. The current enforcement of air-pollution laws basically started with some experiments in Shanghai that the central government then picked up. Rural health insurance started out as experiments in Panyu and a few other counties.

It's difficult in most political systems to say, "You're going to be

"Modernization in reality has always been an incredibly brutal process. It's deracinating. It crushes a rural lifestyle. It enriches people, but also yanks them out from their roots."

able to try this first, and nobody else will get to benefit until later." Yet in China, that's very easy to do. It doesn't matter whether it's electric vehicles or higher education—you try it somewhere, you see if it works. You allow multiple experiments in different places, and then the central government picks the ones that it actually wants to promote elsewhere. This does lead to somewhat uneven development throughout the country, but it's part of the reason China has been able to move quickly, for a developing country, in experimenting with new programs.

OSNOS: One area worth checking to see how much actually is going according to plan is a whole range of international issues, where China has moved faster and has become more important than even it was prepared for. You see that not only its incredibly complex relationships in Africa, but in Iran, for example. I'll oversimplify. So far, China's position in dealing with Iran has been that it will intervene as little as it is possible. That is unlikely to change unless its position begins to harm its standing in the world. If you talk to people in Beijing who are looking at Iran policy, they'll basically say that China is going to wait as long as it can before it takes a really bold position.

What we're seeing is this gap between China's *prominence* and its *leadership*. That's important, because we don't know when and how it's going to take up that leadership. I don't like to use the term popular under the Bush administration, "responsible stakeholder," but on some level, we are waiting for China's moral presence to catch up with its physical presence.

KIRBY: If you take the longer historical view, it was self-understood that "China"—or more accurately the Tang, Song, Yuan, Ming, and Qing empires—would have a kind of moral presence as part of what we would today call their foreign policy. For these empires were responsible for "civilization" and the promotion of moral values within and beyond their borders, across East Asia.

This is possibly one of the reasons why you see a groping for some moral footing in international affairs, because you have a system that has lost its moral footing. With the demise of Marxism, what is there to *do* as a Chinese Communist party? And communism was but the last of a series of experiments in the twentieth century to find some "modern" system to take the place of the ancient, imperial tradition—a tradition that is gone, but not yet replaced. You don't have a sense of what this country in fact *stands* for, if it is to, as Americans like to say, stand for something.

ELLIOTT: On one level, what China stands for is a unified China. If the government's legitimacy rests on one thing, it's on the ability to reunify the country in the late 1940s after half a century of disunity—which was an undeniably impressive accomplishment—and to be able to sustain that (please turn to page 73)

Nonstop



Today's superhero undergraduates do
"3,000 things at 150 percent."

by Craig Lambert
photographs by Stu Rosner

YOU WAKE UP EACH MORNING with a fever; you feel like a shadow of yourself. But no time for sickness today—the Adams House intramural crew has one of its thrice-weekly practices at 6 A.M., and you... will...row. Some mornings, you watch the sunrise from Lamont Library after hitting your study groove there around 11 the night before and bushwhacking through assignments during the quiet time between 3 A.M. and 5. The rower and late-night scholar is Becky Cooper '10. "Lamont is beautiful at 5 A.M.—my favorite time," she says. "Sunlight streams in." There's plenty to do—Cooper is taking five courses, concentrating in literature but still premed: "I can't close doors."

She writes out her daily schedule to the minute: "Shower, 7:15-7:20." Lunch might be at the Signet Society, the private, arts-oriented, undergraduate club where she is vice-president. She also belongs to the Isis, a female social club, and has held the post of Dionysus at the *Harvard Advocate*, planning social events like the literary quarterly's spring dinner (which she revived) for 70 attendees. Cooper has an omnivorous appetite for learning and experience: new fascinations constantly beckon, and she dives in wholeheartedly. Yet the ceaseless activity leaves little space or time for reflection on who she is or what she wants. "I'm more terrified of being bored than busy," she explains. "Though I'm scared I'll work myself into a pile of dust if I don't learn when to stop."

Cooper has always been super-active. Even in elementary and middle school, she "adopted an intense work ethic" and participated in track, basketball, chorus, a pottery class, and gymnastics. At the "pressure cooker" Stuyvesant High School in Man-

hattan, she put the shot and racewalked for the track squad, and added cheerleading. After track meets and practices on Saturdays, she had a Sunday job as a docent in a science museum. And from seventh grade on, she attended summer camps for gifted students at upstate college campuses.

At Harvard, she has hosted a two-hour weekly jazz show on WHRB, and as a freshman acted in *Ivory Tower*, the long-running Harvard TV soap opera viewable on YouTube. (Last summer, she also acted in an independent film shot by a friend in Miami, learning American Sign Language for the part.) In the summer of 2007, Cooper tasted some ravishing *ravioli di zucca* (pumpkin)—"I was in heaven"—and determined to learn Italian and cook in Italy. As a sophomore, she got a job with Harvard University Dining Services, working with their consultant, cookbook author Mollie Katzen, and the next summer, after two months in Paris with the *International Herald Tribune*, was baking in Italy as a pastry chef and speaking only Italian.

As a *Crimson* staffer, Cooper wrote a food column every other week for the arts section. Frequently, her classes and meetings ran from 8 A.M. until 11 P.M., when she went over her column, line by line, with another *Crimson* editor. She returned to college this spring after taking the fall term off to continue a summer job assisting *New Yorker* staff writer Adam Gopnik. "It's exhausting—here now, where next?—continually hopping from one thing to another," she says. "You never let yourself rest. Harvard kids don't want to do 5,000 things at 97 percent; they'd rather do 3,000 things at 150 percent."

There's no irony intended: "That's the standard operating proce-



Late at night, Harvard Crimson staffers put to bed the last issue before winter break.

ture,” Cooper explains. “College here is like daring yourself to swim the length of a swimming pool without breathing. A lap is a semester. I want to do everything I possibly can.” She works on a 28-hour day, she says: some days sleeping 10 hours, others, two. She can describe different levels of exhaustion. One level, she explains, is a “goofy feeling, like feeling drunk all the time; you’re not quite sure what’s going on. Then there’s this extra level of exhaustion, where you feel dead behind your eyes. The last four weeks, that’s where I’ve been. I get sick a lot.”

~Keeping Up with the Einsteins~

AMAZINGLY ENOUGH, Cooper is not unusual at Harvard College. Students today routinely sprint through jam-packed daily schedules, tackling big servings of academic work plus giant helpings of extracurricular activity in a frenetic tizzy of commitments. They gaze at their Blackberries (nicknamed “Crackberries” for their addictive pull) throughout the day to field the digital traffic: e-mail and text messages, phone calls, Web access, and their calendars. Going or gone are late-night bull sessions with roommates and leisurely two-hour lunches—phone calls and texting punctuate meals, anyway.

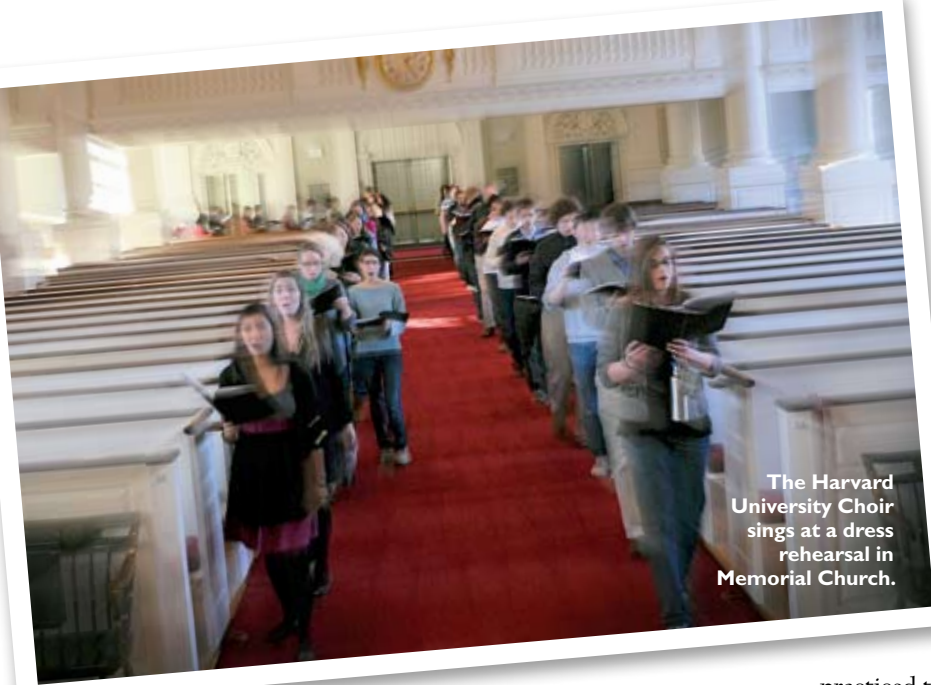
“They are unbelievably achieving,” says Judith H. Kidd, formerly associate dean for student life and activities, who retired from Harvard last year. “They are always on. They *prefer* to be busy all the time, and multitask in ways I could not imagine. Students will sign up for three or four activities and take one of them up to practically NGO level. They were organizing international conferences.”

There’s a wide consensus that today’s undergraduates

make up the most talented, accomplished group of polymaths ever assembled in Harvard Yard: there’s nothing surprising about meeting a first-chair cellist in the Harvard-Radcliffe Orchestra who is also a formidable racer for the cycling club, or a student doing original research on interstellar dark matter who organized a relief effort in sub-Saharan Africa. “You could say it’s a high-end problem,” says dean of admissions Bill Fitzsimmons ’67, Ed.D. ’71, “but one of the dilemmas for the kind of multitasking people who come to places like Harvard is that they could do almost anything. And *especially* if that’s true, you need to think hard about what it is you *really* value, which direction is right for you.”

The paradox is that students now live in such a blur of activity that idle moments for such introspection are vanishing. The French film director Jean Renoir once declared, “The foundation of all civilization is loitering,” saluting those unstructured chunks of time that give rise to creative ideas. If Renoir is right, and if Harvard students are among the leaders of the future, then civilization is on the precipice: loitering is fast becoming a lost art. And if the tornado of achievement that whirls through Cambridge has its obvious rewards, there are, as with most tornadoes, downsides.

Sleep deprivation, for example: varsity athletes, representing about 20 percent of undergraduates, seem to be the only sizable student category to sleep and rise at roughly conventional hours, according to Harry Lewis ’68, Ph.D. ’74, McKay professor of computer science and former dean of Harvard College. At



The Harvard University Choir sings at a dress rehearsal in Memorial Church.

Becky Cooper's high school, the standing joke was: "Friends, grades, sleep: you only get two." Sleep was nearly always the odd one out. Cooper attributes her own frequent low-level infections and colds to exhaustion. Undergraduates tend to push themselves relentlessly and to disbelieve physical limits. "Harvard kids," Cooper says, "think of themselves as superheroes."

New technologies vastly enlarge the game of keeping up with the Einsteins. "If you aren't on Facebook, you feel guilty, you feel like you're being a bad citizen, or worse, that you are out of it," says Hobbs professor of cognition and education Howard Gardner '65, Ph.D. '71, who studies excellence in the realm of work. "One thing we discovered in our research is that kids look up people whom they don't know on Facebook, because they want to see how much they're achieving. If you're on the *Crimson*, but someone else is on the *Crimson* and the swimming team, well, then...."

The explosion of busyness has occurred not in academics (most students still take four courses a semester), but largely in extracurricular activities. "Extracurriculars are now as important as coursework," says Gardner. "I wouldn't have said that 40 years ago." The number of student organizations grew almost sevenfold from 1960 to 2007-08, skyrocketing from 60 groups to 416, although undergraduate enrollment grew only about 10 percent, from about 6,000 to 6,655. In recent years, the College has added an average of 40 to 50 new student groups annually (though about half don't endure), says David Friedrich, M.T.S. '04, assistant dean of Harvard College for

student life. In singing, for example, there are now 19 small *a cappella* groups at the College; before the Radcliffe Pitches were founded in 1975, the Harvard Krokodiloes were the sole such group on campus.

Does this mean that students are starting new groups to build their résumés, so they can boast of having been the founder or president or editor-in-chief of an organization? Impossible to say.

"Yes, it can often be frenetic and [done] with an eye toward résumés," says Friedrich, "but learning outside the classroom through extracurricular opportunities is a vital part of the undergraduate experience here." And extracurricular experiences may in fact be the strongest preparation for the "real world"; for years, Harvard alumni have achieved notable success in the arts, for example, despite the lack of undergraduate concentrations in the performing arts. Instead, they learned and

practiced their crafts at the highest levels in groups like the Harvard-Radcliffe Dramatic Club, the Harvard Lampoon, the Harvard-Radcliffe Orchestra, and Hasty Pudding Theatricals.

In *Excellence Without a Soul*, his 2006 book on the future of liberal education, Harry Lewis relates a conversation with three of his former students who had launched a highly successful Internet start-up. What in their computer-science educations had contributed to their success, Lewis wanted to know. There was an awkward silence, then one spoke up. "I really loved my computer-science education," he said, "but I could have read books and learned a lot of that on my own. The thing that was really valuable was running the Quincy House Grill." Lewis explains: "He'd had to get people to show up on time, and make sure there was enough hamburger ordered the day before—but not too much, or he'd have to waste it, and that would cut into his profit margin. He took all this stuff and combined it with his technical skills to become a very successful entrepreneur. The way social progress gets made is by learning to work together, and the real place where people can learn to cooperate is in extracurriculars."

"There are so many opportunities here, I don't want to sleep," declares the preternaturally busy Will Guzik '11. "I want to soak it all in and make the most of my four years." Last year he pulled plenty of all-nighters, but this year is "shooting for seven hours a night," usually rising at 9 A.M. for a day of classes, going to meetings for activities in the evening, and studying in the Quincy House library (open all night) or the dining hall until 2 or 3 A.M. "The man who cleans the dining hall knows me well," he says, grinning.

Guzick rooms in a centrifugal Quincy House suite with four other driven young men who found themselves together (and awake) only twice during the fall term: once on Guzik's birthday, and one night when they fortuitously encountered each other in the dining hall "and decided to take a picture to commemorate the occasion."

Guzick juggles an astonishing array of commitments in addition to five courses for his economics concentration with a secondary field of statistics. He played varsity tennis his first two years, but dropped that 20-to-25-hours-per-week commitment to clear time for other activities. These include the Leadership Institute at Harvard College, which aims to promote

"You don't have time to dedicate to your friends or to yourself—or to thoughts that you haven't been taught to think."

leadership on campus; work as a research assistant to a Business School professor, a grader for an Extension School finance course, and as a campus representative for a GMAT tutoring business; the Harvard Undergraduate Economics Association; running (he runs 10 to 15 five-kilometer races per year); working at the Banco Credito del Peru in Lima for four weeks this January; and serving as a peer adviser for nine freshmen and as a drug-and-alcohol peer adviser (he is trying to launch a Friday-night movie series at the Science Center as an alternative to intoxicants). Guzick is also working to organize a series of conferences on French, Italian, and Spanish at Harvard and other colleges because "We don't have a system of language learning outside the classrooms."

He's applying to the Harvard Business School's new 2 + 2 program for college juniors, which would assure him entry into its two-year M.B.A. program after he's worked for two years beyond college. Regarding on-campus leadership positions, he says, "From a résumé perspective, yes, you have to have them. From a personal standpoint, they prepare you very well for staying on top of things in the business world."

The pace of that preparation, though, can be frantic. "People are going nonstop," says Olivia Goldhill '11, a philosophy concentrator from England, "and there are a lot of negative implications. You don't have time to dedicate to your friends or to yourself—or to thoughts that you haven't been taught to think." Goldhill, educated at London's venerable Westminster School, where discussion and debate are the warp and weft of the school day, marvels that, at Harvard, "there are so few intellectual discussions outside of classes. I try to take at least an hour for lunch with friends. There are days, though, that even when you want to go and hang out, everyone else is in their nonstop mode."

An aspiring journalist, Goldhill herself writes opinion columns for the *Crimson*; she also volunteers for the Phillips Brooks House Association, tutoring female ex-prisoners for their GEDs and in job skills. But she believes, too, that "People need to have hobbies, not just extracurriculars—things they do for themselves." (Her own hobbies include reading fiction and plays, going to the theater, and meditation.) "Many have such busy lives building up credentials," she says. "A lot of extracurriculars are résumé builders, and you sit in these meetings not really doing very much. To me, time with friends is the most important, and to my mind it's a little bit selfish, putting future jobs before relationships."

~Cradle to Goldman Sachs~

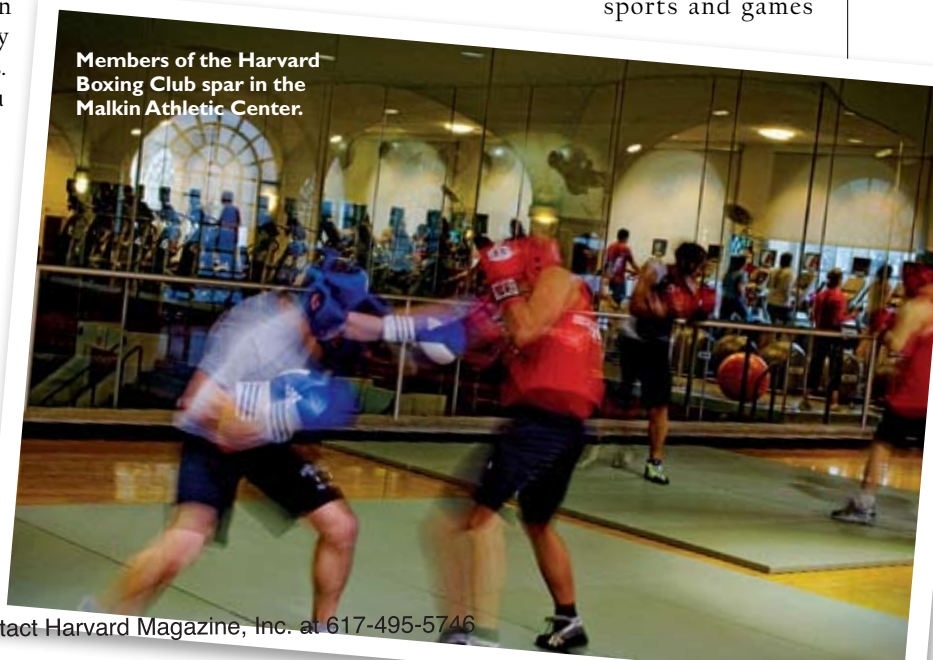
"STUDENTS ARE VERY CONSCIOUS of what it will take to get into graduate school or to get a job," says dean of freshmen Tom Dingman '67, Ed.M. '73. "I regularly have conversations with freshmen who say things like, 'This summer, I have a chance to go back to the yacht club where my family has been involved, and I would run the sailing program. But I don't think I should do that. I should be do-

ing an internship in an office somewhere so that *next* summer I can build on that, and maybe ultimately get an internship with Goldman Sachs.' But they're not paying attention to the things they really enjoy, and not seeing the opportunity to develop themselves holistically—it's more strategizing about how best to build a launch pad."

The strategizing starts early; today's parents groom their children for high achievement in ways that set in motion the culture of scheduled lives and nonstop activity. "This is the play-date generation," says Kidd. "There was a time when children came home from school and just played randomly with their friends. Or hung around and got bored, and eventually that would lead you on to something. Kids don't get to do that now. Busy parents book them into things constantly—violin lessons, ballet lessons, swimming teams. The kids get the idea that someone will always be structuring their time for them." Dingman notes that, "Starting at an earlier age, students feel that their free time should be taken up with purposeful activities. There is less stumbling on things you love and that give you fire in your belly, and more being steered toward pursuits—some of which may, in fact, become passions."

For her part, Olivia Goldhill recognizes that "filling time with activities can be almost a distraction, so you don't have to investigate other aspects of life. The reaction to J-term was a good example of people being scared of what they would do if they weren't given some structure by the University" (see "January Reading," January-February, page 52).

Home life has changed in ways that would seem to undercut children's development of autonomy. There was a time when children did their own homework. Now parents routinely "help" them with assignments, making teachers wonder whose work they are really grading. Youngsters formerly played sports and games





Students study for finals at night in Lamont Library, open 24 hours.

"Snowplow parents" determinedly clear a path for their child and shove aside any obstacle they perceive in the way.

with other children on a sandlot or pickup basis, not in leagues organized, coached, and officiated by adults; kids had to learn to settle disputes over rules and calls among themselves, not by referring them to grownup zebras. Once, college applicants typically wrote their own applications, including the essays; today, an army of high-paid consultants, coaches, and editors is available to orchestrate and massage the admissions effort.

Adults have taken charge even of recreation, as in play dates. "When birthdays come along, kids have been entertained by magicians," says Dingman. "Or taken out to Chuck E. Cheese. They are the 'Chuck E. Cheese generation.'" Having had their parents organize play and social activities, many young people now arrive at college expecting the institution to operate similarly, *in loco parentis*. "It's very upsetting to read on [year-end freshman] surveys that people have been spending Friday and Saturday nights doing problem sets, finding it hard to escape from what they characterize as the 'intense pressure' of this place," Dingman adds. "When they identify what they think is lacking, they say, 'You haven't organized other things for us'—things like 'trips to bowling alleys.' When I was in college, it never occurred to me that it was Harvard's responsibility to entertain me." Kidd, too, recalls "complaints from parents that we weren't providing enough social activity."

Indeed, parental engagement even in the lives of college-age children has expanded in ways that would have seemed bizarre in

the recent past. (Some colleges have actually created a "dean of parents" position—whether identified as such or not—to deal with them.) The "helicopter parents" who hover over nearly every choice or action of their offspring have given way to "snowplow parents" who determinedly clear a path for their child and shove aside any obstacle they perceive in the way.

Some of the impetus for this is probably "overcompensation," explains Dingman. "With more and more families having both parents working, there's some guilt, and there's a sense that 'When I can be available to you, I'm going to make all things happen for you.' There's no recognition that by stepping up to clear the path, they're really *handicapping* their sons and daughters, making them unaware that they actually have the capacities to do things themselves." Parental involvement can reach astonishing extremes. One Chicago father received a call from his Harvard-freshman daughter who had taken the subway into Boston and wanted to know whether to go right or left at a downtown intersection. (He supplied the answer.)

Dingman's office writes to families of incoming freshmen, asking how Harvard can welcome and support their progeny, and "Oftentimes, we get from parents a very definitive chart of where that student is going," Dingman says. "We'll hear, 'So-and-so has always wanted to be a doctor and will be a pre-med at Harvard, use the summers to work in labs, go to med school, and begin a career in pediatric medicine.' The parents' letters are expressed

with such *certitude*—it's quite remarkable. This doesn't suggest that the student has much room to explore, or that there's much support for someone falling in love with a different field of study."

Today's college students, partly due to cell phones, texting, and e-mail, "are in remarkably close communication with their parents," Dingman continues, citing frequent conversations with undergraduates who tell him things like, "'My mother's going to kill me because I didn't get to the [Institute of Politics] Forum last night—Newt Gingrich was speaking, and she said I had to get a ticket.' My parents never would have known what was happening on campus; nor would they have thought it was their role to push me toward it." A survey carried out, in collaboration with Cornell and several other colleges, by associate professor of psychiatry Paul Barreira, director of behavioral health and academic counseling for the University Health Services, showed that one-third of undergraduates are in contact with their parents *daily*.

The parental tendrils can extend even into academic work. In the early 1990s, some undergraduates faxed drafts of term papers home to their parents and received edited, marked-up faxes back; today, e-mail streamlines the process. Barreira cites a study indicating that students who were in frequent contact with parents did better academically; perhaps parents are still "helping" with homework, boosting grades, or perhaps close parent-child ties enhance performance in more indirect, diffuse ways. Barreira doesn't see reason for alarm. "You hear about parents dictating exactly what is going on with their kids, what courses they are going to take," he says. "I actually think that's a minority of students—it may be overplayed."

Fitzsimmons adds, "Sure, there are more helicopter parents, and they come in all different forms—rich and poor, from all kinds of backgrounds. But for the most part, the helicoptering has *worked*, and is perceived as a positive thing by students." He cites a study by the College Board indicating that more than 60 percent of students felt their parents had the "right" level of involvement in the admissions process, and that only 5 to 6 percent felt their parents were overly involved.

~The Ecology of Overachievement~

IN THE LATTER PART of the twentieth century, the composition of Harvard College changed dramatically. The funnel of access became tighter numerically (20 percent of applicants were admitted in the mid 1960s, versus 7 percent today), yet broadened for greater diversity in race, sex, ethnicity, geographical origin, and social class. "Twenty-five percent of my class [1967] was on some kind of need-based financial aid," says Fitzsimmons. "It's a little over 60 percent for the current freshman class. True, we have a better financial-aid program now, so the comparison isn't exact, but there's no question that this place has many more people from the bottom quarter and bottom half of the American income distribution. Now, about a quarter of the class comes from families earning less than \$80,000 per year." New financial-aid initiatives have accelerated change in the last five or six years; consequently, for many students now, "This is their big chance," Fitzsimmons says. "They have no safety net, no family money—or 'social capital'—to fall back on."

Harry Lewis explains: "People who come, on average, from

more comfortable backgrounds are less worried about getting a job after college than those who are very strongly motivated to do better than their parents did. The second group are their parents' best hope for moving the family up in the world. So there's more upward mobility, which makes people more energized and ambitious, and sometimes driven—and I don't consider 'driven' itself to be a negative term. That helps create the energy."

Another shift is that Harvard has become a far more international university than it was a few decades ago. "Harvard may or may not be the greatest university in America," says Howard Gardner, "but it is clearly the greatest one in the world" in that it's known from Malaysia to Chile to Sri Lanka, whereas references to Yale, Stanford, and Princeton draw only blank stares even in western Europe. "To get in, you're competing with people all over the world," he continues, "which makes it an incredibly selective process."

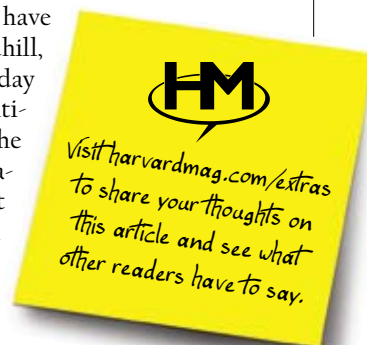
Hard-working, enterprising international students may well be raising the benchmark on achievement for everyone, as well as enlarging students' reference group to global scale. "The average American kid does very little homework," explains Fitzsimmons. "You can find statistics that show high-school seniors averaging 45 minutes to an hour of homework per night. In many other countries, the norm is four, five, or six hours of homework each day."

Perhaps the pendulum has swung to an extreme, and a reaction will set in, with a new balance asserting itself. But right now, many College students seem to suffer from a *horror vacui*, a fear of empty spaces, whether those be the J-term, a leisurely summer near the water, or simply an unplanned hour.

"Like one of those puzzles in which you try to rearrange little tiles—to get the number 1 in the upper left corner, and so on—it's the empty space that makes the other squares maneuverable," says Dingman. "Without it, the pattern can be fixed and not open to new permutations. I tell students that's a good way to think about their lives: if they don't have any empty space, there's not likely to be any movement. It's really in those moments where they have created windows of free time that they may learn the most about themselves and end up with the kind of movement they're looking for."

One undergraduate who seems to have a feel for empty spaces is Olivia Goldhill, who makes sure there is time in her day for friends, unhurried meals, and cultivating her inner garden. Although she had to take a required quantitative reasoning course to graduate, "I wasn't willing to put in vast hours of work just to get an A," she declares. "I think a lot of other students would." She also feels less pressure because, given her career interests (journalism) and the likelihood of returning to England, "My GPA won't matter." Her family, too, has a relaxed, low-pressure attitude about grades. "My mom said she doesn't want me to get As," Goldhill says, smiling. "Because that would mean I was missing the college experience." ▢

Craig A. Lambert '69, Ph.D. '78, is deputy editor of this magazine.



John Waldo Green

Brief life of a conflicted musician: 1908-1989

by SOL HURWITZ

IN HIS EARLY TWENTIES, Johnny Green '28 wrote the music for some two dozen hits, including "I Cover the Waterfront," "Out of Nowhere," "I Wanna Be Loved," and above all the captivating ballad "Body and Soul." His Depression-era songs touched millions with their passionate sense of longing and hope.

He "wrote with as much soul and emotion as anyone on the street," remarked Wilfrid Sheed in his history of American popular music, *The House That George Built*. Green was also an exceptional pianist, conductor, arranger, and producer, combining musical talent with a showman's flair and a corporate manager's toughness. From 1949 to 1958, he was general music director and executive in charge of music at Metro-Goldwyn-Mayer, responsible for many of the studio's landmark musicals and film scores. In a 1955 *Variety* interview, he argued for replacing the lush, formulaic "Hollywood sound" of the 1930s and 1940s with a "sparse and linear" music and a more individual style. Nominated 14 times for an Academy Award, he won for his orchestrations of *Easter Parade*, *An American in Paris*, *West Side Story*, and *Oliver!* Sporting his trademark white carnation, he served 17 years as orchestra conductor and music director for Oscar Night and introduced the practice of striking up the appropriate musical theme the instant a winner is announced.

Green had magnetic charm and an exuberant sense of humor; he was a stylish dresser whose sartorial ideal was Fred Astaire and a *raconteur* who practiced his jokes in front of a mirror. But he also had an enormous need to be taken seriously. The suicides of an adoring mother and beloved younger brother—and the unbending expectations of a harsh father, a real-estate magnate and banker—created inner tensions for much of his life. He sought the prestige accorded classical composers and conductors, but his achievements remain rooted in Tin Pan Alley and Hollywood. His failures hurt: he was devastated when his critically acclaimed original score for the 1957 film *Raintree County* failed to win an Oscar.

Music influenced him early. Both parents, cultured New Yorkers, were proficient amateur pianists, and his mother took him to his first symphony concert when he was four. (He said afterwards that he wanted to spend his life not just making music but being the conductor.) At 14, he met George Gershwin and performed a Gershwin tune on the composer's piano to show him how it ought to be played. When Harvard accepted Green at 15, his father pressured him to choose economics instead of music as a concentration, declaring, "There is no bum like a pretty good artist, and you're a pretty good artist." Even so, Green as a freshman organized the Cambridge Serenaders, an 11-piece band that later became the Harvard Gold Coast Orchestra. When band leader Guy Lombardo heard the orchestra, he hired Green to write ar-

rangements for the newly formed Royal Canadians. "Coquette," which Green composed for Lombardo the summer before his senior year, became an overnight sensation, but he was offended when Harvard's Hasty Pudding Club didn't invite him to compose for its musical.

After a year's hiatus as a graduate student in English and a clerk on Wall Street, Green decided once and for all to pursue a career in music, forming a songwriting partnership with lyricist Edward Heyman only months before the stock market crashed. Desperately in need of work, he wrote four pieces for singer-comedienne Gertrude Lawrence, whom he had once invited to perform with the Serenaders at Harvard. She paid \$250 for the lot, one of them "Body and Soul." As recorded by the Paul Whiteman Orchestra, the song was number one on the charts for six weeks, but it was banned from the radio for nearly a year for its sexually suggestive lyrics, further enhancing its popularity. "Body and Soul" secured Green's induction in 1972 into the Songwriters' Hall of Fame: "You don't write 'Body and Soul' unless you're some kind of genius," a fellow songwriter remarked.

In the early 1930s, Green served as composer-conductor at Paramount's film studios in Astoria, New York; later, "Johnny Green, His Piano and Orchestra" provided sophisticated swing music at posh hotels and on popular radio shows. New opportunities lured him to Hollywood in 1942; he worked as a composer and conductor for several studios before moving to MGM as music director. Meanwhile, he realized his childhood dream as conductor of the Los Angeles Philharmonic at the Hollywood Bowl for more than 20 seasons, and in appearances with other symphony orchestras, although these favored lighter "pops" programs over serious classical works.

In 1978, after writing what he described as "so little original music of importance," he received a commission from the Denver Symphony Orchestra to write a one-movement symphony for the dedication of a new performing arts center. Green, a secular Jew whose conversion to Christianity was inspired by his third wife, beauty queen Bonnie (Bunny) Waters, ascribed the breakthrough to divine intervention: "That's got to be somebody trying to tell me something. And I happen to know who that Somebody is!" He titled the symphony "Mine Eyes Have Seen."

But the work's successful completion was also a reminder of the road not taken. "It's regrettable," Green admitted to classmates toward the close of his career, "that I spent all those years (and, far from incidentally, made all that money!) slaving over other people's music instead of creating my own." ▢

Sol Hurwitz '53 has written on music and the arts for the New York Times, the Washington Post, the Christian Science Monitor, and JazzTimes.



Johnny Green, with his trademark white carnation and some of his musical works

an evolving foe

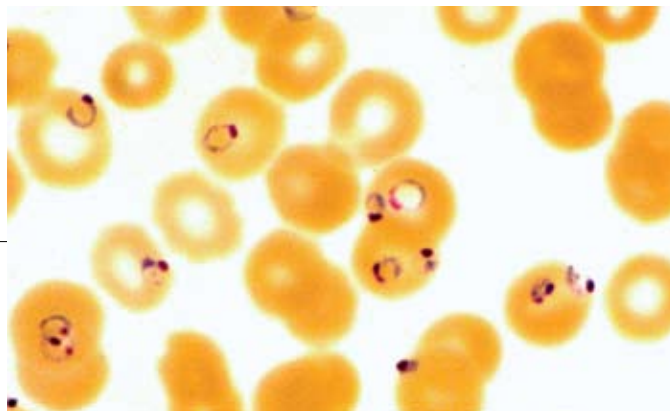
APPLYING GENOMIC TOOLS TO THE FIGHT AGAINST MALARIA

BY COURTNEY HUMPHRIES

tHERE WAS A TIME when it seemed that medicine and human ingenuity could remove deadly infections from the face of the planet. The stunning success of vaccines in wiping out smallpox and polio and of antibiotic drugs in fighting infections suggested that, with the right molecules and strategies, humans could rid themselves of any scourge. But that view, increasingly, has been altered by a reality of evolutionary biology: *everything* changes and adapts, and microbes have a way of outmaneuvering medicine.

The evolution of microbes has resulted in SARS, Ebola hemorrhagic fever, AIDS, and swine flu: diseases that have jumped to humans from animal hosts. In the case of older diseases, resistance to antimicrobial drugs is now a common occurrence. Increased global travel means that new infections and “bugs” possessing drug resistance can leap to another part of the world overnight.

One of the clear cases is malaria. Several decades ago, the world was poised to celebrate the eradication of this disease, but ever since, cases have been on the rise. Every year, more than a million people—mostly children in Africa—die of malaria, while hundreds of millions are infected but survive. Only a handful of antimalarial drugs exist, and no new drugs have been made available in decades. Not only is microbial resistance to the cheapest and most widely used drug, chloroquine, already widespread in endemic areas, but resistance to a combination treatment, sulfadoxine-pyrimethamine, which first appeared in the 1980s in South America and Southeast Asia, has now spread to East Africa. Resistance to artemisinin, the newest antimalarial (first developed in the 1970s), could also be emerging.



Parasites of *Plasmodium falciparum*, the most dangerous type of human malaria, infect red blood cells.

MARK GILES/PHOTO RESEARCHERS, INC.

Fortunately, understanding how pathogens evolve can shed new light on the dynamics of disease. Dyann F. Wirth, Strong professor of infectious disease, who chairs the department of immunology and infectious diseases at the Harvard School of Public Health (HSPH), has been studying how and why drug resistance emerges in malaria. “Drug resistance is just a special case of evolutionary biology,” she says. Wirth, who directs the Harvard Malaria Initiative (see sidebar), is leading an effort to use new genomic tools, first developed for studying evolution, as a means to better understand malaria and find effective ways to fight it.

Reconstructing evolution

MALARIA HAS AN IMPRESSIVE ABILITY to evolve in response to challenges. In fact, the malaria protozoan’s ability to adapt rapidly mimics the behavior of viruses more than that of other single-celled organisms. Treating the disease with a drug immediately prompts its evolution toward developing resistance. The world has seen this phenomenon in action with chloroquine, a synthetic drug that replaced natural quinine as the antimalarial of choice after World War II. Chloroquine resistance emerged separately in Southeast Asia and South America more than 50



Dyann Wirth

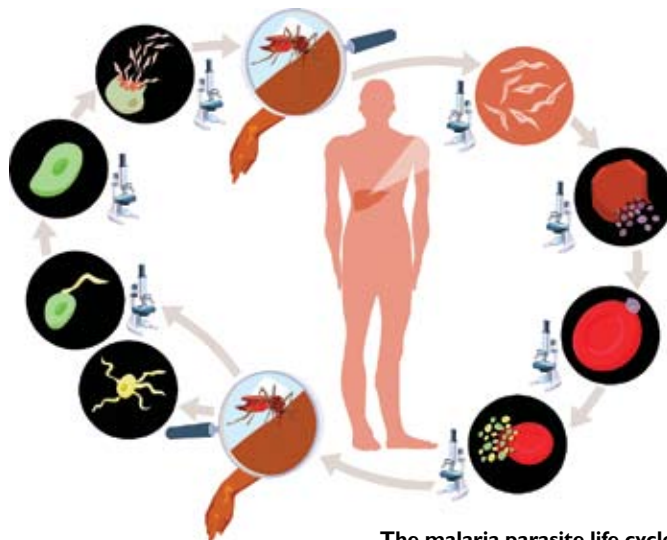
years ago, and scientists can trace its origin to mutations in a specific gene. Gradually, the resistant types came to dominate. “You can trace the history of the spread of chloroquine resistance with the spread of this resistant locus within the genome,” Wirth says.

Though she has been studying malaria throughout her career, Wirth began thinking of her work more formally as evolutionary biology a decade ago, when she began collaborating with Higgins professor of biology Daniel L. Hartl. An evolutionary biologist himself, Hartl was interested in knowing how much genetic variation existed in the protozoan that causes malaria, because, he says, the parasite is “a very strange creature with a hugely complex life cycle, and not a whole lot was known about it 10 years ago when we started this.”

There are four species of single-celled protozoans that cause malaria in humans. The most widespread, *Plasmodium vivax*, is found in Asia, North Africa, the Middle East, and South and Central America; the most deadly, *Plasmodium falciparum*, is concentrated in southern Africa. The parasite travels back and forth between its two hosts, humans and mosquitoes, and malaria is spread through mosquito bites. Malaria can mean many things: an asymptomatic infection, a brief fever with chills and aches, or severe anemia or disease in the kidneys and brain, which can rapidly lead to death. The victims are usually children; most individuals who reach adolescence are able to coexist in relative peace with the parasite thereafter.

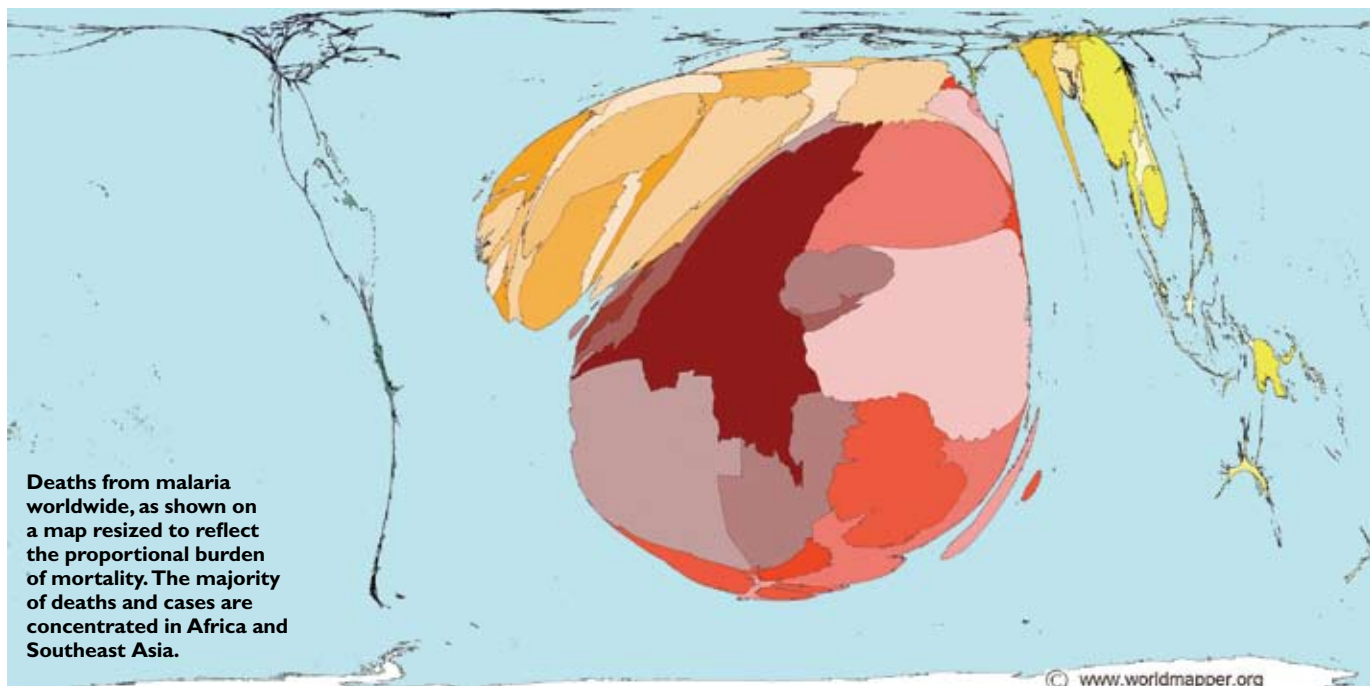
Malaria parasites enter the human body from the salivary glands of a feeding mosquito. They move to the liver, replicate rapidly, and then invade the red blood cells, where they replicate fur-

ther. Most continue to multiply in this way, infecting more blood cells, but a small subset develops into male and female gametocytes. When next a mosquito feasts on the human host’s blood, some of these gametocytes may be drawn into the mosquito’s gut, where they reproduce sexually—a step that distinguishes malaria from bacterial and viral pathogens. The resulting offspring then divide and move to the salivary glands, where the process begins anew. This unusual cycling back and forth is one of the keys to malaria’s rapid evolution. “Every time the parasite is transmitted, you essentially have a mating event,” Wirth says. “And if you think



The malaria parasite life cycle

DR. CECIL H. FOX/PHOTO RESEARCHERS, INC.



MAP COPYRIGHT © 2006 SASI GROUP (UNIVERSITY OF SHEFFIELD) AND MARK NEWMAN (UNIVERSITY OF MICHIGAN)

about Africa, where people have been bitten every night by multiple mosquitoes, you can imagine that there's an enormous amount of exchanging genetic information." All this suggested to her that there would be a great deal of genetic diversity among parasites and a great deal of variation in the malaria genome.

When the Broad Institute of MIT and Harvard was launched in 2004, its director, Eric Lander, professor of systems biology at Harvard Medical School (HMS), asked Wirth to co-lead its infectious disease program with HMS professor of biological chemistry and molecular pharmacology Jon Clardy. Wirth decided to take a yearlong sabbatical at the Broad to better understand large-scale genomics and to find a way to apply the tools originally developed for the Human Genome Project to malaria. Because the *P. falciparum* genome is only one three-hundredth the size of the human genome, she points out, applying these tools yields powerful results much more quickly.

The genome sequence of *Plasmodium falciparum*, consisting of the entire sequence of DNA molecules in a single parasite, had been completed in 2002, but a single genome cannot indicate how the parasite has evolved over time and how diverse the parasites are across different geographical regions. One of the group's first tasks was to get a picture of the genetic diversity of *P. falciparum* by gathering genomic information from many different parasites. The human Haplotype Map (HapMap) project was launched in 2002 to create a comprehensive map of common genetic variation in humans; Wirth's team at the Broad led a similar effort with colleagues in Dakar, Senegal, to create a genome-wide map of genetic diversity in *P. falciparum*. By partially sequencing the genomes of 16 parasites from different parts of the world, they were able to create a map of the most common genetic variations in the species—information they could use to further analyze more than 50 other parasites to address questions about parasite diversity and evolution. The map showed that the malaria genome was even more diverse than Wirth expected.

Pardis Sabeti, a former postdoctoral fellow at the Broad who

"You almost have an arms race between the parasite and the host."

is now assistant professor in the department of organismic and evolutionary biology (see "Harvard Portrait," May-June 2009, page 49), and Sarah K. Volkman, a senior research scientist in Wirth's lab, then helped lead an effort to understand how malaria has evolved. To do this, the scientists took advantage of a measure called linkage disequilibrium, which determines how often one part of the genome is linked to another. Genomes get shuffled over time; every time parasites mate, some of their genes can switch to another chromosome, a process called recombination. Just as shuffling a deck of cards reduces the likelihood of seeing the same card sequences, recombination makes it less likely that any one variation will always be seen in sequence with any other. Linkage disequilibrium thus tells scientists how frequently different sites on the genome are linked to one another, and gives them a measure of evolutionary age: traits that are more often linked have been shuffled less and so have emerged more recently.

This measure also tells scientists something about the selective pressures that are acting on the organism. Genes that have emerged more recently reflect traits that are under selection by their environment—traits that allow the organism to adapt and survive. "This allows us to begin to look for signatures of selection," Wirth says. "We're essentially sequencing the parasites that exist today and inferring their population history." This approach can also be used in reverse, to understand which genes are responsible for a recent evolutionary change. In the case of drug resistance, Wirth says, scientists look for less diverse areas of the genome to track recently emerged genes that may have made a given parasite resistant.

It's possible to trace the history not only of an entire genome, but also of a single gene. Daniel Hartl, for example, became interested in reconstructing the evolutionary history of individual cases of microbial resistance to malarial drugs. His lab published a paper last summer that looked closely at the emergence of resistance to pyrimethamine, which involved mutations in four amino acids that form the building blocks of a particular enzyme in the parasite *P. falciparum*. The researchers were able to reconstruct the order in which the amino acids changed by recreating possible scenarios using bacteria engineered with different forms of the enzyme. "I was interested in this from two points of view," Hartl says. One was practical: if scientists know how resistance evolved, they can begin to look for early stages of resistance in other parasites. The other, he explains, "is a much more general evolutionary question, which is, 'How do proteins evolve?'" Many evolutionary adaptations require multiple mutations to take place, and it's been unclear until recently how these intermediate steps occur.

A battle between host and parasite

THE AVAILABILITY OF GENOMIC TECHNOLOGIES has allowed Wirth's team not only to look in detail at drug resistance, but also to get an overall picture of the forces that have shaped the malaria genome. And it turns out that the most important influence is the human body.

"I was expecting drug resistance genes to pop out as the genes under the highest selection by the parasite's environment," Wirth says. Instead, they found that the parasite demonstrates incredible diversity in the genes that encode proteins on the protozoan's surface—the molecules that are typically recognized by the human immune system. "What this told us immediately," she explains, "was that these genes were likely to be targets of the human immune response, and that variation to escape the immune system was probably the important force in driving the evolution of parasite populations in the world." In hindsight, Wirth says, she should have predicted as much, because antimalarial drugs have been widely used for less than 100 years, and many people infected with malaria are never treated at all. In contrast, "The human immune system is subjecting the parasite to selection 24/7," and has been doing so for thousands of years, so "you almost have an arms race between the parasite and the host."

In this race, however, the parasite has many more opportunities to adapt. Wirth points out that at every step of its life cycle, "the parasite is always facing elimination." Though people may carry billions of malaria protozoans in their blood, a biting mosquito picks up only a few that are capable of reproducing. These few multiply in the mosquito's body, and when that mosquito bites again, only a few of the hundreds of thousands of parasites that it carries are injected into its human victim. As Wirth says, "It would be like taking the Harvard medical area and saying that only one person is going to survive some hypothetical selection process. If you think about it from a competitive standpoint, that's going to be the person best adapted to whatever the test is."

In Africa, *P. falciparum* has textbook conditions for an evolutionary perfect storm. With its two hosts living in close proximity, the parasite has many opportunities to mate and diversify, but the bottlenecks it faces as it moves between mosquito and human ensure that only the best adapted individuals survive. This

abundant variation, when combined with stringent selection, fosters rapid evolution.

But humans have adapted too, in our own relatively sluggish way. Although malaria has been with us for hundreds of thousands of years, the parasite's numbers exploded around the time agriculture was developed 10,000 years ago. Humans were then living in denser populations and clearing land for fields and settlements, which meant that some of them were living close to wet habitats

the hunt for new drugs

THE HARVARD MALARIA INITIATIVE (www.hsph.harvard.edu/research/hmi) began in 1997 as a way of bringing together varied resources and expertise across Harvard to focus on scientific problems of the malaria epidemic. The team—a collaboration among the Harvard School of Public Health, the Faculty of Arts and Sciences, and the Broad Institute of MIT and Harvard—is led by Dyann Wirth, Strong professor of infectious disease, and focuses on understanding the mechanisms of drug resistance in the malaria parasite and identifying potential new drugs and therapeutic strategies. The goal is to use sophisticated tools to better understand malaria and use this knowledge to guide treatment and policy in places where the disease is common. The group's work is made possible through collaborations with universities and clinical centers in Africa, Asia, and South America, the most extensive being a longstanding partnership with the University of Cheikh Anta Diop, in Dakar, Senegal, under the leadership of Professor Souleymane Mboup. The collaborations focus on training local scientists as well as collaborative research.

In addition to studying the underlying biology of the malaria parasite, the initiative is involved in a collaboration among Harvard's Medical School and School of Public Health, the Broad Institute, and Genzyme Pharmaceuticals to discover new antimalarial drugs, for which there is pressing need because current drugs are very similar to one another. The team hopes to find completely new ways of targeting malaria by screening vast numbers of molecules to see which are effective against the parasite.

One reason there are so few antimalarial drugs is a lack of financial incentive for drug companies, given that most malaria-ridden populations are located in poor countries. The Harvard initiative has received funding from Medicines for Malaria, a foundation that works with public and industry partners to develop antimalarial drugs. Professor of biological chemistry and molecular pharmacology Jon Clardy, who is leading the research project, says that, like any drug development process, it will take years to bear fruit because of the extensive testing and approval process required.

But even if tangible therapies are still years in the future, the project is already generating new knowledge about the basic biology of the parasite. For every drug that is active against *Plasmodium*, the researchers can investigate which aspects of the parasite's biology it is targeting. "With malaria, the use of these screens is relatively new," Clardy says. "There's a lot to discover, and a lot about the organism that we don't understand."

where mosquitoes bred. Much of the malaria genome evolved after this large expansion, which was also when the mosquito species that transmit malaria began to expand and diversify.

Scientists looking at the human genome can see that malaria has been one of the most important factors in shaping it ever since. The disease has a direct effect on human survival and reproduction because infection causes complications in pregnancy and also because malaria's victims are usually children. In fact, it was human adaptation to malaria that provided the first direct evidence that the human race has indeed evolved. In 1949—more than 75 years after Darwin argued in *The Descent of Man* that humans were products of natural selection—sickle cell anemia was found to arise from a genetic adaptation that protects people from malaria. Other blood disorders have subsequently been linked to malaria resistance as well, which helps explain why these seemingly harmful genetic diseases have become prevalent among people living in tropical areas.

Pardis Sabeti has looked at both host and parasite genomes to trace the battle scars of this relationship. Working with Eric Lander, she first developed a method for identifying artifacts of natural selection in the human genome in 2002. In subsequent years she has been able to confirm several known recent adaptations in humans, including the gene that causes sickle cell anemia. She has also helped look for evidence of natural selection in malaria. Sabeti believes that understanding both genomes will help scientists understand the clinical course of the disease better. “If someone becomes ill from malaria,” she points out, “it could either be that the person does not have good immunity to the parasite or it could be that the infecting parasite is particularly severe. So you really have to look at both sides.”

Of course, there are actually three players in this evolutionary dance. Mosquitoes have also evolved resistance to insecticides, so understanding their evolution is important as well. The mosquito genome has also been sequenced, and the Harvard team plans to apply some of the same genomic tools to better understand its role in malaria. In particular, the insect's genome could provide insight into differences in malaria between Southeast Asia and Africa, where different mosquito species transmit the disease.

From laboratory to public health

THE ABILITY TO TRACE the evolution of malaria is not a mere academic exercise. The genomic information generated by this work can be used to identify and track drug resistance in countries where malaria is endemic. The malaria HapMap project made it possible to take some of the key variations found in *Plasmodium* genomes and use them as a way to identify the parasites in infected patients.

A team based at the Broad Institute developed a set of 24 genetic markers that could be used to create a molecular “bar code” that could uniquely identify any parasite in a patient's blood. The markers are embedded in a chip that can be manufactured inexpensively and used with standard lab equipment. Wirth says the technology can be used in the clinic to better characterize and track a particular patient's disease. Although it's possible to track resistance to a single drug with other methods, the molecular bar code would make it possible to test for resistance to multiple drugs at once and identify which drug will work for a specific parasite.

“If someone becomes ill from malaria, it could either be that the person does not have good immunity to the parasite or that the infecting parasite is particularly severe.”

Wirth and her colleagues have worked with Senegalese scientists from the University of Cheikh Anta Diop, in Dakar, to study both the genetic diversity of malaria in that country and microbial drug resistance among malaria parasites in patients. Cases of chloroquine resistance were first reported in the 1980s in Senegal and are now common there. The team has therefore been studying the underlying genetic mutations responsible for making the parasite resistant to treatment, with the goal of eventually using a molecular bar-code system to identify and track emerging cases of resistance to newer drugs. Wirth says that they have already seen resistance to pyrimethamine appear in Senegal and spread gradually as the resistant protozoan took over the parasite population. They hope to focus now on artemisinin, the newest antimalarial, which is used in combination with others. “The goal would be to catch artemisinin resistance much earlier, so we could perhaps contain it,” she explains. Early warning of resistance would make it possible to direct resources like insecticides where they are needed most. Wirth notes that—apart from the consequences a drug-resistant infection has for an individual patient—“the issue from a public-health standpoint is that when a resistant organism begins to spread, you have to completely change the public-health approach.”

The collaboration in Senegal has also provided a setting for investigating new questions about malaria. Johanna Daily, a former member of Wirth's lab who is now an associate professor of medicine at Albert Einstein College, led a 2007 study that used a genomic tool to identify which genes are active in parasites taken directly from patients' blood, as distinct from parasites cultured in a lab. That research showed that some of the blood parasites were operating in two totally different biological states: one apparently a response to an environmental stress; the other a response to the denial of typical food sources. The study points to a way to correlate the parasite's physical state with a patient's symptoms—which could clarify why the severity of infection varies so widely. Wirth says that Senegal will provide an opportunity for the team to look in much more depth at parasite diversity and to explore its relationship to human disease and mosquito biology.

The diversity of the parasite may play a role not just in drug resistance but in the nature of the disease itself. Dan Milner, a pathologist at Brigham and Women's Hospital, is working with Wirth, Michigan State University researcher Terrie Taylor, and colleagues at the Queen Elizabeth Central Hospital in Blantyre, Malawi, to investigate cases of fatal (please turn to page 75)



JOHN HARVARD'S JOURNAL

Construction of the Allston science complex will halt. The Charlesview housing site, across Western Avenue (to the right), will come under Harvard's control—but development of a proposed arts and cultural hub at this key intersection with North Harvard Street remains a vision for the future.

Arrested Development

BOWING TO financial reality, the University announced in December that, as expected, it will halt construction on its huge science facility in Allston—the first part of an ambitiously envisioned campus expansion during the next half-century. Moreover, Harvard is in effect rebooting its planning effort for that expansion overall. That implies a longer deferral of Allston development—and raises the prospect of significant changes from the prior vision of new homes for the Harvard School of Public Health (HSPH) and Harvard Graduate School of Education (HGSE), a cultural and performing-arts complex, expansive laboratories, new undergraduate residences,

relocated athletic buildings, and other facilities.

Science Facility Frozen

FORMAL NOTIFICATION came in a letter from President Drew Faust. Addressing the science facility first, she wrote that the University “will pause construction” after completing current work in early spring. The letter gave no projected duration for the “pause,” and introduced a new wrin-

kle: continued analysis of “strategies for resumed activity, including co-development.” This suggests that Harvard is exploring options for a partnership with private investor-developers, local hospitals, other institutional users of laboratory space, or pharmaceutical companies (which have made large investments in research facilities in Cambridge and the Longwood Medical Area in the recent years).

These options are more conservative

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than those announced in February 2009, when Faust made public the decision to review construction on the project (estimated to cost \$1.3 billion to \$1.4 billion). Faust said then that the facility's foundation would be brought up to surface level—representing perhaps 30 percent of the construction cost—but that purchases of materials needed to build the four laboratories themselves would be deferred while Harvard undertook a thorough review of the project's scope and pace. The options, she said, included proceeding as originally

planned (if economic conditions improved rapidly); reconfiguring the building “in ways that yield either new cost savings or new space realization”; and pausing construction completely. The first option is obviously moot. The second—redesigning the facility—is now contingent on the needs of a possible co-developer.

The early-2009 decision reflected the realization that the financial crisis would severely erode the value of the endowment, as well as curtail Harvard's ability to borrow funds for capital projects with-

out impairing its top credit rating. (A recent debt offering for other construction was rated Triple A; see “Two Projects Proceeding,” below. But the ratings of Caltech, Dartmouth, and Rockefeller University have been downgraded recently. For Harvard, a lower rating would raise borrowing costs, possibly make large interest-rate swaps more expensive, and perhaps hamper some endowment investment strategies.)

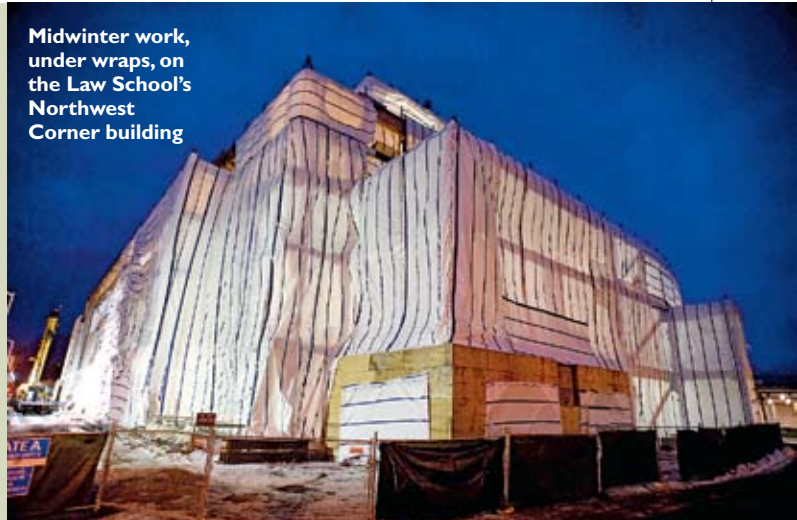
The recent decision to “pause” and search for partners to restart the project

Two Projects Proceeding

In January, the University placed a \$480-million debt offering, in part to retire existing borrowings but also for \$219 million of “project costs,” the majority associated with Harvard Law School's Northwest Corner building (see “Legal Legroom,” January-February 2007, page 61, and “Sun, Wind, and Steel,” November-December 2009, page 16N). That 250,000-square-foot project was well begun before the financial crisis unfolded in 2008, and is being completed; occupancy is expected in the fall of 2011. Although it was anchored by two large gifts raised during that school's recent capital campaign (of \$25 million and a reported \$30 million, respectively), the overall costs are estimated to be in the range of \$220 million to \$250 million, necessitating the financing. (The law school will likely have to begin servicing the debt and paying for operation and maintenance—multimillion-dollar new expenses—in fiscal year 2012.)

The other major campus construction—a complete renewal of the now-mothballed Fogg Art Museum, previously estimated to cost \$350 mil-

Midwinter work, under wraps, on the Law School's Northwest Corner building



lion to \$400 million—was authorized by the Corporation in December. Although that decision was not formally announced, exterior demolition began in late January. Thomas Lentz, Cabot director of the Harvard Art Museum, pronounced himself “pleased and relieved” that the work can proceed, given the cost of the “complex” overhaul and prevailing financial conditions.

The Renzo Piano-designed project, which will renovate the core building and its antiquated systems, will also yield additional gallery space and a new entrance along Prescott Street and art-study centers for faculty, student, and visitor use on the upper levels. Previously announced gifts from Emily Rauh Pulitzer, A.M. '63, and David Rockefeller '36, G '37, LL.D. '69, provided more than \$70 million to advance the work. Other financing has not been reported, and fundraising continues. Lentz hopes that—following a planned 36 months of construction and up to a year to move the collections back to the reconstructed facility—the museum can reopen for the fall term in 2013.

Renderings of the reconstructed Fogg Art Museum from Broadway at Prescott (upper left) and Quincy (lower left) streets; the contractors begin.



reflects both the known financial realities and various adjustments the University has made during the past year. The scientists once headed to the Allston complex are being provided for elsewhere: the stem-cell researchers in Cambridge, and the bioengineering scientists in Cambridge and Longwood, while the Medical School's systems biology department remains in Longwood. Those decisions have two consequences:

- Given the tens of millions of dollars (and possibly more) needed to refit existing laboratories for the scientists diverted from Allston, and to relocate other professors to accommodate these moves, it is unlikely the University would want to incur those large costs again, soon, simply to gather stem-cell, bioengineering, and systems-biology staffs in Allston.

- Overhead funds paid with sponsored-research grants are an important means of defraying capital costs for laboratory buildings and facilities. With scientists diverted from Allston, and growth in their ranks slowed, the population of investigators whose grants would help pay the indirect laboratory costs will be smaller, making it harder to cover additional debt costs that Harvard would have to incur to erect the new Allston facilities. (See "Further Financial Fallout," January-February, page 45, for information on the faculty retirement-incentive offers and the plan to reduce new professorial appointments, at least within the Faculty of Arts and Sciences.) Faust's letter said that "Harvard's significant momentum in the life sciences" will "in no way" be slowed by the delay in the Allston science complex, and that faculty recruiting will continue. But the trajectory has clearly changed.

According to a News Office interview with executive vice president Katie Lapp, who oversees Allston, "We expect to take the next year to look at possible opportunities, including co-development with private partners or other institutional partners that may make sense for that site, as well as for other Allston sites that Harvard owns." The last phrase points to the larger Allston program.

Campus Planning Paused

BROADER "campus development," Faust's letter said, "will be pursued as resources allow and only after a targeted, evaluative process" that is about to begin. The Uni-

HARVARD PORTRAIT



Emma Dench

"I was very morbid as a child," says Emma Dench, professor of the classics and of history. "I liked dead things and dead people"—and when she visited the Roman baths in Bath, England, at seven, she says, "I realized the Romans were very, very dead." Obsessed with them, she walked the 73.5-mile length of Hadrian's Wall with her family at age 11. Today she teaches Latin writers like Livy and Cicero and history courses on the Roman empire. Dench's father is the noted Shakespearean actor Jeffery Dench (her aunt is film star Dame Judi Dench) and her mother, Betty, was a speech therapist. (As a child, Emma played Peaseblossom in a 1968 film of *A Midsummer Night's Dream*.) The family lived near Stratford-on-Avon. Dench graduated from Wadham College, Oxford, with a double first in 1987, then taught classics for a year at Hobart and William Smith Colleges in upstate New York, which proved to her that she is "a city person." She returned to Oxford and took her D.Phil. in 1993; her dissertation, on "central Italian mountain men," appeared as *From Barbarians to New Men* in 1995. (*Romulus' Asylum*, on the multiethnic character of ancient Rome, came out in 2005.) Dench taught ancient history at the University of London's Birkbeck College from 1992 until 2006, and joined the Harvard faculty in 2007. She and her husband, artist Jonathan Bowker, have a 10-year-old son, Jacob. Every summer they travel, typically in Central America. "I hate the Romans—they were violent, sexist, racist, arrogant, and not very nice to anybody who got in their way," she says. "But I love to hate the Romans."

A panoramic view of Allston: the science site (center), Harvard stadium (right)



versity “will meet its obligations to file an updated Institutional Master Plan before its current plan expires in 2012.”

In effect, this means that translating Harvard’s broad Allston vision into actual zoning and approvals under Boston’s regulatory review process will take more time, and will likely involve change—perhaps significant—from the internal work done so far. Harvard’s planners and consultants have developed an outline for new roads, infrastructure, green spaces, and broad quadrants (academic buildings, laboratories, cultural facilities, and so on) for use of its landholdings in Allston. As guidelines, those appear to be intact. But apart from the now-suspended science complex, none of the outlined objectives exist in the form of committed users of the space, nor concrete proposals for architectural design or ensuing development.

Now, Faust’s letter explained, a new

Work Team—Coleman professor of financial management Peter Tufano, who is senior associate dean for planning and University affairs at Harvard Business School; Institute of Politics head Bill Purcell, the former mayor of Nashville; and professor in practice of urban planning and design Alex Krieger, chair of the department of urban planning and design at the Graduate School of Design—“will recommend strategies for achieving our shared vision of a cohesive scientific, academic, and learning campus environment situated in a sustainable and livable community in Allston.”

Of note, that team—reporting through the executive vice president—will coordinate the work of Faust, the provost, and the deans “to understand the priorities of the University and the schools over the next decade and will recommend ways in which the University’s growth needs can best be addressed, structurally as well

as financially.” That time horizon—the next 10 years—suggests a foreshortening of planning, but also, perhaps, a more realistic grasp of what can actually be achieved.

But its suggestion that priorities need to be reassessed and ranked means that Allston development is only a piece of the puzzle. When the public-health school was identified as a candidate for relocating to Allston, for instance, the cost of the alternative—updating its Longwood facilities—was estimated to exceed a half-billion dollars. Harvard planners are now evidently going to revisit every school’s facility needs, how these could be met, and where. Development in Allston, where costly infrastructure would have to be created in advance of much academic building, becomes one among contending priorities. As Lapp said in the interview, “Allston planning going forward will be fully integrated into University planning, keeping in mind not only our programmatic needs, but our holdings in Longwood, Allston, and Cambridge. This is an opportunity for us to think about our campus in holistic and strategic ways.” Among those priorities is renovation of the undergraduate residential Houses, a billion-dollar-plus program for which funding has not been arranged yet.

As Lapp suggested, there are indications that the Allston landholdings themselves are being re-evaluated. The “co-development” process involving the science complex applies generally, suggesting a wider review that might result in private or institutional development of Harvard holdings, sale of land or properties to free funds for other capital needs, or any other conceivable option for use. (And with the most ambitious Allston plans pushed into the future, and a broader review of capital needs being put in place, it may be easier for the University to proceed toward a feasible, and long-deferred, fundraising campaign, freed from the complications and

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formidable costs of aggressive new campus development.)

One parcel critical for future concentrated campus development is closer to Harvard control. Just before Christmas, Boston authorities approved a plan to replace the Charlesview housing project, at the corner of North Harvard Street and Western Avenue, with new units at a University-owned parcel farther down Western Avenue. Harvard's prospective purchase of the existing site will help defray the costs of building the new housing, while securing a key site at the center of the Allston campus expansion—when and as it occurs.

These decisions may not have surprised the Allston community, but they did pose new challenges. Residents have participated in hundreds of hours of meetings with Harvard and Boston officials in the past several years, as plans have been drafted and revised. Faust's letter addressed "property stewardship and community engagement" and "campus planning and greening." For the former, she wrote, Harvard will make more of the buildings it owns available for re-leasing, to bring life back to local streets. Rentals proceeded slowly when Harvard offered short lease terms (one to five years); it will now offer 10-year leases on up to 100,000 square feet of space—an indication, of course, that their use for Harvard-related redevelopment is now much longer off in the future. "Greening" involves landscaping, tree planting, and completion of a park behind the Allston public library branch. In mid January, as an amenity, Harvard erected an indoor skating rink on Western Avenue for free community use through the end of March.

Whatever disappointments the December announcement may cause, it reflects new circumstances. Private or non-University institutional investment may advance some uses of Harvard's landholdings in Allston faster than the University can now afford to do on its own.

Yesterday's News

From the pages of the *Harvard Alumni Bulletin* and *Harvard Magazine*

1920 The editors express hope that an "overalls movement"—"the cultivation of a spirit of moderation in this period of lavish expenditure"—that seems to have gained headway in other colleges will spread at Harvard as a way to end its reputation as a "rich man's college."

1930 The Flying Club bests 13 other college clubs to win the first Loening Trophy for intercollegiate flying, for making the greatest advance in aeronautics.

"Prohibition is becoming more and more of a national and inescapable issue," reports the *Bulletin*. A straw poll of 14 colleges reveals 64 percent of undergraduates imbibe alcohol. At Harvard, 78 percent of students reported drinking; at Yale, 71 percent; but "Princeton polled the wettest vote," at 79 percent.

1940 President Conant leaves for a month's visit to the West Coast—"one of many recent indications," note the ed-

itors, "that Harvard aspires to rid itself of any charge of provincialism....The educational as well as the population center of the country is moving westward."

1945 The 10,800-ton cargo ship *SS Harvard Victory* is launched, carrying a working library for use of the crew as a gift from the University.

1950 Responding to a poll conducted by the United Press, Secretary to the University David M. Little '18 agrees that current undergraduates are in many ways superior to those of a decade or so earlier: "There's no question...that these 1950 boys are more mature, alert, and serious-minded...The GIs who returned to college had a tremendous influence in spreading their habits of hard work among the student body."

1970 Nearly 3,000 rioters battle police for more than four hours in Harvard Square, in what one official calls "the worst civil disturbance in Massachusetts history." Many demonstrators have come from a peaceful antiwar rally on Boston Common, but police eventually employ tear-gas and nightsticks to curb the crowd. Damage to more than 40 local businesses from fire, broken windows, and looting exceeds \$100,000.

1975 As the economy worsens, the Office of Career Guidance reports a surge of interest in banking. "Banking was a dirty word a few years ago, but somehow it seems that if anything is going to survive Armageddon it'll be Chase Manhattan," writes Undergraduate columnist Paul K. Rowe '75.



Illustration by Mark Steele

The Corporation Changes

JAMES R. HOUGHTON '58, M.B.A. '62, who joined the President and Fellows of Harvard College (the formal name of the Harvard Corporation, the University's senior, seven-person governing board) in 1995 and became senior fellow in 2002, announced in December his plan to step down on June 30. During his service as senior fellow, Harvard underwent the transition from President Lawrence H. Summers, who resigned in 2006, to Derek Bok's interim presidency through mid 2007; Houghton led the search that concluded with President Drew Faust's appointment, effective then.

He will be succeeded as senior fellow by Robert D. Reischauer '63, president of the Urban Institute, in Washington, D.C., who joined the Corporation in 2002, having previously served for six years as a member of the Board of Overseers, an elected position. That gives him some relative seniority compared to Robert E. Rubin '60, the former Goldman Sachs and Citigroup executive and Secretary of the Treasury, who also joined the Corporation in 2002, but had never been an Overseer.

The search for a new Corporation member began in mid January. The committee comprises Faust, Reischauer, and two other Corporation members—Patricia King and University Treasurer James Rothenberg—and Overseers Leila Fawaz, Paul Finnegan, and Richard Meserve. Under Harvard's charter, members are elected by the Corporation, with the counsel and consent of the Overseers. (Confidential nominations may be directed to corporationsearch@harvard.edu or to the Corporation Search Committee, Loeb House, 17 Quincy Street, Cambridge 02138).

The changing composition of the Corporation—always of interest within the University community—may be particularly significant now, given hints that at least some aspects of its operations may be under internal review.

"It's been a true honor to have been able to serve Harvard over the years," said Houghton, chairman emeritus of Corning Incorporated (and chairman of the Metropolitan

Museum of Art board, and a longtime trustee of the Morgan Library and the Corning Museum of Glass), in the announcement. "I've been around Harvard for more than 50 years, through challenge and change, and the wealth of talent in our community never ceases to amaze me. I have every confidence that Harvard will continue to demonstrate the unique capacity of great universities to educate students and generate new ideas in ways that change the world."

Houghton has served "with extraordinary devotion and a profound concern for the well-being of the University and its people," Faust said in the statement. "He has seen Harvard through times of change with a steady hand and a constant commitment to the best interests of the University—above all, the quality of our students' educational experience and the capacity of our faculty to shape the course of knowledge....I'm one of many people at Harvard who have benefited from his thoughtful counsel and common sense, and who have come to value his friendship and generosity of spirit. We owe him our deep gratitude for his years of selfless service to Harvard."

AT THE regularly scheduled Faculty of Arts and Sciences (FAS) meeting on

December 15, the day after Houghton's announcement, Faust spoke about the Corporation more broadly. During its fall meetings, she said, Houghton had led discussion about how the Corporation could most effectively carry out its roles and responsibilities. Faust said both he and she felt it important that the Corporation look closely at how it did its work and what practices would be most sensible: the sort of reflective review any such entity ought to undertake from time to time, and especially now, in light of changes in the University itself and in the larger world. Given that the Corporation rarely, if ever, discloses anything about itself or its work, her remarks were unusual.

Among the matters Faust said had been specifically raised were: how the Corporation sets its agenda and spends its time during its regular meetings; how it receives information and interacts with University constituencies; how it relates to the Harvard administration and the Board of Overseers; and how, generally, it benefits from advice available or offered to it. She invited faculty members to offer such advice (in person, by letter, or via e-mail to ogb@harvard.edu), as part of the Corporation's intention to consult widely.

The Corporation is unusual among modern institutional boards: it is self-renewing and appointment is not for a set term—although there are informal standards for how long members serve. It has not as a rule made efforts to communicate about its concerns or deliberations, or to convey information about its decisions on matters of policy, budgets, or other major issues.

Four years ago, *Harvard Magazine* published a roundtable conversation on the University's governance and the Corporation's distinctive characteristics, featuring two former Corporation members (one, Henry Rosovsky, a past FAS dean, now serves as president of the magazine's board of directors) and two faculty members with expertise on institutional governance, including that of higher-education institutions. Their suggestions for how the Corporation might, at a minimum, communicate more openly, appear in "Governing Harvard," May-June 2006, page 25.

The weekend before the FAS



The Honorable Speaker

The principal speaker at the afternoon exercises on Commencement day, May 27, will be the Honorable David H. Souter '61, LL.B. '66,



David H. Souter

who was appointed an associate justice of the United States Supreme Court by President George H. W. Bush in 1990 and retired last June. Between his College and Law School years Souter studied at Oxford as a Rhodes Scholar.

Understanding Indonesia

The Harvard Kennedy School has received a two-part, \$20.5-million gift from the charitable foundation of PT Rajawali Corporation, an Indonesian business conglomerate, to endow the Rajawali Foundation Institute for Asia and an Indonesia program within it. The initiatives will coordinate policy research, fellowships, executive education, and exchanges in Asia—models already developed for programs focused on China and Vietnam by Daewoo professor of international affairs Anthony Saich, who will oversee the new entities—and launch similar efforts focused on Indonesia. The Harvard Worldwide website lists a modest number of faculty members and research projects touching on the huge island nation today; the Harvard Institute for International Development (now defunct) used to have a significant field and advisory presence there. With the new resources, Saich foresees a significantly greater academic program in southeastern Asia.

Hospitals' Conflicts Policy

As an outcome of their continuing review of conflict-of-interest policies governing Harvard Medical School personnel and researchers at its affiliated hospitals, the two largest of the latter—Massachusetts General and Brigham and Women's—have decided that senior executives and high-ranking physicians can no longer receive stock or very large fees

Brevia



Lino Pertile

I TATTI'S LEADERSHIP TRANSITION.

Dante scholar Lino Pertile—Pescosolido professor of Romance languages and literatures, and the retiring Eliot House master—has been appointed director of Villa I Tatti, the University's Center for Italian Renaissance Studies, in Florence. He will succeed Joseph Connors, professor of history of art and architecture, director since 2002, who steps down this summer to return to teaching. Last October, a symposium honored the fiftieth anniversary of the death of Bernard Berenson, A.B. 1887, the connoisseur and collector who established the center at the villa; at that time, a million-dollar renovation of the 1950s annex of the Biblioteca Berenson was formally dedicated. The completed work, shown above right, corrected problems in the building systems and provided new shelving and study spaces for visiting scholars. The project entailed moving 120,000 volumes.



PHOTOGRAPHS COURTESY OF VILLA I TATTI

duties associated with serving on corporate boards. Director compensation at major corporations can reach six-figure annual sums.

Mather Masters to Depart

Sandra Naddaff and Leigh Hafrey announced in December that they would step down as master and co-master of Mather House at the end of

this academic year. They follow their Eliot and Cabot House peers, who are also relinquishing their positions (see Brevia, January-February, page 49). Naddaff—who directs the freshman seminar program and is director

of studies in the literature concentration—and Hafrey are the College's most senior master and co-master, having served since 1993.

Academic Appointments AWOL

In the wake of declining endowments and financial pressures throughout higher education, the academic job market appears to be contracting sharply. At its winter meeting, the Modern Language Association forecast a 35 percent reduction in postings for positions in English language and literature, and a 39 percent drop for those in other languages—bringing the two-year decline to more than 50 percent for both categories. The American Historical Association forecast a 24 percent decline in listings—a figure expected to worsen as searches are called off. And the American Economic Association reported a 19 percent decline in academic job listings during calendar year 2009, and a 24 percent decline for positions outside of the academy.

Endowment Manager Pay: On Deck

Harvard Management Company's annual report of the compensation awarded to its five highest-paid staff members, typically released in December, has been delayed this year. To conform to the University's schedule for filing its tax returns, required of nonprofit organizations, the HMC disclosures are now expected in May. The result will be the disclosure of money managers' salaries and bonuses for the fiscal year ended June 30, 2009 (when investment returns on assets were negative 27.3 percent, driving the \$11-billion decline in the endowment's value) nearly at the end of fiscal year 2010. By then, Harvard and other investors can hope for sharply better results.

Nota Bene

ADMISSIONS ANGST. Applications for admission to Harvard College rose nearly 5 percent, to an estimated 30,500, from 29,114 last year; applications rose 19 percent at Princeton and 20 percent at Brown, but declined 1 percent at Yale. Some observers attribute the general increase in application volumes to families' need to shop for competitive financial-aid offers. Separately, the College resumed accepting a very limited number of transfer students for next fall, after a two-year suspension because of limited housing.

MISCELLANY. Jennifer Leaning, who has hands-on experience in humanitarian relief and public-health crises, has been appointed director of the Francois-Xavier Bagnoud Center for Health and Hu-

ART ADVISERS. President Drew Faust has established the Harvard University Committee on the Arts, a 31-member body that will advise her and the provost on ways to enhance the presence of the arts in the community. Its formation was recommended in the December 2008 report of the Task Force on the Arts (see "A Vision for the Arts," March-April 2008, page 45). Burden professor of photography Robin Kelsey chairs the committee; he was profiled in the January-February 2009 magazine. "I am honored to be asked by President Faust to work with the committee's distinguished members to find ways to encourage artistic experimentation and collaboration on our campus," Kelsey said. Among the other members of the committee are Cogan University Professor Stephen Greenblatt, who chaired the prior task force; the dean of Harvard College, Evelyn Hammonds; Hobbs professor of cognition and education Howard Gardner; and Federico Cortese, music director of the Harvard-Radcliffe Orchestra.



Robin Kelsey

WEBB CHAPPELL

COURTESY OF JENNIFER LEANING



Jennifer Leaning

man Rights, based at the Harvard School of Public Health. She succeeds Jim Yong Kim, now president of Dartmouth....Houghton curator of contemporary art Helen Molesworth, who most recently assembled the exhibition of ACT UP graphic material at the Carpenter Center (see "From AIDS to Art," November-December 2009, page 40), has been hired away to serve as chief curator at the Institute of Contemporary Art, in Boston.... Harvard Management Company (HMC) has appointed Neil Mason—previously of FRM Capital Advisors, BlueCrest Capital Management, Bank of America, and



Helen Molesworth

KRIS SNIBBE/HNO

JP Morgan—as chief risk officer; HMC invests the University's endowment and other financial assets....Hasty Pudding Theatricals named actress Anne Hathaway (*The Princess Diaries*, *The Devil Wears Prada*) as its Woman of the Year. Singer Justin Timberlake was recognized as Man of the Year on February 5, before the premiere of the 162nd production, *Commie Dearest*....Harvard College has appointed D.E. Lorraine Sterritt dean for administration; a former assistant dean of freshmen (1996-2000), she had since held student-services and academic positions at Penn and Stanford....The Carlos Slim Health Institute, founded three years ago by the Mexico City-based telecommunications executive, has pledged \$65 million for research on cancer, type-2 diabetes, and kidney disease at the Broad Institute (the MIT-Harvard genomics center) and Mexico's National Institute of Genomic Medicine.

REMEMBERING SAMUEL HUNTINGTON. The late Weatherhead University Professor and public servant—the author of *The Soldier and the State* and *The Clash of Civilizations and the Remaking of World Order*, among other books, who died December 24, 2008—is being honored by a graduate-student fellowship fund. A committee chaired by Peter L. Malkin '55, J.D. '58, and Geyser University Professor emeritus Henry Rosovsky (and including such prominent Harvard international-relations figures as Zbigniew K. Brzezinski, Jorge I. Domínguez, Henry Kissinger, Joseph S. Nye, Robert D. Putnam, James R. Schlesinger, Lawrence H. Summers, Fareed R. Zakaria, and others), has raised nearly \$1 million so far. Malkin remembered meeting Huntington, his Government 1 "section man," as a freshman in 1951—the start of a lifelong friendship. The inspiration for supporting graduate students working in international relations and political science, Malkin said, came from a discovery among Huntington's papers: a notebook detailing his outlays for every meal and cup of coffee during his own penny-pinched graduate education.



meeting, professors Harry Lewis (a former Harvard College dean) and Fred Abernathy published a sharp critique of the Corporation's performance as an op-ed in the *Boston Globe* ("Shrouded in secrecy, decision makers gambled and Harvard lost"). They focused on the recent severe endowment decline and other financial losses, and the decisions concerning spending, fundraising, and increasing reliance on distributions from the endowment that were made earlier in the decade. Their conclusion:

The Harvard Corporation is a dangerous anachronism. It failed its most basic fiduciary and moral responsibilities. Some of its members should resign. But the Corporation's problems are also structural. It is too small, too closed, and too secretive to be intensely self-critical, as any responsible board must be. Until the board can be restructured, the fellows should voluntarily share

their power with the Overseers. And Harvard should reveal the risks of its business plans, as would be required if it were a publicly held corporation. That exercise in transparency would surely serve Harvard well.

The financial pressures facing the University have stimulated discussion about how budgets were made and spending priorities set—and about the Corporation's work. Some of these issues had already bubbled up in an October 16 Harvard News Office interview with University Treasurer James Rothenberg, and in subsequent reporting on Harvard's financial losses by the *Globe's* Beth Healy (see "Further Financial Fallout," January-February, page 45). In a late November dispatch, Healy reported that the Overseers were not told about Harvard's fiscal year 2009 swap and general operating account losses (at least \$2.3 billion, and potentially as much as nearly \$3 billion) until shortly before the news was released to the public in

mid October. (In fact, this may overstate matters. Overseers' expertise and involvements vary, and at least some of those most engaged in financial issues appear to have known these details. What reports were made to the Overseers as a whole, and when, could not be ascertained.)

The *Crimson's* coverage of Houghton's announcement, by Esther Yi '11, may be the clearest indication of change. She included comments from an unprecedented three Corporation members: Nannerl Keohane (president emerita of Wellesley and of Duke) and Rubin, in e-mails, and Reischauer himself, in an interview.

Any such change, it is clear, would emanate from within the Corporation itself, but these stirrings suggest that some new norms for outreach and communication, at least, are being tested.

Look for further reporting on the Corporation, after this issue was sent to the printer, at harvard-magazine.com and in the May-June issue.

FAS Narrows Its Budget Chasm

Addressing the Faculty of Arts and Sciences (FAS) on February 2, Dean Michael D. Smith presented "Recommendations and Next Steps" for the continuing effort to "bring annual expenses in line with the current financial situation we find ourselves in," while enabling the faculty to pursue future priorities.

He cast that effort in an encouraging context: FAS is near a goal of reducing its unrestricted deficit for this fiscal year (ending June 30) from \$20 million to essentially break-even results. Further, it expects to reduce the gap looming over the next fiscal year from \$110 million to an unrestricted deficit now estimated at \$80 million, thanks chiefly to a revenue item: a change in Massachusetts law last year permits institutions to avail themselves of income from "underwater" endowments (where principal has declined below the gift amount because of investment losses like those sustained by Harvard's endowment last year).

Nonetheless, Smith said, the remaining "huge" deficit will not be eliminated by actions being taken now or envisioned in the near term. His goal by the end of this fiscal year is to put FAS on a budgetary path that enables it to operate in a sustainable (non-deficit) way by fiscal year 2012. He forecast that FAS's unrestricted reserve funds would bridge the excess of expenses over available income in fiscal year 2011 and part of the next year before running out.

Smith summarized—without dollar figures—the ideas for further efficiencies and improvements in FAS operations generated by the six working groups he established last year (for arts and

humanities; social sciences; sciences; engineering and applied sciences; College academic life; and College student services). Suggestions from the community at large were also collected at an online "idea bank."

Among the recommendations he said merited implementation soon are: tools to better gauge students' likely course selections, so teaching fellows can be hired more efficiently; curricular committees (like the one for the many life-sciences concentrations) that could reconfigure very small, specialized courses in different departments into more intellectually engaging, somewhat larger offerings—with instructional savings; more flexible faculty use of sabbatical leaves—perhaps staggering them so course offerings can be maintained intact (lessening the need for visiting teachers); and using sponsored-research funds to pay faculty salaries during the academic year (not just during the summer), freeing Harvard-paid salary funds for research. For details, see <http://planning.fas.harvard.edu/index.html>.

This spring, Smith and the leaders of departments and academic centers will engage in a form of financial poker, revising proposals for the fiscal year 2011 budget. Smith is keeping close to the vest data on FAS's reserves, the size of the deficit he can accept, and how he will allocate central funds that are annually distributed to support academic operations.

In the meantime, FAS faces large financial uncertainties. The Corporation has not yet announced the endowment distribution—the faculty's largest revenue source by far—for fiscal 2012. (It has been reduced about \$50 million during the current fiscal year, and a further \$70 million for fiscal 2011.) And administrators will not know until the June 30 election date how many senior faculty members have accepted the retirement incentive offered last December; those decisions, taken together, will affect significantly the future size and cost of the professoriate.

Friending the Faculty...and Others

by MELANIE LONG '10

IT WASN'T UNTIL my senior year, my third year as a Lowellian, that I had any meaningful interaction with the members of our Senior Common Room. The SCR consists of the House master and co-master, faculty members, graduate-student tutors, visiting scholars, and Harvard administrators and staff. It is intended to add to the House community a set of senior members with whom undergraduates can interact freely in a mutually enriching way, to broaden our education in informal settings outside the classroom—one goal of the College's House system. I think many of us would welcome that broadening contact. But based on my own experiences, making these connections can be challenging.

"SCR" also refers to a room designated for use by its members only, the way undergraduates have their Junior Common Room in which to gather. I spent junior year living above the SCR. Returning from class on Wednesday afternoons, I had to walk past the open door of the room where the SCR members were holding their weekly meeting. Although I began to recognize many of their faces, I knew none of them. In fact, I always worried that I was disturbing them, because the noise of the entryway door closing behind me often drew glances my way. It's

likely those glances were just a reaction; nonetheless, the sense remained that I was distinctly separate from their group.

A handful of nonresidential members do frequent the Lowell dining hall and introduce themselves to undergraduates. Once, over a meal with a visiting scholar who had decided to join us, my friends and I remarked that we knew very few SCR members. In reply, she remarked that it is intimidating to join a group of undergraduates in the dining hall: will they be receptive or annoyed? As a result, she said, most SCR members eat together—or don't come at all. She had felt comfortable

joining us because we were eating with a resident tutor whom she knew, who was able to introduce us. We had a

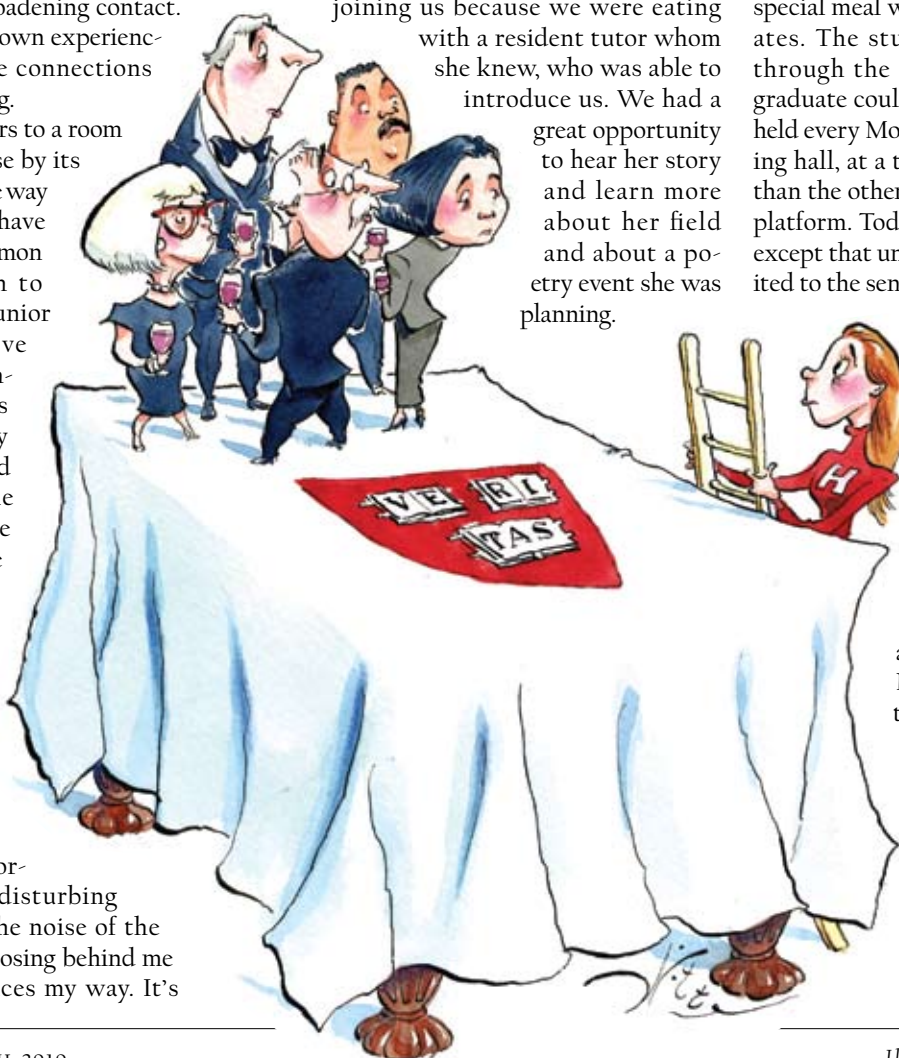
great opportunity to hear her story and learn more about her field and about a poetry event she was planning.

That's when I realized that many of Lowell's SCR affiliates and I had something in common. Although a few individuals on both sides were willing to brave the initial awkwardness to establish a connection and become a familiar face, for most of us, separation is the norm.

But Lowell does host an event that provides a platform to ease interaction. High Table, a tradition unique to our House, has been in existence since the 1930s, when Professor J. L. Coolidge, S.B. 1895, was master. Originally, High Table was an opportunity for the Senior Common Room and other invited guests to share a special meal with a group of undergraduates. The student invitations rotated through the year, so that each undergraduate could attend. High Tables were held every Monday, at the back of the dining hall, at a table that is literally higher than the others—it stands on an elevated platform. Today, the tradition continues, except that undergraduate guests are limited to the senior class.

I spent sophomore and junior years watching seniors dressed in formal attire join members of the SCR at the back of the dining hall, eating food that looked much better than our usual fare, and could not wait until I had my turn. When I received my invitation to attend High Table this past November, I was excited to take part in this Lowell tradition.

And the event managed to surpass my already high expectations. I entered the master's residence for a pre-dinner reception, where I was able to mingle with classmates, SCR members, and



It's time to try harder to revitalize this unfulfilled promise of the House system.

Lowell alumni. Within minutes, I had met a faculty member from the Graduate School of Education and we were able to discuss my interest in Teach For America. After we had all had the opportunity to introduce ourselves, we proceeded to the dining hall, where a carefully planned seating chart had placed undergraduates near SCR members who shared common interests, and ensured that the two groups were well interspersed.

The evening turned out to be more than just a break from dining-hall food, or an excuse to dress up. I had the chance to get to know SCR members who provided both entertaining conversation and helpful advice: topics ranged from what we did for Halloween to our academic and potential career interests. That balance of casual conversation and advising was great. Also, knowing that Lowellians have congregated at High Table for more than 70 years, and meeting some of the Lowell alumni who were enjoying the opportunity to take part once more, made me feel even more connected to my House and its history.

ALTHOUGH I'M THANKFUL that Lowell House has an established tradition that

encourages interaction with the SCR, I wish I could have formed those connections earlier. Apparently, I'm not alone. The "Report on Harvard House Renewal," published last spring, identified the lack of substantial interaction between SCR members and students as a fundamental shortfall, given the College's aspirations for its undergraduate residences.

In a letter introducing the report, dean of Harvard College Evelyn M. Hammonds stated, "Of all of the concepts discussed by the subcommittees, faculty leadership and involvement may be the most fundamental to the mission and purpose of House life.... The educational potential of College housing is even more promising when faculty shape the residential community and engage students in educationally purposeful activities."

The House Program Planning Committee has recommended a trial House Fellows Program that aims to increase "casual yet meaningful interaction between faculty and students" by developing initiatives that build on each House's unique identity and traditions: Lowell's High Table is one example. But when Houses sponsor special faculty presentations, student turnout is often low.

As for more popular, existing House events that help establish ties with nonresidential members—holiday dinners and gatherings at the master's residence—the problem is that such gatherings don't necessarily facilitate sustained connections or friendships. For example, the weekly Lowell master's tea draws a

mostly residential crowd, but also a few nonresidential affiliates. On one occasion, I met a European graduate student who was spending the year at Harvard. I have lived abroad and it was fun to talk about our travels and to get her perspective on the Harvard experience. Although her studies focused on science, she wanted to explore a variety of fields during her time here, and I was able to give some suggestions for good English courses. In return, she offered reassurances about not being certain of what to do after graduation, explaining that she was still exploring an array of interests herself. It would have been nice to keep in touch, but I never saw her again and didn't have her full name or contact information. I could have attempted some detective work to find her; instead, I just accepted it as a one-time connection. Clearly, some other models need to be tested.

In the past, some faculty members lived and worked in the Houses, increasing their visibility among the undergraduates. But as the undergraduate population grew and fewer faculty members remained in residence, the degree of interaction changed as well. I now know that broadening informal contact with faculty members is welcome and rewarding—and that it's time to try harder to revitalize this unfulfilled promise of the House system. ♡

*Berta Greenwald Ledecy Undergraduate Fellow
Melanie Long '10 is excited about enjoying her last months as an undergraduate.*

SPORTS

Badminton's Lightning Charm

Chasing a bird that flies indoors at 200 mph

IN 1985, an astonishing time-motion study compared badminton with tennis. That year, Boris Becker defeated Kevin Curran in four sets for the Wimbledon tennis championship, and, amid far less fanfare, Han Jian of China bested Denmark's Morten Frost in three

sets of badminton at Calgary. The Wimbledon match lasted three hours and 18 minutes; the badminton contest took only one hour, 16 minutes. During the matches, the tennis ball was actually in play for a mere 18 minutes, as compared with 37 minutes for the badminton shuttlecock. Beck-

er and Curran had 299 rallies and struck 1,004 shots; Jian and Frost had only 146 rallies but hit 1,972 shots, for an average of 13.5 per rally, about four times as many as the 3.4-shot average tennis point. And the distance covered by the players? Two miles in tennis, four miles in badminton.



A badminton rally in progress at the Malkin Athletic Center. Above, right: Harvard Badminton Club co-presidents Abraham Lin and Lauren Schumacher.



This isn't science; it's a comparison of two matches that took place more than two decades ago, at the highest levels of competition. One reason badminton rallies last longer is that the court is smaller—a tennis doubles court covers roughly triple the area of its badminton counterpart. But these data should put to rest any notion that badminton is no more than an amusing game played at summer cookouts with a beer in one hand and a racquet in the other. In fact, the Harvard Badminton Club (HBC) directly confronts that laid-back image on its website (www.hcs.harvard.edu/badminton), displaying the club's Latin motto: *Non est picnicum* ("It's no picnic").

Actually, badminton has been an Olympic medal sport since 1992. Some call it the fastest, most demanding racquet sport in the world. Serious players compete indoors, in gymnasiums, as wind has marked effects on the duck- or goose-feathered shuttlecock (only recreational players use plastic ones). With different aerodynamic properties than a tennis or squash ball, the shuttlecock has been clocked at speeds as high as 262 miles per hour, though the feathers also drastically increase drag, decelerating the "bird" more rapidly than a ball. (The very best tennis servers crack the 140 mph or, very rarely, 150 mph barriers.) "It's very fast," says Abraham Lin '10,

co-president, with Lauren Schumacher '10, of the HBC. "A rally of 10 to 20 shots might take less than a minute." When the bird hits you at short range, he adds, "It has quite a bit of force. It stings for a while."

Badminton matches are the best two out of three sets. The first player or doubles team to make 21 points wins a set; if the score reaches 20-20, one must win by two, and if it reaches 29-29, the next point is decisive. The sport uses rally scoring: every point served results in a point scored for one side. Unlike tennis, where the

server has a decided advantage, or volleyball, where the receiving team has an edge, in badminton, server and receiver are on fairly even footing. "In tennis, the serve is a weapon," Lin explains. "But in badminton, you're serving *underhand*. You want to keep the serve low, just clearing the net, so opponents can't attack it. To serve high and short is a telltale sign of not having been trained properly."

As in tennis, Ping-Pong, and volleyball, there's an offensive advantage in forcing opponents to hit *up*, enabling the attacking team to smash the shuttlecock to the floor and so end the point. Badminton players jump high to drive the bird earthward at steep angles. Men's doubles, in particular, requires lightning reaction times, as defenders scramble to return such smashes. For related reasons, players switch racquets for doubles matches. "Doubles is a faster game," Lin explains, "so to keep up with the other side, you need a faster, lighter racquet. It's rare that you have that much time to react."

Singles players tend to favor more head-heavy racquets, which produce greater

Sports Wrap

Basketball

The **men's** team (14-4, 3-1 Ivy) had its strongest start in 25 years, vanquishing non-conference powers like Boston College (74-67) and George Washington (66-53). They began the Ivy campaign with two wins over Dartmouth and trounced Columbia, 74-45, but on the same New York road trip were blown out (86-50) by Cornell, seeking to three-peat as Ivy champs. Co-captain Jeremy Lin '10 (see "Hoops Houdini," March-April 2009, page 54) led the scoring with a 17.1 points-per-game average at midseason.

The **women** hoopsters (11-6, 2-1 Ivy)

ran off a 9-4 record against non-conference opponents before dropping a close Ivy opener to Dartmouth, 45-44. (The Big Green has finished atop the Ivies for the past two years, sharing the title with Harvard in 2007-08.) The Crimson recovered quickly with home wins over Columbia and Cornell.

Swimming and Diving

The **men's** squad (7-2, 6-1 Ivy) finished second to Princeton and well ahead of Yale at the annual HYP meet held in Princeton, with Harvard posting the top four times in the 500 freestyle. The **aqua-women** (6-1, 6-1 Ivy) achieved similar results at the HYP, falling to Princeton while beating Yale.

Hard Times for Harvard Football

Bolstered by war veterans enrolling under the GI Bill, Harvard's 1946 football squad was hailed as the best in decades. Yet the next four seasons brought a mounting series of defeats, attributable in part to bad scheduling, bad coaching, bad breaks, and in one instance—a 44-0 loss at Stanford Stadium—bad footwear. Those Crimson teams did not lack fighting spirit, but the seasons of 1949 (1-8) and 1950 (1-7) were the worst in Harvard annals. Administrators weighed giving up football, but opted instead to help form an Ivy League athletic conference as a corrective to the excesses of big-time college football. Those arduous years are recaptured in *"The Old Timers": Harvard Football, 1946-1950*, a video documentary scripted and narrated by George Abrams '54, LL.B. '57. A Boston attorney, art collector, and diehard football fan, Abrams made the 45-minute DVD as a tribute to a band of former players who call themselves the Old Timers and gather for fall reunions. Ex-gridders of that era include Howard Houston '50, Phillip Isenberg '51, M.D. '55, and

Carroll Lowenstein '52, who respectively captained the teams of 1949–1951; place-kicker Emil Drvaric '49, M.D. '53, and John Coan '50, M.B.A. '53, rugged linemen who lettered three times; Chester Pierce '48, M.D. '52, the first African American to compete against a major Southern team; and Hal Moffie '50, M.A.T. '59, who still holds the record for Harvard's longest punt-return touchdown (89 yards versus Holy Cross, 1948).

Harvard at Army, 1948: The Black Knights won, 20-7. The ball carrier is Chuck Roche '50.



The "Old Timers" DVD is available for \$20, including shipping, from Play It Again Video Productions, 31 Fremont St., Needham, Mass. 02494 (tel. 800-872-0986).

power. But all badminton racquets are feather-light by the standards of other racquet sports. They range in weight from as little as 67 to 95 grams or so (2.4 to 3.4 ounces). Tennis sticks range from 269 to 354 grams, or 9.5 to 12.5 ounces, strung—about four times the heft.

Badminton rules specify that the birds will fly with 16 feathers affixed to the cork base. Those feathers can wear out quickly, especially in high-level play: at the Olympics, a new bird may last only five minutes. A can of 12 feathered Yonex shuttlecocks sells for \$19.95 at the Tennis & Squash shop in Harvard Square; a dozen tournament-grade birds runs \$10 more. Racquets for badminton are roughly comparable to tennis racquets in price, ranging from around \$50 to nearly \$300.

THE HBC HAS about 100 members, more than half of whom are undergraduates, although graduate students and faculty and staff members are welcomed; there's even instruction available for beginners. Saturdays and Sundays, there are practice sessions on two courts at the Malkin Athletic Center (MAC) from 10 A.M. until 2 P.M.; a couple dozen players show up, and

those not on court may hit the bird with-out a net.

The club's website traces the history of the current HBC to 1987. At that time, as few as three players were showing up for games at the MAC, where the shuttlecock enthusiasts sometimes skirmished with basketball players over court time and space. In recent years, under the leadership of Cathy Cheng '07, the club competed in the Northeast Intercollegiate Badminton League (NIBL), which included MIT, Boston University, Boston College, Tufts, Babson, and Brandeis. Harvard went 2-6 in its first NIBL year (2004-05), but the following season posted an 8-0 record to win the championship.

"There's no longer a formal league," says Lin, though the national Intercollegiate Badminton Association is working to set up conferences and tournaments. Meanwhile, the HBC arranges friendly matches with neighboring colleges. This year, for the first time, the club is organizing an intramural tournament that will score points in the annual Straus Cup competition among the Houses; 150 to 200 undergraduates have expressed interest in coming out to bat the birdie.

In international badminton, China is the dominant nation: at the 2008 Beijing Olympics, Chinese athletes won gold medals in all badminton events except men's and mixed doubles, where teams from Indonesia and South Korea, respectively, triumphed. Denmark has long been the European badminton power. The Harvard community mirrors the world in that "the likelihood of a badminton player being Asian is very high," says Lin, smiling, though he notes that this year, a far more diverse group of players, perhaps only half from Asian backgrounds, have been coming out.

The sport's origins, in fact, span Occident and Orient. Derived from the ancient game of battledore and shuttlecock, it was popularized by British army officers in mid-nineteenth-century India, and called Poonai for a time, after the garrison town of Poona. In 1873, the sport had its definitive launch at Badminton House in Gloucestershire, seat of the duke of Beaufort; the modern game takes its name from that venue. Today, the HBC is part of a global community of players. It may be no picnic, but they seem to be having a lot of fun. ~CRAIG LAMBERT

PHOTOGRAPH BY JOHN SNEDDON

Horseplayer Extraordinaire

Newspaperman for the turf tribe

DESPITE NEWSPAPERS' hard times, at least one daily is thriving, even though its price—\$5 to \$6 a copy—makes it one of the most expensive papers in the world. In a way, that high price is the *Daily Racing Form's* strength: 95 percent of its revenue comes from circulation, only 5 percent from advertising. Furthermore, the DRF, which is to horseplayers what the *Wall Street Journal* is to investors, also prospers online: about 20 percent of its revenue comes from downloading fees for its racetrack data. Steven Crist '78 is the DRF's publisher and chairman; he was bitten by the racing bug in college and has built his entire career around the turf. "The stats and numbers stuff is there," he says, "plus the animals, the gambling—and the weird subculture: the racetrack is...well, like people who ran away and joined the circus."

Though it's edited in downtown Manhattan, the DRF publishes—every day but Christmas—up to 35 regional editions keyed to action at local tracks. (Horses race in more than 30 states, in all parts of the country save the Deep South.) There are 35,000 horse races per year in the United States, which, after Japan and the United Kingdom, bets the third-largest amount of money on their outcomes. (Racetracks in Asia can draw 75,000 to 100,000 on weekends, compared with a typical Saturday's 10,000 at Belmont Park, not far from Crist's home on Long Island.)

The racetrack economy has evolved in recent decades. "Fifty years ago, horse racing

had a virtual monopoly on legal gambling," Crist explains. "Other than Las Vegas, there were no casinos. Now there are a lot of gambling and entertainment options and, sad but true, it's much easier to sit at a slot machine and pull a handle than to spend years learning how to read the *Racing Form* and handicap horses. You have to work before you make a bet on a horse race; at a casino, you just walk in, order a drink, and start gambling."

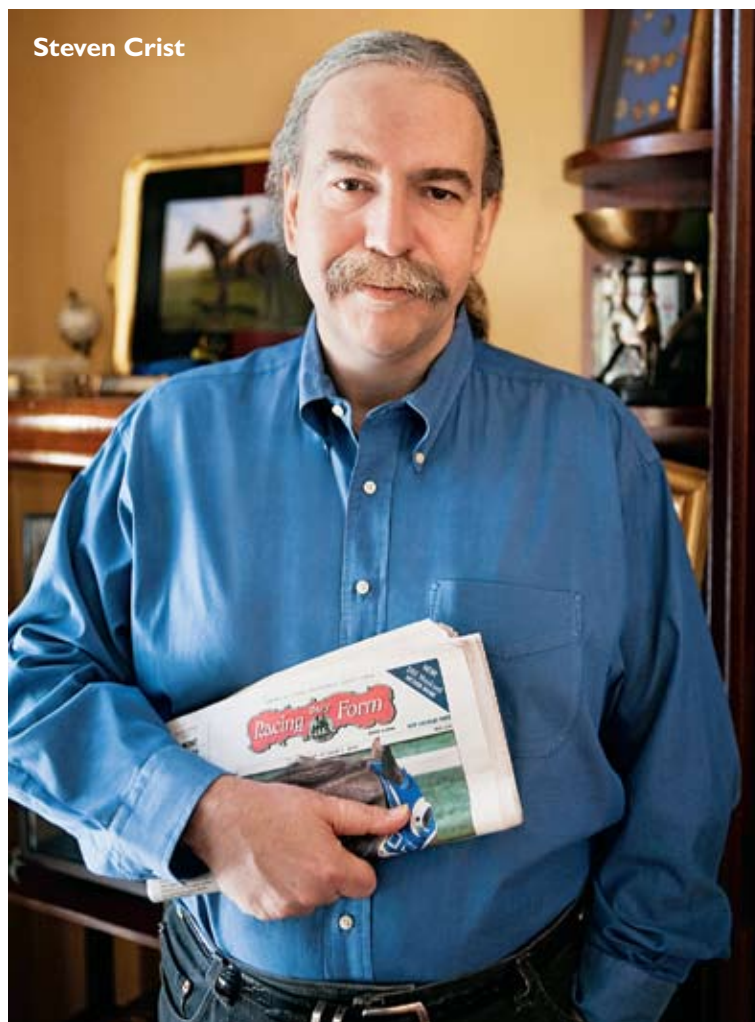
But if slot machines and lotteries have siphoned off income from racetracks, there's still an annual racing handle of

\$13 billion—more than Hollywood's box office—and the Internet has made it easy to wager on races from the comfort of your home, which is exactly what Crist does.

Yet it's harder now to prosper as a horseplayer. That's because racetrack betting employs a pari-mutuel system in which the bettors who pick the top finishers divide the losers' stakes, minus the racetrack commission: hence, poor gamblers subsidize the winners. "Twenty years ago, if you made your own speed figures [a method of standardizing horses' running times for comparison, popularized by noted handi-

capper and *Washington Post* columnist Andrew Beyer '65] and followed horseracing closely, you had a real edge over the majority of the public," Crist explains. "But now, so many of the bad gamblers—the people who *should* be pulling handles on slot machines—have left racing for casinos that one of the great regrets of current horseplayers is: 'Where did all the suckers go?' You want to be betting against people who are betting based on colors and jockeys and hunches."

Today Crist's titles of chairman and publisher are largely honorary and his ownership stake in the DRF is less than 1 percent. "I'm the crazy uncle in the attic whom they leave alone to write and blog and consult about the data," he says. He bets avidly but goes to the track less; having attended 25 Ken-



Steven Crist

Photograph by Robert Adam Mayer

tucky Derbies, he hasn't been to Churchill Downs for the past two years.

He bets his own money, and "I do it in a very public way," he says. "For the big betting days of the year, like Breeders' Cup or Derby Day, I do it all in real time [on his blog] and might post 12 or 15 times through the day. I lay out my whole play: here's \$3,000 worth of tickets. People follow along, either rooting for me or against me."

FROM 1981 until 1990, Crist was a horse-racing reporter and columnist for the *New York Times*. As "an old-fashioned print guy, I was dragged kicking and screaming into blogging," he says. "Now, I love the format. You're not constrained by space, and you can do it anytime you want. I usually write a column for Saturday and Sunday, but if something happens on Tuesday that ticks me off, I can post about it immediately. I put up video clips of races and screen grabs of past performances, charts—there's a lot of stuff going on."

Statistics and probabilities of athletic performance laid the groundwork for his love of playing the ponies. He grew up an only child on the Upper West Side of Manhattan; his father had his own public-relations firm and his mother is the film critic Judith Crist. In his 2003 memoir, *Betting on Myself: Adventures of a Horseplayer and Publisher*, he recalls that as a child, he developed an "obsessive devotion to a board game called Strat-O-Matic, a baseball simulation that to this day has a cult following. I would play entire 162-game seasons at my desk," he writes. "I developed an unconscious fluidity at calculating percentages....It became second nature to me that a batter who started the season with 24 hits in 84 at-bats was a .287 hitter."

At Harvard, he concentrated in English and joined the Lampoon. One summer night after his junior year, he went to the Wonderland dog-racing track near Boston with his friend George Meyer '78. It proved an epiphany. Reading the race program's summary of the past performances of the greyhounds racing that night "was like hearing a new language but understanding it right away," Crist writes. The Wonderland track, then a "charming little place, with a festive feeling—the animals, lots of

people," made an immediate impression. "This is the greatest place I've ever been!" he recalls thinking. "I felt right at home, the first night."

For the rest of that summer, Crist and Meyer went to the dogs almost every night, and added horse racing, too, at Suffolk Downs. At first Crist preferred the greyhounds, because the smaller scale of a dog track was "more manageable." (Today, two small cast-iron horses flank his front door, and he and his wife, Robin Foster, a fellow horse-racing writer and editor, are the adoptive parents of two retired racing greyhounds. They also own a nine-year-old retired thoroughbred, Teddy, who raced as Three Steps Ahead.)

Crist's consuming fascination with racing propelled him into his job at the *Times*, where he became the horseracing correspondent. His columns included outspoken criticism of the sport's Bible, the *Daily Racing Form*, which dates from 1894. "The *Racing Form* that I grew up with in the '70s and '80s was just a terrible newspaper," Crist recalls. "The so-called articles were heavily edited press releases, where not a discouraging word was ever said. Gambling was hardly mentioned. There was this huge disconnect between the paper, both editorially and statistically, and the gamblers, who were very sophisticated."

In 1990, representatives of British media magnate Robert Maxwell approached Crist about editing a new paper, *The Racing Times*, to be launched as a competitor to the DRF, which had been newly acquired by Rupert Murdoch. "It was pretty tough to leave the best job at the *New York Times*," Crist says. "I mean, really—to get paid by the *Times* to go to the racetrack and write about it? What a great gig. But how many journalists get the opportunity to create the newspaper of their dreams, and take on the hated *Racing Form*? So I did it."

With the *Racing Times*, Crist's goal was to produce a legitimate newspaper with real reporting and dramatically enhanced statistical data. He hired the 10 best writers on the sport, such as Beyer, and put out what he and many others considered "a vastly better version of the *Daily Racing Form*." Within six months, they had captured 30 percent of the market and the future looked rosy. Then, in 1991, Maxwell went overboard from his yacht and drowned under "weird, suspicious circumstances that have never been resolved,"

"This is the greatest place I've ever been!" he recalls thinking. "I felt right at home, the first night."

Crist says. Maxwell's estate soon sold the *Racing Times* to Murdoch, who folded it, re-establishing his monopoly.

Crist spent the next three years as a professional horseplayer, and "never enjoyed racing less. Betting horses is a much better hobby than a profession. It plays with your head if you're trying to win to eat." In 1992, Governor Mario Cuomo appointed him to the New York State Commission on Racing in the 21st Century; there, he drafted recommendations and legislation that subsequently became law. And for two years, he was a vice president of the New York Racing Association, in charge of simulcasting, marketing, and corporate development; he introduced in-home simulcasting of races.

Then, one day, the DRF announced, on page 4, that the paper was to be sold. Crist and a group of investors eventually acquired it for \$40 million, and Crist served as CEO from 1998 until 2002. Since then, it has been sold twice to venture-capital groups, but Crist has remained centrally involved.

In addition to his memoir, he has written several other horse-racing books, including *The Horse Traders* (1986) and *Exotic Betting* (2006). The latter deals with the mechanics of new, complicated betting options that racing has developed during the last decade, particularly the "pick six," in which bettors have to pick six consecutive winners. "You don't actually just pick one horse in each race and make out one ticket," Crist explains. "There's a fairly complicated matrix of tickets you fill out and try to include all six of those winners. Until recently, when it's had to compete with other forms of gambling, racing almost pretended there was no betting going on—they made no effort in their advertising and marketing to appeal to bettors, game players, and gamblers. Consequently, racing has done very little, historically, to educate its customers about how to play these bets."

His own wagers have put him ahead



Visit harvardmag.com/extras for a video clip of Steven Crist discussing exotic wagers.

overall, though “when you spend eight to 10 hours a day at this for 20 or 30 years, it works out to minimum wage, or less,” he says with a guffaw. One reason there are only a couple hundred professional horseplayers in the country is the “takeout”: the racetrack skims off 20 percent of every dollar wagered before paying off the winning bettors. The takeout goes toward operating racetracks and paying purses for owners, breeders, trainers, and jockeys, as well as paying the slice for state governments. (Betting sports in Las Vegas involves a takeout of 4.5 percent, roulette takes 5.25 percent, slots, 10 percent, and lotteries 40 percent to 50 percent. Two or three times a year, Crist, an excellent poker player, goes to Vegas to play cards, which he finds “relaxing.”)

Gambling on Wall Street, or at games of pure chance like roulette, holds no interest for Crist. People sometimes remark that the one thing he hasn't done in the sport is own a racehorse, but “I own the horse I'm betting on for one minute and 12 seconds, and that's good enough for me,” he says. “There is a strong feeling of success for your ego when you make a winning bet. When their horse crosses the finish line in front, horseplayers never say, ‘What a good horse!’ They go, ‘That was me—me, me, me!’ That's part of the pleasure of horse racing, and why it's so much more fun to pick your own horses than to bet somebody else's picks. With a Wall Street stock, I can't imagine the same feeling of satisfaction.”

He believes that jockeys are “hugely overrated” as a factor in racing; without minimizing the skill or danger involved in riding, he says, “You could take the top 20 jockeys in America, switch them on all their mounts, and the races would come out the same.” That's an example of his contrarian thinking. In fact, he says, “That's what you have to do to succeed in a marketplace of opinions.” He notes that at the track, for example, if you always bet the favorite, you'll win one-third of the time, but predictably lose at least 10 percent of your stake in the long run.

Over the years, Crist has heard every theory under the sun on how to bet horses, but has seen no secret formula for success. “There are a hundred little things going on,” he says. “But the most important single piece of information is how fast a horse can run from point A to point B.”

~CRAIG LAMBERT

Vote Now

THIS SPRING, alumni can choose five new Harvard Overseers and six new directors for the Harvard Alumni Association (HAA) board. Ballots will be mailed out by April 1 and are due back in Cambridge by noon on May 21 to be counted. Election results will be announced at the HAA's annual meeting on May 27, on the afternoon of Commencement day. All holders of Harvard degrees, except Corporation members and officers of instruction and government, are entitled to vote for Overseer candidates. The election for HAA directors is open to all Harvard degree-holders.

For Overseer (six-year term), the candidates are:

Cheryl Dorsey '85, M.D. '91, M.P.P. '92, New York City. President, Echoing Green.

Joseph Fuller '79, M.B.A. '81, Cambridge. Cofounder, vice chairman, and CEO, Monitor Group.

David Heyman '83, London, film producer.

Walter Isaacson '74, Washington, D.C. CEO, The Aspen Institute.

Nicholas Kristof '82, New York City. Columnist, the *New York Times*.

Karen Nelson Moore '70, J.D. '73, Cleveland. U.S. Circuit judge, U.S. Court of Appeals for the Sixth Circuit.

Diana Nelson '84, San Francisco. Director, Carlson Companies, Inc.

David Tang '75, Seattle. Managing Partner, Asia K&L Gates.

For Elected Director (three-year term), the candidates are:

Kenneth Bartels '73, M.B.A. '76, New York City. President and CEO, Paxton Properties, Inc.

Roger Fairfax Jr. '94, J.D. '98, Washington, D.C. Law professor, George Washington University Law School.

Mark Fusco '83, M.B.A. '90, Westwood, Massachusetts. CEO, Aspen Tech.

Lindsay Hyde '04, Boston. Founder and president, Strong Women, Strong Girls.

M. Margaret Kemeny '68, New York City. Professor of surgery, Mt. Sinai School of Medicine, chief of surgical oncology, and director of the Queens Cancer Center.

George Newhouse Jr. '76, Los Angeles. Partner, Brown, White & Newhouse, LLP.

Reynaldo Valencia, J.D. '90, San Antonio. Associate dean for administration and

finance; professor of corporate and securities law, St. Mary's University School of Law.

Victoria Wells Wulsin '75, M.P.H. '82, D.P.H. '85, Cincinnati. Physician, Mid-City Pediatrics.

Irene Wu '91, Washington, D.C. Director of international research, U.S. Federal Communications Commission; adjunct professor, Georgetown University.

Harvard Serves

DURING APRIL, the University community—in Greater Boston and around the globe alike—are invited to participate in the Harvard Alumni Association's public service initiative, “Harvard Serves.” Inspired by President Drew Faust's exhortation to apply “our knowledge to help advance the well-being of people in the world beyond our walls,” the HAA hopes to mobilize all 300,000 alumni worldwide, and the extended Harvard family, to volunteer our time and efforts in our own communities.

Events will be organized through local Harvard Clubs, Shared Interest Groups (SIGs), and individual classes; organizers will choose one or more dates during the month of April for their service opportunity. If you would like to get involved, e-mail harvardserver@post.harvard.edu. A full list of service opportunities and specific dates of projects in your area will be available at alumni.harvard.edu on March 1.

Alumni Awards

THE HAA CLUBS and SIGs Committee Awards honor individuals who provide exemplary service to a Harvard Club or Shared Interest Group, as well as to clubs and SIGs that have organized exceptional programming. Awards were presented to the following recipients at the HAA Board of Directors winter meeting on February 4.

Jake Arbes '73, of Atlanta. As president of the Harvard Club of Georgia, Arbes has helped the club grow substantially, both financially and socially. Club events, ranging from public-service projects to recent graduate dinners, have attracted more than 100 local alumni. Arbes has also bolstered the club's relationship with the HAA, partnering on programs such as the HAA Global Networking Night, the HAA Global Day of Service, and Early College Awareness.

Anne M. Dewez, M.B.A. '81, of Monaco. Since she assumed the presidency of the Harvard Club of Monaco in 2005, Dewez has demonstrated leadership by maintaining high-level programs while working with other regional university clubs to create joint activities that benefit all area alumni. In 2008, she also developed and organized an event that brought together 175 local high-school students with representatives from Harvard, Amherst, and the University of Pennsylvania to learn about attending college in the United States.

See-Yan Lin, M.P.A. '70, Ph.D. '77, of Kuala Lumpur, Malaysia. As HAA regional director for Asia for 12 years, Lin has helped create a strong network of Harvard clubs. He is the founding deputy president for the Association of Harvard University Alumni Clubs of Asia (AHUACA), and he has played a pivotal role in organizing several Asian club conferences. He has also served as president of the Harvard Club of Malaysia since 2002, and was deputy president from 1983 to 2002. In addition, Lin has been a leader within the Harvard Graduate School Alumni Council, serving as the chair, 2002-2005.

The Harvard Arab Alumni Associa-

tion, founded in 2001, has more than 500 members who span five decades and represent nearly every school at the University. HAAA's goal is one of inclusiveness and cooperation; it seeks to build bridges by bringing together the intellectual capability, innovation, and creativity from the University with the richness and diversity of the Arab world. The organization holds annual conferences, in both Cambridge and the Middle East, which unite students and alumni with world-renowned experts in a unique forum focusing on a wide range of topics. The 2009 conference in Cairo, entitled "The Arab World: Shaping the Future" (see "Cairo Conference," September-October

2009, page 63), drew more than 200 people.

The Harvard Club of Phoenix serves 2,000 alumni in metropolitan and rural areas. During the last four years, the club has reinvigorated itself, holding 22 events last year, including a day of public-service work at a local food bank, and evenings with guests ranging from Bass professor of government Michael Sandel to Arizona state legislators. Its schools and scholarships committee conducted 325 interviews for applicants to the College class of 2013 and, as a way to bolster membership, the club has instituted a "one thing" policy through which each board member makes one significant contribution to the organization every year.

A Special Notice Regarding Commencement Exercises

Thursday, May 27, 2010

Morning Exercises

To accommodate the increasing number of those wishing to attend Harvard's Commencement Exercises, the following guidelines are proposed to facilitate admission into Tercentenary Theatre on Commencement Morning:

- Degree candidates will receive a limited number of tickets to Commencement. Parents and guests of degree candidates must have tickets, which they will be required to show at the gates in order to enter Tercentenary Theatre. Seating capacity is limited, however there is standing room on the Widener steps and at the rear and sides of the Theatre for viewing the exercises.

Note: A ticket allows admission into the Theatre, but does not guarantee a seat. Seats can not be reserved. The sale of Commencement tickets is prohibited.

- Alumni/ae attending their reunions (25th, 35th, 50th) will receive tickets at their reunions. Alumni/ae in classes beyond the 50th may obtain tickets from the College Alumni Programs Office of the Harvard Alumni Association (HAA), 124 Mount Auburn Street, sixth floor, Cambridge 02138; 617-495-2555; or through the annual Tree Spread mailing sent out in March.

- Alumni/ae from non-major reunion years and their spouses are requested to view the Morning Exercises over large-screen televisions in the Science Center, and at designated locations in most of the undergraduate Houses and graduate and professional schools. These locations provide ample seating, and tickets are not required.

Afternoon Exercises

The Annual Business Meeting of the Harvard Alumni Association convenes in Tercentenary Theatre on Commencement afternoon. All alumni and alumnae, faculty, students, parents, and guests are invited to attend and hear Harvard's president and featured Commencement speaker deliver their addresses. Tickets for the afternoon ceremony will be available through the HAA, 124 Mount Auburn Street, sixth floor, Cambridge 02138.

—Jacqueline A. O'Neill, University Marshal

Comings and Goings

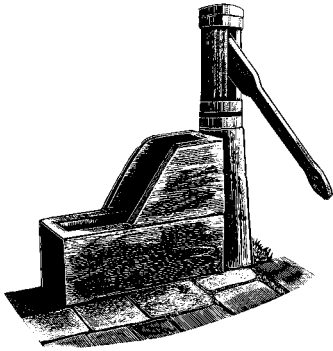
Harvard clubs offer a variety of social and intellectual events around the country. For information on upcoming programs, contact your local club directly; call the HAA at 617-495-3070; or visit www.alumni.harvard.edu. Below is a partial list of early spring happenings.

On March 12, the **Harvard Club of Sarasota** offers "Did the Reset Button Work?" with Carol Saivetz, associate of the Harvard Ukrainian Research Institute and of the Davis Center for Russian and Eurasian Studies. On March 25, Shattuck professor of government Paul Peterson discusses "Saving Schools: From Horace Mann to Virtual Learning" with members of the **Harvard Club of Seattle**. On March 28, the **Harvard Club of Broward County** explores the question, "Was the Obama Campaign a Social Movement?" with Timothy McCarthy, lecturer on history and literature and public policy director of the Hu-

man Rights and Social Movements Program at the Carr Center for Human Rights Policy. McCarthy also visits with members of the **Harvard Club of Long Island** to explore "Teaching History and Changing Society" on April 18.

On April 21, Marshall Goldman, senior scholar at the Davis Center for Russian and Eurasian Studies, talks about "Putin, Petroleum, Power, and Patronage" at the **Harvard Club of Minnesota**. "Coping Strategies for Optimal Aging" is the topic led by clinical instructor in psychology Douglas Powell on April 21 at the **Harvard Club of Southern California**. The following night, at the **Harvard Club of Georgia**, former Starr professor of Hebrew literature James Kugal talks about "The Bible and Its Interpreters." On April 28, the **Harvard Club of Northeast Ohio** considers "The Biology of Circadian Rhythms: Sleep, Jet Lag, and Resetting Your Clock" with J. Woodland Hastings, Mangelsdorf professor of natural sciences.

Tidbits, One Ringtailed



"Your wooden arm you hold outstretched to shake with passers-by."

A CONTRIBUTING EDITOR of this magazine, Christopher S. Johnson '64, of Cambridge, read the entire forty-fifth anniversary report of his College class, all 576 pages, and sent Primus a note pointing to dozens of good parts. The report has reflections by 719 people on the pains and pleasures of their lives. The class has, by the way, a Stephen Johnson and a Steven Johnson, two David Nelsons, two David Millers, two Brian Silvers, two Larry Sheltons, two David Stones, two John Thorndikes, two Stephen Schlesingers, and a woman whose first name is Christopher—Christopher Boldt Affleck, mother of Ben. Class reports burst with humanity. We have space to cite only a few tidbits.

Christopher Carlsen, of Santa Fe, an attorney, observed: "As one goes forth, day following day, to right (or at least attempt to do so) wrongs done to individuals, one sometimes feels a sense of hopelessness at the sheer magnitude of the task. But one keeps on. Always a little startled that one still has one's hand in; but more puzzled by those who, having spent a lifetime learning how to do something well, suddenly throw it over and move to Florida. Well, God bless them anyway. God bless us all for that matter."

Peter H. Lowry, of Cincinnati, a physician, worried about the future his grand-

daughter will face: "I don't think Congress can act collectively to dow what makes sense for the country. Our 200-year-old governmental system, designed to diffuse power in a rural agrarian society, seems, to me, to be breaking down. No matter who is president or what his (or her) program is, it is bound to be frustrated and the president is liable to end up wandering the halls of the White House at night talking to pictures of Richard Nixon."

Martin Quinn, of San Francisco, a mediator, reported a conviction about himself: "I know one thing for sure. Where I am now, 45 years after leaving Harvard College, is largely due to stupendous luck. Yeah, some talent was involved. And yes, being diligent and conscientious played a part. But in the end—pure luck."

Anne Brown Keith, of New Gloucester, Maine, a semiretired public-health and nursing consultant, wrote: "I am enjoying the growth of wisdom and the fading of desire for power."

Richard Brayton Olson, of Provincetown, Massachusetts, a retired lawyer, made a discovery about his past: "Have largely confined my travel to the British Isles and never fail to spend a week in London, staying at the inestimable Garrick Club.... Ah, but my new, and greatest, love is Ireland. I always have known that I was adopted as an infant, and by the best parents who could have picked me. Massachusetts law now makes it pos-

sible to obtain original birth records for an adoptee, and I was, in fact, of all-Irish ancestry and originally christened 'Robert Jeremy Bates.' Richard and Robert Jeremy get along just fine inhabiting the same skin, and the Irishness explains a lot—like how much I love to sing in pubs!"

Nicholas Pyle, of Los Angeles, telegraphed: "Retired from architecture. Writing now. Use only predicates—saves time. Don't know how had time for work before retired. Unthinkable now. Travel more. Loved India. Bought Kindle, reduced danger of house collapsing. Missed chance for California same-sex marriage. Overthought it. Fascinated watching investments evaporate like spilled gasoline on hot pavement. Expect end of world soon. Didn't work out as hoped."



WHO'S BEEN WALKING ON our mirrors? asked astronomers at the Harvard-Smithsonian's Whipple Observatory in Arizona. In a building that holds the MEarth project—eight robotic telescopes designed to search for distant planets—they found footprints upon the fragile mirrors of five

telescopes. Whoever made the tracks kept returning. Finally, the scientists captured alive, and released at some distance, a ring-tail cat, a member of the raccoon family and the state mammal of Arizona.

~PRIMUS V



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Shenzhen: leased migrant workers (in blue clothes) at a paper factory in the booming southern Special Economic Zone

CHANGING, CHALLENGING CHINA

(continued from page 33)

for 60 years now. That and the prosperity it has brought are its main accomplishments.

But if protecting that unity becomes the end in itself, then other things necessarily end up being sacrificed toward that goal. The problems in Xinjiang in the summer of 2009, or in Tibet the year before, point up some of the difficulties the government faces in maintaining that unity—not to mention the Taiwan issue, the great unresolved hot button. I've never met *anybody* from the mainland who was willing to grant that Taiwan could possibly be independent.

As to other issues that people are focusing on, our discussion so far has looked mainly at China's east coast. But in the western part of the country, what people are focusing on more than anything else is the survival of their cultures. This is true in Tibet. It's certainly true in Xinjiang, and even to a degree in Inner Mongolia—although in Inner Mongolia, demographically that's already largely been decided because of Han in-migration.

If the *Xibu Dakaifa*—the “develop the West” policy—and the Tibet railroad pol-

icy are any indications, the government's long-term strategy for assuring national unity is to do its level best to export as many Han immigrants to these areas as possible and to unify this territory on the ground in a way that no imperial state ever really tried to do. And that's a big gamble. It worked in the United States at tremendous cost—if we had to do it over again, I think most of us probably would say we should have done it differently. That argument is raised by a number of Chinese critics. People say, “Where do you in the United States get off, telling us what we should or shouldn't be doing in Xinjiang or Tibet? Look what you did to Native Americans—those cultures, which are essentially eviscerated today.” I still don't have a good response for that.

As I said, if everything rides on national unity, that dictates certain policies. Again, the debate on whether this is in everybody's best interest is not a debate that can happen publicly. I tried to raise this question in a very, very indirect way in a talk I gave in Beijing a couple of weeks ago—and at one venue, I was prevented from giving my talk.

OSNOS: The idea of national unity and

prosperity as moral goods, or as the object of China's civilization, is quite fragile. Those are *conditions*—they're not values in and of themselves. As I see it, there is a widespread recognition of that fact among Chinese citizens—that economics is ultimately an unsatisfying faith. You've started to see this in what is described in Chinese as the *xinyang weiji*, the “crisis of faith.”

I'm guessing that in Xiaofei's discussions of what being Chinese means, there's probably a growing component that concerns faith and religion. I am struck at how much I'm seeing the casual embrace of religion in a way was not happening a few years ago. Depending on the numbers, there are now more Christians in China than members of the Communist Party. I've started to see Communist Party members openly describe themselves as religious, and they don't know how to reconcile this fact. This is going to become a larger concern for Chinese people: what exactly is the moral constitution, the religious and spiritual constitution, of the country.

KROEBER: Several different strands are getting tangled up here.

I'd like to challenge this notion that it's reasonable to demand or require that China stand for anything. That's a very American idea—that the purpose of countries is to stand for an ideological position. If you ask people in Germany, for example, what Germany stands for, I suspect you would get incoherent responses, or a wide range of responses, or incomprehension.

I think China is entitled to become a normal country. People feel good about their countries because they're *their* countries, and not necessarily for any better or worse reason than that. I question the idea that China in the global community needs to stand for anything other than an active and constructive presence in that global community...

KIRBY: But wouldn't you agree that what is distinctive about China's sense of itself is that it has the burden of being an empire and a *civilization*, and a civilization that defined a large part of the world? The two are so closely related in both political and moral terms that it's been an enormous burden for twentieth-century Chinese states that have tried to embrace what you might call “Asian values” or “Chinese values.” Look at ways in which, for example, Chiang Kai-shek tried to re-

invigorate Confucian values in a modernizing, militarizing world on both the mainland and in Taiwan. It's just a greater burden that China has—and that's why I think the current debate on China's political future seems so comparatively barren relative to debates of a century ago. Maybe nationalism will be enough, but it's pretty thin gruel for this great civilization.

KROEBER: I agree with most of that. My point is that for people to have a renewed sense of the values of Chinese civilization and how those can best be expressed is a distinct question from what the Chinese country or state should stand for...

KIRBY: That puts it much better.

KROEBER: And frankly, the record of the last 100 years of states deciding that they ought to stand for something is horrendous.

In the international sphere, people want China to play a bigger role. China wants to play a bigger role. That's legitimate. It's a question of constructive participation.

The separate question is, How can the traditional values of Chinese civilization be developed in a modern context and expressed in a way that makes people in China feel good, and that could benefit global civilization? It's very difficult to do that in the existing political construct, where all of these issues—what does it mean to be Chinese, what is traditional Chinese civilization?—have this political tinge. They immediately become danger zones that you can't talk about publicly, because then you might start talking about the political system, and we can't have that. Right?

Finally, on the source of the Chinese government's legitimacy, I think it is based on a much broader set of constructs than just economic growth. It's tied to the strong ethos of *governance* that runs very deep in Chinese history—that however corrupt the average official may be, the bureaucracy as a whole is responsive to the idea that it needs to improve the quality of its governance and not just deliver economic stuff, but more public services.

And there's increasing understanding that governance is related to how you *communicate* about your governance—that communication is part of the process of

"In the international sphere, people want China to play a bigger role. China wants to play a bigger role. That's legitimate. It's a question of constructive participation."

insuring legitimacy. By a recent count, 17 of the 31 province-level party secretaries in China now have backgrounds in media—they're not all engineers any more. That's a very telling shift in terms of understanding how you secure legitimacy.

Learning About the World

TIAN: I think the Chinese government knows very well that economic development is not the only key to legitimacy. They're very much trying to push for this "national unity, prosperity, and harmony." They keep talking about harmony in Chinese society, harmony in the global community. But the important thing for them to understand is that without differences, there cannot be harmony.

The statistic about people from media backgrounds becoming heads of provincial government is very interesting—they know this point about communications very well. I think that's to the detriment of China itself, and to people living in China, like Uighurs and Tibetans, whose cultures are being overwhelmed by the Han Chinese culture.

KIRBY: "Harmonized," so to speak.

TIAN: "Harmonized," right. Arthur was saying about nationalism that there's nothing wrong with feeling proud about one's country. Quite true. But in some ways the government in China has tremendous power, and something is very troubling when they're pushing nationalism without a true spirit of internationalism.

So many fields in China are so underdeveloped. People can speak English, they can speak business Italian. But there are few good programs, and no healthy fields, in European history, Islamic art, African literatures, or things like that. There are experts in languages for practical uses, but few experts in the cultural depth of languages—not to mention the history and culture of many regions of the world. As it is becoming a player in the global commu-

nity, China really has to understand its place better, instead of just rehashing the same line, "We're the oldest civilization in the world, and nobody understands us." The government is not making a conscious, self-aware effort to promote understanding of the world. And if it doesn't, it might repeat some of the mistakes that the U.S. government has made, by not understanding world cultures better.

SELIGSOHN: Compared to 20 years ago, I've found that the number of young Chinese scholars who would be interested in going out and studying these regions is way, way higher. When I taught in the '80s, the government was busy sending people out on development projects around the world, and they *hated* going, they complained about it. Now you meet lots of Ph.D. students who went off and did a research project in Peru or in India, and they found it really interesting. But it's not very organized, and there aren't that many, relative to the need. The number of Chinese working around the world, either doing their Ph.D. research or working with the United Nations Development Program or nongovernmental organizations, is a tiny fraction of the number of Americans, or even of Japanese, who are doing those things.

STEINFELD: I agree with a lot of the things Xiaofei was saying. But one of the things I would never have predicted 15 years ago has to do with the number of Chinese who have gone overseas for education or whatever else and now have gone back. That's surprising, and so is the ability of the system to absorb them. We see it in academia now. We certainly see it in the corporate sector, and increasingly in the government. That provides at least a small degree of optimism. Yes, there are many things wrong with the education system and the government's stance on teaching about the world and China's place in it. But there are individuals who are very worldly, who also happen to be Chinese, who have gone back and are not just being absorbed by the system, but are *changing* the system—for the better.

SELIGSOHN: That's true. I just think there's even more opportunity...

STEINFELD: There's plenty more opportunity for it. ▽

AN EVOLVING FOE

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malaria infection to understand what causes the most severe forms of the disease. In seeking to characterize the diversity of malaria parasites in Malawi, he hopes to learn whether genetic differences among them contribute to disease severity. In Malawi, he says, many more people die of malaria than in Senegal.

Severe malaria is usually seen in young children. Gradually, most people develop a tolerance for the disease; they may still be infected many times by malaria protozoans, but their bodies are able to control the infection. Milner says this tolerance depends on a continual back-and-forth between the parasites and the human immune system. In areas where the disease is endemic, he says, infection is “like a natural constant vaccination.” But those who leave Malawi to spend a few years abroad no longer have this immunity when they return, because the parasites have changed so much in the interim.

Vaccines, new drugs, bed nets, and more

WIRTH BELIEVES that malaria’s remarkable diversity has implications for the development of vaccines. So far there is no effective vaccine for malaria; Wirth says that many candidates work well in animal studies but fail when tested in humans. She notes that many vaccines developed so far target the very features of the parasite that are most variable, and therefore they may not work on all parasites. Instead, she suggests, it may be necessary to develop pan-vaccines—like those used for influenza—that are modified every year to attack the viruses predicted to be most common. Although this annual forecasting approach might work in theory, its expense might prove too great for the practical realities of poor countries where malaria is endemic. Wirth’s group, therefore, is pursuing a different strategy: focusing on identifying possible vaccine targets that represent critical, less variable functions in the parasite.

With or without a vaccine, controlling malaria will be a significant challenge. In the 1950s and 1960s, widespread campaigns to eradicate the disease were conducted using newly developed drugs (against the



At a clinic in Myanmar (Burma), where malaria is one of the major killers, a boy watches as medicine is dispensed to patients.

“The issue from a public-health standpoint is that when a resistant organism begins to spread, you have to completely change the approach.”

malarial parasite) and DDT (against the mosquitoes that host it). Countries around the world celebrated the eradication of the disease. But shortly afterward, resistance emerged in both the parasite and the mosquitoes and the disease surged again. Although eradicated from the United States and other developed countries, malaria kills more people today than ever; recently, the Bill and Melinda Gates Foundation has called for a renewed effort to eradicate the parasite globally.

Current efforts against malaria focus on a multipronged strategy. A malaria vaccine, if one is developed, could help prevent or at least slow infections. For those who do become infected, the development of new treatments would ensure that recovery remains possible even as older drugs become less effective. Mosquito control, when deployed strategically, can also prevent infections at their source. And the low-tech approach of using bed nets in endemic areas also has a great potential for stopping malaria before it starts. “I don’t think any one of these things will do very much,” Dan Hartl says,

“but all together they should have a very significant effect.”

Even if controlling the disease is a realistic goal, Hartl believes it may be naïve to think we can wipe malaria from the face of the earth, given its incredible ability to adapt. Awareness is growing about the evolutionary reality of infectious diseases like malaria, he says: “It’s important to take the long view, because in my opinion, malaria is going to be with the human population for a very, very long time.” And malaria is just one example of this new reality—treating HIV also requires varied combinations of antiretroviral drugs. Fighting a disease is no longer a matter of a single vaccine or drug; it must include an ever-changing arsenal of weapons: a steady stream of new antibiotics to combat resistant bacteria, vaccines that adapt to changing pathogens, and a more complete knowledge of the enemy’s most fundamental weaknesses. ▢

Contributing editor Courtney Humphries last wrote at length about “Untangling the Brain,” this magazine’s May-June 2009 cover article.

Dancing School

Minuet in progress and an aide-mémoire on quadrilles

THE CHILDREN in *The Dancing Lesson*, Pt. 2 are learning the minuet. The dancing master plays a pochette, a pocket violin. The girl at back stands in a narrow box called a *tourne hanche*—or, in English, a hip turner, turn-out boards, or the torture box—to train her feet to point at a wide angle, in genteel fashion, as do those of the dancers and the master himself. The hand-colored etching is by famed caricaturist George Cruikshank and depicts a moment from London's social-dancing scene in 1824.

The etching is part of the vast collections in opera, ballet, operetta, mu-

sical theater, and popular song and dance from Elizabethan times to the present assembled by Mason professor of music emeritus John M. Ward and the late Ruth Neils Ward and given to the Harvard Theatre Collection, the Loeb Music Library, and the Houghton Library. "Professor Ward's approach is comprehensive," says Fredric W. Wilson, curator of the Theatre Collection. "If there are 13 editions of an opera, ideally he'd like to have all of them and maybe more than one copy of some. This is wonderful for researchers." The Wards have demonstrated, Harvard University Library director Robert Darnton has written, "that collecting itself is a vital form of scholarship."

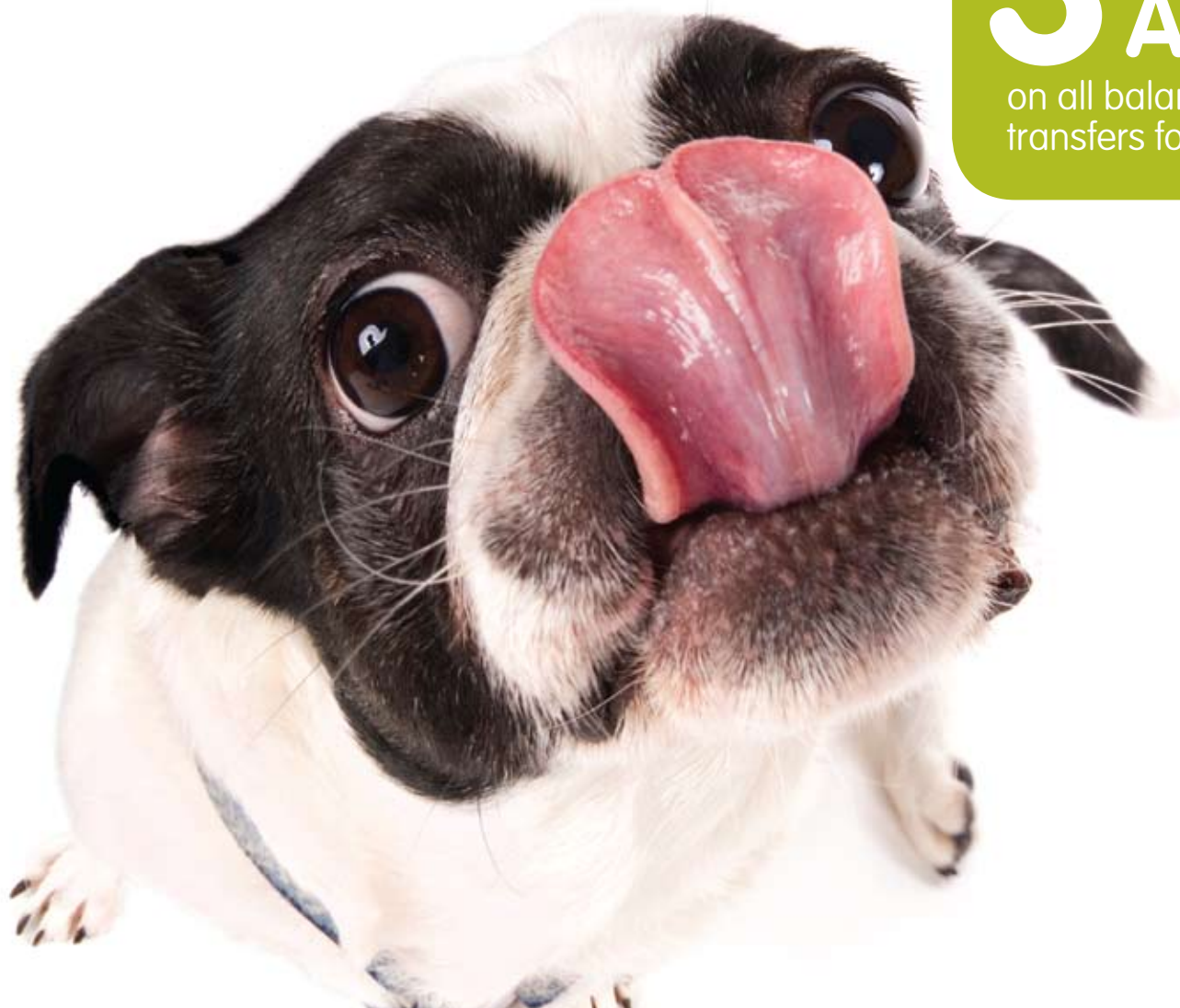
At 92, John Ward is still avidly collecting—and giving. Moreover, he provides financial support for two library catalogers who try to keep up with the incoming flow not only of scores and scripts, but

also of documentation about actual performances and the audiences who heard, saw, and responded to them.

Ward is interested both in music and in what people do with it. One thing they did in the post-Napoleonic-wars era in Britain was to disport themselves in the quadrille, a dance for four couples in square formation that allowed of many variations. *Paine of Almack's Quadrilles* (London, c. 1815), at left, was a deck of gilt-edged cards providing reminders of the steps for many of the intricate variations on the theme. Each card is punctured at top, to be strung around the wrist. Andrea Cawelti, one of the Ward catalogers, explains: "At a ball, the dances were often not set ahead of time, and couples might not know until the last minute which dance was to be played. I can imagine the anxiety a participant might feel to excel, in a time when you were often judged by your dancing skill. A young person's entire future might seem to hang on the ability to make a good impression." ~C.R.



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