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# HARVARD

MAGAZINE

NOVEMBER-DECEMBER 2011 • \$4.95



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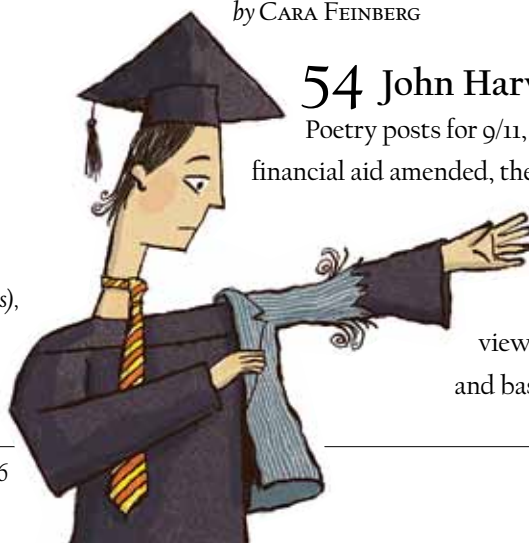


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JIM HARRISON

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# Cambridge 02138

*Household energy efficiency, Deng Xiaoping, Darwinian drives*

## HARVARD, 375 YEARS YOUNG

AT FIRST GLANCE, a 375th anniversary may not seem, as you suggest, as momentous or splashy as a 400th or even a 350th ("Birthday Greetings," September-October, page 5), but it does represent an even three-eighths of a millennium (the equivalent of three furlongs in a mile, six ounces in a pound, three pints in a gallon), and is altogether a marker not to be sneezed at.

CALVIN F. SENNING '55  
Cape Porpoise, Me.

THE ISSUE OF *Harvard Magazine* dedicated to the upcoming 375th anniversary of the founding of the school surprised and dismayed me. In the reflections on Harvard's recent past, present, and immediate future, there is hardly a mention of civic engagement: of the value of community service and social advocacy work in the undergraduate experience. I write as an alumnus who had the good fortune to be at Harvard at a time of intense political involvement, but also as a graduate whose volunteer experiences through programs at Phillips Brooks House still have impact and meaning. Perhaps the lack of attention to civic engagement represents simple oversight on the part of the editors. If my surmise is wrong, then a campus- (alumni)-wide dialogue is in order.

WALTER LICHT '67

*Annenberg professor of history; faculty director,  
Civic House and the Penn Civic Scholars Program  
University of Pennsylvania*

YOUR FASCINATING article about "The Twenty-First-Century Student" (by Elizabeth Gudrais, page 52) had one disturbing feature: a striking graph showing the rise of undergraduate tuition, room, and board from \$15,430 in 1985-86 to \$50,724 in 2010-11. Remarkably, the article did not mention,



let alone address, the disturbing fact that college tuition has so far outstripped inflation in the past 25 years. Is there a legitimate explanation for this, other than that other colleges have been doing the same?

SIMON FRANKEL '86  
San Francisco

TO NOT INCLUDE the Crimson's 2004 undefeated football season—the first-ever 10 and 0 year—as part of "The Crimson Triumphant: 25 high moments in Harvard athletics, 1986-2011" (by John Bethell, page 56) is clearly a mistake—or hopefully simply an oversight.

HOWIE BERG  
Stamford, Conn.

John Bethell replies: Harvard teams went 11-0 in 1890 and 1896, 12-0 in 1901, and had a 9-0 season in 2001 (which might well have been a 10-0 season if the first game hadn't been canceled because of 9/11). But 2004 was indeed the first-ever 10-0 year. It was a great season, and I wish we could have included it.

One difficulty in selecting 25 high mo-

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ments was that football could easily have provided a dozen or more, and I was trying to squeeze in as many less-headline-making sports, like fencing, track, sailing, as I could.

JONATHAN SHAW's article on "Professorial Permutations" (page 48) ignores one of the most significant problems of "education" at Harvard.

Harvard's faculty-recruiting practices have for decades denied students the opportunity to work with mid-career faculty. These are the more senior nontenured, and the more junior tenured, professors doing great work at other schools, and sharing that work with their students as it is fresh and developing.

During my time as a graduate student, I can think of only one course taught by such a person. One of my primary advisers was my *mother's* thesis adviser—while he was doing his best work at another Ivy League university 30 years earlier. Increased diversity is certainly a very good thing. In the name of diversity and other inwardly focused considerations, Harvard may accidentally recruit "prime of life" scholars. What a fortunate accident that would be.

GREGORY MILLER, A.M. '76  
Bethesda, Md.

"PROFESSORIAL PERMUTATIONS" celebrates Harvard's efforts to increase its diversity. If one is willing to use demographics as a proxy for diversity, the argument makes sense. However, it seems to me that the true measure of diversity would be gauged by the range of viewpoints and ideas held by the faculty. In fact, it seems that if diverse viewpoints and ideas are desired, the statistics point to a wrong direction. An increase in the percentage of tenured faculty, the resulting lower turnover; fewer new faces (probably an older demographic also); fewer faculty competing for fewer jobs (less competition and meritocracy); and the likelihood of increased

conformity within a faculty ensconced in a tenured environment, seem likely to produce less diversity rather than more, regardless of the race, gender, and national origin. Interestingly, the inset box on page 50 seems to support this very fact: the faculty is, in fact, more liberal than ever—i.e. less diverse, not more. I agree with an attempt to be more diverse, but I wish Harvard was using a number of other measures to gauge its success and guide its actions.

JEFFERY C. POPE, M.B.A. '75  
Atlanta

THE REFERENCE to the story about the Harvard Quiz Bowl team ("The Students Speak," page 55, a Web Extra linking to Undergraduate columns) brought to mind a vignette from the mid 1970s, when those of us on the Harvard Quiz Club played a match against a team from Norfolk State Penitentiary (founded, incidentally, by an alumnus). Their team was well-known, as its captain was a published poet and something of a celebrity, notwithstanding (or because of) a homicidal background. As we entered the raucous hall where inmates were gathered to watch the game, a tall, lanky prisoner with a deep scar across his face confided the following advice to us: "If we go down by more than 50 points, we start taking hostages." It turned out to be one of the more satisfying 45-point wins in Harvard quiz history.

ROBERT DUPIRE-NELSON '77  
Honolulu

ON THE OCCASION of Harvard's 375th, I offer my own vision for the next 25 years ("Harvard at 400," page 80), which includes both a continuation of the University's proud tradition of excellence, and a call for change in the economics department. Harvard economists must cease and desist their public endorsement of Keynesian economics as a successful economic theory worthy of political support. If Lord Keynes' own admission that his economic theory had proven less successful in practice than on paper is not proof enough, then surely the more recent failure of Obama's centrally planned and debt-ridden disaster—falsely described as an "economic recovery"—should finally put to rest any doubts.

*Ve-Ri-Tas* means "truth." As truth-seekers, not liberal public-relations executives, the economics department should teach Keynesian economics only as another his-

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## SPEAK UP, PLEASE

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torical example of the failure of central planning, alongside the more obvious examples of Stalinism, Nazism, monarchism, and theocracy.

JONATHAN L. GAL '89  
Rockwall, Tex.

ONE OF THE PICTURES accompanying "The 'Steel Factory'" in the September-October issue (page 34) identified three of the four men in the foreground but failed to note that the smiling gentleman standing between President Carter and Vice Premier Deng was Harvard's own Ji Chaozhu '52. Ji served as translator not only for Deng, but as the third man on the tarmac, at the shoulder of Zhou Enlai, as the latter greeted President Nixon in 1972.

Ji's memoir, *The Man on Mao's Right* (yep, Mao too), was cited in the July-August 2008 issue of *Harvard Magazine* (page 19).

MICHAEL ENGBER '63  
New York City

*Editor's note:* Also unrecorded: in the photograph on page 39, showing President Neil L. Rudenstine in the Forbidden City,

the figure to the far right is none other than Ezra Vogel, author of the biography of Deng reviewed at page 33.

IN THE 375th anniversary issue, I could find no credit given to the creator of the latest superb puzzle. Only after checking your website did I confirm that it was of course your own magnificent long-time puzzler, John de Cuevas. Much to my surprise, his recent bimonthly puzzles have been at [harvardmag.com/topic/puzzles](http://harvardmag.com/topic/puzzles) without ever appearing in the print version of the magazine. To my great regret, I have been suffering withdrawal symptoms unnecessarily ever since the previous puzzle appeared in print!

PETER G. NEUMANN '54, Ph.D. '61  
Menlo Park, Calif.

*Editor's note:* We thank Peter Neumann, and other puzzler-doers/correspondents, for revealing John de Cuevas's role in constructing the anniversary puzzle (as he did for the 350th anniversary edition), and for calling attention to the online life of his clever creations. Having invited de Cuevas

to craft this one, we were especially mortified, in working from his template to prepare the puzzle for publication, that we left out the note identifying him as the issue went to press. Our sincerest apologies.

*Amplification:* Due to an error in the information provided by sources, "The Twenty-First-Century Student" (September-October) contained incorrect data on the career choices of 2011 graduates. The percentages given applied only to graduates who planned to enter the workforce immediately after graduation, and who responded to the College's senior survey.

#### MARY BERENSON

THANK YOU FOR introducing Mary Berenson to a new generation of Harvard readers (*Vita*, July-August, page 30). However, how could you have excluded her lengthy residence at the Villa I Tatti, where she reigned supreme in her early efforts to promote Berenson's scholarship? Bernard Berenson worked most of his life to earn sufficient income for Harvard to assume the villa's care. (The University several times refused

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the bequest.) Now, this magnificent villa outside Florence hosts fellows in Renaissance studies, the most prestigious such program in the world. Without Mary Berenson's financial and moral support in the first crucial years of renting, and later in the decision to buy the villa, Harvard would not now have this resource. I hope you will consider running a follow-up soon, as this past June I Tatti celebrated 50 years of Harvard stewardship.

NEHAMA JACOBS WARNER '74  
Pasadena, Calif.

*Editor's note:* For recent coverage of Villa I Tatti, see "Masterpiece Pieces" (Treasure, November-December 2009, page 92), news of renovation of its library (Brevia, March-April 2010, page 53), and earlier articles on the I Tatti Renaissance Library series.

### THE ENERGY FUTURE NOW

EMBRACING THE FUTURE, my wife and I decided to install solar panels on the roof of our three-bedroom house in West Los Angeles. Our successful self-experiment may be instructive to those with an interest in energy and energy policy (see "Time to Electrify," July-August, page 36).

We were paying annually about \$500 for 4,000 kilowatt hours (kWh), typical residential usage in California for a two-person household. But there was a lot of waste: for example, we left the two cable TV boxes on all the time. Since our son has graduated college and is on his own, we shut off the box in his room and, with no loss of comfort and a tiny effort—we still operate a large-screen TV, two laptops, and various appliances and gadgets—we've reduced our usage to about 2,700 kWh a year.

Thinking that we would want to operate an electric car, we chose a system that provides about 4,000 kWh/year. This required about 20 square meters of panels—about one-eighth of the total area of our roof. The contractor who installed the panel negotiated with the Los Angeles department of water and power which then directly paid him about \$7,000 of the total cost of nearly \$17,500. Because of the 30 percent federal income tax credit, our final out-of-pocket cost was slightly more than \$7,000.

We are getting a return on our investment that is hedged against inflation and vastly superior to the interest we would get by putting the money in the bank. Installing the panels was a sensible financial

diversification. Our house was built in 1928 and requires upkeep. The cost of the panels was about the average amount we spend per year on maintenance and upgrades.

We are of course happy to get the tax credit for the installation of panels. For comparison, the \$1,000 a year I pay for a parking permit at UCLA is not subject to federal income tax. Consequently, I receive a tax subsidy of somewhat more than \$300/year for parking. In 25 years, the expected lifetime of the panels, the extrapolated tax subsidy for my UCLA parking permit will be much larger than for my solar panels and, in fact, be comparable to the subsidy I received from the department of water and power.

My wife felt very strongly that the panels should not be visible from the street, and therefore they were probably not quite as tilted as required to fully optimize their production over the course of a year. Domestic tranquility was assured at the cost of a few hundred kWh/year.

When we replace our 17-year-old energy-gobbling refrigerator, we will be closer to using 2,000 kWh/year. But even now, our panels provide enough energy both for home and for our electric car; the end of gasoline and electricity bills for a lifetime. This home experiment suggests that transition to a sustainable, modern economy is within technical and financial reach. It is most pleasing to have an inexhaustible supply of energy from the sun.

MICHAEL JURA, PH.D. '71

*Professor, department of physics and astronomy,  
University of California, Los Angeles*

*Editor's note:* To view the solar installation and a graph of Jura household energy use, visit [www.astro.ucla.edu/~jura/energy.htm](http://www.astro.ucla.edu/~jura/energy.htm).

### COLLEGES AND BUSINESS MODELS

WHILE "COLLEGES IN CRISIS" (by Clayton M. Christensen and Michael B. Horn, July-August, page 40) makes a good summary of some of the many challenges facing higher education today, the authors' uncritical embrace of distance learning as a "disruptive" technology that contains the solution to the crisis seems off the mark. Perhaps because they have an excellent description of how iPods replaced Walkmans, every problem now looks like one that can (or even must) be solved by a new, disruptive, business model. But universities are not businesses—and the authors'

failure to accept this basic premise makes their account, while provocative, ultimately unfulfilling. Although they recognize that today's universities serve multiple functions—research, teaching, and "preparation for life and careers"—the technologically focused solution they advance really only replaces the teaching and career development "value propositions" of the university, leaving research and "preparation for life" to fend for themselves.

Certainly, business has proved that it can force many of our institutions into market competition that will destroy all who do not tend first and foremost to the bottom line. But as recent economic events should have taught us all, the ability of markets to rapidly destroy things of value (homes, jobs, retirement plans, etc.) does not mean that markets can also effectively and efficiently create the nonmonetary values that all these things also possess (community, purpose, security, etc.). In universities, other methods than embracing market competition could be imagined for resolving the very real problems the authors try to address. For instance, the shrinking public support for American universities is more a current political trend than an unalterable reality.

Perhaps of greatest concern, the authors' proposal that universities treat students increasingly as consumers of education in pursuit of career success is all too much of a piece with their failure to account for how the university's role in developing individuals into well-rounded and public-spirited citizens can be sustained in the new business model. It's highly unlikely that the fiercest competitors in an educational "marketplace" focusing hardest on short-term returns on investment will be able to replace the universities they may "disrupt" with an "innovation" that is truly better. Do we really need to see the outcome of such a contest and destroy the educational institutions we have today before we look to other sources to restore, sustain and renew the project of higher education?

RAPHAEL SPERRY '95

*San Francisco*

*Editor's note:* See page 36 for two higher-education scholars' views on these issues.

### ISRAELIS AND PALESTINIANS

PLEASE ALLOW ME to question a likely misstatement in Dan Adams's letter in the



# I CHOOSE HARVARD...



**CHARLES E. RYAN '89**

Charles E. Ryan '89 couldn't afford to visit the former Soviet Union as he was developing his senior thesis on Soviet foreign policy, but he wants to give future undergraduates the chance to do so. Ryan, an investment banker and venture capitalist who specializes in Russian technology, has created the Charles E. Ryan Undergraduate Research Fund to support students seeking to conduct research in Russia. A government concentrator from Kirkland House, Ryan lived in Moscow for many years but now resides near Philadelphia with his wife and two sons. "Russia is a fascinating place," he says. "I hope this fund enables more students to discover that for themselves."

To read more, please visit [www.alumni.harvard.edu/stories/ryan](http://www.alumni.harvard.edu/stories/ryan).

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**GIFFORD COMBS '80**

From their conversations in Eliot House, Gifford Combs '80 knew that Willard Van Orman Quine, Edgar Pierce Professor of Philosophy Emeritus, was engaging and brilliant. He later learned that his friend's intellectual life was shaped by a trip to Europe in 1932–1933 on a Frederick Sheldon Traveling Fellowship. To mark his 25th reunion, Combs—a senior portfolio manager with Dalton Investments in Los Angeles—created the Willard Van Orman Quine Graduate Travel and Research Fund in the Graduate School of Arts and Sciences to support promising graduate students in the humanities. "Establishing a traveling fellowship in Van's name," Combs says, "was a way to honor him that echoed what had clearly been a formative episode in his life."

To read more, please visit [www.alumni.harvard.edu/stories/combs](http://www.alumni.harvard.edu/stories/combs).

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## LETTERS

September-October issue (page 12). About the 1948 War of Independence he claims, "Fully 85 percent of the Palestinians living on the land that was to become the State of Israel were ruthlessly evicted from their homes, their farms, and their orchards by these [armed Jewish] groups and given a one-way ticket to nowhere." This claim parrots the Arab narrative; in reality no independently verifiable sources exist to support this remarkably precise statistic from events over 60 years ago. In 1948, all of Israel was a war zone. Many Arab noncombatants understandably fled the fighting.

What is incontrovertible is this. The Arab world rejected the UN's 1947 plan to partition mandatory Palestine into separate Jewish and Arab nations. After Israel proclaimed its independence, all the neighboring Arab countries attacked it. Had the Arabs instead accepted Israel, there would have been no Arab refugees. Israel's Proclamation of Independence stated, "in the midst of wanton aggression, we yet call upon the Arab inhabitants of the State of Israel to preserve the ways of peace and play their part in the development of the State."

Commendable is Adams's concluding statement: "[W]e can and should take a position that supports the rights of both peoples equally and unequivocally to create safe and secure homelands for their own people and to achieve full recognition and standing within the community of nations." Israeli leaders now recognize the rights of the Palestinian Arabs to their own nation. It's long past time for the Arabs similarly to overturn their mistake of 1948 and recognize Israel as the nation-state of the Jewish people.

BENJAMIN POLLOCK, M.B.A. '79  
San Francisco

CONTRARY TO ADAMS, I did not say that the Palestinian people don't exist, which he likens to saying that New England doesn't exist. Instead, I said (July-August, page 3) it was unclear that they existed as a people in Gandhi's time. Certainly, Arabs lived in Mandatory Palestine. Does that make them "the Palestinian people"? Germans live(d) in Alsace and Serbs in Bosnia. Does that make them the Alsatian or Srpskan people?

Adams's assertions that the Palestinians, who had lived there "for centuries," were "ruthlessly evicted" by "Jewish paramilitary groups" from 95 percent of Israel are all false. Many "Palestinians" had migrated

to the area around 1900. (A Palestinian acquaintance of mine has the surname "Halabi"; his family came from Halab, i.e., Aleppo.) Pre-war, about 45 percent of the land was "unassigned" (i.e., it belonged to nobody). And any "evictions" occurred during and in the context of a war started by the Palestinian Arabs, having rejected a state in less than all of Palestine, and continued when Israel's Arab neighbors invaded with a stated goal of pushing all the Jews—some of whom had also lived in Israel, continuously, for centuries—into the sea. According to Benny Morris, most of these Arabs actually fled without prompting, many expecting to return with victorious Arab troops. Some were evicted by Jewish troops because their presence threatened Jewish lives. As for the rest, in a war, bad things happen to people who start it.

My belief that the Palestinians have neither an exclusive nor an equal right to the land of Israel does not make me a "racist."

Palestinian victimhood is attributable to their own rejection of a state in 1948. It is time they moved on.

ORRIN TILEVITZ '75  
Brooklyn

## ROWING COACH REMEMBERED

I WAS IMPRESSED with Harvard's recent rowing successes as recounted in *Harvard Magazine* ("Dominant Flotilla," July-August, page 67).

In describing Harvard's competitors, you cited Steve Gladstone, his national reputation, and his present coaching for Yale. Though capturing his successes over many years, you failed to mention his coaching the very successful lightweights at Harvard, who went undefeated over four years and won four Eastern Sprints titles during his tenure. The 1971 crew is widely regarded as one of the best in many years.

Steve is a great coach and made major contributions to Harvard rowing. I was lucky to be one of the people who had the benefit of his coaching.

FREDERIC A. EUSTIS, III '72  
Westport Point, Mass.

*Craig Lambert responds:* Mr. Eustis is accurate in all respects. I knew of Steve Gladstone's great work as a Harvard coach: the 1971 lightweight crew were nicknamed the "Super-crew" as no one could beat them; they were enshrined en masse in the Varsity Club Hall of Fame. The article didn't dwell on his



background, however, because it focused on current Harvard crews, not the Yale coach.

#### THE VEIL AND VIOLENCE

I CAN'T LEAVE unchallenged Divinity School professor Leila Ahmed's assertion that "the broad mainstream of the Islamist movement—according to all the experts—is overwhelmingly opposed to violence and committed to nonviolence" ("The Veil's Revival," September-October, page 17).

The 2011 Pew study of Muslim attitudes towards terrorism shows the following portions of Muslims saying "suicide bombing and other forms of violence against civilian targets" are "often or sometimes justified": 68 percent in the Palestinian territories, 34 percent in Nigeria (a 2010 figure), 35 percent in Lebanon, 28 percent in Egypt, 10 percent in Indonesia, 13 percent in Jordan, 7 percent in Turkey, 5 percent in Pakistan.

If you do the math, that implies 118 million Muslims of 726 million in those countries "often or sometimes" support violence against civilians. If you add in those who "rarely" support it, the total number of supporters approaches 200 million. That is more than 25 percent of the population in these countries and is hardly what you could call a commitment to nonviolence.

MARK CASEY, M.B.A. '98  
*San Francisco*

#### DENG XIAOPING, DICTATOR

EDWARD STEINFELD says Deng Xiaoping knew that "Everything the West had, China lacked: modern factories, state-of-the-art technology, gleaming infrastructure, and cutting-edge scientific expertise" ("The 'Steel Factory,'" review of Ezra Vogel's biography of Deng Xiaoping, September-October, page 33). As for Western "laws, rights, and freedoms," dedicated communist Deng avoided them like the plague as mere "abstract institutions...[not]...the concrete manifestations of societal prosperity and strength."

But if Deng failed to understand the integral nexus between Western political openness and economic success, he knew that democracy would mean the end of the one-party dictatorship he strived to maintain. Steinfeld says, "Deng saw no viable path for China's modernization other than that which led through the Communist Party." More likely, the ends and means were reversed—he saw economic success as the only way to preserve commu-

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nist rule after Mao's debacles. But it was always a false choice. South Korea and—most uncomfortably for Beijing—Taiwan showed that ancient, authoritarian Confucian cultures can achieve both economic and political reform, sequentially if not simultaneously.

Dictators, left or right, always claim indispensability: only they know what is best for society and are uniquely situated to deliver it. Deng never intended, any more than today's Chinese leaders do, to move to political reform even after modernization.

Yet, he had an unparalleled opportunity to accomplish both. His victories over resistant "party insiders" brought China's population, hope-filled and resolute, to the side of sweeping reform. Instead, on June 4, 1989, he used his paramount power to direct the murderous attack on, and moral insult to, the earnestly peaceful Chinese people.

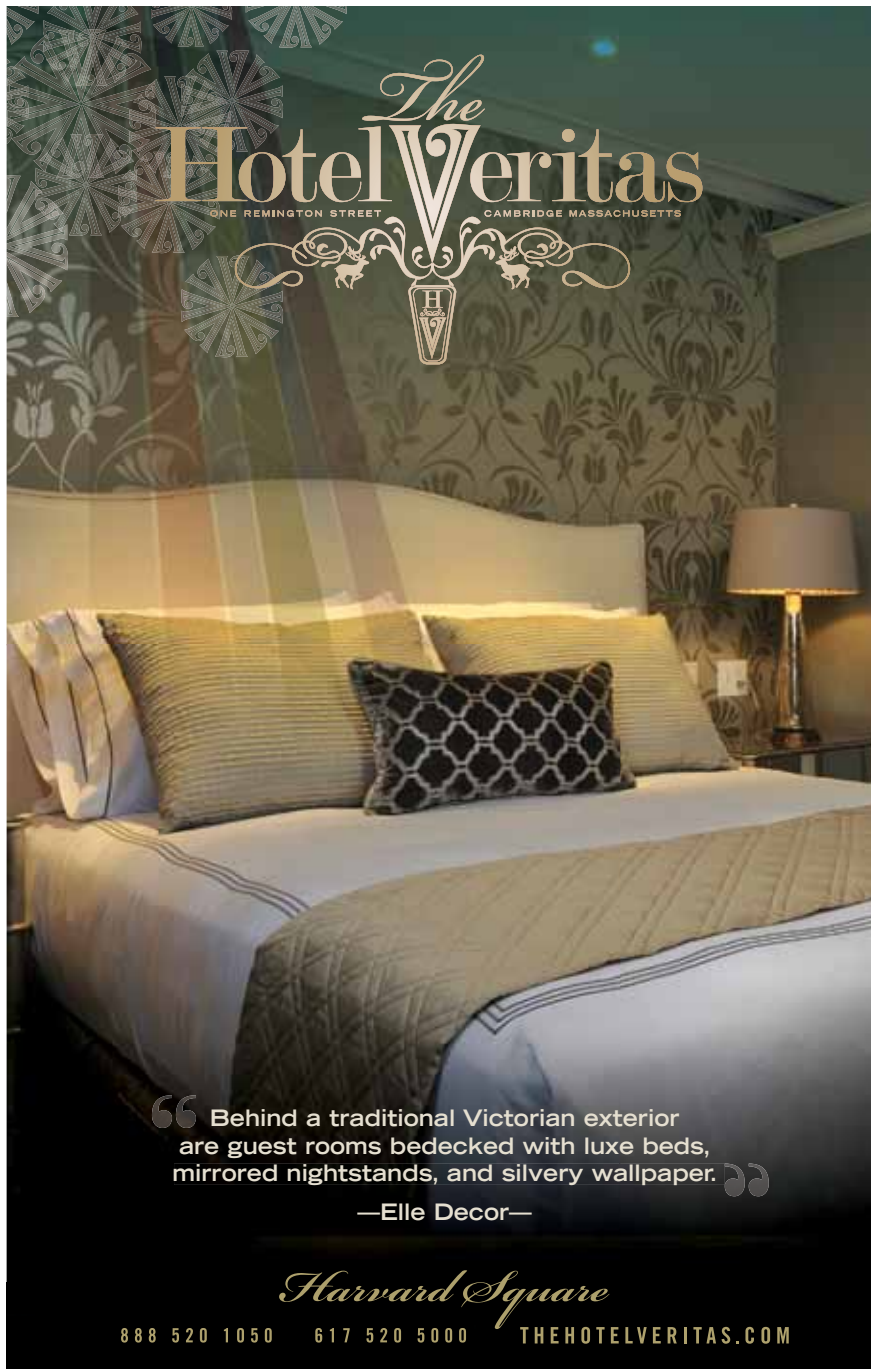
Deng is praised for ridding China of Marxism and forgiven for retaining its Leninism. As he was building China's economic—and military—power, he advised: "Hide your capabilities; bide your time." China's "triumphalists," says his admirer Henry Kissinger, believe now is the time to use that power.

JOSEPH A. BOSCO '60, LL.B. '65  
China desk officer (2005-06), Defense Department  
Washington, D.C.

#### DARWINIAN DRIVES

ACCORDING to a survey of employees at multinational firms, Paul Lawrence's theory of four independent, innate human drives ("From Human Nature to Human Resources," September-October, page 14)—to acquire, defend, comprehend, and bond—explained "60 percent of employees' variance on motivational indicators." On the basis of my research, reported in *The Leaders We Need, And What Makes Us Follow* (Harvard Business School Press, 2007), Lawrence leaves out four innate human drives that would explain more of the variance: for mastery, play, dignity (self-esteem), and meaning. Employees, and for that matter all of us, are motivated when we are respected and employ our skills for a meaningful purpose. The most creative scientists and artists describe their work as disciplined play. Like amateur athletes, they are motivated to play, even when they are not acquiring anything more than an enjoyable experience.

MICHAEL MACCOBY, '54, Ph.D. '60  
Washington, D.C.



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# Right Now

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## NET KNOWLEDGE

### How the Web Affects Memory

**G**OOGLE and other search engines have changed the way we use the Internet, putting vast sources of information just a few clicks away. But Lindsley professor of psychology Daniel Wegner's recent research proves that websites—and the Internet—are changing much more than technology itself. They are changing the way our memories function.

Wegner's latest study, "Google Effects on Memory: Cognitive Consequences of Having Information at Our Fingertips," shows that when people have access to search engines, they remember fewer facts and less information because they know they can rely on "search" as a readily available shortcut.

Wegner, the senior author of the study, believes the new findings show that the

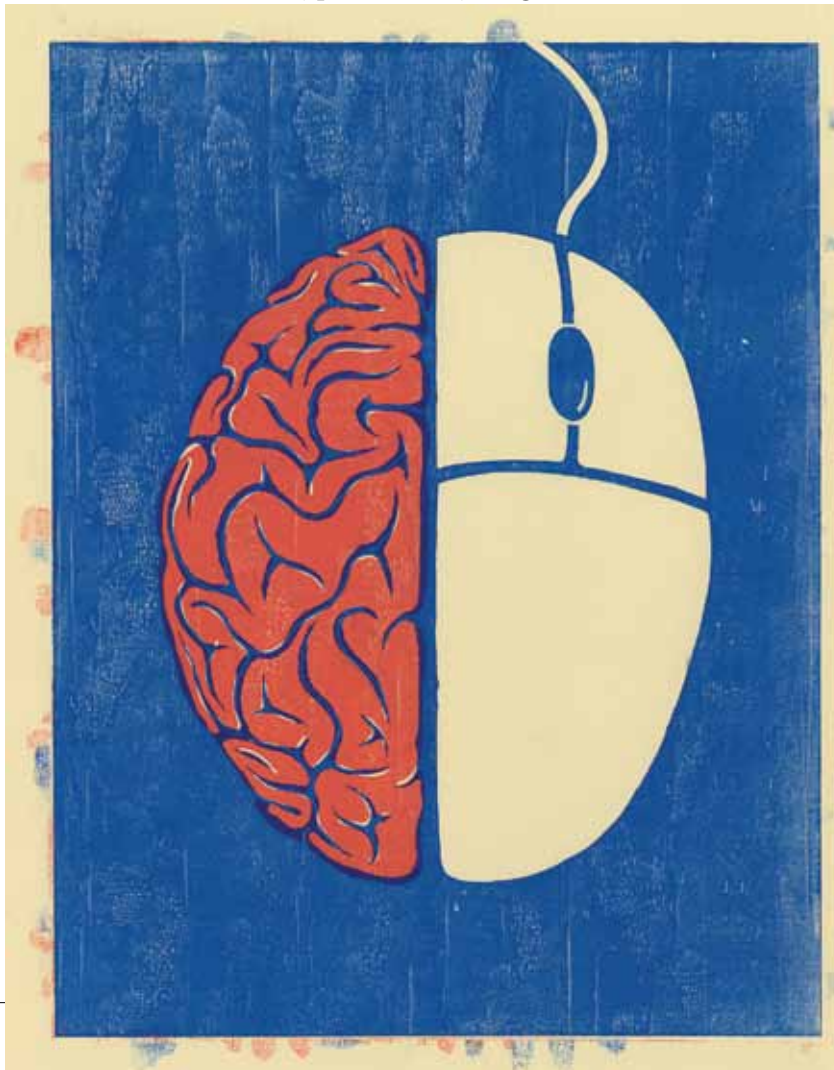
Internet has become part of a transactive memory source, a method by which our brains compartmentalize information. First hypothesized by Wegner in 1985,

transactive memory exists in many forms, as when a husband relies on his wife to remember a relative's birthday. "[It is] this whole network of memory where you

don't have to remember everything in the world yourself," he says. "You just have to remember who knows it." Now computers and technology as well are becoming virtual extensions of our memory.

The idea validates habits already forming in our daily lives. Cell phones have become the primary location for phone numbers. GPS devices in cars remove the need to memorize directions. Wegner points out that we never have to stretch our memories too far to remember the name of an obscure movie actor or the capital of Kyrgyzstan—we just type our questions into Google. "We become part of the Internet in a way," he says. "We become part of the system and we end up trusting it."

Working with fellow researchers Betsy Sparrow of Columbia and



Jenny Liu of the University of Wisconsin-Madison, Wegner conducted four experiments to demonstrate the phenomenon, using various forms of memory recall to test reliance on computers. (The results were published in the August 5 issue of *Science*.) In the first experiment, participants demonstrated that they were more likely to think of computer terms like “Yahoo” or “Google” after being asked a set of difficult trivia questions. In two other experiments, participants were asked to type a collection of readily memorable statements, such as “An ostrich’s eye is bigger than its brain.” Half the subjects were told that their work would be saved to a computer; the other half were informed that the statements would be erased. In subsequent memory testing, participants who were told their work would not be saved were best at recalling the statements. In a fourth experiment, participants typed into a computer statements they were

told would be saved in specific folders. Next, they were asked to recall the statements. Finally, they were given cues to the wording and asked to name the folders where the statements were stored. The participants proved better able to recall the folder locations than the statements themselves.

Wegner concedes that questions remain about whether dependence on computers will affect memories negatively: “Nobody knows now what the effects are of these tools on logical thinking.” Students who have trouble remembering distinct facts, for example, may struggle to employ those facts in critical thinking. But he believes that the situation overall is beneficial, likening dependence on computers to dependence on a mechanical hand or other prosthetic device, or to the use of calculators in the classroom. Initially, math students were banned from using the latter, he points out, but “Now it’s gotten to the

point where most of the time we are being tested with our calculators, to see where we can get with that wonderful tool in our hands.”

And even though we may not be taxing our memories to recall distinct facts, we are still using them to consider where the facts are located and how to access them. “We still have to remember things,” Wegner explains. “We’re just remembering a different range of things.” He believes his study will lead to further research into understanding computer dependence, and looks forward to tracing the extent of human interdependence with the computer world—pinpointing the “movable dividing line between us and our computers in cyber networks.” ~ALEXANDER BLOOM

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#### LOADED PERCEPTIONS

## What We Know about Wealth

**A**mericans have a distorted sense of the level of inequality in their society—but not in the direction one might expect. Associate professor of business Michael I. Norton has found that respondents to his surveys universally think that wealth is more evenly distributed in the United States than it actually is—and what’s more, respondents say they would prefer for the wealth to be *still more* evenly spread around.

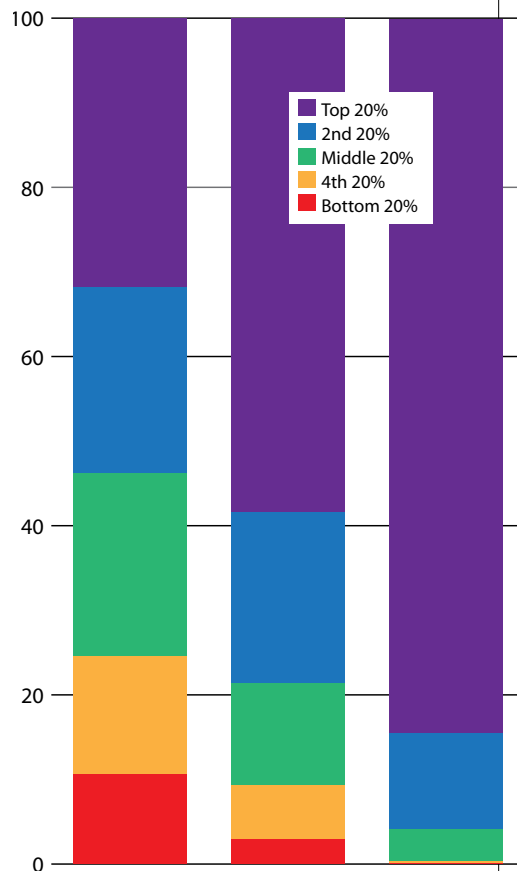
More than 80 percent of the wealth in the United States belongs to 20 percent of the population; respondents estimated that this group held less than 60 percent of the wealth, and would in an ideal world hold about a third.

The lowest two quintiles (a group with average net worth of \$2,200) control 0.2 percent and 0.1 percent of the wealth, respectively. But respondents estimated that these groups held 6 percent and 3 percent, respectively, and said they would like

them to hold about 15 percent and about 10 percent instead.

Norton and his coauthor, Dan Ariely (author of the popular title *Predictably Irrational* and a professor of behavioral economics at Duke), believe that one reason perceptions are so skewed is because the easy availability of credit masks people’s real financial situation. If your neighbors own the same make and model of car that you own, Norton points out, there’s no way to know whether they paid cash for theirs or took out a loan for the full amount. It’s easy, he says, to think, “I have a car and you have a car, so I guess wealth is equally distributed.” This perception is reinforced by the fact that people tend to interact primarily within their own social stratum.

What is surprising given these circumstances, says Norton, is that Americans



#### Skewed Preferences

From left to right: the wealth distribution that Norton’s respondents said would be ideal; how they estimated wealth was currently distributed; and the actual distribution of wealth in the United States.



Visit [harvardmag.com/extras](http://harvardmag.com/extras) to read about Michael Norton’s findings about Harvard alumni opinions on wealth and inequality.



at *all* income levels—the very rich as well as the very poor—said they would like wealth to be more evenly distributed.

In fact, these preferences for wealth distribution have been strikingly similar across many different groups the researchers surveyed: Americans, Canadians, and Australians—and visitors to the websites of National Public Radio and *Forbes* magazine. Norton says he would like to widen his sample of Americans in future surveys—for instance, reaching people who do not have regular Internet access. (He is also asking how Harvard graduates' perceptions and preferences stack up against those of other respondents'; to see these new findings, visit [harvardmag.com/extras](http://harvardmag.com/extras).)

Although respondents who reported having voted for George W. Bush as president in 2004 chose slightly less wealth redistribution for their ideal world, their responses

**Americans have a distorted sense of the level of inequality in their society—but not in the direction one might expect.**

were still quite close to those of John Kerry voters—they chose a desired distribution far more equal than the actual distribution of wealth, *and* more equal than what they estimated the actual distribution to be. Norton notes that much depends on how one frames the question: if asked explicitly, “Do you support wealth redistribution to reduce inequality?” most of those Bush voters would probably have said no.

This implies a separate observation: that people's abstract preferences about inequality, expressed in a survey, may not lead them to *vote* in a way that brings policy into line with these preferences. People tend to assume, says Norton, that wealth correlates with talent or hard work—that it is deserved.

Health inequality, on the other hand, is correlated with income inequality: on average, the poor are less healthy, and countries with higher income inequality perform less well on health measures (see “Unequal

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### RIGHT NOW

America," July-August 2008, page 22). Norton thinks people may be more motivated to eliminate wealth inequality if they understand that it correlates with health inequality: "It's hard to say that poor people's babies should die more than rich people's babies." For his next study, he would like to investigate whether he can influence voting behavior by presenting respondents with accurate information about the actual distribution of wealth in society immediately after they take his survey.

Norton's work is inspired by the notion (developed by Harvard philosopher John Rawls) of a just society as one in which people are willing to be randomly placed

anywhere in the social order. But Norton emphasizes that his polls measure the gut reactions of ordinary people, and that even economists don't know what kind of income distribution maximizes human welfare, a measure whose very definition is complex and subject to disagreement. "We don't know, normatively, which distribution is right," he says. "We only know what people *want* it to look like."

~ELIZABETH GUDRAIS

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### HACKING THE GENOME

## Life: The Edited Version

SCIENTISTS HAVE MADE stunning progress in their ability to decode genomes; the past several years have produced many new genome-sequencing efforts. Now, some scientists have shifted their focus from passively reading genomes to actively "writing" and "editing" them in specific ways. Researchers led by George Church, professor of genetics at Harvard Medical School, and Joe Jacobson, associate professor in the Media Lab at MIT, have announced a new approach for rapidly and inexpensively editing large numbers of genomes in liv-

ing cells. Their new editing tools could be used to engineer cells that have radically different properties, including advantages such as resistance to infection.

Their July 15 paper in *Science* focuses on efforts to alter the genome by means of a "search and replace" method that revises *codons*—strings of three DNA molecules that are often thought of as DNA "words" because they encode a single amino acid (the building block of proteins). Some codons, though, function more like a punctuation mark; these "stop codons" instruct the protein-building machinery of a cell to

A T G T T G C T C G C T T T T C C G  
T T G C T C G C T T T T C C G A G C  
C T C G C T A G T C C G A G C G A G  
G C T T T T C C G A G C G A G C G T  
T T T C C G A G C G A G C G T T A G  
C C G A G C G A G C G T A A A T G C  
A G C G A G C G T A A A T G T T G G  
G A G C G T A A A T G T T G C T C G  
C G T A G A T G T T G C T C G C T T  
A A A T G T T G C T C G C T T T T A

*(Handwritten red annotations: "TAA" with arrows pointing to specific codons in the sequence, indicating stop codons.)*





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stop linking amino acids together, much as a period ends a sentence. In this study, the researchers engineered *E. coli* bacteria by replacing each stop codon bearing the pattern of DNA bases thymine-adenine-guanine, or TAG, with a different (but nonharmful) stop codon reading TAA.

Replacing each instance of that single codon, which appears 314 times in the *E. coli* genome, involved a two-step process. "We're speeding up evolution," Church explains. The first technique, called multiplex automated genome engineering (MAGE), can make rapid, specific changes in cells: researchers introduce pieces of synthetic DNA into bacteria and then select resulting strains that possess the desired properties (in this case, with some of the TAG codons replaced by TAA). They then use a method called conjugative assembly genome engineering (CAGE) that

**The goal is to create a bacterium that is resistant to infection by viruses.**

draws on bacteria's natural ability to swap genetic material. By selecting strains with the most TAA codons, the team could eventually create a strain in which every instance of the TAG codon has been replaced.

The larger goal, Church says, is to create a bacterium that is resistant to infection by viruses. Viruses can't make their own proteins, so they hijack host genomes and force them to make viral proteins; Church's team wants to scramble the genetic code in a way that leaves its functions intact but makes it unrecognizable to viral invaders. The TAG and TAA codons are "synonymous"—they both have the same function in the genome—so by replacing each TAG stop codon with a TAA equivalent, Church's team can then delete the machinery in the cell responsible for reading TAG. The cell will function as if everything is normal, but a virus expects to see the code in its original form. "If you make the code different enough," Church explains, "that organism becomes resistant to all viruses."

Viral resistance is only one of the ways these editing techniques can be used to

hack genomes. "Our goal is to change every base pair," Church reports. His approach differs from that of a team at the J. Craig Venter Institute that synthesized a genome from scratch and transplanted it into a cell last year. Rather than copy something from life, Church says, his team's goal is to radically change an existing genome's properties. He estimates that creating the entire *E. coli* genome would cost several million dollars, whereas his editing technique is much cheaper and more flexible, and at each stage of the process provides

researchers with feedback about how their changes have affected the cell. With a directed evolution approach, he says, "If you select for what you want, the end product is exactly what you want."

~COURTNEY HUMPHRIES

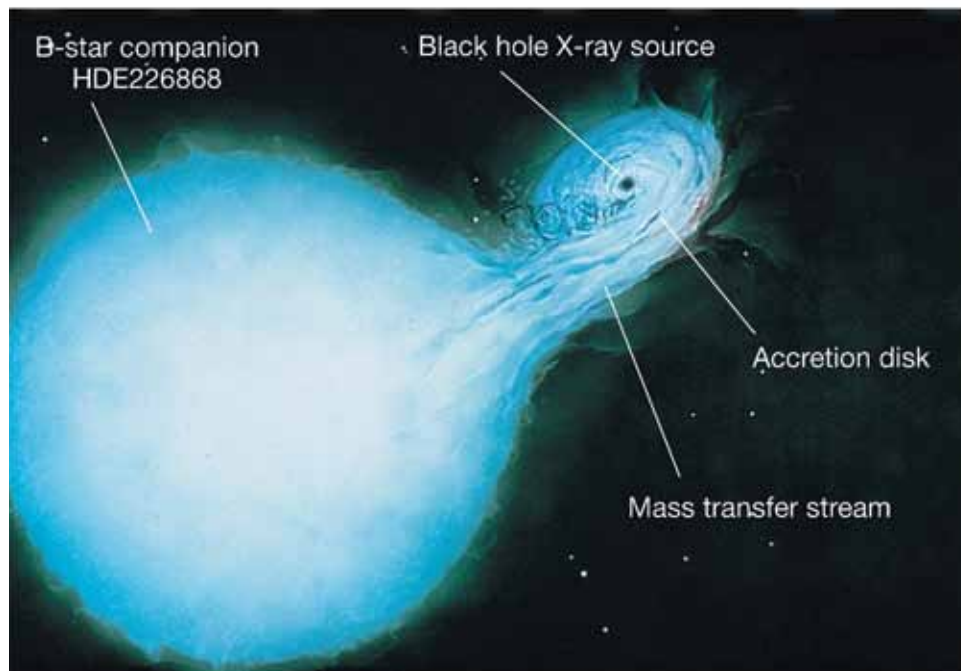
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For more information on Church's work, see "DNA as Data," January-February 2004, page 44



## A Bet and a Black Hole

**The idea that objects exist** whose gravity is so powerful that light cannot escape them has been around for centuries. But it was not until instruments aboard a rocket detected x-rays from an unseen source in the constellation Cygnus in 1964 that researchers considered the possibility that they had in fact discovered a black hole, an object from which nothing, including light, can escape. Seven years later, astronomers discovered a star in Cygnus orbiting something that could not be seen. "The dark object's gravity seemed to be tearing gas from its bright companion," says author and astronomer Ken Croswell, Ph.D. '90, "and as the gas took the final plunge [see illustration], it became so hot it emitted x-rays." But not everyone believed a black hole was the cause; in 1974, Stephen Hawking even bet another physicist that it wasn't. Now the controversy (which Hawking conceded long ago, based on indirect measurements) has been definitively put to rest by Mark Reid and colleagues at the Harvard-Smithsonian Center for Astrophysics, who were able to calculate an accurate distance to Cygnus X-1, making possible an inference of its mass. Furthermore, they calculated that the gas closest to the dark object orbits it almost 670 times per second—a phenomenal rate that is half the speed of light—clear evidence of an object whose gravitational pull is so strong that it could only be a black hole.

~JONATHAN SHAW



# New England

## REGIONAL SECTION



## Extracurriculars

### SEASONAL

#### The Game

- November 19 at noon

The 128th gridiron competition against Yale takes place in New Haven this year.

[www.gocrimson.com/sports/fball/index](http://www.gocrimson.com/sports/fball/index)

#### Harvard Glee Club and Radcliffe Choral Society Christmas Concert

- December 3 at 8 P.M.

[www.boxoffice.harvard.edu](http://www.boxoffice.harvard.edu)

617-496-2222

Sanders Theatre

#### Harvard Ceramics Program Holiday Show and Sale

- December 8, 3-8 P.M.

- December 9-11, 10 A.M.-7 P.M.

[ofa.fas.harvard.edu/ceramics/show.php](http://ofa.fas.harvard.edu/ceramics/show.php)

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#### Harvard Square's

#### Holiday Happenings

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617-491-3434

- November 1-30

A month-long folk-music celebration fea-

tures a range of concerts, historic tours, and exhibitions. See website for further details.

- November 26, 5-6:30 P.M. The annual **Holiday Tree Lighting** at the Charles Hotel. Music, food, and a cameo by Santa Claus.

- December 11 at noon. Opening of the **Skating Rink** at the Charles Hotel. Free skate rentals, holiday treats, and music.

- December 17, 1-2:30 P.M. The fifth annual **Everybody Loves Latkes Party** features free potato pancakes and toppings, along with holiday music and storytelling. Brattle Square.

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[www.boxoffice.harvard.edu](http://www.boxoffice.harvard.edu); 617-496-2222

[www.hcs.harvard.edu/hrc](http://www.hcs.harvard.edu/hrc)

- December 9 at 8 P.M.

The chorus will join the Pro Arte Chamber Orchestra of Boston to perform Bach's *Christmas Oratorio*. Sanders Theatre.

#### Memorial Church

#### Christmas Carol Services

[www.memorialchurch.harvard.edu](http://www.memorialchurch.harvard.edu)

617-495-5508

- December 11, 5 P.M.; December 12, 8 P.M.

Christmas Eve service at 11 P.M.

#### The Christmas Revels

[www.boxoffice.harvard.edu](http://www.boxoffice.harvard.edu); 617-496-2222

[www.revels.org/calendar/the-christmas-revels](http://www.revels.org/calendar/the-christmas-revels); 617-972-8300

- December 16-29

An evening of music and dance from sixteenth-century France. Sanders Theatre.

### MUSIC

[www.hcs.harvard.edu/~hwe/Concerts.html](http://www.hcs.harvard.edu/~hwe/Concerts.html); 617-496-2263.

- November 6 at 2 P.M.

"Bands of the Beanpot" features the **Harvard Wind Ensemble** along with those of Boston University and Boston College. Fenway Center, Northeastern University. [www.boxoffice.harvard.edu](http://www.boxoffice.harvard.edu); 617-496-2222 [www.hcs.harvard.edu/~jazz/Schedule.html](http://www.hcs.harvard.edu/~jazz/Schedule.html).

- November 12 at 8 P.M.

"Blue Note Records, Then and Now: The Hard Bop Legacy Featuring Curtis Fuller" (guest trombonist) and the **Harvard Jazz Bands**. Lowell Lecture Hall.

[www.hcs.harvard.edu/~jazz/Schedule.html](http://www.hcs.harvard.edu/~jazz/Schedule.html). Admission is free.

- November 20 at 8 P.M.

"Jazz at Cabot House" with the **Sunday Jazz Band** and the **Alumni Jazz Band**.

[www.boxoffice.harvard.edu](http://www.boxoffice.harvard.edu); 617-496-2222

Left to right: From the "Cosmic Train Wrecks" lecture at Harvard's Center for Astrophysics; an abundance of shopping carts, from the Peabody Museum's "Trash Talk" lecture series; a deep-sea creature on display at the Harvard Museum of Natural History

FROM LEFT TO RIGHT: HARVARD CENTER FOR ASTROPHYSICS; COURTESY OF THE PEABODY MUSEUM OF ARCHAEOLOGY AND ETHNOLOGY; PETER GIRGISIS/HARVARD MUSEUM OF NATURAL HISTORY



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### NEW ENGLAND REGIONAL SECTION



**From Shooting for Peace: Youth Behind the Lens, a Peabody Museum exhibit of photographs by young people fleeing rural violence in Colombia**

[www.hcs.harvard.edu/~hwe/Concerts.html](http://www.hcs.harvard.edu/~hwe/Concerts.html); 617-496-2263

• December 3 at 8 p.m.

“The French Connection: Music Influenced by Nadia Boulanger,” presented by the **Harvard Wind Ensemble**. Lowell Lecture Hall.

[www.boxoffice.harvard.edu](http://www.boxoffice.harvard.edu)

617-496-2222

[www.hcs.harvard.edu/earlymus](http://www.hcs.harvard.edu/earlymus)

• December 8, 9, and 10 at 8 p.m.

• December 11 at 3 p.m.

Francesco Cavalli's *La Calisto*, performed by the **Harvard Early Music Society**. New College Theatre, 10-12 Holyoke Street.

#### **Sanders Theatre**

[www.boxoffice.harvard.edu](http://www.boxoffice.harvard.edu)

617-496-2222

[www.hrgsp.org](http://www.hrgsp.org); 617-938-9761

• November 3-13

*HMS Pinafore, or the Lass That Loved a Sailor*, is the fall selection being offered by the **Harvard-Radcliffe Gilbert and Sullivan Players**.

• November 16 at 8 p.m.

The Harvard music department presents **The Chiara Quartet**. The program includes Mozart's *Quartet No. 14 in G Major*, Schubert's *Quintet in C Major*, and Hans Tutschku's *Behind the light*, for string quartet and electronics.

Concert is free; tickets required.

• December 6 at 8 p.m.

The **Harvard-Radcliffe Orchestra** performs Tchaikovsky's *Symphony No. 6*.





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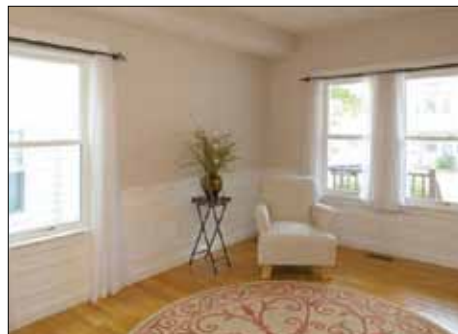
**Cambridge...**Steps from Harvard Square, with an open layout, this 4-room, 1-bedroom unit has a spacious living room w/ wall of windows, oak floors and fireplace. [www.31Concord.com](http://www.31Concord.com) \$365,000



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## NEW ENGLAND REGIONAL SECTION

COURTESY OF THE CARPENTER CENTER



**Measurements of Space in a Fractal Structured Vacuum**, by Felicity Nove, on display at the Carpenter Center

### DANCE

<http://ofa.fas.harvard.edu/dance>  
[www.boxoffice.harvard.edu](http://www.boxoffice.harvard.edu) (for tickets)

617-495-8683; Harvard Dance Center,  
 60 Garden Street  
 • December 2 and 3 at 8 P.M.  
 Jill Johnson, the new director of the  
 dance program within Harvard's Office  
 for the Arts, will be collaborating with

student dancers and musicians on a site-specific performance piece. Check the website for an announcement of performance location details.

### THEATER

#### American Repertory Theater

[www.americanrepertorytheater.org](http://www.americanrepertorytheater.org)  
 617-547-8300 (box office)  
 617-495-2668 (general number)

• December 7 through January 8 (2012)

**Three Pianos.** This Obie Award-winning music/theater event features three friends who spend a wintry night exploring Schubert's song cycle *Winterreise*, reenacting a wilder version of a "Schubertiad"—a musical salon hosted by the composer. Loeb Drama Center, 64 Brattle Street.

• December 10-31

**The Snow Queen.** This interactive adaptation of the classic tale by Hans Christian Andersen features live action and larger-than-life puppetry. Loeb Drama Center, 64 Brattle Street.



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## NEW ENGLAND REGIONAL SECTION

[www.cluboberon.com/events/donkey-show-o](http://www.cluboberon.com/events/donkey-show-o). 617-496-8004.

• Saturdays at 8 P.M. and 10:30 P.M.

**The Donkey Show**, a high-energy Studio 54 adaptation of *A Midsummer Night's Dream*. "Boogie—on down!"

Oberon Theater, 2 Arrow Street.

## NATURE AND SCIENCE

### The Arnold Arboretum

[www.arboretum.harvard.edu](http://www.arboretum.harvard.edu); 617-384-5209

• Through December 17, with an artist's reception on November 5, 1-3 P.M.

**Trees and Gardens: Photography by Joseph Flack Weiler** features intricate black-and-white images that reveal the ways in which trees touch our rural and urban lives.

### The Harvard-Smithsonian Center for Astrophysics

[www.cfa.harvard.edu/events/mon.html](http://www.cfa.harvard.edu/events/mon.html)

617-495-7461; 60 Garden Street

Observatory Night lectures at 7:30 P.M., followed by stargazing if weather permits.

• November 3

"CFA's Fall/Winter Sky Guide" with Sue French, author and contributing editor at *Sky & Telescope* magazine.

• November 17

"What is a Planet?" with CFA's David Aguilar.

• December 15

"Cosmic Train Wrecks" with CFA's Lauranne Lanz.

## FILM

### The Harvard Film Archive

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

617-495-4700

Visit the website for a complete listing of festivals and showtimes.

• November 4-19

**Once Upon a Time...Sergio Leone** celebrates the work of the Italian director who revolutionized

the Western and gangster movie genres through films like *Once Upon A Time in America* and *The Good, the Bad, and the Ugly*.

• November 18

**Laurel Nakadate's The Wolf Knife.**

Shown in conjunction with the Carpenter Center's current exhibit of the installation and video artist's work, this film explores



DAVID A. AGUILAR, CFA

An image from "What is a Planet?" at the Center for Astrophysics



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## NEW ENGLAND REGIONAL SECTION



HARVARD FILM ARCHIVE

two teenage girls' inarticulate relationships.  
• November 26 - December 18

***The Complete Henri-Georges Clouzot.*** This pivotal and divisive figure in French cinema of the 1940s and 1950s produced daring, dark-humored films critical of bourgeois society.

## EXHIBITIONS & EVENTS

### Carpenter Center for the Visual Arts

[www.ves.fas.harvard.edu](http://www.ves.fas.harvard.edu); 617-495-3251

• November 4 - December 22. Opening reception and panel discussion on November 3 at 6 P.M.

***Measure for Measure*** is a multimedia exhibition curated by Baird professor of science Lisa Randall featuring new works by seven Los Angeles-based artists who explore the concept of scale through contemporary art, architecture, and physics.

• November 17 - December 22. Opening re-

**From *Once Upon a Time in America*, at the Harvard Film Archive**



***Three Pianos*, at the ART, with Alec Duffy, Rich Burkhardt, and Dave Malloy**

ception and panel discussion on November 17 at 6 P.M.

***Laurel Nakadate: Say You Love Me.*** Presented with the Fogg Art Museums, this selection of videos by the artist pushes the boundaries of voyeurism, exhibitionism, and vulnerability.

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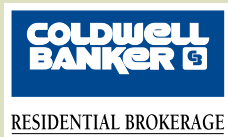


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## CAMBRIDGE, MA

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## CAMBRIDGE, MA

Harvard Square – Just renovated, dramatic 15-room home. Living room w/ coffered ceiling & fireplace; dining room w/ fireplace & built-ins; eat-in-kitchen w/ granite & stainless opens to family room; master w/ fireplace, glass doors to deck & spa bath. Landscaped grounds & garage. \$3,750,000



## BELMONT, MA

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## CAMBRIDGE, MA

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## CAMBRIDGE, MA

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## LINCOLN, MA

Gracious Georgian Revival nestled on a knoll amid large meadows. Floor-to-ceiling windows, Monet-like gardens, patio & pool. Elegant rooms, original details, renov. kitchen, charming carriage house w/ kitchen/bath and 2 large rooms. Land area and frontage for possible extra lot. \$2,795,000



## CAMBRIDGE, MA

Avon Hill - Exquisitely renovated single. living/dining w/ fireplace & French doors to patio. Kitchen w/ soapstone counters & 5-burner Wolf cook-top. 4+ beds, 4 1/2 baths (master w/ cathedral ceiling, & bath). C/A. Garage + parking. Near Harvard & Porter Sqs & Mass Ave shops & restaurants. \$2,000,000



## CAMBRIDGE, MA

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zliudesigns.com  
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## NEW ENGLAND REGIONAL SECTION



HARVARD COLLEGE LIBRARY

## Blackfoot Indian Tipis: Design and Legend, 1976, at the Tozzer Library

### Harvard Art Museums

www.harvardartmuseums.org

617-495-9400

• Through December 10

*Prints and the Pursuit of Knowledge in Early Modern Europe.* A rich display of prints, books, maps, and scientific instruments exploring the role of celebrated artists in the scientific inquiries of the sixteenth century (see page 42).

### Peabody Museum of Archaeology and Ethnology

www.peabody.harvard.edu; 617-496-1027

• Opening November 17, with a reception, 5-7 P.M.

## From Cabinets of Curiosity and Rooms of Wonder at the Houghton Library



HARVARD COLLEGE LIBRARY

*Shooting for Peace: Youth Behind the Lens* features photographs by young people exploring their identities after fleeing rural violence in Colombia.

• December 1 at 5:30 P.M.

### "Trash Talk" Lecture Series

"Products, Plastics, Putrefaction, and Power: Rethinking How We Manage Materials to Achieve Just Sustainability," by Samantha MacBride, adjunct assistant professor of international and public affairs at Columbia.

### Harvard Museum of Natural History

www.hmn.harvard.edu; 617-495-3045

• November 20 at 4 P.M.

"The Species Seeker," a lecture and discussion with science writer and NPR commentator Richard Con-

niff, focuses on adventurers who discovered new life forms in the farthest corners of the earth.

• Continuing: *Life in the Extreme Deep*, a collection of stunning deep-sea photographs that show the work of Loeb associate professor of the natural sciences Peter R. Girguis, the scientists who work with him, and the creatures they study.

• Continuing: *New England Forests*, a new permanent exhibit, is a multimedia examination of the natural history and ecology of regional forests and their responses to human activity.

### The Semitic Museum

www.fas.harvard.edu/-semitic  
617-495-4631

• Continuing: *The Houses of Ancient Israel: Domestic, Royal, Divine* features a full-scale replica of an Iron Age (ca. 1200-586 B.C.E.) village abode.

• *Ancient Egypt: Magic and the Afterlife* offers the Egyptian view of the hereafter.

## LIBRARIES

www.hcl.harvard.edu/  
info/exhibitions  
617-495-2417

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## NEW ENGLAND REGIONAL SECTION

### Houghton Library

• Continuing: *Cabinets of Curiosity and Rooms of Wonder* explores the intersection of science and art, reflected in late Renaissance European artifacts and in the origins of museums. 617-495-2449.

### Tozzer Library

• Continuing: *Native Life in the Americas: Artists' Views* showcases the work of little-known Native American and women artists. 617-495-1481.



**Still Life Teapot**, by Delanie Wise, at the Harvard Ceramics Program's annual holiday show and sale

### Lamont Library

• Through November 17.

A display of images from the Harvard College Annual International Photo Contest. 617-495-2455.

### Schlesinger Library Movie Night

[www.radcliffe.edu/schles/movie\\_night.aspx](http://www.radcliffe.edu/schles/movie_night.aspx); 617-495-8647

10 Garden Street, Radcliffe Yard

Monthly screenings and discussions

• December 7

*Paris Was a Woman*, by Greta Schiller, reveals the extraordinary women, many of whom were lesbian or bisexual, involved with the Left Bank's cultural scene between the world wars.

Events listings also appear in the *University Gazette*, accessible via this magazine's website, [www.harvardmagazine.com](http://www.harvardmagazine.com).



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# Dancing “Makes Us More Alive”

*New England offers numerous forms of dance for body, mind, and soul • by Nell Porter Brown*

**New York City dancers Karen Amatradig and Christopher Lockhart strut their stuff during a lecture by Wynton Marsalis at Sanders Theatre.**



**I**N PRIMITIVE CULTURES throughout the world, dance brings communities together in a common purpose, jazz master Wynton Marsalis, Ar.D. '09, told an audience packed into Sanders Theatre in September. Dances requested rain or a successful hunt or battle, opened paths to gods and other spirits, promoted fertility and gender identity. They taught “our young the meaning of sexuality as they entered adulthood,” he said. “Dancing sanctified our space. It could heighten our sense of being alive by making us one with the very ground we danced on, the air we breathed, and the seen and the unseen.”

Dance was, and is, a unique and essential human activity that connects us to the musical rhythms of life. “Unlike rowing a boat or chopping wood,” Marsalis noted, in “dancing you became more of yourself as you became one with others. You almost never got tired because your spirit soared the more you danced—because this was play.” Proving that point, his four-and-a-half hour presentation on the history of social dance and music in America (part of his two-year lecture and performance series sponsored by President Drew Faust’s office) was punctuated by dazzling performances, from the cakewalk, minuet, waltz, and fox trot to tap, tango, the Charleston, the lindy hop, the mashed potato, merengue, cha cha cha, and the twist.

**THIS WINTER**, as the cold isolates many New Englanders by chasing them indoors, dance might be just the form of exercise—for the mind and spirit as well as the body—needed to gain a fuller sense of well-being and connection to others.

The region offers a wealth of dance studios, classes, community groups, ethnic dance movements, and amateur performing troupes to join (see the resource box on page 16L). Fitness gyms increasingly offer dance classes such as Zumba, bal-



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let, Nia (which combines dance, yoga, and martial arts), and even belly dancing, along with the more traditional workouts. “Hey—whatever gets people moving!” says Jill Johnson, the new director of the dance program within Harvard’s Office for the Arts.

Johnson knows that many people are intimidated by dancing, which makes it hard to be comfortable as a beginner. She encourages nonprofessional dancers not to worry so much about how they look, but to concentrate on how they *feel*: dance is a way to explore what of ourselves gets expressed, and our relationship to others on the dance floor. “We worry about how we are perceived by others,” she adds. “People say, ‘I’m not a dancer’ and that shuts off curiosity about it. We were *born* with the capacity to dance! Children who see someone playing music on the street will move to connect with the beat. That instinct gets lost because of who we think we are supposed to be as adults.” She advises starting slowly. “Hip hop is very popular,” she says. “Some of it involves complex coordination. Breaking down a phrase into smaller steps can sometimes help. Try not to look in the mirror too much.”

Johnson trained classically through her teens, then was “opened creatively” by the variations of modern dance. Her work has blended the two—and other dance forms—through intricate compositions with her longtime collaborator,

## Dance Resources

Among the organizations that lead and/or promote social dancing in New England:

### <http://www.havetodance.com>

A fairly comprehensive resource for regional swing dances. Also good contact information for other dance forms, including tango, hustle, and salsa

### [www.salsaboston.com](http://www.salsaboston.com)

Great for finding lessons, clubs, and performances. (See dance lessons section for venues outside of Boston.)

### [www.arnb.org/Northeast.php](http://www.arnb.org/Northeast.php)

Cajun/Zydeco music and dance

### <http://wadabo.drupalgardens.com>

West African dance and music classes and events, primarily in Boston

### [www.dne.org](http://www.dne.org)

Dance New England is an umbrella group that coordinates free-form dances. The website also has an extensive list of other kinds of dances to join.

### [www.jehkulu.org/contact.html](http://www.jehkulu.org/contact.html)

Dance and drumming classes, performances, and festivals in and around Burlington, Vermont

[www.facone.org](http://www.facone.org) (the Folk Arts Center of New England), [www.folkdancing.org](http://www.folkdancing.org) (the Folk Dance Association), and [www.neffa.org](http://www.neffa.org) (the New England Folk Festival Association), all offer details on international folk dancing and music venues.

### [www.earthdance.net](http://www.earthdance.net)

Earthdance, based near Northampton, Massachusetts, offers classes, workshops, and events with an emphasis on dance and interdisciplinary somatic arts that “focus on sustainable living, social justice, and community.”

### [www.zumba.com/en-US/about](http://www.zumba.com/en-US/about)

The trademarked dance fitness program Zumba, performed to international music with a heavy Latin American sound

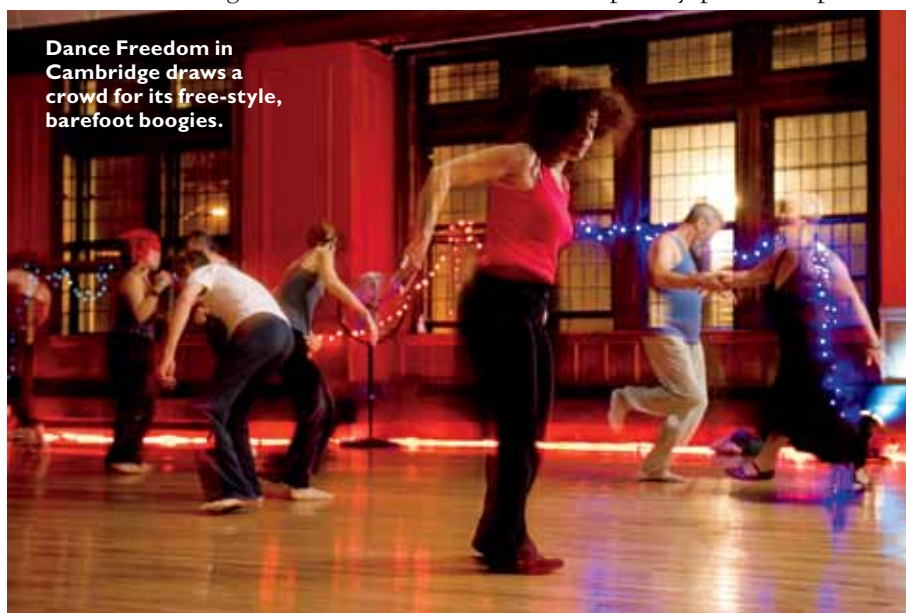
### [www.niaboston.com](http://www.niaboston.com)

The site lists classes, teachers, and workshops.

choreographer William Forsythe. She is interested in “waking up the neural pathways” through dance and wants to engage in interdisciplinary partnerships with

Harvard researchers to better understand how dance affects brain activity and plasticity. Specifically, she would like to make clearer the connections related to the effect of movement on and in the pre-frontal cortex of the brain and how the cognitive processes develop. “So much of the body is *patterning*, which has helped me learn new things in the studio,” she explains. “Approaching a certain step in a dance and trying to change it is like the process of recovering from an injury. The pathways are re-patterning in healing and recovery the same way they are when we are learning new ways to move our bodies in dance.”

In the classes she teaches, Johnson has her students warm up through “cross-hemisphere coordinative exercises”: swinging their bodies across their midlines by moving the right and left hands to opposite, specific points on the body (e.g., ankles, knees, elbows, ears). “The legs also move across the body in subtle opposition to the directions of the hands.





## NEW ENGLAND REGIONAL SECTION

David Kahn happily  
twirls the night away.



The whole body is moving, utilizing the configurations of *épaulement* found in ballet,” she explains. “To my knowledge, there isn’t any empirical research that suggests that this series of exercises helps coordination, but I have found—after extensive use of this modality in my own dancing, and teaching students these patterning exercises over a length of time—that there is an increased coordinative ability as a result of practicing them.”

THERE IS NO DOUBT of the positive effect, in general, of physical activity on the brain, on cognitive functioning, and on age-related problems, notes David Kahn, an instructor in psychiatry at Harvard Medical School whose research supports the development of a neuropsychology of dreaming. “But dancing adds another aspect to exercise and its effect on our bodies and brains,” he says, “because it is a *joyous* activity.”

Kahn is among the leaders of Dance New England (DNE; [www.dne.org](http://www.dne.org)), “a creative collective of individuals who love to dance.” The nonprofit, all-volunteer group promotes dance’s ability to foster authentic self-expression, tolerance, and community; it is the umbrella organization for numerous freestyle dances throughout the region (and in New York City), as well as for an annual summer family camp in Freedom, New Hampshire.

Since 1976, Kahn has attended the Wednesday night gatherings in Harvard Square called Dance Freedom, which has its origins in Dance Free, created by Allison Binder and the dance and drumming circles first established on the Cambridge

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Common in the late 1960s. All DNE's events are smoke-, alcohol-, and drug-free. "If that stuff is available and almost expected, because that is the way nightclubs make their money, then why not have another paradigm where there is no alcohol and see what happens?" Kahn asks. DNE encourages the meeting of "authentic selves" in the dance. "People have said they need alcohol to loosen up, but in my experience, all people need is to hear the music and move their bodies. And this has been successful."

Dancing regularly and participating in the DNE community has not only been good for Kahn's physical health, it has also complemented his work as a researcher. "At work," he says, "I think by articulating ideas that are part of trying to understand how and why we behave the way we do, while dancing uses a different part of my brain. I don't have to understand why I am dancing or how. There is no abstract thinking. The mind takes a coffee break and the body has full rein."

On a recent cool, rainy evening, the Cambridge dance, held in a church facing the Common, drew about 30 people. Individuals, couples, or larger groups danced without prescribed steps, or simply stretched their bodies, to a wide range of predominantly instrumental music, including trance and electronic-style lounge sounds. Pretty much anything goes at Dance Freedom. "Every dance I find some joy in," Kahn says, "but every once in a while, like the other night, there is a meshing with another dancer and there is a chemistry that is like chocolate melting in your mouth."

Helen Snively '71, of Cambridge, can find a similar experience in Balkan dancing, which she has done for 15 years. Done in a group, with the dancers holding hands, Balkan dancing "is easy to relax into once you know the steps," she says. "Sometimes



Jill Johnson performs during "The Art of Survival: A Tenth Anniversary Observance of 9/11 in Words, Music, and Dance" at Sanders Theatre.

I close my eyes and just feel it. You have to be aware enough to not pull too hard on the others, or tangle up somehow, but generally it's possible to just melt into the sense of the group." It was originally the music (and her musician husband) that drew her to this communal dance form because the rhythms are not four-four as they are in American contra dancing (which she finds much less interesting); instead, they are variable, syncopated, "and intriguing," she says. "Tango dancing is intriguing in the same way. You are moving to different rhythms and there is an ongoing curiosity about how you fit into the music."

There are opportunities to learn and perform Balkan dances, such as through The East European Folklife Center (eefc.org), which runs a week-long summer camp in upstate New York that Snively attends. Many other groups in New England organize a similar range of folk and ethnic dances, such as Greek, Scandina-

vian, and Scottish, along with events and performances. "There are a lot of places you can learn to dance, like old church halls with fluorescent lighting," Snively says. "But it doesn't matter where you are, because there is a lot of energy in dance groups and you have a good time. Dancing is definitely a way to find a community. People want to share their culture and art forms, especially with young people, and are very welcoming."

Great dancing is not about satisfying the ego—it is "an offering" of your gifts, Johnson says. "If you are really dialed into the dance then you cannot think about yourself; the energy and focus [present in that creative moment] are too big. We think of that kind of thing as 'New Agey,' but if you are open and accessible" to merging the movement with the music and other dancers, then a new state of being surfaces. "I think it is being in touch with the soul,"

Johnson explains. "These days we are so empirical; we want to know the *how* and *why* instead of having some mystery that defies words. In dance, you know the feeling when you feel it, and therein lies the connection" among body, mind, and spirit.

In his lecture, Mar-salis said social partner dancing allowed "a glimpse into another soul, if only for a moment, through the exuberance of motion." He took a year to research the origins of popular dance in preparation for the Sanders Theatre event. That work clarified, for him, what social dancing has contributed to culture. "It was competition, cooperation, and consciousness," he noted. Dance "is and was and will always be community in action. Although life is no cakewalk, people are going to dance no matter what, because it makes us more alive." ▽

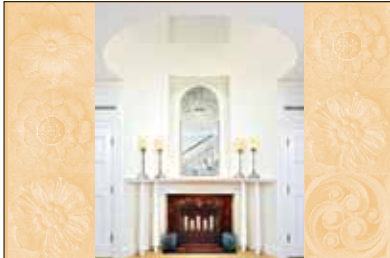


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**HARVARD**  
MAGAZINE

# Evoo Evolves

*One of Cambridge's locavore leaders thrives in Kendall Square.*



**I**MPRESSIVE FOR ITS promotion of high-tech global innovation, Kendall Square is no one's idea of a cozy neighborhood. Nor is it known for its vibrant night life.

Its gleaming glass and steel buildings are home to more than 100 firms whose employees, by day, join international visitors and MIT faculty and staff members crowding into numerous lunch spots. Luxury condominium buildings offer living and sleeping quarters, but their residents rarely seem to be out on the streets at night—except to hop the Red Line to Boston. Little exists to draw their gastronomic interests beyond the notable exceptions: Amelia's Trattoria, The Hungry Mother, The Blue Room, and, since 2010, Evoo, which moved from a site on the farthest fringes of Harvard Square to a spot next to its sister restaurant, Za (which features a bar and casual fare like pizZA).

Evoo (short for “extra virgin olive oil”) is not particularly cozy, either. It is housed in the bottom of the Watermark residential tower on a concrete plaza built over an underground garage (where diners can park for \$4). Its modern, faintly industrial-style interior is pretty even if a bit generic—boxy rooms painted a sage green, accented

**Evoo's earthy food is served in a modern, open interior with a view of the kitchen.**

by red ceiling banners and red upholstered banquettes—and could stand a few intimate touches.

Still, Evoo is, literally and figuratively, among the brightest lights in this urban landscape after sundown—deservedly popular for its eclectic array of homey, earthy dishes sourced from regional farms. “We want this place to be something to feel good about,” says chef Peter McCarthy, who owns it with his wife, Colleen. “You know your money is not going to some big corporation in the Midwest but to small farmers you can call on the phone and talk to.”

Evoo's menu changes to accommodate available ingredients, but always offers three courses for \$42, or \$60 when paired with wines. (Try the local Turtle Creek Chardonnay made 19 miles away in Lincoln, Massachusetts; it's surprisingly dry and layered.)

We began with an excitingly fresh summer-vegetable gazpacho, heavily seasoned with basil and garlic seemingly just plucked from the ground. The “back-room smoked” pig's-skin risotto arancini tasted, by contrast, as if it had been cooked all day, merging salty, dirty barbecue flavors that bloom fully only over time.

While waiting for the

main dishes, we devoured the homemade, pencil-thin bread sticks, made with a zingy blend of salt and rosemary, and deplored their accompaniment: olive oil and balsamic vinegar with cheese bits that was far too acidic.

The first entrée was served upside-down on the plate: the diner lifted a Chinese take-out box to reveal a tower of mustard-glazed shrimp and sesame-hoisin braised beef (perfectly cooked), layered with brown rice and gingery vegetables (including broccoli and shredded lettuce) and cashews in a red chili gravy. Less hoisin sauce would be advisable, but the balance of textures and tastes was great overall.

The grilled sirloin (from Pineland Farm in New Gloucester, Maine; Evoo lists its suppliers on the menu) rubbed with coriander and black pepper was lean and tender. With it came duck-fat fried potatoes (a bit too dry and bland), and a nicely biting tomato and arugula salad with excellent Great Hill blue cheese from Marion, Massachusetts.

The dessert was simply outstanding: peaches marinated in a nuanced white-wine-and-thyme syrup and topped with freshly whipped cream. All the diners at Evoo—and at the adjacent Za bar across a foyer, abuzz on a Thursday night—seemed happily fed and immersed in good conversation.

One would never guess that just outside on this cool evening, all was quiet save for a few stray wind-blown leaves on the vacant plaza. “It won't be empty long,” McCarthy declares. “Three new restaurants have recently opened and a new apartment

building is going up. And we're here. We think Kendall Square is fast turning into a great new neighborhood.” ~N.P.B.

## EVOO

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# Montage

Art, books, diverse creations



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captured in an absorbing 2010 documentary (foreignpartsfilm.com) co-directed by anthropologists Véréna Paravel and J.P. Sniadecki, both fellows of the Harvard Film Study Center. It will play in art-house theaters this fall.

Willets Point pulses with grassroots entrepreneurship, driven by the repair of automobiles, which often involves

**Puddles of water, a leitmotif in *Foreign Parts*, fill the rutted streets of Willets Point in Queens, a mecca for auto repair and parts.**

tearing down other cars. City motorists flock to the rutted, puddled streets to find bargains

in windshields, sideview mirrors, tires—all manner of parts salvaged from dead cars. Images of dismemberment stud the 80-minute film, as viewers witness cars and vans chopped to pieces in the automotive equivalent of organ donation. Watching a worker saw off a steering column and carry it away, severed wires dangling, feels like seeing a butcher carrying entrails down a boulevard. Since cars hold such a formative place in American culture, *Foreign Parts*' intimate look at the backstage work of a junkyard doubles as an explora-

## An Elegy Set in Queens

*Filming a vital, vanishing junkyard neighborhood of New York City*

by CRAIG LAMBERT

**I**N THE NONFICTION FILM *Foreign Parts*, a tall, scrappy, solitary man named Joe strides majestically through the junkyard neighborhood of Willets Point, a 75-acre section of Queens that lies beside the Billie Jean King National Tennis Center, site of the U.S. Open tennis tournament, and in the shadow of Citi Field, new home of the New York Mets. Joe, now 79, is the last legal resident among the 2,000-odd transients and working stiffs of Willets Point, and he rages like a deposed king

while loping through his homeland, now threatened by the city's juggernaut of eminent domain. In both accent and attitude, Joe is pure "New Yawk"—quintessentially, lovably, New York—and the fact that Willets Point is doomed, destined to be destroyed by Mayor Michael Bloomberg's \$3-billion plan to help developers build stores and offices there, feels like a death sentence for a dogged part of the soul of the great city. Luckily, the neighborhood's fascinating, gritty life-world has been



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## MONTAGE



**Joe, a quintessential New Yorker and central figure in *Foreign Parts*, takes a walking tour of a warehouse stocked with automobile parts.**

tion of the society itself, in both its vitality and its cruelties. When Paravel first stumbled on Willets Point while shooting her first film, *7 Queens*, “I had the feeling,” she says, “that I was walking into a cemetery, a cathedral, a museum, a feudal village, a third-world country, a postindustrial microcosm, all at once.”

The community does indeed feel like a world apart, a foreign bazaar for auto parts that somehow remains intensely American: in a way, the film shows capitalism in its rawest form, and in particular those who have been shunted aside by its unsentimental calculus. One man seems to do little but direct incoming motorists to the right shop for their needs, oiling the wheels of commerce on a pro bono basis. The people of Willets Point face the same fate as the cars that fuel their livelihood. “We wanted to make visible a community that is trying to survive,” Paravel says.

In two years of shooting, the directors made monthly trips to New York and spent a full month in the junkyard during the summer of 2009. In the process, they built relationships with the individuals who reappear in the movie, which unfolds like a vivid ethnography. A fond but down-and-out young couple, Luis and Sara, live in a van; Sara shows the filmmakers the tire iron and knife she sleeps with while Luis is in jail. A free-spirited African-American woman, Julia, appears as the lov-

able town drunk—the friendly, incoherent transient, neglected by the machinery of society, who carries on thanks to the protection of a community that can't quite imagine doing without her. Affectionate abuse stitches the neighborhood together: when Julia hits up a working acquaintance for yet another loan, the latter ripostes, “What am I—an ATM?”

Paravel, born in Switzerland to French parents, lived in Algeria, Togo, Portugal, France, Russia, and the Ivory Coast as the child of a petroleum engineer. She earned her doctorate in anthropology and soci-

ology at the University of Toulouse II in 2003, and is currently a lecturer on anthropology at Harvard, as well as a faculty associate of the Sensory Ethnography Lab, a collaboration between the departments of anthropology and of visual and environmental studies. In 2002 she settled in New York City with her husband, Vincent Lépinay, a fellow social scientist; the family moved to Boston when he joined the MIT faculty in 2006.

Once Paravel discovered the magic of Willets Point, she realized that she would need a male collaborator to



Visit [harvardmagazine.com/extras](http://harvardmagazine.com/extras) to see a clip from *Foreign Parts* and a gallery of stills from the film.



Véréna Paravel



J.P. Sniadecki

COURTESY OF J.P. SNIADICKI AND VÉRENA PARAVEL



shoot throughout the rough neighborhood, and joined forces with Sniadecki. A graduate student in anthropology at Harvard, he had directed a 2008 documentary she admired, *Demolition*, about workers at a demolition site in China. (He is currently pursuing research in China.) “Aesthetically, we were speaking the same language,” she says; in the junkyard, they “would be swapping the camera back and forth—it was so organic.”

*Foreign Parts* reflects both their aesthetic and their philosophy, which rejects many traditions of documentary film: narrative structure, voiceover narration, identifying titles, and musical soundtracks, for example. “Documentaries tend to be too timo-

rous, and too beholden to the conventions of broadcast journalism,” Paravel explains. “I’m allergic to the strictures of a ‘fly-on-the-wall’ approach, in which the filmmaker tries to be completely invisible and inaudible, as if they’re some kind of all-seeing God who has no real relationship with the subjects in front of the camera. For me, films should enact and embody an encounter, rather than just report on one after the fact. The notion of a unidirectional gaze is an illusion—a camera’s vision is always returned and contested by those in front of it.”

The result is a film that draws the viewer into an unfamiliar but very real place. (“Sure, it’s an ethnographic film,” Paravel jokes, “—like any other fictional film.”)

Whatever its genre, *Foreign Parts* seems to resonate strongly with audiences: it won the Best First Feature prize at the prestigious Locarno Film Festival, best-film prizes at three other European festivals, and was an official selection for the New York Film Festival.

“I try to offer something for viewers to see, experience, and make sense of on their own terms, rather than imposing my own interpretation through a voiceover,” Paravel explains. “I try not to finger-point. This is more empowering for the subjects, and also for the viewers. Film at its best aspires to be a medium of commensality rather than mere communication, a way of sharing and reliving the world with one’s subjects.” ▢

## Salads with Panache

*Gardening, mixing, and tossing in Santa Fe*

THE HIGH DESERT and gourmet salads; experience as both a *fashionista* and a farmer. Unlikely pairings apparently come naturally to Erin Wade ’03, farmer, chef, and owner of Vinaigrette, a salad bistro in Santa Fe. The menu at her 68-seat establishment (100 seats in the summer, when the patio is open) offers about 20 varieties of salad daily—and her creations have a way of hitting the palate with aplomb. Consider the robust Apple-Cheddar Chop (\$15.95)—grilled pork tenderloin over peppery baby arugula, julienned green apples, pickled fennel, and sharp cheddar, chopped and tossed in a ruby port vinaigrette, or the relatively light Eat Your Peas (\$9.95)—fresh baby lettuce and sweet green peas with crunchy bacon shards, savory white mushroom sauté, and Asiago cheese with a tart vinaigrette. Should you

come during the growing season (roughly late May to late September), there’s a good chance that Wade will have picked your greens herself that very morning.

She began to think seriously about food after college, while studying to become a fashion designer in Milan. “The Italian attitude toward pleasure and food, it’s infectious,” she says. “It’s this sense of entitlement—that everyone deserves good food.” A Milanese pizzeria that featured more than 100 different pizzas, ranging from kiwi and *talleggio* to Gorgonzola and hazelnut, inspired her; all were “simple, fresh, and healthy.”

“As a woman coming out of college, I was looking for a way of eating, a philosophy of eating, that wasn’t deprivational,” she recalls. “I wanted to eat in a way that was loving and nurturing.”

Wade tends her three-acre garden, with a 1,200-square-foot greenhouse, in Nambé, a hamlet 20 miles north of Santa Fe, with help from one other gardener. Her family bought the 10-acre parcel of land, including the



**Salad creator Erin Wade on her New Mexico farm. (At left) Wade's Cherry Tart salad at Vinaigrette in Santa Fe**

300-year-old adobe fixer-upper where she now lives, in 2003 as a family redoubt, but Wade moved in after returning from Milan unclear about her career plans.

In 2004, she began planting cover crops like alfalfa and legumes to replenish the soil's nitrogen, and began trying to irrigate, a task far more complicated than she'd first expected, given the area's written and un-



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**MONTAGE**

written rules governing water rights. “Whiskey’s for drinking, the saying goes around here,” Wade says, “water’s for fighting.” But by 2005, a small patch was ready for planting in raised beds—and the dream of opening a restaurant was blooming, too. In 2008, with help from her family, a large line of credit, and considerable faith in her untested business plan, she opened Vinaigrette.

“I picked every dish, tin, plate, chair, table, and lamp,” Wade says. “Designing was a natural extension of my background, and a hell of a lot easier for me than the work of running a restaurant” For help in that department, Wade enlisted an operations manager and a kitchen consultant. “I will say that it wasn’t easy, in this male-dominated industry, to find people I could work with who checked their ego and listened to me—a skinny white chick with no experience.” But Wade brought her salad acumen, fine-tuned during her years living on the farm, and the concept. And the pairings have worked: steady growth, bustling lunch and dinner crowds, and rave reviews (including two mentions in the *New York Times*).

She now raises about 70 percent of Vinaigrette’s produce on her own land, and whatever happens to be thriving inspires her salad creations. The high desert air produces particularly peppery arugula, for instance—hence the idea of balancing it with



Visit [harvardmagazine.com/extras](http://harvardmagazine.com/extras) for two of Erin Wade’s salad dressing recipes and more images of her food and restaurant.

**Grilled shrimp adds color to The Omega, a salad with avocado, corn, and cilantro.**



DOUGLAS MERRIAM



O P E N B O O K

## America as Argentina

Frieden advance a macroeconomic account of these woes, and a (difficult) path away from them. In the preface, they ask, "What happened?" and answer thus:

**The United States borrowed** and spent itself into a foreign debt crisis. Between 2001 and 2007, Americans borrowed trillions of dollars from abroad. The federal government borrowed to finance its budget deficit; households borrowed to allow them to consume beyond their means. As money flooded in from abroad, Americans spent some of it on hard goods, especially on cheap imports. They spent most of the rest on local goods and services, especially financial services and real estate. The result was a broad-based economic expansion. This expansion—especially in housing—eventually became a boom, then a bubble. The bubble burst, with disastrous effect, and the country was left to pick up the pieces.

The American economic disaster is simply the most recent example of a "capital flow cycle," in which capital floods into a country, stimulates an economic boom, encourages high-flying financial and other activities, and eventually culminates in a crash. In broad outlines, the cycle describes the developing-country debt crisis of the early 1980s, the Mexican crisis of 1994, the East Asian crisis of 1997-1998, the Russian and Brazilian and Turkish and Argentine crises of the late 1990s and into 2000-2001—and, in fact, the German crisis of the early 1930s and the American crisis of the early 1890s....

To be sure, the most recent American version of a debt crisis was replete with its own particularities: an

**It has been** a rotten economic decade for the United States. Why—and can anything be done to keep the stagnant new normal from persisting? In *Lost Decades: The Making of America's Debt Crisis and the Long Recovery* (W.W. Norton, \$26.95), Menzie D. Chinn '84, of the University of Wisconsin, and Stanfield professor of international peace Jeffrey A.

alphabet soup of bewildering new financial instruments, a myriad of regulatory complications, an unprecedented speed of contagion. Yet for all the unique features of contemporary events, in its essence this was a debt crisis. Its origins and course are of a piece with hundreds of episodes in the modern international economy.

For a century American policymakers and their allies in the commanding heights of the international financial system warned governments of the risks of excessive borrowing, unproductive spending, foolish tax policies, and unwarranted speculation. Then, in less than a decade, the United States proceeded to demonstrate precisely why such warnings were valid, pursuing virtually every dangerous policy it had advised others against....

The American crisis immediately spread to the rest of the international economy. The world learned a valuable lesson about global markets: they transmit bad news as quickly as good news. The American borrowing binge had pulled much of the world along with it—drawing some countries (Great Britain, Ireland, Iceland, Spain, Greece) into

a similar debt-financed boom, and tapping other countries (China, Japan, Saudi Arabia, Germany) for the money to make it possible. The collapse dragged financial markets everywhere over a cliff in a matter of weeks, with broad economic activity following within months.



**Vinaigrette's light, airy interior pays artistic homage on one wall to the building blocks of salads.**

sweet dried cherries and toasted pecans in the Cherry Tart (\$8.95). Other salads, like Appeasement, start from a story—in that case, about a couple of grumpy customers who needed mollifying. "The fact that *peas* and *mint* are a classic culinary pairing got me thinking...but how to combine them?" she recalls. "Mint is used frequently in Thai cooking, so I thought of peanuts and obliquely of black sesame seeds, which are common in Asian cuisines—and because I find mint too harsh by itself, I began to think about it in the dressing. So I ended up with Appeasement [(a-peas-mint)]—crisp green cabbage, sugar snap and snow peas, and radish, with chopped peanuts, black sesame seeds, and a creamy mint-ginger vinaigrette."

The grumpy couple, apparently, never returned, but Wade considers the salad name emblematic of what running a restaurant requires. "When you can turn a negative experience into a positive one by apologizing, admitting fault, sending out dessert or comping the whole shebang—whatever kind of appeasement is necessary—you often cultivate your most loyal and devoted customers."

Of moving to New Mexico, learning to farm, and opening Vinaigrette with no restaurant experience, Wade says, "It was a big leap of faith. I was convinced I was going to be dressed in a sleazy carrot costume begging people to come in off the street." But she says also that she knew, in part from her experience at Harvard, that "ideas matter. No one thought it was going to work, but I believed in this. I knew it would work. People need it."

—HOWARD AXELROD

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### LAUREN MECHLING '99

**Background:** Lauren Mechling has worked as a writer and editor at a number of publications, including the *Paris Review* and the *New York Sun*. She is now an editor at the *Wall Street Journal*. Mechling is also an author of fiction for young people, including the *Dream Girl* detective series, *The Rise and Fall of a 10th Grade Social Climber* series, and a novel titled *My Darklyng*, which was published on Slate.com.

**A Harvard Grad Is:** Says Mechling, "I learned the most from the students surrounding me. There truly is no luxury greater than being in the midst of such inspiring and brilliant and quite often hilarious souls. They shaped who I am, and inspired me to approach my work and life with a sense of fearlessness and playfulness."

### A Harvard Grad Gives Back:

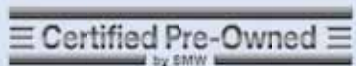
Mechling donates to the Harvard Film Center, where she says she spent "...what some might call an unhealthy amount of hours in the dark, being very, very happy." **BMW North America is proud to support Lauren's efforts with a donation to The Harvard Film Center.**

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## MONTAGE

# Disruptive Creations

Videos and sculptures that challenge perceptions

**I**N THE VIDEO CALLED *Day Shift*, a security guard sits in a small office, watching a monitor that shows the room she's in. The phone rings. Nobody's there. Again the phone, again no one's on the other end. No matter, it's 5 P.M. The guard walks to her car. Looks back—her rear window is bricked in. Nonetheless, a section of the window slides open. She crawls into the backseat and through the rear window, emerging in the monitor on her office desk. The office is different now—the ceiling's lower. The phone rings. Yet again the caller is silent. And as a small building is slowly pulled backward on the lawn of a country estate, there is applause.

The inspiration for this video might have been the 1999 film *Being John Malkovich*. But that cult favorite would be too direct for Meredith James '04, the artist who also cast herself as the uniformed security guard in her video. Her idea of an inspiration for a video or sculpture is



The main set for Meredith James's video *Day Shift* (above), and one of its scenes (left), starring James



more likely traceable to a Surrealist film by Jean Cocteau or a literary science-fiction novel. Not on her list: ideas that come from drawing, painting, and sculpture. "When I draw," she says, "I feel I'm looking at my own handwriting. The words may surprise me, but it feels familiar."

Her art is anything but familiar. "My intent is to show parallels between the

world you imagine in your mind and the world we inhabit," she says. "I want to level that playing field." So in her large, nearly empty studio in a nondescript section of Brooklyn, James, now 29, makes videos and sculptures (<http://meredith-james.com>) that distort architectural space and play with perception. "My continuing interest," she says, "is disruption."



**See-Through (2007)**

Photographs courtesy of Meredith James



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# Off the Shelf

Recent books with Harvard connections

**The Idea of America: Reflections on the Birth of the United States**, by Gordon S. Wood, Ph.D. '64 (Penguin, \$29.95). Essays from the past half-century on the American Revolution, the making of the Constitution, and the early Republic, by the eminent historian (now emeritus at Brown)—winner of the Bancroft and Pulitzer Prizes and National Humanities Medal—who has done foundational work in all these fields.

**Rising Force**, by James D. Livingston, Ph.D. '56 (Harvard, \$27.95). A popular introduction to the “magic” of magnetic levitation, by a former physicist at General Electric and lecturer at MIT, who knows how to have fun with his subject. Your kids will love the picture of the levitating frog.

**The Annotated Peter Pan: The Centennial Edition**, edited by Maria Tatar, Loeb professor of Germanic languages and literatures and of folklore and mythology (W.W. Norton, \$39.95). Just as Archie and Veronica and the Riverdale gang remain ageless teenagers, J. M. Bar-

rie's airborne hero is a young centenarian. Tatar, profiled in these pages in 2007 (“The Horror and the Beauty,” November-December), provides context and notes. Profusely illustrated.

**Midnight Rising: John Brown and the Raid That Sparked the Civil War**, by Tony Horwitz, RI '06 (Henry Holt, \$29). The author, a shoe-leather historian/journalist who writes vivid narratives (including the classic *Confederates in the Attic*), here brings the Harpers Ferry events crackling to life.

**American Anthrax**, by Jeanne Guillemin '68, A.B.E. '68 (Henry Holt, \$27). A security-studies fellow at MIT probes the seven-year investigation of the anthrax attack after 9/11.

**The Better Angels of Our Nature: Why Violence Has Declined**, by Steven Pinker, Johnstone Family professor of psychology (Viking, \$40). The author, best known for his studies of human language and cognition, turns his attention toward our use of fists and what he terms a diminution of bloody behaviors across history.

**Why Trilling Matters**, by Adam Kirsch '97 (Yale, \$24). The author, among the most productive and perceptive of contemporary critics (and a contributing editor of this magazine), revivifies the leading literary critic of an earlier era for the current one, when literature appears on less firm footing.

**1812: The Navy's War**, by George C. Daughan, Ph.D. '68 (Basic, \$32.50). The ground-based Civil War took place 150 years ago; the drone-dominated U.S. campaign in Afghanistan is now a decade old. Historian Daughan recalls the 200th anniversary of a less-remembered conflict, when the overmatched Americans faced Britain's terrifying navy.

**Illustration by F.D. Bedford for J.M. Barrie's *Peter and Wendy*. As the children sleep, Peter crosses the sill in the glow of Tinker Bell's light.**

**Columbus: The Four Voyages**, by Laurence Bergreen '72 (Viking, \$35). Continuing the nautical theme: having dramatized the adventures of Magellan and Marco Polo, the author now recounts Columbus's voyages, and not just the celebrated initial one.

**Living Originalism**, by Jack M. Balkin '78, J.D. '81 (Harvard, \$35). The Knight professor of constitutional law and the First Amendment at Yale argues with full scholarly force that originalism and a living Constitution (incorporating modern conceptions of civil rights, health, the environment, etc.) are compatible—that constitutionalism *requires* continuous construction.

**People's Warrior**, by Michael R. Lemov, LL.B. '59 (Fairleigh Dickinson, \$27.95 paper). The former chief counsel to the late Representative John Moss, a 13-term Congressman, narrates the battles over the Freedom of Information Act and the Consumer Product Safety Commission—the sort of thing Congress did before it turned to debates over defaulting on U.S. debt.

**Tocqueville and His America: A Darker Horizon**, by Arthur Kaledin '52, Ph.D. '65 (Yale, \$45). An emeritus MIT historian considers Tocqueville's inner life, its relationship to his iconic *Democracy in America*, and his later concerns about the underside of democratic culture.

**Haiti after the Earthquake**, by Paul Farmer, Kolokotronis University Professor (PublicAffairs, \$27.99). A heartbreaking reminder of what befell the battered people of Haiti in January 2010, and what has happened since, by the Partners In Health founder who has worked to alleviate suffering for decades in a country where the disasters have long been of the manmade variety.

**Elie Siegmeister: American Composer**, by Leonard J. Lehrman '71 and Kenneth O. Boulton (Scarecrow Press/Rowan & Littlefield, \$75). A biographical essay on and catalog of the works of the composer of symphonic, operatic, movie, and other musical works.



PETER FLEW IN





The humorous *Applause* uses motorized hands to clap for viewers.

A typical piece is *See-Through* (2007), an assembly of salvaged wood and windows, arranged in a kind of cupola. “You look into a window,” she explains, “but instead of seeing inside, you see another window. Soon you’re looking into a tunnel of windows. It’s a formal problem for me now, but it started out as a dream in which I walked up to a house, looked in—and saw out the side window.”

*Corridor* (2009), created from a dry-cleaner’s conveyer rack, is a distant echo of a shot of the spooky hotel corridor in Stanley Kubrick’s 1980 film *The Shining*. Its intent: “to turn visual imagery into a physical object.” The video *Present Time* (2009) shows what seems like the peeling off of endless layers of lacy fabric as curtains of a proscenium stage are pulled back, only to reveal another curtain.

This is not, for James, art that we should take entirely seriously. In *Applause*, a sculpture she made at Yale, where she earned an M.F.A.

in 2009, two rubber hands, powered by a motorized bicycle chain, sit upon a chair and clap repeatedly. “As an artist, you end up having to be your own audience a lot, because you’re alone so much of the time,” James explains. “But really, the piece is a joke. I’m laughing at myself and my desire for approval. When I showed it to my professors, I started with it switched off. Then



Visit [harvardmagazine.com/extras](http://harvardmagazine.com/extras) to see additional images and video clips from Meredith James.

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TURN TO PAGE 74

## MONTAGE

I turned the machine on, because I knew there's no clapping in grad school."

The eldest of three children of economist Annabel (Boyce) James and financier Hamilton James '73, M.B.A. '75, she sewed her first costume when she was seven but didn't read until she was in the second grade. At Harvard, where she concentrated in visual and environmental studies, she was the one in the second row at the Brattle Theatre, lost in the surrealistic special effects, or hunched over a sewing machine at the Loeb Drama Center. The source of her disruptive hopes for her art? In large part, her aesthetic is a reaction to the stability she experienced as a child in New York and a student in Cambridge.

"At Harvard, you're always aware of the history," she explains. "In the bricks, even—the new ones look just like the old

ones. And in New York, there are many different fabrics of reality. They all seem real—but a lot of it is invented. The Cloisters, for example; that medieval structure looks as if it's always been there."

The aura of the past and the solidity of objects unsettle her, which is why, she says, she's so enamored of video. "It's a medium that lets you easily dissolve what is concrete and real. In the world, I find that scary—I used to think an ashtray suddenly flying off a table would be the most terrifying thing in the world. Now I see how video can record a play that only exists from the point of view of the camera. Through the lens, you see a complete world. As soon as the camera moves, that world falls apart. And then you can put it back together."

As an illusionist, she works in the tradition of Penn and Teller, who show the



**Meredith James in her studio, with props for a work in progress**

audience how they do their tricks—and yet still deceive and dazzle. For James, her favorite moment is when the viewer recognizes the physical impossibility of what she depicts, yet still finds the piece compelling. "I like making art that's like the funhouse at an amusement park," she says. "It may be stupid, but it still scares you."

—JESSE KORNBLUTH

# On Discovering Drugs

*New approaches to crossing the pharmaceutical "Valley of Death"*

by DAVID G. NATHAN

**D**ESPITE ENORMOUS GAINS in understanding of the mechanisms of disease, we are at a near impasse in new drug development. Most good drug ideas fail at the stage between successful experiments in test tubes and cell culture plates and the attempt to translate the results to intact experimental animals. The failure rate at this stage is so high that some call it the "Valley of Death." This collapse after much expenditure of time and treasure is hard enough to accept, but loss of a drug in the clinical-trial stage is depressingly common as well, and our clinical-trial system is so encrusted with

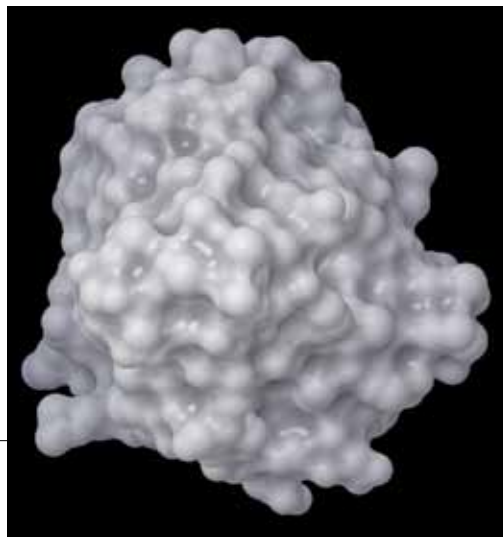
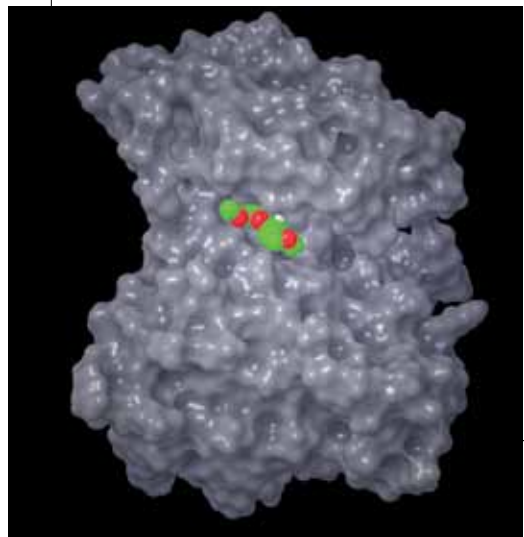
regulatory impedimenta that enormous amounts of time and money are required to learn that a drug is either a clinical failure or produces only a very small advance. It is very easy to spend a billion dollars to find out that there is very little to show for the effort. In a market-based system such as ours, such losses are nearly impossible to accept because we depend on pharmaceutical company profits and the incredible generosity of donors and taxpayers (who support the National Institutes of Health) to fund the discoveries.

Brent R. Stockwell, Ph.D. '99, is an associate professor of biological sciences

and chemistry at Columbia and a Howard Hughes Medical Institute Early Career Scientist. His scientific pedigree places him in the top echelon of promising chemists, particularly those with a bent to break the worldwide logjam in drug development, the hoped-for end product of the science of pharmacology. In addition to his practical knowledge of and experience with organic chemistry and drug design, Stockwell is a teacher who has produced a very useful small volume, *The Quest for the Cure: The Science and Stories Behind the Next Generation of Medicine*.

Stockwell begins with a clear statement of the scientific and fiscal challenge that faces patients with severe acute and chronic diseases, the physicians and nurses who care for them, the grantors who support biomedical research, and the pharmaceutical industry. His early chapters explain that much of the reason for the

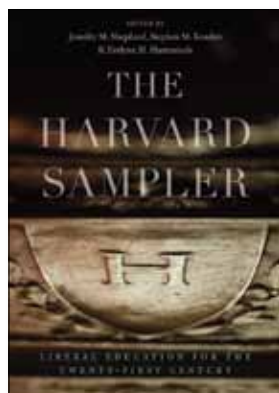
Brent R. Stockwell, Ph.D. '99 *The Quest for the Cure: The Science and Stories Behind the Next Generation of Medicine* (Columbia, \$27.95)



**Left: The cancer drug gefitinib (also known as Iressa) is shown bound to the druggable protein EGFR. Gefitinib is used to treat non-small cell lung cancer. Right: The undruggable protein KRAS, found mutated in a high percentage of pancreatic, colon, and lung cancers, among others. No drugs have yet been found that can block the cancer-causing effects of mutant KRAS—the problem that concerns Brent Stockwell and other pharmaceutical researchers.**

Images courtesy of Brent R. Stockwell



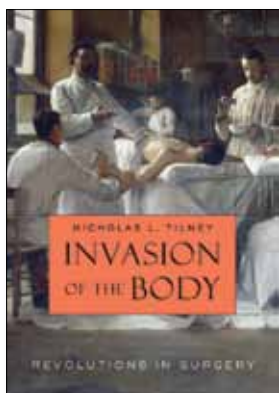


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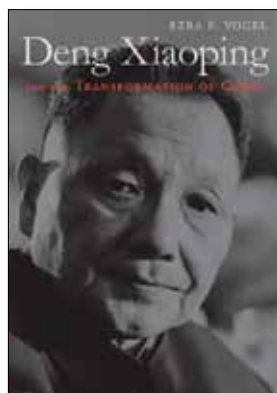


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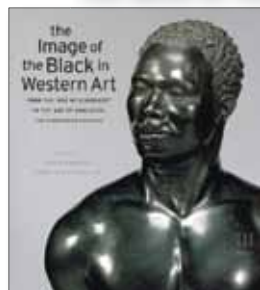
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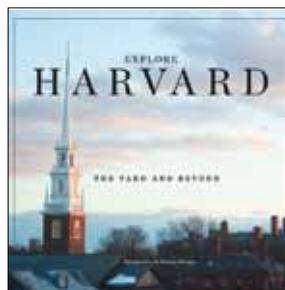
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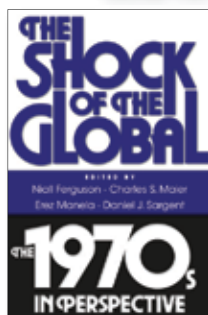


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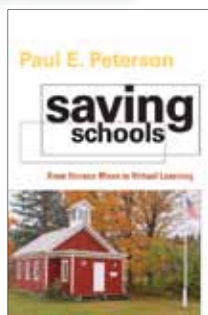


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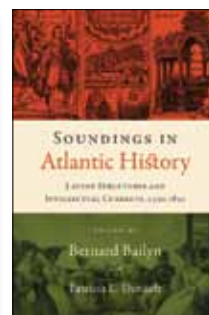


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narrowing of the pipeline of drug discovery lies in a vexing dilemma. The cells of a patient or experimental animal contain *thousands* of proteins, and the cells of each tissue differ from one another based on the specific proteins that they express. Because proteins control cell behavior, the successful treatment of diseases mandates that we produce drugs that will influence proteins. This creates the problem that animates Stockwell: less than 20 percent of the proteins in cells are considered “druggable” (meaning a small chemical or drug can be produced that will bind to the protein and affect its function). The more than 80 percent of cellular proteins that are currently *not* druggable—because they lack crevices on their surfaces into which a small chemical can bind—remain beyond the reach of today’s pharmaceutical science, even though some of them are prime suspects in the causation of devastating diseases. Stockwell’s goal is to show the reader how such proteins can be made druggable by defining “hot spots” on them (see below), and thereby to advance the field of pharmacology.

Proteins are the engines of the cell. Through their function they control the creation of energy, movement, brain function, death, and reproduction, and they accomplish those functions by making specific contact with one another—in effect, nudging one another into action. It is through the proteins they form that genes make the individual cells in our tissues develop into functioning organs and control the inherited fraction of who we are as individuals. Each protein is a polymer—a long chain of constituent amino acids. The latter are members of a class of more than a score of different small molecules made up of carbon, oxygen, hydrogen, nitrogen, and occasionally sulfur atoms. The order of their insertion into the chains or polymeric structures of individual proteins is directed by one of the approximately 20,000 genes that are composed of DNA and reside on chromosomes in the nucleus of every human cell. Importantly, the precise order of the amino acids in a protein dictates its shape, because the amino acids fold against each other in a three-dimensional pattern that is entirely dependent

on their sequence; and the shape of a protein, in turn, dictates its function.

Drugs work by binding to proteins, altering their shape and thereby changing their function. For example, aspirin, a small, readily absorbable molecule and one of the oldest drugs, binds to small crevices on several proteins (including one on blood platelets, thereby rendering them less sticky; thus aspirin taken daily reduces the incidence of heart attacks and strokes). But many proteins, including disease-inducing ones, affect changes in cell function by rubbing up against each other, adhering to a partner protein across large surface areas, thereby altering the shape, and hence function, of each protein.

Small molecules like aspirin may be lost in that huge range of contact. But Stockwell teaches that within the large contact regions there may be “hot spots” where there are tiny but critically important crevices in which a differently configured small molecule might lodge, thus changing the shape of its host and interrupting its abnormal function. Much of the second half of his book reviews the history of and

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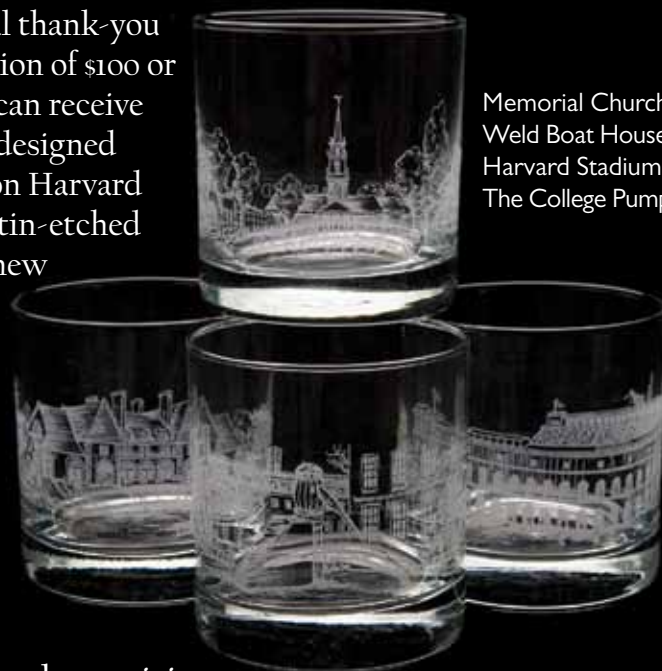
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the new approaches to finding those minute crevices and the small molecules that might bind tightly in them. He describes how academic and pharmaceutical-company laboratories prepare vast “libraries” of small molecules and robotically determine which of them may bind to particular proteins that are implicated in disease.

Though Stockwell discusses computer-aided drug design and drug combinations (including his frustrating experience of starting a company to explore the latter) in some detail, he does not address the mechanisms of drug resistance in either cancer or infectious diseases. These are serious omissions because resistance of both infectious agents and cancer cells is dependent on their high mutation rate and the selection for survival of the cells that achieve resistance to one or more drugs. This demands combination therapy. We need to define increasing numbers of useful antimicrobials and anticancer agents just to keep pace as the infectious or malignant cells achieve resistance.

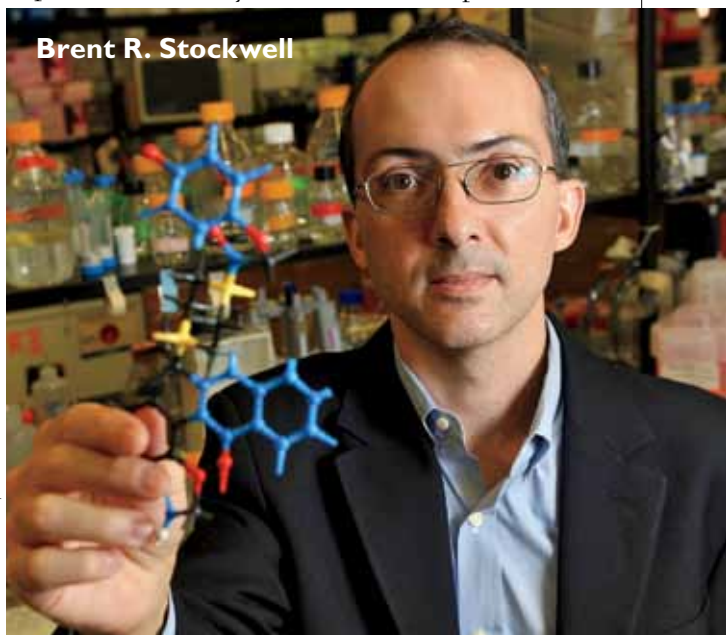
Stockwell refers to “personalized medicine”—the selection of an appropriate drug

based on patient-specific gene expression in cancer cells—as he describes the multiple genetic mutations in cancer, but it increasingly seems that the infectious agents and cancer cells are *themselves* becoming personalized. Cancer, for example, arises from mutation in a single normal cell, but one of its characteristics is instability of DNA and a very high mutation rate. Thus the daughter cells of the originating cancer cell all differ from one another at the genetic level. Accordingly, they are prone to continued mutation and very likely to develop further mutations that render some of them resistant to a particular drug. Dangerous infectious microbes have the same propensity. The populations of microbes or cancer cells must be attacked with multiple drugs to eradicate the invading horde. Hence

we will need many drugs to combat them.

Stockwell knows that his readership is unlikely to include many professional organic chemists, so he has adopted a storytelling approach to get his points across. Wisely, his medical case reports are few

Brent R. Stockwell



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► **The "Living Fossil"**

Take a virtual trip through the Arnold Arboretum with world-renowned ginkgo expert and Harvard lecturer Peter Del Tredici (page 31) in an exclusive video from [harvardmagazine.com](http://harvardmagazine.com).



► **Discuss Coed Living**

Do you remember Harvard and Radcliffe Colleges' coeducational living experiment of 1970 and 1971 (page 68)? Share your memories and read other readers' recollections.



► **Make a Salad with Panache**

Read about Erin Wade '03, who operates a salad bistro in Santa Fe (page 19), then go online to find two of her innovative recipes for dressings.

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**MONTAGE**

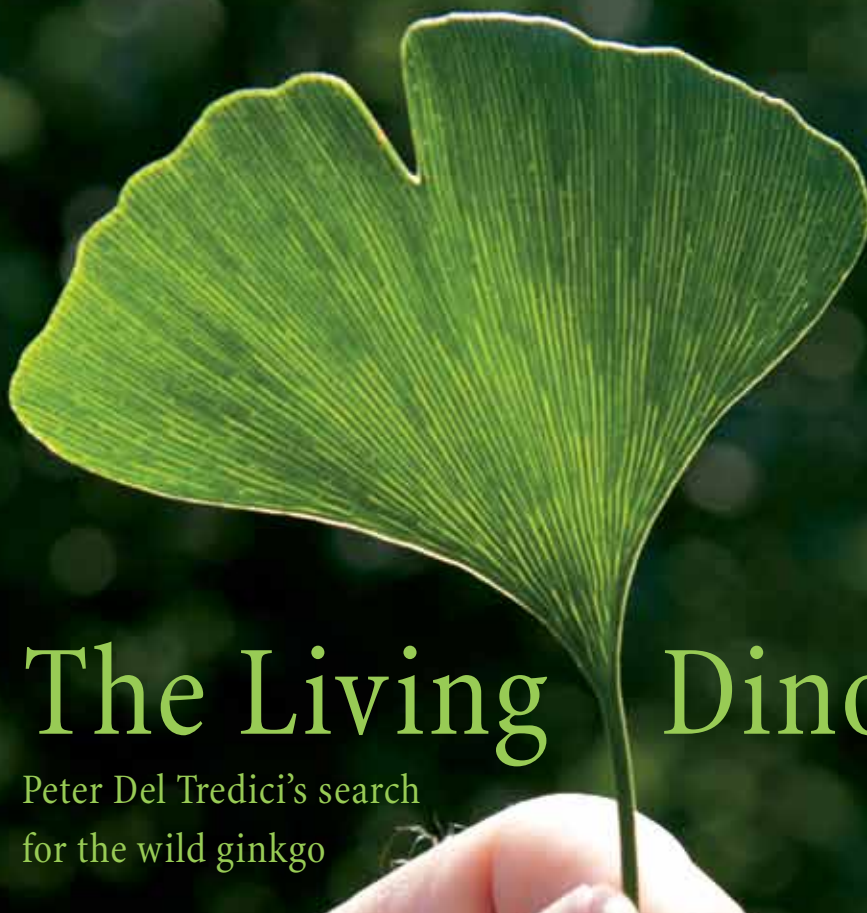
and far between, because he does not know the details of the patients he describes, but his grasp of the fascinating history of organic chemistry and of the particular experiments that led, for example, to huge gains in our understanding of the protein-driven mechanisms of cancer is firm and more often than not lucidly presented. One may quibble, of course, with some of his tales. His description of the major contributions of Sidney Farber to the birth of cancer chemotherapy, for example, is not quite right. Farber and his colleagues, the first to use a targeted drug (aminopterin) to attack childhood leukemia, were in fact searching for a vitamin to manage the disease, but found that aminopterin is actually an anti-vitamin that kills leukemic cells but is broadly toxic, making precise dosage critical. *Selective Toxicity*, Adrian Albert's brief 1950s monograph about antibiotics, well describes that conundrum.

As is true of many good scientists beginning to write for a general readership, Stockwell needs to work on his writing style. His explanations vary from insultingly simple to overly complex. He needs to learn the descriptive methods of Berton Roueché or Atul Gawande. It is important that he do so because his message is very important. He concludes with a call for educating our citizenry on the need for more drugs and for health-research policies that encourage the development of those drugs. In today's climate of deficit reduction and political stalemate, this seems to be a mournful cry. But Stockwell is absolutely right. Drug development is essential if we are to combat severe diseases, and the hitherto undruggable proteins are the targets we must attack. Despite our current political paralysis, government leaders should listen to Stockwell and be certain to advance our capacity to generate the drugs that our society and the world need. ♥

*David G. Nathan '51, M.D. '55, president emeritus of Dana-Farber Cancer Institute and physician-in-chief emeritus of Children's Hospital Boston, is Stranahan Distinguished Professor of pediatrics and professor of medicine at Harvard Medical School. His books include The Cancer Treatment Revolution (from which an adaptation, "Ken's Story," appeared in this magazine's January-February 2007 issue).*

*"The Unlikely Writer," a profile of Atul Gawande, appeared in this magazine's September-October 2009 issue.*





# The Living Dinosaur

Peter Del Tredici's search  
for the wild ginkgo

by JILL JONNES

**I**N EARLY OCTOBER 1989, Peter Del Tredici of Harvard's Arnold Arboretum was high on the slopes of Tian Mu Mountain Nature Reserve in western Zhejiang Province, counting ginkgo trees with two Chinese collaborators. For 1,500 years, visiting pilgrims had journeyed to this sacred mountain, where Buddhist monks in the late thirteenth century built the famous Kaishan Temple, the largest of many picturesque shrines scattered about the steep hillsides. In the cool fall weather, wrote Del Tredici, then 43, "we walked all the paths and trails in the reserve and measured and mapped the locations of all the ginkgos that we could locate. Ginkgo leaves were turning yellow, making it easy to locate the trees even at some distance." All told, they found "167 spontaneously growing Ginkgos." In the world of trees and botany, the finding of wild ginkgos was big news.

The *Ginkgo biloba* is one of the wonders of the natural world, a "living fossil" whose arboreal ancestors date back to the Jurassic period. "How or why the ginkgo managed to survive when all of its relatives went extinct is an unsolved botanical mystery," wrote Del Tredici in *Horticulture* back in 1983—a mystery he would spend two decades helping to partially unravel. The term "living fossil" was coined by Darwin; in Del Tredici's words, it refers

to a living species "with a long evolutionary history and no close living relatives." An average plant species may have an evolutionary run of a few million years; *Ginkgo biloba* has been around, with minimal changes, for about 56 million years.

Sharing the earth with dinosaurs, the ginkgos—often a dominant forest species—grew across the Northern Hemisphere along disturbed stream beds and levees. Then, about seven million years ago, the glaciers pushed out the last of the ginkgos in America; two million years ago, the ice pushed out the last of the ginkgos in Europe. Ultimately, *Ginkgo biloba* survived only in Asia.

Today, the dinosaurs are long since extinct but the ginkgo, thanks to gardeners and urban foresters, has recolonized the very continents where it once thrived, a ubiquitous, super-hardy city-tree species. Also known as the maidenhair tree, it has long been admired for its distinctive, elegant, fan-shaped leaves, and valued for its delicate nuts—but it is infamous, too, for the foul odor of its fruits, whose "fleshy outer covering [the sarcotesta]," noted Arboretum founder Charles Sprague Sargent in 1877, "exhales an extremely disagreeable smell of rancid butter." (Others describe it as "vomitous.") Having long outlived the pests and diseases that may have afflicted it, a ginkgo is young at 100, when most other street trees have long since died of old age or disease. This is

**Scientist's subject:**  
Peter Del Tredici holds  
a distinctly veined, fan-  
shaped leaf from a fe-  
male *Ginkgo biloba* that  
he imported in 1983.





ligious buildings, palaces, tombs, and old historic or geomantic sites....What caused its disappearance [in the wild] we shall never know.” Such was Wilson’s clout, reported Del Tredici, that this romantic story of venerable monks preserving this ancient tree “had become dogma.” In 1967 a professor wrote in *Science*, “It is doubtful, however, whether a natural stand of ginkgo trees is to be found anywhere in the world today.”

Wandering the woods of Tian Mu more than two decades later, Del Tredici, who is today a senior research scientist at the arboretum, believed he had found the elusive and long-sought wild ginkgos. Locating them could help address some of the tree’s evolutionary mysteries. For Del Tredici, the ginkgo offered botanists “a unique window on the past—sort of like having a living

**Ginkgo specimens in their ancestral setting: Shan Jiang village, Guizhou Province, in the People’s Republic of China**

dinosaur available to study.” He hoped to learn how this amazing species had managed to survive in the wild since the dinosaurs. How had some ginkgos lived more than a thousand years when few tree species live even hundreds of years? What served as the dispersal agent for its seeds? And what evolutionary purpose caused their fruits to smell so god-awful?

**T**HE 600 SPECIES of trees that grow in temperate North America today fall into three divisions: Pinophyta, which includes all the hundreds of conifers, or cone-bearing seed plants; Magnoliophyta, including the hundreds of broadleaf trees, whose reproduction is tied to their flowers and fruits; and Ginkgoophyta, which includes only *one* tree, *Ginkgo biloba*, with a reproductive system unlike that of other trees. Although the fact that ginkgo trees are either male or female is not unusual in the tree world, this gender distinction is considered evolutionarily primitive.

“The order to which the tree belongs, the *Ginkgoales*,” wrote Del Tredici in *Arnoldia*, “can be traced back to the Permian era, almost 250 million years ago,” thanks to the study of many ginkgo fossils found in the Northern Hemisphere. “The genus *Ginkgo* made its first appearance in the middle Jurassic period, 170 million years ago....At least four different species of *Ginkgo* coexisted with the dinosaurs during the Lower Cretaceous.” One of the four species, *G. adiantoides*, possessed leaves and female ovules that are similar to, but smaller than, those of *G. biloba*, the species that exists today. In short, the ginkgo has probably existed on earth longer than any other tree now living.

The first ginkgo to grow in Europe after the Ice Age was raised from seed brought from Japan around 1730 by German physician-

an amazing botanical conquest and comeback.

In the late nineteenth century, when Western plant explorers descended upon China and Japan seeking botanical treasure, they were amazed at the size and antiquity of certain ginkgos: 100-foot-tall trees with 50-foot girths that were 1,000 or even 2,000 years old, growing around temples and monasteries. One of those plant men was collector Ernest H. “Chinese” Wilson, whose two China expeditions from 1907 to 1911 amassed 65,000 botanical specimens for Harvard’s arboretum. (Artfully laid out on 265 acres in Jamaica Plain, the arboretum was conceived in 1872 as both a Boston public park and a Harvard research institution, where the “Living Collections” would serve as a “Tree Museum” and a research resource. Harvard purchased the land for the arboretum and then donated it to the city of Boston, which constructed the park and leased it

back to the University for a thousand years for \$1 a year.)

In 1930, not long before Wilson’s death in a car accident in Worcester, this legendary botanical explorer declared in no uncertain terms that the ginkgo “no longer exists [in Asia] in a wild state, and there is no authentic record of its ever having been seen growing spontaneously. Travelers of repute of many nationalities have searched for it far and wide in the Orient but none has succeeded in solving the secret of its home....In Japan, Korea, southern Manchuria, and in China proper it is known as a planted tree only, and usually in association with re-

**Details of the ginkgo’s archaic reproductive system: from pollen drops to the maturing fruits—attractive to some, repellent to many**



Visit [harvardmagazine.com/extras](http://harvardmagazine.com/extras) to see a video of Peter Del Tredici in action at the Arnold Arboretum, discussing his vast knowledge of *Ginkgo biloba*.



botanist Engelbert Kaempfer. Planted at the Botanic Garden in Utrecht, Holland, that ginkgo (which thrives to this day) was viewed simply as another rare and exotic tree from the land of the shoguns. In the ensuing decades, botanists at Kew Gardens in England, the Botanic Garden in Montpellier, France, and elsewhere on the continent planted their own rare specimens. In 1784, Philadelphiaian William Hamilton was delighted to be the first in his young nation to have one of these “Oriental” trees on his Woodlands estate. Naturalist William Bartram planted one nearby in his garden. Today it is the oldest ginkgo in America. But until 1896, botanists, who knew ginkgos were ancient thanks to fossilized specimens, had no idea just how old *Ginkgo biloba* was.

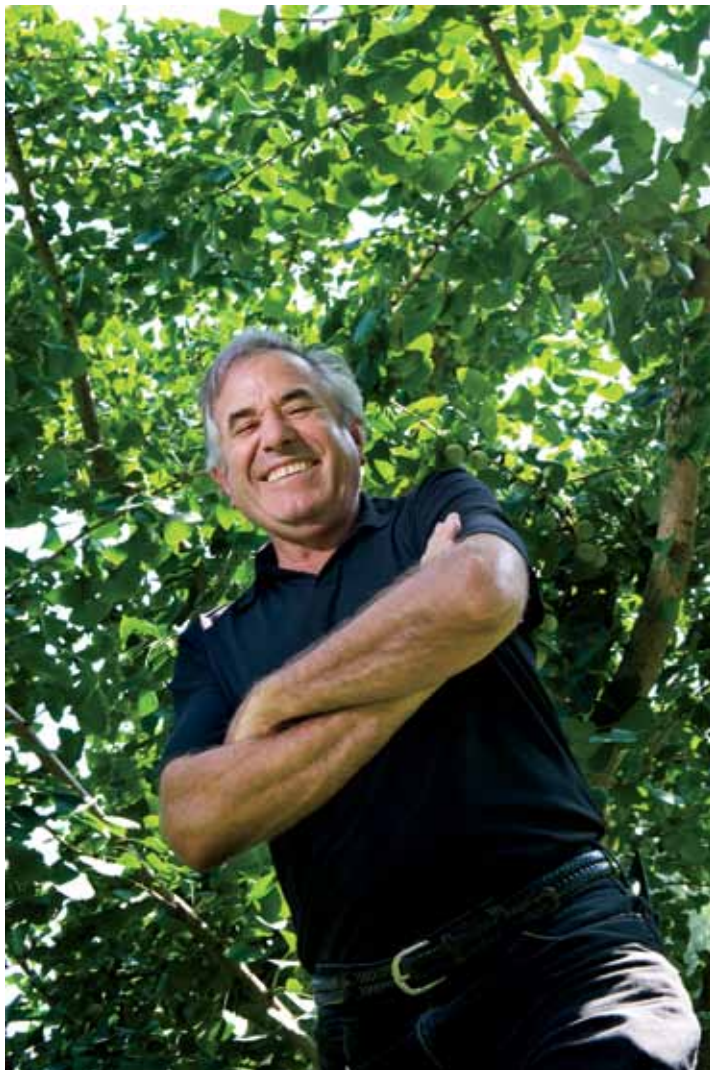
That year, on September 9 in Tokyo, Japanese botanist Sakugoro Hirase peered through his microscope at the inside of a female ginkgo tree’s ovule. The previous spring, a male ginkgo’s pollen had wafted on the wind toward a female ginkgo with many dangling pairs of round ovules. On the tip of an ovule, a secreted drop of gooey fluid captured and absorbed the pollen into an interior pollen chamber. The pollen had grown all through the summer and, as Hirase was astounded to observe, it had become a multiflagellated ginkgo sperm (three times larger than human sperm) that was *swimming* to fertilize a waiting egg cell.

“This was really momentous,” according to Del Tredici. “The discovery of motile sperm captured people’s attention. From the scientific point of view, motile sperm was considered to be a trait associated with evolutionarily primitive, non-seed plants such as mosses and ferns. And yet here was the ginkgo tree—clearly a seed-producing plant—with its motile sperm that linked non-seed plants to the more evolutionarily advanced conifers and an-

**“The order to which the tree belongs, the *Ginkgoales*, can be traced back almost 250 million years.”**

giosperms with pollen tubes and non-motile sperm. People realized, ‘My God! *Ginkgo* is a missing link—a living fossil.’”

The ginkgo tree has the same archaic reproductive system as the cycads, which predate the dinosaurs. It takes about 133 days for the ginkgo pollen to develop into sperm that then flails its way to the egg and creates a growing embryo. Soon thereafter, in the fall, the fleshy seeds, containing a hard-shelled nut with a tiny embryo, drop



**Del Tredici poses before *Ginkgo biloba* “Hayanari,” a female tree he imported as a seedling from Japan in 1983 (see leaf detail, page 31). This cultivar was selected because it produces seeds at an early age. It grows near the Arnold Arboretum’s Hunnewell Visitor Center.**

to the ground. Not until the next spring will the seeds germinate. Ginkgo fossils showed that the tree’s reproductive system has been largely unchanged since the Cretaceous. This “direct link with ancient fossil plants,” from before the age of flowering plants, wrote Del Tredici, “gives the modern *Ginkgo biloba* a pedigree unmatched by any living tree.” Thus *Ginkgo* was catapulted to a new status of “living fossil”—but a fossil, it was believed, that had survived only through human cultivation, whether for its delicious nuts or its status as a revered “elder.”

When Del Tredici began stalking the wild ginkgo in China in 1989, he was resuming a plant-hunting tradition at the Arnold Arboretum that had ended when “the Bamboo Curtain came down in 1949.” He worked with Nanjing Botanical Garden director Yang Guang and Chinese forester Ling Hsieh. What was hard to ignore as the three men located and measured the golden-leaved ginkgos on Tian Mu Mountain was the paucity of young trees. “Clearly,” wrote Del Tredici, “the *Ginkgo* population was not actively reproducing from seed under the shady, mature forest conditions that currently prevail on the mountain.” Then they learned that the local populace (and the red-bellied squirrels) had already played “an important factor limiting seedling establishment”: they had collected most of the foul-smelling fruits for the seed-kernel inside. In fact, many Chinese farmers had established ginkgo orchards in order to harvest these nuts as a cash crop.

But Del Tredici did observe something exciting and unfamiliar on Tian Mu: “[M]ost of the larger *Ginkgos* were reproducing vigorously from suckers arising near the base of their trunks....Wherever the base of the trunk of a large *Ginkgo* came into direct contact with a large rock or where its base was exposed by erosion, these structures developed...When these growths reach friable soil, they produce lateral roots, develop vigorous growing shoots, and continue their downward growth.” Where conditions were disturbed or tough, ginkgos responded by sending up new shoots from their roots that began growing into new trees. As a result, many old



**From top:** *Ginkgo chichi* on a tree at Tokyo University; *ginkgo* from *Flora Japonica* by Siebold and Zuccarini (1835-1842); fossil *Ginkgo yimensis*, about 170 million years old



ginkgos have multiple trunks.

Very old ginkgos have long been observed to grow “air roots” from their upper branches. These were known in Japan as *chichi* (nipples, or breasts), harking back to a Japanese folk tale about an ancient ginkgo in Sendai that grew over the tomb of an emperor’s wet nurse, who vowed to Buddha that mothers who failed to lactate could pray there and would then be able to nurse their babies. Del Tredici was not seeing the aerial “breasts,” but *basal chichi* (lignotubers). “They had never before been described in the English literature,” he says. This helped explain how ginkgos could live so many millennia. Not only had they outlived pests and diseases, but they resprouted when under stress.

“Going to China was really a leap of faith, but that’s what science is all about,” said Del Tredici during a recent conversation in his arboretum office—an airy

space of exposed brick walls, large windows overlooking many trees, two desks and two computers, his collection of old herbal medicine bottles, drawings and photos of ginkgos, and bookcases crammed with titles like *Design in Nature: Learning from Trees*. “When I came back I did experiments on reproduction and morphology in the lab and the greenhouse on this survival mechanism that ginkgo had evolved.” In the greenhouse, he was able to demonstrate that “basal chichi develop from suppressed cotyledonary [embryonic leaf] buds.

“To my great relief, on that first trip to China,” he said, “I found and explained the ability of ginkgos to survive so long. Even though their sexual reproduction system is archaic and doesn’t work all that well, the tree has this ability to resprout. I call it ecological immortality. Ginkgo became my case study for integrating ecological knowledge with botanical knowledge with horticultural knowledge. I was able to bring all these pieces together into a unified picture.” He was well launched on helping to unravel some of *Ginkgo*’s evolutionary mystery. The basal chichi helped explain

the persistence of the species into the modern era and the extraordinary age of individual trees. Del Tredici’s discovery established a mechanism that has allowed this “living fossil” to survive in the wild in the face of massive ecological change.

**D**EL TREDICI’S PASSION for ginkgos advanced in fits and starts. A native Californian from Marin County, one of his distinct childhood memories is of 10 ginkgos planted across a neighbor’s front yard. “The thing about ginkgos,” in his view, “is you can be totally illiterate about trees and you still know what a ginkgo is.” With a B.S. in zoology from the University of California at Berkeley, and an M.S. in biology from the University of Oregon, he came East to be with his girlfriend (and later, wife) while she finished Radcliffe College.

After five years at the Harvard Forest greenhouses, running what is now the Torrey Research Lab, he joined the arboretum in 1979 as an assistant plant propagator. “I was working on Sargent’s Weeping Hemlock, an old Victorian plant with a mysterious history,” he said. “I started visiting old estates and inevitably there would be these old ginkgos—100, 200 years old. So I ended up writing this article about old ginkgos.” The arboreal infatuation was heating up. Then Del Tredici discovered that just a few years earlier, in 1977, the Boston Common had lost Gardiner Greene’s ginkgo, an eighteenth-century tree so beloved it had been moved at great expense, when already 40 feet tall, from Beacon Hill to the Common in 1835.

“Believing that it is sometimes good to repeat history,” wrote Del Tredici, “I thought it would be nice to get a public-spirited Bostonian to donate a 40-foot male ginkgo [no smelly fruits!]...to fill the empty space where the tree had been.” On Arbor Day 1982, he and like-minded citizens welcomed the ginkgo to its new home. “It’s been my comeuppance,” he said ruefully of this romantic episode. “I visualized this beautiful ginkgo. Thirty years later and it’s maybe five feet taller. The site conditions are really difficult—compacted soil, on a slope, some extreme drought conditions.”

“In 1985, I had just turned 40,” said Del Tredici, “and felt I needed a new strategy, because I was getting too old to make a living with my back in the greenhouses.” He enrolled in a Ph.D. program at Boston University the next year, intending to write about black cherries. This turned out to be a somewhat more complicated subject than anticipated and one of his committee members, Lynn Margulis, impressed by a paper he had written for her evolution class about the dispersal of ginkgo seeds, suggested, “Why don’t you do your dissertation on *Ginkgo*?”

“A light bulb went off,” recalled Del Tredici. “Ginkgos. Probe every little evolutionary detail and you find something unique.” At that time, many posited that dinosaurs ate ginkgo fruits and excreted the seeds, and the beasts’ demise partly explained the disappearance of wild ginkgo—but no dinosaur droppings with ginkgo seeds had ever been found.

In 1988, not long after that Ph.D. light bulb went off, Del Tredici happened to read in the *Harvard Gazette* that Emery professor of organic chemistry Elias J. Corey (who soon thereafter won the Nobel Prize) had just isolated a compound—ginkgolide B—that might have a medical aspect. He decided on a lark to call Corey, who said, “Come on over.” “I told him I was working on *Ginkgo*,” Del Tredici continued, “and that I thought it probably existed in the wild, but my question was: ‘What ecological role did *Ginkgo* play?



How had the species survived so many millions of years? What would it look like as a wild plant? Is it a pioneer species? I wanted to go to China, but I didn't know what I would find. Despite what Wilson said, there were plant hunters—including Chinese botanists—who had reported it in remote valleys, little wild remnants.

“Corey said, ‘That sounds like a great idea.’ He was working with a French pharmaceutical company that was providing ginkgo leaves for him to work on. He said, ‘Write your letter describing your project and I’ll write one in support and we’ll put them in the mail at the same time.’ In a month or so, I had a check for \$5,000. That was a lot of money in those days. All the French wanted was that I write a book chapter for them.”

While working on Tian Mu in 1989, Del Tredici was persuaded he was seeing wild ginkgos because the trees were mixed in with the natural forest, the sex ratios were normal (half female, half male), and the trees were single or multistemmed and looked as if they had grown from seed. Equally exciting was his discovery of basal chichi.

And then there was the mystery of the stinky fruits. On that trip to China, he learned that local nocturnal scavengers and



**Del Tredici helps circle the male Li Jia Wan Ginkgo, in Guizhou: at 51 feet in circumference, the largest natural specimen known.**

carnivores like Chinese leopard cats and the masked palm civet ate the ginkgo's fruit. He hypothesized that the stinky flesh mimicked the smell of rotting meat, a successful strategy to attract these creatures. The ginkgo nuts, in turn, were eventually excreted, and were far likelier to sprout and grow if dropped in sunny sites. Back in Boston, in various experiments and field trials, Del Tredici confirmed that ginkgo seed germination rates soared (71 percent versus 15 percent) minus the smelly sarcotesta (as would happen when eaten and excreted). “Dur-

ing the Cretaceous,” he wrote, “potential dispersal agents included mammals, birds, and carnivorous dinosaurs.”

As cumbersome as *G. biloba*'s sex life is, it, too, has served an evolutionary purpose. As Del Tredici and other botanists studied the tree's reproductive cycle, he began conducting experiments at the arboretum—both in the greenhouse and outdoors—growing seeds from Guizhou and Boston ginkgos, further confirming that all “aspects of *Ginkgo*'s sexual reproductive cycle are strongly influenced by temperature.” During the Ice Age, he wrote in a review paper, “Such a trait would have allowed this species to re-

(please turn to page 91)

## Ginkgo and Memory

HIGH ON AN UPPER BOOKSHELF in Peter Del Tredici's office sits a faded box of organic breakfast cereal called GinkgOs. In large letters, it proclaims: “For Sharp Thinking.” The millions who now take *Ginkgo biloba* products for better memory assume they are benefiting from ancient Chinese medical wisdom. Not at all, said Del Tredici: “It all began in a board room in Germany in the mid 1960s. The ancient ‘doctrine of signatures’ says that because a walnut looks like a brain, it must be good for the brain. By extension, if a *Ginkgo* lives ‘forever,’ it must be good for promoting long life.” The German firm Schwabe Pharmaceutical and a French subsidiary developed ginkgo-leaf extract into one of the blockbuster herbal medicines. Early *in vitro* research on the extract was promising—the substance appeared to promote blood flow. Said Del Tredici, “The rest is history. *Ginkgo* has become a hot commodity in the twenty-first century, a big cash cow” with annual sales topping \$500 million.

Del Tredici found himself involved in this world soon after his first China trip. In early 1990, he flew down to Sumter, South Carolina, to see for himself a 1,000-acre ginkgo plantation with 10 million waist-high trees established in 1982 by the French Schwabe subsidiary. “I met the Swiss agronomist,” recalled Del Tredici, “and asked him if the trees were producing basal chichi. He said not at all. The whole operation was mechanized. They stripped the leaves off these plants in the summer and then they ran a chipper over them. They sprouted out the following spring. I knew the trees must be stressed, and that's when ginkgos start producing basal chichi. So I proposed we get some shovels and dig down and see. To their amazement, there were all these chichi producing vigorous young shoots.”

So began Del Tredici's decade as a consultant working for the French subsidiary manipulating either the quantity or the quality of those ginkgo leaves. “How the plants affected people's physiology,” he said, “that was not my world.” In 2003, Schwabe provided *Ginkgo biloba* for five-year controlled trials in the United States, to see if the leaf extract proved helpful for memory loss. The 2008 and 2009 studies, Del Tredici said, “showed no significant effect by ginkgo-leaf extract in patients suffering from dementia or memory problems.”



# BULLISH on PRIVATE COLLEGES

ON THE ENDURING STRENGTHS OF INSTITUTIONS OF HIGHER EDUCATION

by RICHARD P. CHAIT and ZACHARY FIRST

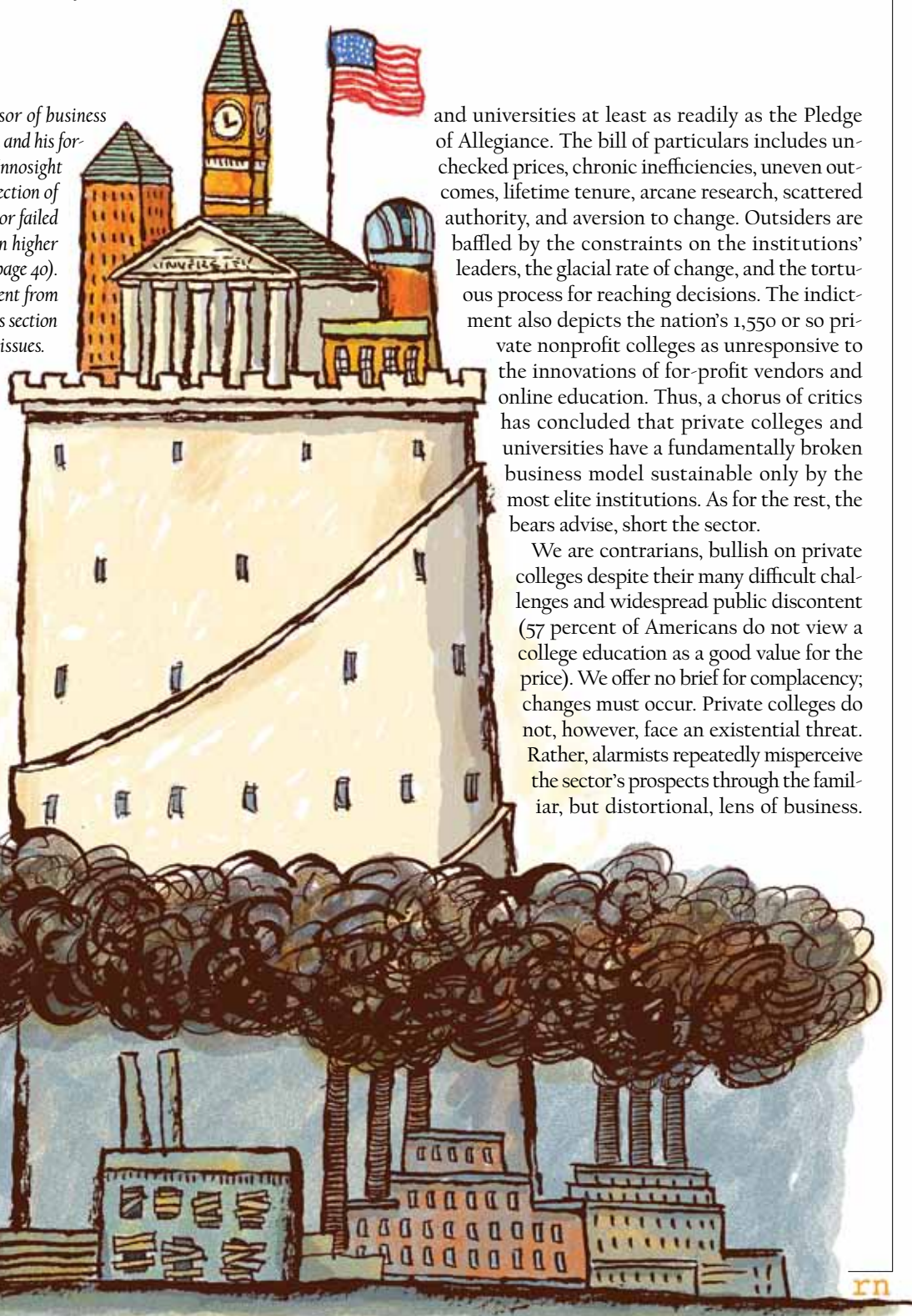
In our July-August issue, Cizik professor of business administration Clayton M. Christensen and his former student, Michael B. Horn, of the Innosight Institute, made the case that the intersection of disruptive technologies with outmoded or failed business models put much of American higher education at risk ("Colleges in Crisis," page 40). That article prompted extended comment from readers, some of it published in the letters section of the September-October and current issues.

Two eminent scholars of higher education now offer their own perspective on what they see as the unique, durable, and adaptable characteristics of private American institutions of higher education—a case they make in part by putting forth an educator's take on business enterprises. Although the essays were conceived separately, both bear on issues of particular pertinence during Harvard University's 375th anniversary year, and so we continue the discussion by publishing their argument here. ~The Editors

**M**OST ADULT AMERICANS can probably recite the case against private colleges

and universities at least as readily as the Pledge of Allegiance. The bill of particulars includes unchecked prices, chronic inefficiencies, uneven outcomes, lifetime tenure, arcane research, scattered authority, and aversion to change. Outsiders are baffled by the constraints on the institutions' leaders, the glacial rate of change, and the tortuous process for reaching decisions. The indictment also depicts the nation's 1,550 or so private nonprofit colleges as unresponsive to the innovations of for-profit vendors and online education. Thus, a chorus of critics has concluded that private colleges and universities have a fundamentally broken business model sustainable only by the most elite institutions. As for the rest, the bears advise, short the sector.

We are contrarians, bullish on private colleges despite their many difficult challenges and widespread public discontent (57 percent of Americans do not view a college education as a good value for the price). We offer no brief for complacency; changes must occur. Private colleges do not, however, face an existential threat. Rather, alarmists repeatedly misperceive the sector's prospects through the familiar, but distortional, lens of business.





For many decades, management experts have contended that colleges must behave like businesses in order to prosper. While this message has not changed, the cure-alls have. The steady stream of surefire “solutions” has included zero-based budgeting, management by objectives, total quality management, continuous quality improvement, business-process reengineering, strategic planning, benchmarking, and innovative business models. All rest on the premise that a single concept can be fruitfully applied across all industries and professions without “tissue rejection.”

We are skeptical of meta-theories and partial to a principle of biodiversity: different organisms (and organizations) thrive or perish under different conditions. Short-sellers incline toward inapt prescriptions for private colleges, such as radical mission makeovers, wholesale shifts to online delivery systems, and fealty to profit-oriented business models. We believe these tactics would be as ill-advised for private colleges as adherence to academic norms would be for publicly traded corporations. To survive, let alone succeed, for-profit companies cannot play by the same rules as private colleges, *and vice versa*. And even though the norms of independent colleges seem odd and irksome to many, “unusual” does not mean “unsuccessful.” In fact, independent colleges are remarkably durable, stable, and adaptable. Why is that so despite the sector’s coolness to the “best practices” of business?

**C**ORPORATIONS OPERATE in merciless markets. Fatalities include American Motors, Bethlehem Steel, Borders, Montgomery-Ward, PanAm, Polaroid, Pullman, RCA, and Woolworth’s, to name only a few. Of the 12 original components of the Dow Jones Industrial Average (established in 1896), only General Electric remains. Only 62 companies have made the Fortune 500 every year since the list was introduced in 1955. Nearly 2,000 others have appeared and disappeared due to acquisition, decline, or bankruptcy. Between 1999 and 2009, the number of NYSE-listed companies dropped from 3,025 to 2,327; on NASDAQ, the numbers plummeted from 5,556 in 1996 to 2,852 in 2009. Some of the most highly touted companies have stumbled or crumbled. *In Search of Excellence* (1982), a one-time Bible for business, cited Amdahl, Data General, Digital Equipment, K-Mart, and Wang Labs among 43 companies that “pass all hurdles for excellence.” Likewise, *Good to Great* (2001) listed Circuit City and Fannie Mae among 11 “great companies.”

By contrast, the only notable private college to close in recent memory, Antioch, will soon reopen. Indeed, an extrapolation from federal data suggests that less than 0.5 percent of all colleges and universities have closed since the early 1980s. As ranked by *U.S. News & World Report*, the top 25 private liberal-arts colleges were founded, on average, 179 years ago; the top 25 private universities, 185 years ago. Even more impressive, the top 35 private regional colleges in the Midwest—small, uncelebrated schools particularly vulnerable to competition from strong state universities and dismal demographics—have endured 123 years on average. The last year-over-year enrollment decline at private colleges was in 1985.

In the corporate sector, front-runners routinely, sometimes suddenly, become also-rans. Just look at excerpts from the Fortune 500 in 1955 and 2010.

Newcomers such as Pandora,

Company	1955 Rank	2010 Rank
U.S. Steel	5	211
DuPont	12	86
General Dynamics	17	69
Goodyear	21	141
Navistar	26	202
Eastman Kodak	45	297
Goodrich	50	334

LinkedIn, and Google zoom from ideas to IPOs. In other cases, upstarts bypass leaders. Southwest Airlines surpassed legacy carriers; Netflix demolished Blockbuster; Wal-Mart and Costco prevailed as A&P and Grand Union all but disappeared. Companies operate by the code of the German Autobahn: if you cannot keep pace, get the hell out of the way.

The market dynamics for colleges and universities are quite different. By and large, the caravan stays in line. One school may occasionally edge ahead of another, but the convoy basically remains intact. Compare a reputational study of American universities in 1906 with the 2011 *U.S. News* rankings.

Only one private university, Cornell (an institution with public components), dropped from the top 13. Among the *U.S. News* Top 10 Liberal Arts Colleges, there has been one change between 1991 and 2011: Haverford replaced Wesleyan. The other schools, slightly reordered, have remained the same. Fewer than 50 colleges have been in the top 40 since 1996. From top to bottom among private colleges, stability prevails. Overnight successes do not occur. The youngest top-tier university, Caltech, was established in 1891. Since older generally means better in this context, admissions brochures do not trumpet the all-new 2012 Princeton baccalaureate or Bowdoin 5.0.

Although rapid transformations are scarce, private colleges are not static. Substantial reforms do occur, usually organically and gradually, sometimes imperceptibly, as snapshots over the past several decades reveal.

- **Programs.** Of the 637 purported liberal-arts colleges in 1994, the majority did not meet the minimal threshold of 40 percent of degrees awarded in the liberal arts. The rest were nominally small professional colleges. The number of pure liberal-arts colleges was 212 in 1990 and 137 in 2009. In effect, some 500 institutions, responsive to market demand, evolved into comprehensive colleges or master’s universities with an emphasis on professional programs like business and health that satisfy the instrumental aims of today’s students.

- **Faculty.** In an effort to control costs, private colleges markedly reconfigured the professoriate. Between 1999 and 2009, less expensive nontenure-track, full-time faculty at private colleges increased by 46 percent and part-time faculty by 36 percent, compared to 16 percent for tenure-track and 13 percent for tenured. In that same decade, the proportion of full-time faculty at private colleges dropped from 73 percent to 67 percent.

- **Globalization.** Private colleges and universities have embraced global markets. Four private institutions rank among the top 10 universities to enroll international students. Dozens of private universities have campuses or programs abroad. Ten percent of Grinnell’s applicants are foreigners. Since 2006, Barnard’s international applications are up over 500 percent, Franklin and Marshall’s almost 250 percent.

1906	2011
Harvard	Harvard
Columbia	Princeton
Chicago	Yale
Cornell	Columbia
Johns Hopkins	Stanford
Berkeley	Penn
Yale	Caltech
Michigan	MIT
MIT	Dartmouth
Wisconsin	Duke
Penn	Chicago
Princeton	Northwestern
Stanford	Johns Hopkins

Universities in red were replaced by universities in green.

• **Tuition.** Published tuition at private four-year colleges, the most maligned and misconstrued metric, escalated 50 percent, inflation adjusted, between 1990 and 2008. (By comparison, Standard & Poor's reported that corporate executives enjoyed a 300 percent pay increase between 1992 and 2010, and a Duke economist calculated that salaries of football coaches at 44 public and private universities increased 650 percent in constant dollars during the past 24 years, while presidential salaries climbed 90 percent.) However, the average institutional discount rate (the average institutional aid per student divided by published tuition and required fees) climbed from 27 percent to 42 percent during the past two decades. In constant 2010 dollars, the College Board determined, net tuition rose only 10 percent from \$10,310 in 1995-96 to \$11,320 in 2010-11, a slower rate of acceleration than the added costs colleges and universities incurred as measured by the Higher Education Price Index. Inflation-adjusted, net tuition at private colleges actually declined in 2010-2011. Meanwhile, the payoff in lifetime earnings on a baccalaureate degree (both public and private) versus a high-school diploma has multiplied from a 40 percent advantage in 1980 to 83 percent in 2010.

In the rearview mirror, we can see that private colleges and universities have also adapted to new demographics, adjusted (for better or worse) to students as consumers with unlimited appetites for amenities, and acclimated to the explosion and commercialization of science and technology. In 2011, four of the top six, and six of the top 10, leaders in licensing income were private universities.

Short-sellers discount these and similar initiatives as stopgap measures—levees that provided protection under normal conditions but are now doomed to collapse under the force of for-profit universities and online education. Let's take a closer look at these "disruptive innovations."

Money poured into publicly traded for-profit universities as enrollments soared—none more so than the University of Phoenix, where by 2009 the numbers reached 438,000 students online or in class. Between 2000 and 2005, Apollo, the parent company of the University of Phoenix, was the second-best performer on NASDAQ with a market capitalization of \$13.57 billion (and a price-earnings ratio of 60), greater at the time than American Air-

lines, Eastman Kodak, and Saks combined. The business model emphasized standardized curricula, work-related degree programs, consumer convenience, part-time faculty, and online delivery, and minimized physical plant, faculty research, and shared governance. For-profit players like Apollo, Strayer, DeVry, and Kaplan were heralded as game-changers. Bloomberg News called Phoenix's online program "The single greatest improvement in higher education since the condom." Private colleges and universities fretted about powerful new competitors. Who knew that bubbles burst in higher education, too?

With a 7 percent decline in overall enrollment since 2009, a 42 percent drop in new enrollments between March 2010 and March 2011, a 9 percent six-year graduation rate (versus 65 percent for private colleges and 22 percent for all for-profits), a dependence on Pell grants and federal loans for nearly 90 percent of total revenue, excessive defaults on student loans, and intensified regulatory reviews, Phoenix wilted. Since March 2009, Apollo has ranked as the third-worst performer of publicly traded companies and the third worst among the S&P 500 in 2010. Apollo's market cap nosedived 57 percent to \$5.8 billion in 2011. In March 2011, Apollo reported a quarterly loss of \$64 million and the stock price plummeted from a high of \$90 in January 2009 to a low of \$33.75 in November 2010. It currently trades in the mid 40s. Capital markets are no longer bullish on for-profit universities. Under the headline "Apollo Sent to Back of Class," *Barron's* declared in March 2011 that "shares are rightly getting a failing grade....We would steer clear of the uncertainty surrounding Apollo and its industry...."

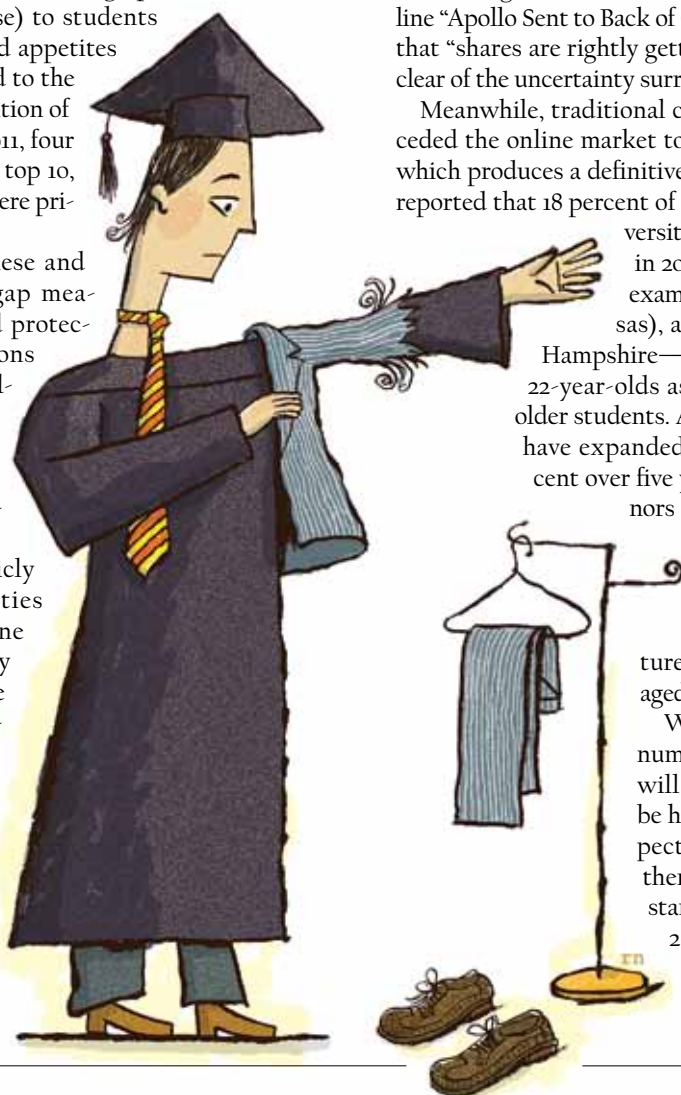
Meanwhile, traditional colleges and universities have hardly ceded the online market to for-profits. The Sloan Consortium, which produces a definitive annual update on online education, reported that 18 percent of students at private colleges and uni-

versities had taken least one course online in 2008. Scores of nonprofit hybrids—for example, Tiffin (in Ohio), Ottawa (in Kansas), and the University of Southern New

Hampshire—offer on-campus programs for 18- to 22-year-olds as well as online degrees targeted to older students. At some of these schools, enrollments have expanded exponentially: more than 100 percent over five years in some cases. Western Gover-

nors University, a purely online nonprofit, serves 25,000 students. Success stories like these leave the bears confident, indeed certain, that online programs will inevitably capture the majority of traditional college-aged students.

We remain unconvinced that sizable numbers of 18- to 22-year-old collegians will opt exclusively or predominantly to be homeschooled via technology (a prospect many parents might not relish, either). Online growth rates have already started to decelerate. Between 2002 and 2009 the proportion of all students (public, private, for-profit) taking at least one course online increased from 9.6 percent to 29.3 percent, a





## WE SEE NO CHANCE THAT FOR-PROFIT UNIVERSITIES AND ONLINE EDUCATION WILL RENDER PRIVATE COLLEGES OBSOLETE IN THE TWENTY-FIRST CENTURY.

compound annual increase of 19 percent. However, the upsurge was confined mostly to about one-third of all postsecondary institutions that together enroll 43 percent of all students but nearly 66 percent of all students online. Since 2006, the growth rate at these “leading online institutions” has slowed to 13 percent, which “may be the first indication,” the Sloan Consortium observed, “of the end of the continued rapid expansion in online enrollments.”

Questions about quality persist. For instance, a 2010 National Bureau of Economic Research study concluded, on the basis of a controlled experiment to compare online and face-to-face enrollment in a microeconomics course, that “much more experimentation is necessary before one can credibly declare that online education is peer to traditional live classroom instruction, let alone superior....” In a recent Sloan survey of chief academic officers, 34 percent judged online education to be inferior to face-to-face instruction; 17 percent registered the opposite view.

**W**E SEE NO CHANCE that for-profit universities and online education will render private colleges twenty-first-century versions of abandoned factories. On the other hand, there are significant risks at hand or on the horizon. These include:

- Expanded authority for two-year colleges to offer four-year degrees, already an option for select degree programs in 17 states.
- Greater resource disparities between four-year colleges and research universities as the latter successfully monetize their intellectual capital through licensing arrangements and equity positions in startups.
- The possibility that federal and state student financial aid will become performance-based—payable upon commencement, not enrollment.
- The prospect that the wealthiest colleges and universities will virtually eliminate undergraduate tuition.

In the face of these challenges, how colleges proceed will materially affect the degree of success each attains. To understand this dynamic better, let's take a quick trip abroad.

Every year, millions of Americans visit countries like England, India, and Japan, where traffic circulates on the left side of the road. We feel disoriented; habits we have found useful turn dangerous; and experience becomes an unreliable teacher. We might be perplexed, but the two billion residents of these countries who drive on the left motor along as effortlessly and as safely as we do at home. Instinctively, we perceive these drivers to be on the *wrong* side of the road but, in truth, we know that they simply drive on the *other* side.

Similarly, people from the for-profit sector wonder why private colleges and universities do not conform to the best practices of business: innovative, bold leadership; distinctive, proprietary strategic plans; rigorous quantitative-performance metrics; and cold-blooded divestiture of unprofitable product lines. Why not pursue heftier margins and greater market share? Why not, literally and figuratively, drive on the “right” side?

To people unaccustomed to academe, the scene on campus re-

sembles bumper cars at an amusement park more than automobiles on an expressway. Leaders do not direct traffic as much as orchestrate the intentions of drivers. Strategic plans are always public and often contested. Competitors routinely collaborate. Prestige, the academy's analog to profits, stems from exclusion, not expansion—from the percentage of customers refused, not the number served. Welcome to Wonderland.

With few exceptions, change happens differently in this realm. The business mindset conditions outsiders to expect powerful CEOs, comprehensive strategies, precise directives, systematic execution, and rapid response. Instead, artful leadership on campus unfolds tentatively, ambiguously, gradually, and somewhat obscurely. To the untrained eye, no one seems to be in charge. Yet, more often than not, the bees actually build the hive: the percentage of tenured faculty ebbs; the number of preprofessional programs rises; online courses appear; new disciplines emerge; scientists embrace entrepreneurship; schools burnish brands—all without presidential pronouncements.

As researchers and consultants on leadership and governance, we appreciate that college presidents are critically important agents of change. Contrary to expectation, perhaps, the most successful hew to the conventions of the campus, not the buzzwords of business playbooks. Influence accrues as a president demonstrates congruence with organizational culture, reinforces core values, and relies on familiar processes to introduce initiatives. However unglamorous a strategy, subtle adjustments and sensible experiments *at a steady pace*, consistent with an institution's self-identity, have and will position private colleges to do well over the long run.

The bears see death at the doorstep of traditional colleges and urge drastic action. Not coincidentally, the prophets of a large-scale crisis are also the purveyors of a sure-fire solution: a new business model. We question the long-term wisdom of a massive bet hastily placed on the educational and commercial potential of online education. More important, we doubt the compatibility of for-profit business models and “for-purpose” private colleges. Surely, no one would suggest that businesses challenged by new competitors and economic adversities embrace the model of academe. Why the converse, especially when private colleges have been so resilient?

We offer a simpler suggestion: learn to drive like the natives, as bizarre as the rules of the road may seem at first. Solutions that presume or impose a shift to the “right” side of the road will produce far more crashes than successes.

Between the island of Macau and mainland China, the Lotus Bridge achieves a miraculous conversion: through a looping figure-eight, six lanes of traffic shift from driving on the right in China to driving on the left in Macau. No Lotus Bridge connects the provinces of colleges and corporations. Instead, we have to adjust and abide by different rules of the road. Private colleges will evolve and endure as long as they do not try to become what they are not: businesses. ▽

*Richard P. Chait is a research professor at the Harvard Graduate School of Education. Zachary First, Ed.D. '07, is managing director of the Drucker Institute at Claremont Graduate University.*

# Andrew Craigie

*Brief life of a patriot and scoundrel: 1754-1819*

by ANTHONY J. CONNORS

**A**FTER SERVING as the first Apothecary General of the Continental Army during the American Revolution, Andrew Craigie made a fortune in land and securities speculation in New York. Returning to his native Massachusetts, he purchased one of the most elegant homes in Cambridge, built the bridge connecting Boston to Lechmere Point, and developed East Cambridge. Yet years before his death, Craigie had become a ghostly figure, self-confined to his mansion to avoid arrest. Cambridge boys, including future physician and poet Oliver Wendell Holmes, would knock on his shuttered windows and then run, as if from a haunted house. How had “Doctor” Craigie fallen so low?

The son of a Scottish ship captain and his Nantucket wife, Craigie attended Boston Latin, and by April 1775 had gained sufficient pharmaceutical experience to be appointed apothecary of the Massachusetts army. After tending the wounded at Bunker Hill, he was introduced to Samuel Adams as “a very clever fellow,” and his name came to the attention of General George Washington; he was commissioned Apothecary General in 1777. For the duration of the war he traveled widely to obtain medical supplies for the army and produced the medicine chests used to treat sick and wounded soldiers at Valley Forge and elsewhere. His loyalty was recognized by Washington, although they never met.

The revolutionary cause was good for Craigie, providing business connections in the pharmaceutical trade. But even before the war ended, he had set his sights higher: a Boston Latin classmate asked in 1782 whether he had “a mind to speculate?” He did, and was soon among the growing circle of financiers and speculators surrounding Treasury Secretary Alexander Hamilton. Craigie engaged in legitimate transactions, but also partnered with the nefarious William Duer, a Hamilton assistant. In one particularly egregious case, Duer illegally directed Treasury business to Craigie in exchange for an \$8,000 bribe. The men in Hamilton’s circle had insider knowledge of his plan for the new federal government to assume the war debts of the states, thereby making state debt certificates a better bet. Craigie bought up large amounts of discounted South Carolina paper and made a tidy profit.

This was the sort of cozy insider relationship that Hamilton’s critics Jefferson and Madison warned would concentrate the nation’s wealth in the hands of a few powerful speculators. Exhibiting no such qualms, Craigie brashly wrote that his speculative strategy was to associate with “people who from their official situation know all the present & can aid future arrangements either for or against the funds.” Many congressmen were also up to their ears in insider deals: Congress delayed acting on Hamilton’s financial plan, Craigie observed, “because their private arrangements are not

in readiness for speculation.” He had so insinuated himself with legislators that one of his partners quipped, “Should a bill of sale be given of Congress, Andrew would certainly pass as appurtenant.”

Craigie also played a part in Duer’s audacious deal to purchase and resell five million acres of Ohio land. But by the time that fiasco landed Duer in debtor’s prison, Craigie had moved to Cambridge where, early in 1791, he purchased the Brattle Street mansion that had served as Washington’s headquarters during the siege of Boston. After renovating it into a “princely bachelor’s establishment,” he looked for a suitable wife. Although described as “a huge man, heavy and dull,” he had money, connections, and big plans, enough to win the hand of Elizabeth Shaw of Nantucket. The marriage was soon blighted, it was said, by her receiving letters from a former suitor—and Craigie had his own secret: an illegitimate daughter. Nevertheless, their house became a center of society, with a dozen servants, a well-stocked wine cellar, and sumptuous parties, especially during Commencement season. Queen Victoria’s father and the French diplomat Talleyrand were guests. The couple cemented their Harvard connection by donating portraits of George Washington and John Adams by John Trumbull, and three acres of land for the Harvard Botanic Garden.

Craigie’s development of East Cambridge left an indelible mark. With partners, he secretly bought up 300 acres around Lechmere Point: farms and marshland became a vibrant residential and industrial area, especially after Craigie persuaded Middlesex County authorities to relocate the county court from Harvard Square to a new Charles Bulfinch building in East Cambridge. In 1809, he and his associates completed construction of Craigie Bridge, connecting Cambridge to Boston. His rerouting of roads to steer traffic toward his toll bridge did not enhance his popularity.

The result of all this speculation and extravagant living was a greatly overextended empire. Unable to pay his many creditors, Craigie confined himself to his Cambridge estate to dodge debtor’s prison. After he died of a stroke, his wife was forced to rent rooms to Harvard faculty members, including Henry Wadsworth Longfellow, who later owned the house. (It became the Longfellow National Historic Site.) Craigie Bridge now props up the Museum of Science and Craigie’s Pond, once a favorite skating spot, has been drained. Locally, only Craigie Street recalls this paradoxical character from the earliest years of the American Republic. But his patriotic service is still recognized: an outstanding federal government pharmacist each year receives the Andrew Craigie Award. ▢

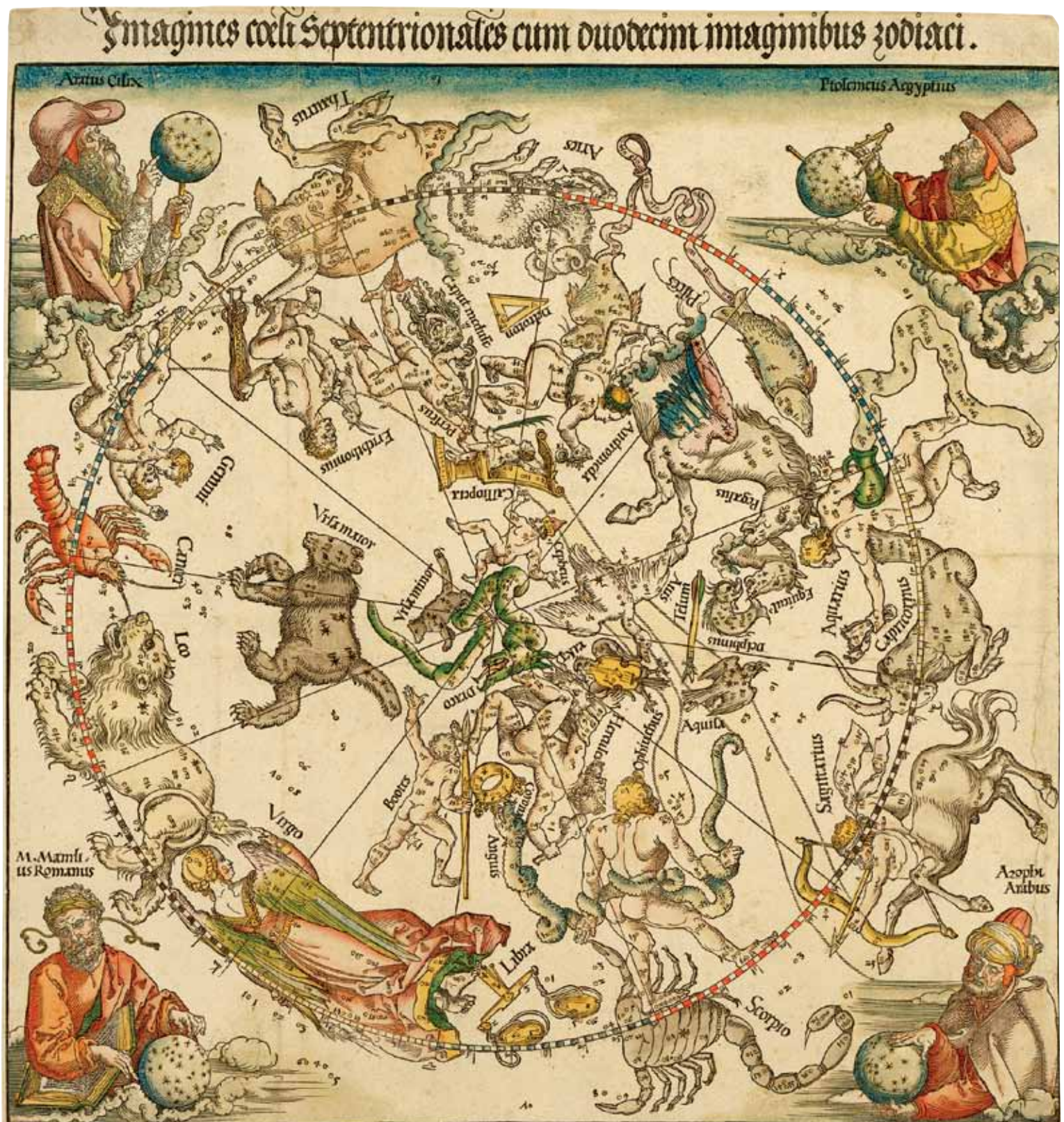
*Independent historian Anthony J. Connors, A.L.M. ’97, most recently edited volume one of the documentary encyclopedia Conflicts in American History.*





*A miniature portrait of Craigie in his prime, this watercolor on ivory, painted around 1800, is attributed to Archibald Robertson. Image courtesy of the American Antiquarian Society*





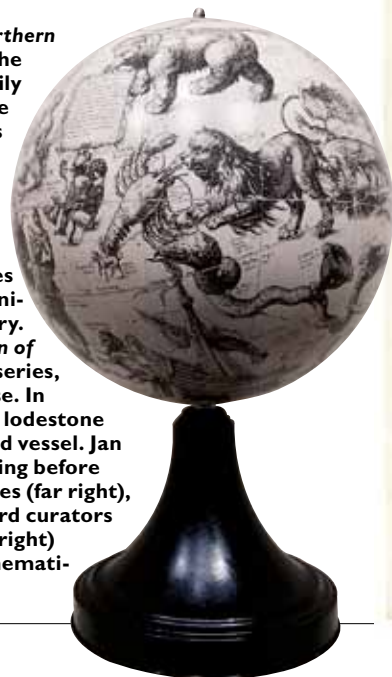
# Spheres of Knowledge

*Artistic discovery in Renaissance Europe*





**Albrecht Dürer's 1515 Map of the Northern Celestial Hemisphere (opposite) was the first printed celestial chart, and heavily influenced subsequent star maps. The *Invention of Book Printing* (top) comes from *Nova Reperta* (New inventions and discoveries of modern times), by Stradanus (Jan van der Straet), the first such illustrated compendium of postclassical innovations (ca. 1599-1603). The ability to print many copies of such works revolutionized communication of ideas in the sixteenth century. Hans Collaert the Younger's *Invention of the Compass* (above), from the same series, shows a figure drawing a compass rose. In the foreground, a naturally magnetic lodestone floats on a wood plank in a water-filled vessel. Jan Saenredam used copperplate engraving before 1600 to create the celestial globe gores (far right), which echo and update Dürer. Harvard curators made the three-dimensional model (right) by affixing modern copies of his mathematically precise gores to a sphere.**

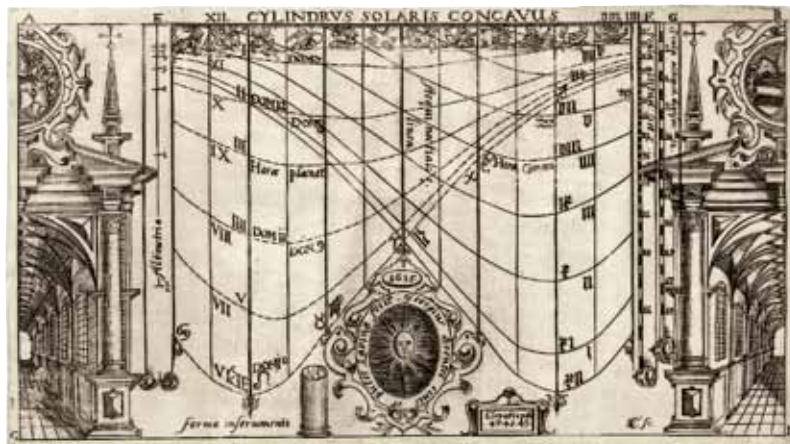


**T**HE SIXTEENTH CENTURY marked the beginning of modern scientific exploration. Instead of relying principally on classical accounts of the natural world, scholars began employing direct observation to measure, probe, and expand fields of knowledge: astronomy, cartography, anatomy, and medicine. Well-known artists of the period such as Albrecht Dürer, Hans Holbein, and Peter Breugel enthusiastically depicted what would today be considered scientific subjects, says Susan Dackerman, Weyerhaeuser curator of prints at the Harvard Art Museums, even though the notion of scientific inquiry was in its infancy. (The word “scientist” wasn’t even invented until the eighteenth century.) Shortly after arriving at Harvard five years ago, Dackerman began wondering how extensive a role these important artists played in the pursuit of knowledge in early modern Europe. “We all have this idea of scientific illustration,” she explains, “but that is not what I am really interested in. I’m interested in the way that the most famous artists of the time collaborated” in the production of specialized knowledge. Just how much did Dürer know about astronomy, for example, when he carved the first known woodcut of a celestial chart (facing page)?

Dackerman’s subsequent quest to solve that puzzle took her to Harvard’s botanical libraries, Map Collection, Houghton Library, Countway Library of Medicine, Collection of Historical Scientific Instruments, and many other sources. The collaborative effort was aided by regular interdisciplinary discussions at the Mahindra Humanities Center over the course of several years, and further honed







In 1615, Georg Brentel the Younger issued a pamphlet describing how to construct and use a cylindrical sundial. A printed sheet (at left) featured a zodiacal calendar that, wrapped around a cylinder (below), enabled its owner to determine the length of each day, the time, and sunset. Georg Glockendon's 1511 *Peoples of Africa and India* (below) copies Hans Burgkmair's 1508 woodcut documenting the voyage of a Tyrolean merchant along the coasts of these two newly explored continents. Burgkmair's innovative approach to "mapping" the route the expedition followed has been called the beginning of ethnography.

in a class Dackerman co-taught with Katharine Park, Zemunsky Stone Radcliffe professor of the history of science, in 2010.

Stunned by Harvard's intellectual resources—the physical collections, the human expertise in “almost anything you can think of,” and a “corps of graduate and undergraduate students who are curious and eager and smart”—Dackerman realized that she had access to “an incredible potential laboratory for devising different ways of teaching”: a key goal of the University's reimagined art museums. The work has culminated in *Prints and the Pursuit of Knowledge in Early Modern Europe* (through December 10 at the Sackler Museum), a model for bringing together a group of scholars, undergraduates, and graduate students who all contributed their “interdisciplinary and intergenerational voices,” in Dackerman's words, to the exhibition.

“We think of artists as individuals working from imagination or observation,” says Dackerman, but artists like Dürer—the premier painter, draftsman, and printmaker of the early sixteenth century—were familiar with important astronomical theories and discoveries and incorporated them into their work. Dürer's woodcut of the constellations, with its combination of classically posed human nudes and naturalistic renderings (Cancer is a lobster, not a crab), subsequently became important to the history of astron-



omy. “Almost any representation of the stars made in the sixteenth century,” Dackerman says, “is some derivation of Dürer's original,” which depicts the stars affixed to the outermost layer of the concentric spheres that also hold the moon and planets in place around the earth. The German artist's influence persists even in Jan Saenredam's copperplate engravings of celestial-sphere gores (previous page), dating to the end of the century. Based on the Danish astronomer Tycho Brahe's expanded star catalog, they are the first printed non-Ptolemaic depictions of the skies. Houghton Library holds the only surviving impressions of these gores.

Printing itself (see previous page) was an astounding technology at the time—the most sophisticated way possible to represent and disseminate knowledge. And printmakers were inventive in their use of this new medium: printed paper sundials, for example, included the instructions for their own manufacture. The facsimile at left (which visitors to the exhibit can hold and manipulate) consists of a paper sheet (shown above) affixed to a cylinder that is fitted with a precisely measured, protruding gnomon (at the top). The device would have allowed traveling merchants not only to tell time, but also to convert among the three different time-telling systems of the day as they traveled from one region to another.

In an era when ability to navigate long dis-

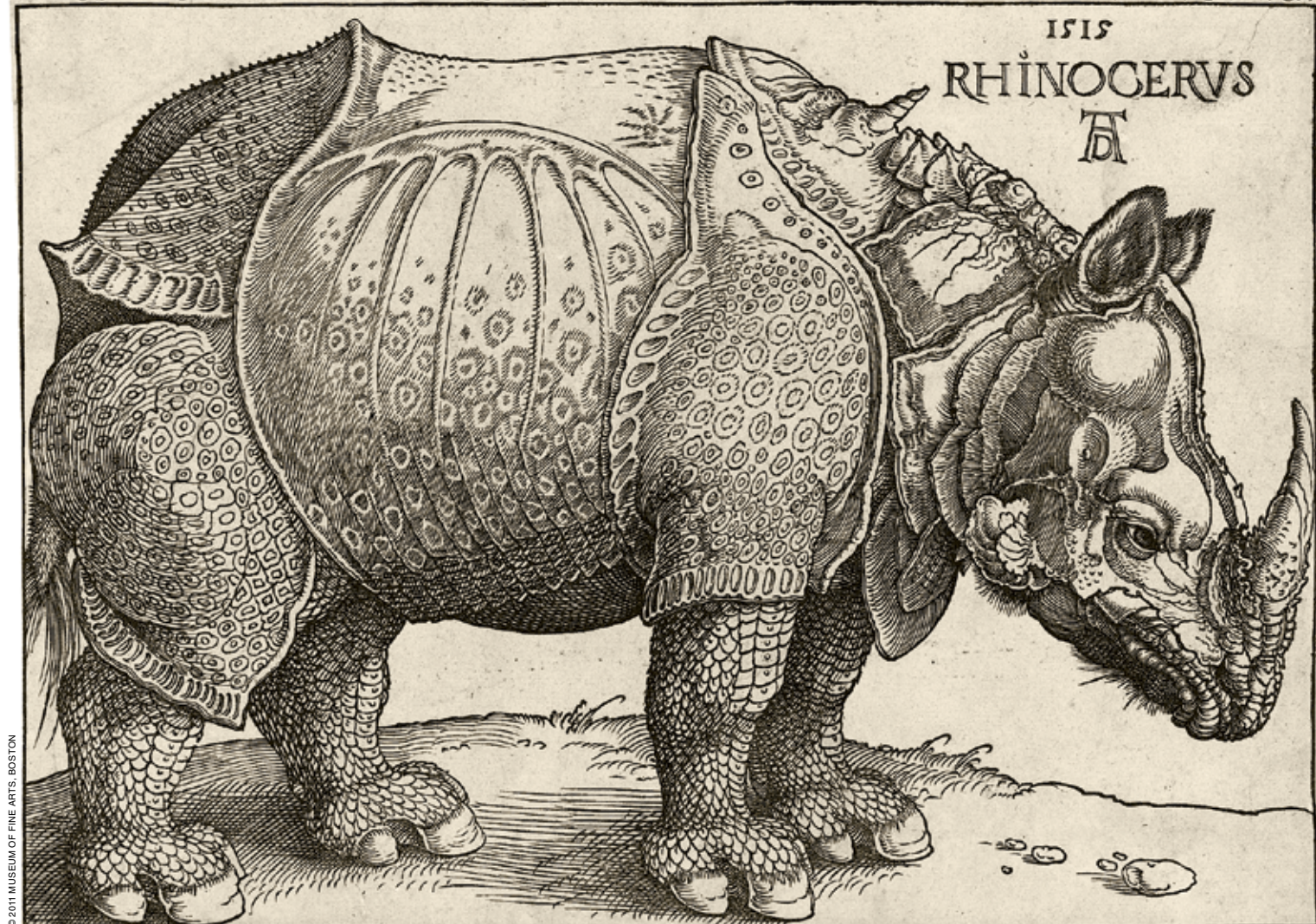


Visit [harvardmag.com/extras](http://harvardmag.com/extras) to view additional images from the exhibit of other sundials and engravings, and to find links to a video introduction to the exhibit as well as an informational video on sixteenth-century botanical leaf printing.





Nach Christus gepurt. 1513. Jar. 26. i. May. Hat man dem großmichtigen König von Portigall Emanuel gen Lysabona pracht auß India/ ein sollich lebendig Thier. Das nennen sie Rhinocerus. Das ist hie mit aller seiner gestalt Abcondertet. Es hat ein fard wie ein gepackte Schildkrot. Vnd ist vñ dicken Schalen vberlegt fast fest. Vnd ist in der groß als der Holfande Aber nydertrachtiger von paynen/ vnd fast wehafftig. Es hat ein scharff klarc Horn vorn auff der nase/ Das begynde es albeg zu wegen wo es bey steynen ist. Das dösfig Thier ist des Holf fang todt feynde. Der Holf fande furcht es fast vbel/ dann wo es In ankumbe/ so laufft Im das Thier mit dem kopff zwischen dye fordem payn/ vnd reyst den Holf fande vnden am pauch auff vñ erwürge In/ des mag er sich nit erweh. Dann das Thier ist also gewapent/ das Im der Holf fande nichts kan thun. Sie sagen auch das der Rhynocerus Schnell/ Freydig vnd Listig sey.



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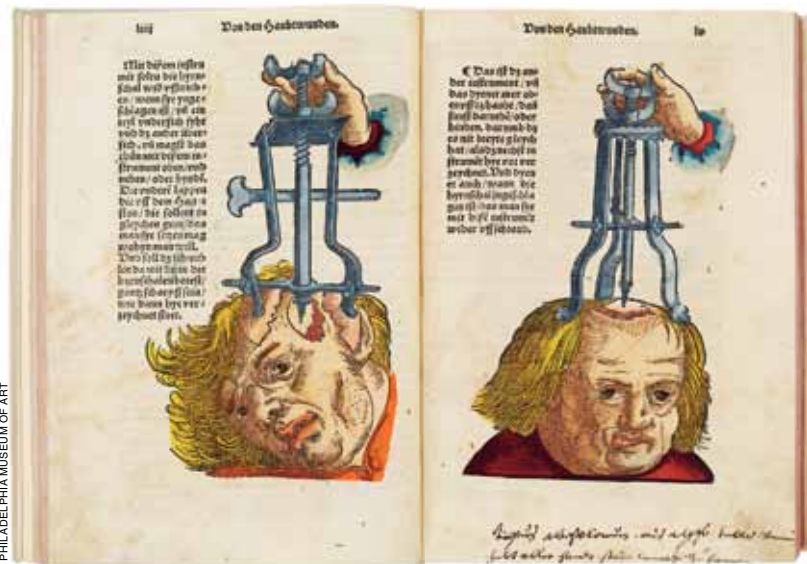
In 1515, a rhinoceros was brought from India to Lisbon, the first to arrive in Europe since ancient times. The king of Portugal, who already had an elephant in his menagerie, knew from reading Pliny that elephants and rhinos were natural enemies, and wanted to see what would happen. The king soon sent the rhinoceros on to the pope, but the ship transporting it sank. Although the rhinoceros drowned, Dürer created (from a firsthand observer's sketch and description) the dramatic woodcut above that became the iconic and authoritative representation of the animal for the next several centuries. Jan Saenredam's 1602 engraving, *Beached Whale near Beverwijk* (right), shows the artist himself sketching the scene in the left foreground, translating empirical information gathered by others to create an accurate visual record of the carcass. Yet the allegorical frame at the top of the print nevertheless alludes to a classical past by asking whether the beaching of the whale is an ill omen for the Dutch.



NEW BEDFORD WHALING MUSEUM



they described—a novel way of understanding and interacting with the world. Saenredam's engraving of a beached whale (page 45) shows the artist himself sketching figures who are busy measuring the carcass and studying properties of its skin and blowhole. They would now be called scientists, but were then fellow seekers after, and purveyors of, knowledge, just as he was.

[illegible][illegible]



# Anathomia oder abtontertierung eines

Weibts leib/wie er inwendig gestaltet ist.



Der mag ist ein haff/darinnen alle speiß empfangen / vnd von der lebern getocht würt / vnd auß ihm das haupt/berg/vñ alle glider get speiser vñ erneret. Auch alle get blüt auß dem magen / von der lebern geboten werden.

Aber bey des magens mund/ert scheynen etliche knobelche gebeyn außgebozt/vñ einer beschließung vñ sterc des magens mund. Es begibet sich auch vil frantcheyt in dem mund des magens/also ver schlemmung/ auch sterc etwan mit löcheren / von heissen flüssen des hauptes/oder etwan von dem hals geschweert/welche Squamaria ge nannt erwachset/welchen scharpfe speiß od getrenet schädlich seind zu gebauden / auch sterc übung beyßer speiß/oder gewürte / dann es bringe vñ natürlüche böse hyg.



Die leber ist ein brün aller natürlüchen geist vñnd krefft / ein züsamien geruhen blüt/welche von der speiß des magens das lēdest an sich trücht / vñ darauß ein reyn lauter geblüt macht / den schaum darvon abtünndet / welches dann ist die seichere Colera in das helle lein der gallen / Die spees aber / welches die melanoley ist / schweide fre in dñ milg. Die mensura oder wabß fluß hat sein vrsprung von der lebern / ein aber die sich herab zeichet in den vrschoff der mütter / wie hie vñnd.

Die gall hangend seßlin in müttern dñ / welche alle bitterere dñ an sich zeichet / auch in die gallen / fallen große / kleine / vñnd.



Die lung ist ein deckel vñnd be helzung des hertzens / von welcher erwan kumpt reuchen / vñnd der verstopfung der lungen rōs / et wan von großer kette vñnd seich tin/ auch von übriger trüchne. Tre geschwer seind peripneumonia / hygnig von der flegma / Pleuresia von der Colera/ pteisa vñnd dñen bedē.

Das berg ist ein seite behausung des geists der seilt vñnd menschlüche lebts / dñ hygnig glid des menschlüchen coepers / mit vil nerten vñ arterien versehen / inwendig hat es drey blüt stellen des lebens.

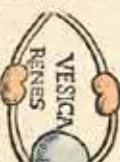
Das diaphragma ist ein netzisch seil lin vñnd an der lungen hangend / welches vñnderscheid die ernerende glider / von denen so das leben vñnd enthalten / welches vñnd zwey adern ruckfelle seimen vrsprung hat / mit funft vile blüt abdeclin verfangen.

Die blüß seind kalt vñnd seich / von adern / arterien vñnd nerten / mit einer seich vñnd lüch / em seich auß / gefüllet / in welt dñen dñ blüt in müttern verkeret würt. Zwe adern gond inwendig herab von den blüßten des weibts in die müttern / dann das kind sein vñnd hant hat / biß es an die welt geborn würt. Dar nach verseyhet es vñnd laufft alles in den brüßten wider zu. Darum den weibtern nach der geburt / die brüßten gang voll vñnd hart werden / biß dñ gang der wergeln adfñet werdē.



Dieß tier sind warm vñnd reud / durch wel che alle seich tin / von dem Magen in die Blasen gefürt werden.

Es kommen auch schmerz den nyere von verstopfung der gefalgne flegma/vñnd Colera / welches sich zu ein nem Steyn oder greich verjamer.



Die ader Vena Kilia / hat sein vrsprung von der lebern / vñnd theylet sich gleich wie ein baum in vil äß / in das haupt / arm / vñnd driß / nach mals herab an dñ ruckgrade vñnd bey der müttern od theil echte teylet sy sich wider in zwen äß / einer in lüch / der ander in den rechte schenckel.



Das milg ist kalt vñnd truck / in/ein besel alles geblüts / auß wel chem die Melanoley im hindern teyl des hauptes geboten würt.

Das milg vñnd gibt den magen an der lüch seiten abzeywerch / mit zweyen rōen oder gengen / deren eine in den Magen / die ander zu der Lebern geet. Die überflüßige des groben geblüts an sich zu zeichen dñ zu kochen / vñnd durch das ander rōn widerum in den magē vñnd züßteffen.



Die Chier ist ein fünggeordnet faß von Gott dem Herren / darinn die kindlein erp fangen / erneret / vñnd zu eins menschen coepers for miet werden.

Auch ist die müttern mit zwey en flügeln zu bey den seiten anget heuret / an welch em zwo adern mit zweyen seilen weib liche samens hangt en / Vasa spermatis genant.



In dem hindersten dñßdarm seind fünf Adern / die man Mezoidea od der Vena aurea das ist / die gulden ader nennet / durch wel che erwan vil böß geblüt / dem Went schen zu gesundt / beyt / gleich wie durch der Weiber frantcheyt aufget furet würt.



# THE Mediatrix

Former Hollywood filmmaker Michael Rich  
studies how media affect youth.

by CARA FEINBERG

**T**HIS PAST JUNE, the U.S. Supreme Court decided that violent video games posed no more danger to children than the grimmest of Grimms' fairy tales. At issue was a California ban of the sale of violent video games to minors—and seven of the nine justices struck it down, agreeing that it restricted minors' access to free speech. Justice Antonin Scalia, LL.B. '60, writing for the majority, went farther, stating that the evidence of video games' harmful effects was no stronger than that for any other violent media. "Certainly the books we give children to read...contain no shortage of gore," he wrote. "Cinderella's evil stepsisters have their eyes pecked out by doves. And Hansel and Gretel (children!) kill their captor by baking her in an oven."

As a pediatrician who studies media's effects on children's health, Michael Rich, M.D. '91, M.P.H. '97, believes Scalia got it wrong—and that science and common sense are on his side. You simply can't compare a fairy tale to a graphic video game where humans are torn limb from limb or beg for mercy as they're tortured, he says: "Written stories require translation in your imagination. A kid only imagines what his or her life experience allows."

But ultimately, Rich believes, this is not an issue for the courts. For decades, he explains, the effects of media on children have been a polarizing issue that often gets posed as a moral question. But he isn't interested in proving whether media products are good or bad, nor does he strive to find ways for government to regulate them. Instead, he hopes to reframe the question, looking at media explicitly as a public-health issue—like exercise, nutrition, or sleep—with physical, mental, and social consequences.

As an associate professor at Harvard Medical School and the School of Public Health, Rich has spent the last two decades gathering—and in many cases, conducting—scores of studies, some linking media violence

to increased aggression and high-risk behavior in children. "Media aren't ever going to disappear," he says. Recent national studies of kids 8 to 18 bear that out. According to a 2010 study by the Kaiser Family Foundation, the average American youth takes in nearly eight hours a day of media—or 10, counting the time spent using more than one form at a time. "That's two hours more than they found just five years ago," Rich notes. Even kids under six use media for more than two hours a day, their parents report. "This is the air kids breathe, he explains. "And in many cases, we have no real idea how it's affecting them."

Ten years ago, he and his colleagues set out to change that, founding the Center on Media and Child Health (CMCH) at Children's Hospital Boston, Harvard Medical School, and Harvard School of Public Health. Scientists there conduct their own research, and the center has also become known for its searchable online database—the only place in the world where parents and professionals can dig into a library of multidisciplinary research on every aspect of media and health—much of it translated from academic jargon into abstracts in English plain enough for a child to read. Rich hopes to bring the same scientific approach to the



study of media that the science of nutrition brings to our daily food choices—and thereby empower parents and caregivers to make better-informed choices on their “media diets.” In both realms, “There are nutrients and ‘empty calories,’” Rich explains. Without solid scientific research, “How are parents ever supposed to know which is which?”

SITUATED at the end of a narrow carpeted hallway in a 1960s-era hospital building, the Center on Media and Child Health is a collection of nondescript offices distinguished only by their décor—a clear homage to the subject scientists here study. The bathroom is plastered with classic Hollywood posters—Alfred Hitchcock’s *Psycho* and Charlie Chaplin’s *The Kid*; above the receptionist’s desk hangs a poster of *The Wizard Of Oz*’s Dorothy. Rich’s own office door sports a bumper sticker: “Surgoen Generel’s Warnig: Televison Promots Illiteracy.”

In many ways, the walls reflect the researchers’ appreciation and enjoyment of media simply as conduits for information. That means acknowledging the halos as well as the horns. “We have a very powerful ally in media if we can recognize it,” Rich says. Video games, for instance, are among the most effective technologies available for teaching—delivering rewards for practice and, like all pleasure, a likely flood of dopamine to the brain with each success. But just as with food, too much junk can cause all sorts of health problems.

Rich and his colleagues have compiled more than 3,400 studies on media and health, ranging from issues of obesity (children who watch more TV snack more often and consume more fast food and sweets), to advertising (in the late 1990s, 50 percent of three-year-olds could identify Joe Camel and connect the character with Camel cigarettes), to alcohol use and risky sexual behavior. One study showed that exposure to alcohol advertising on TV had a more potent effect on alcohol use than age, gender, parental influence, social status, or church attendance. Another found that more than 70 percent of network shows contain sexual material, but less than 10 percent deal with sexual risks or responsibilities.

“It’s not just how much time kids spend with media,” Rich explains, “it’s *what* they watch.” In one study published in 2006, lead author David Bickham, then a CMCH postdoctoral fellow, and Rich found that the *quantity* of media consumed yielded a *positive* result: youths who spent time watching TV with friends tended to be more social, spending more time doing non-media-related activities with their friends. But when the researchers looked at media *content* in general, they found that youngsters who spent more time watch-

ing *violent* programs tended to be much more socially isolated.

Most of these are correlational studies that cannot identify cause and effect. There is no way to determine, for instance, whether violent media made youths more socially isolated, or if socially isolated kids tend to gravitate toward violent media. “But that doesn’t mean we should ignore the findings,” Rich cautions. Take cell phones as an analogy, he says. Every year, more research suggests they might (or might not) cause brain cancer. Yet “We don’t stop using them,” Rich points out. “We just might think of precautions and adjustments, like using headphones.” More importantly, he adds, correlations between media consumption and



children's behavior may be telling us something about children themselves—and what they need: “Perhaps children who watch a lot of violent TV, or who use media to stimulate themselves, are looking to meet needs that are not unlike the satisfaction they get from actual risky behavior.” It may not be media that *cause* their behavior, he explains; media use and content may flag children who are already at higher risk—and they may derive some kind of benefit we haven't even explored.”

“We know that children's brains are different from adults,” he explains. Though all brains change and forge new nerve pathways throughout life, those of infants and young children are especially plastic. With virtually no circuitry devoted to primitive survival reflexes, the human brain is among the most embryonic at birth. “Every other organ in our bodies is a small functional version of its adult self,” Rich notes, but the infant brain is entirely dependent on the care of others. That means the human brain is built to learn, forging original pathways created by interaction and environment and pruning away unnecessary connections as it ages. This is why babies who learn languages from birth can hear and mimic sounds that most adults simply can't pick up, he says: the babies' brains haven't yet set well-worn neural pathways.

Nearly all acquired chronic health conditions—obesity, eating disorders, HIV and other sexually transmitted diseases, and tobacco, alcohol, and drug use—start with behaviors developed in childhood and adolescence. And media, Rich says, “are arguably the most powerful forces...kind of like a ‘Superpeer’ in the psychosocial lives of adolescents.”

Yet medicine has been among the last disciplines to formally recognize these factors. In a 2008 abstract, Rich and his colleagues reported that only half of the 200-plus medical residency programs queried offered formal education on media. Most schools mention media in conjunction with other health topics

like obesity or exercise, but in the absence of formal lectures *acknowledging* media's importance in the environment in which kids develop, “doctors may not view media as highly influential health factors,” says Rich—and as a result, they may not ask patients or their parents about media use, or help parents manage their children's risks.

RICH KNOWS that to change behavior, he needs to change minds. As a result, he has become a personal ambassador for his cause, advising both media and medical entities, lecturing publicly, and appearing as an expert on television. Despite his white coat and trail of academic accolades, he has an easygoing style and quick wit. As a clinician, he puts even his shyest patients at ease. At a compact five-foot eight, he's often no taller than the teens he works with, and pries forth reluctant smiles with self-deprecating humor. (“Look at *me*,” he tells one patient concerned about his height, “I'm a fire hydrant with legs.”) This makes him that rare doctor who can connect emotionally with the typically sullen, often completely shut-down adolescent patients and study subjects who parade through his clinic's door. But in the field of media research, Rich stands out for an entirely different reason; until he was 31, he was neither a doctor nor a scientist, but a full-time Hollywood filmmaker.

In his twenties, Rich worked with famous directors, including Akira Kurosawa (a Luce Scholarship sent him to Japan as an apprentice and assistant director), and as a Hollywood script doctor, writing and rewriting scenes (uncredited, and often unused) in several well-known films of the 1980s. Eventually he became disillusioned with writing scripts “by committee” and, 11 years into his film career, went to medical school after a year and two summers of pre-med training.

Today, he pours his energy into studying the very medium he once worked in. But in a scientific field that most often relies upon observation, self-reports, and surveys, Rich and his colleagues have a unique approach: besides asking kids and their parents to describe their own media use, the CMCH researchers use media themselves to reveal the electronic environment young people now inhabit.

In the late 1990s, Rich placed video cameras in the hands of study subjects, lending asthmatic children tools that could





## Until he was 31, Rich was neither a doctor nor a scientist, but a full-time Hollywood filmmaker.

literally show clinicians the environment and circumstances affecting their disease. What resulted was a novel, ultimately award-winning research method (see “Lights. Action. Asthma,” November-December 2000, page 14) that changed not only the power dynamic between clinician and patient, but also doctors’ treatments and patient outcomes. “One of the strengths of this method is that it captures things you weren’t looking for,” Rich said then—whereas an interview “is already framed by the questions you ask.” When doctors have a better sense of patients’ actual environments, they can work much more collaboratively—and more effectively. When Rich and his colleagues watched some of the tapes made by his asthma patients, they found that the footage revealed risk factors that patients either didn’t suspect or didn’t want to admit: a mother who smoked in her asthmatic child’s bedroom (despite adamantly claiming she didn’t); a house described as “100 percent allergen-free” in which plants filled the entrance hall from floor to ceiling. (The mold, dust, and bugs that plants can attract are serious asthmatic irritants.) One video diary showed a teenaged patient coughing violently while using hairspray, which can trigger a severe asthma flare-up.

In the years since Rich implemented the study, the video-camera technique has been used for other health assessments, including HIV, obesity, and other chronic conditions. Yet he and his colleagues are still among the very few in the medical world to use media as research tools. It’s not that video cameras have no role in research, Rich explains—they often record patients in sleep labs, for instance, or document behaviors in social-science research. “It’s that within the research community, video cameras as actual measuring tools feel alien.” Most medical researchers are trained to take measurements with surveys, questionnaires, and quantitative diagnostics. Compared to such tried-and-true methods, he says, “Watching, analyzing, and coding videotape into usable statistical findings is time-consuming and expensive, and often requires a specially trained staff.”

For the past few years, Rich’s team, led by CMCH visiting scholar Craig Ross, a doctoral candidate at the Boston University School of Public Health, has been conducting a longitudinal study in Manchester, New Hampshire, that aims to catalog middle-schoolers’ media use. At the outset, researchers recorded subjects’ heights and weights, and a broad range of other health information (variables they will track year after year to compare health outcomes). Then the team gave participants four tools to record their media use: a high-definition camcorder; a personal digital assistant (PDA) that would buzz several times a day, reminding kids to write down what they were doing; a time-use diary; and a retrospective questionnaire. The questionnaires were a standard method for gathering information, but the camcorder was not. The students, responding to random beeps throughout the day, were expected to answer their questionnaires and then use their camcorders to make a 360-degree pan of their surroundings.

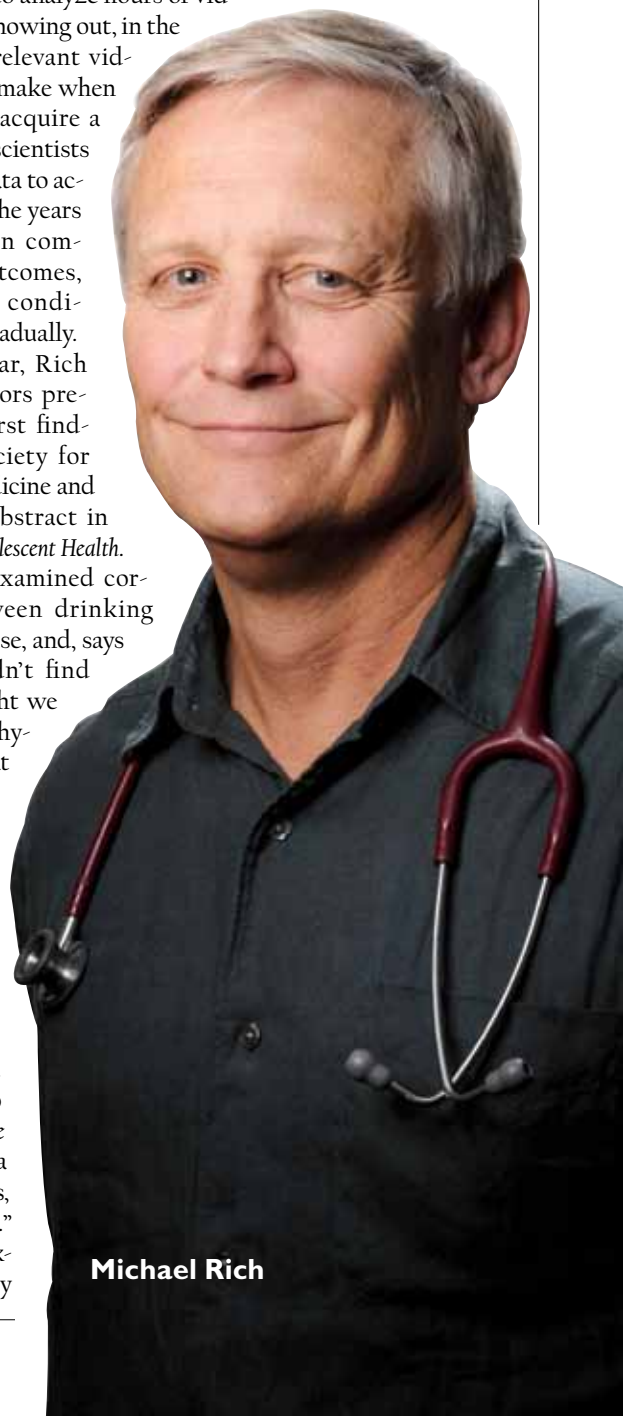
“Most of the media-use data we have in our field—and we don’t have much—is based on paper and pencil measures...kids or parents estimating their children’s media use,” explains Northwestern University professor Ellen Wartella, another researcher on the effects of media on children. “Michael’s methodology is a

much more robust measure—a measure against which we can compare the questionnaire answers.” The videos, she explains, create a more complex picture of what kids are *actually* doing.

A student may write “I am watching TV” on her questionnaire, but a video pan may reveal that she is also texting, listening to music, and Facebooking on her computer at the same time—information that might never have surfaced in a penned survey. Such study data, Wartella points out, provide the baseline information researchers need in order to ask their next set of questions: “We can’t figure out how kids are affected by media if we don’t know how they use it.”

Just three years into their research, the Manchester study has published few findings, though there are many in the pipeline. This is, in part, a function of the nature of longitudinal research. Besides having to analyze hours of video footage (winnowing out, in the process, the irrelevant videos teens often make when they suddenly acquire a video camera), scientists must wait for data to accumulate over the years before they can compare health outcomes, because many conditions develop gradually.

This past year, Rich and his coauthors presented their first findings at the Society for Adolescent Medicine and published an abstract in *The Journal of Adolescent Health*. The research examined correlations between drinking age and media use, and, says Rich, “We didn’t find what we thought we would.” Their hypothesis was that kids who spent more time using media would begin drinking at an earlier age, yet the data showed no correlation between the two. “But kids who used *multiple* kinds of media at once,” he adds, “*did* drink earlier.” Media multitasking—a reality



**Michael Rich**

now for most children—had a significant effect.

Although media have been a part of children's lives for generations, kids today have more access to more types of media than ever. With the proliferation of portable options—smart phones, laptops, handheld video games, iPads, and ebooks—young people now can not only stay connected 24/7, but also connect via several platforms at once: texting while surfing the Internet, watching videos, listening to music, and talking on the phone. In the past five years alone,

## Multitaskers felt more confident about their performance, but *non*-multitaskers performed much better.

according to that 2010 study by the Kaiser Family Foundation, the proportion of 8- to 18-year-olds with their own cell phones grew from 39 to 66 percent. The number of kids owning MP3 players jumped from 18 to 76 percent. “Kids today are multitasking at a level we’ve never seen before,” says Rich. “And people—particularly parents—want to know what this *means*.”

“Take multitasking, for instance,” he continues. “There are already studies out there, but very few, if any, deal with children. Most focus on college students and adults.” And most, like his own work, raise more questions than they answer. One of the most arresting studies was done recently at Stanford University, where researchers put self-described high-tech jugglers and non-multitaskers through a series of tests where, among other tasks, they were told to focus on one set of colored shapes flashing on a computer screen, and to ignore another set. The habitual multitaskers felt more confident about their performance afterwards, but it was the *non*-multitaskers who performed much better. Heavy multitaskers simply could not ignore the extraneous information.

“Our brains are programmed to be interrupted,” Rich explains. We get an adrenaline jolt every time we receive a new stimulus—a reward for paying attention to the new. And with the improvement of brain-imaging technology in the last two decades, researchers can now actually see this process at work.

“On a molecular level, several studies have shown us that exciting stimuli causes a release of dopamine and other neurotransmitters in the brain,” says neuroscientist Markus Dworak, a former Harvard research fellow in psychiatry who focuses on sleep behavior. In 2007, he studied boys aged 12 to 14 who were asked to spend alternate nights either playing video games, or watching action movies, for an hour after finishing their homework. Dworak and his colleagues then measured the boys’ brainwave patterns as they slept and found that both activities led to much lower sleep quality (though the video-game players consistently found their sleep more disrupted). When the boys were asked to recall vocabulary words they had learned before their nightly media sessions, their ability to remember the words dropped significantly after playing video games—but *not* after watching action movies.

The brainwave patterns, says Dworak, showed how the video games affected sleep quality. Sleep is the time when the brain stores information, when it decides what is important to keep or delete, he explains. “We don’t know whether the boys’ learning suffered because they slept poorly,” he says, “but we do know that information that is exciting tends to get stored in the brain much more easily....Perhaps the excitement of the video games just took

precedence over the less exciting vocabulary lesson.”

This is all preliminary research; even the definition of “multitasking” is up for grabs. Some research indicates that true multitasking—the ability to do several similar tasks at once—just doesn’t exist. “What’s really happening,” Rich explains, “is a rapid toggling of our primary attention: if we are doing two or more tasks that require the same type of attention, something has to recede to the background.”

Of greater concern is not what kids are doing *with* media, it’s what they may *not* be doing as a result of them. Recent imaging studies examining the brain during specific tasks also revealed how the brain functioned in the tasks’ absence: the resting brain used as much energy as the task-focused one. Rather than shutting down when there was no outside input, a whole network of nerves across various parts of the brain—the emotional center, visual cortex, memory—lit up, Rich explains, suggesting that periods of rest are critical for brain development: for creating new connections, synthesizing information, and forging a sense of self.

Constant stimulation may deprive kids of much-needed down time—a point Rich made last year in a speech to the American Academy of Pediatrics entitled “Finding Huck Finn: Reclaiming Childhood from the River of Electronic Screens.” Rich then urged physicians to ask patients about their media histories and outlined the risks linked to certain types (and amounts) of media use, among them obesity, anxiety, desensitization to violence, and high-risk behavior at an earlier age.

But Rich also reminded fellow pediatricians that, powerful as they are, “media are neutral.” Used thoughtfully, he explained, “media can do great good—connecting, informing, and educating.” Children spend more time using media than doing anything else except (possibly) sleeping. “You’d think,” he says, “we’d be doing everything in our power to understand the effects,”

MANY OF these study results raise legitimate concerns, but Rich wants his efforts at publicizing them to raise hope as well. “You could say that findings like these prove that multitasking is just a distraction and we should avoid it....But you can also say, ‘This is the world we live in.’ If today’s environment is training our kids’ brains differently, he says, “Let’s find out how, so we can harness that power and use it.”

He has connected with educational professionals around the globe, hoping that the information they find can help shape curricula. The typical American school now has one computer for every four students—and the push by policymakers to digitize schools represents a significant increase in spending per pupil. “But we don’t want to have computers just for computers’ sake,” Rich says. Several recent studies—including one by Jacob Vigdor, Ph.D. ’99, now an economics professor at Duke, have shown that youths often use home computers for entertainment rather than learning—and this can *hurt* school performance, particularly in low-income families. “Basically, kids in less-supervised environments or in single-parent families tend to use technology to play games and chat with friends,” Vigdor says. “If we don’t pay close attention to *how* kids use technology, [the results] often add up to more distractions from schoolwork.”

(please turn to page 91)





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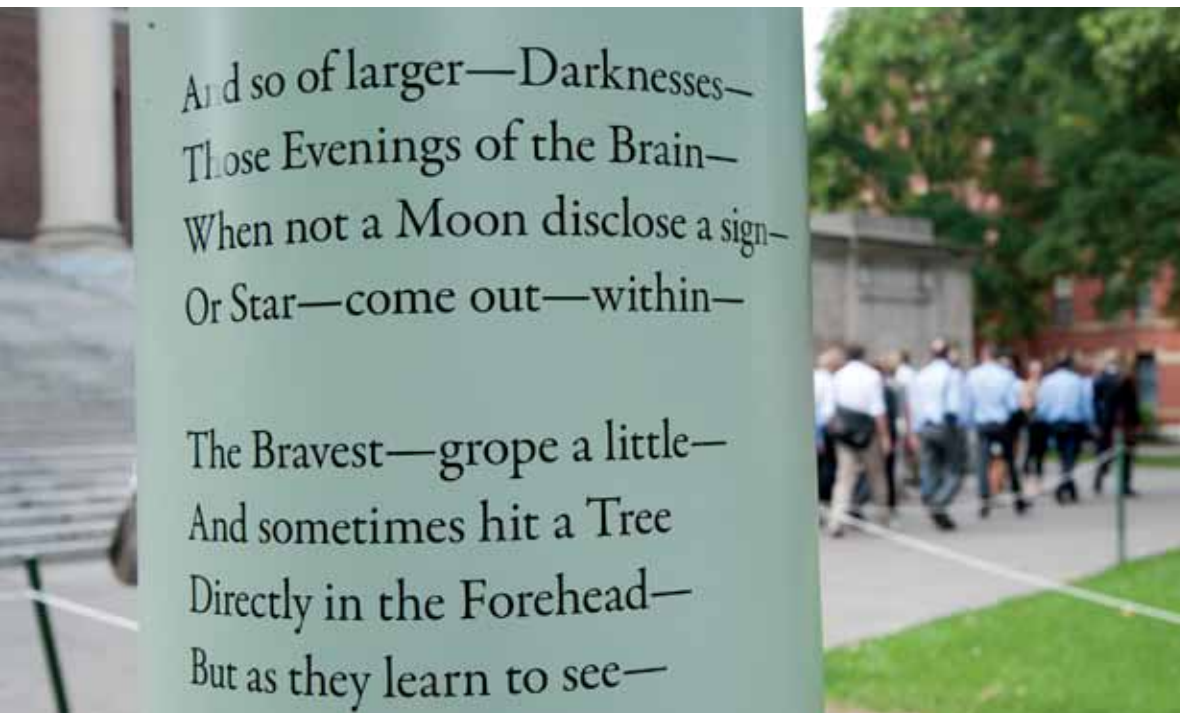
*"Our understanding of disease is growing at an enormous pace. We sit on the dawn of a new era."*

Lee Nadler, MD, *Dean for Clinical and Translational Research*

Harvard Medical School researchers are unveiling connections between the immune system and diseases never before considered related, such as type 1 diabetes, inflammatory bowel disease, multiple sclerosis, obesity, and even some forms of cardiovascular disease. This emerging knowledge will lead to novel therapies and new hope for treating these vexing problems.

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# JOHN HARVARD'S JOURNAL



**AS PART OF THE UNIVERSITY'S** observance of the tenth anniversary of 9/11, the Mahindra Humanities Center erected eight "poetry posts" on the lawns between Massachusetts Hall and the Barker Center: slim green cylinders, about seven feet tall, each bearing the names of the 10 Harvard affiliates who died in the attacks, and a poem (or excerpt) meant to prompt reflection about loss and recovery. Among the texts were Martin Espada's "Alabanza: In Praise of Local 100," on the 43 members of Hotel Employees and Restaurant Employees Local 100 who perished in Windows on the World; Emily Dickinson's "We Grow Accustomed to the Dark"; an excerpt from Lucille

Clifton's "september song: a poem in 7 days"; Frank Bidart's "Curse"; and an excerpt from W. H. Auden's "September 1, 1939."

The list atop each pale olive pillar paid homage to the dead: David Alger '66; Paul Ambrose, M.P.H. '00; Anthony Demas, P.M.D. '80; Steven Lawrence Glick, M.B.A. '89; Edward R. Hennessy '88; Waleed Joseph Iskandar, M.B.A. '93; Andrew Keith Kates, M.B.A. '91; Michael B. Packer '76; Meta Waller, M.P.A. '82; and Steven Weinstein, S.M. '73.



For a report on the community commemorative service, see [harvardmag.com/commemorating-9-11](http://harvardmag.com/commemorating-9-11).

## Better Endowed

HARVARD'S ENDOWMENT was valued at \$32 billion as of June 30, the end of fiscal year 2011—up 16 percent from \$27.6 billion at the end of fiscal 2010—according to Harvard Management Company's (HMC) annual report, released on September 22. HMC recorded an investment return of 21.4 percent on endowment and related assets—a strong performance following the 11.0 percent return in fiscal 2010 (and the -27.3 percent investment return during the

financial crises of fiscal 2009, when the endowment's value declined by \$11 billion).

According to Wilshire Associates Trust Universe Comparison Service—a standard measuring stick—large institutional investors achieved fiscal year 2011 median returns of 20 percent to 21 percent, reflecting the generally favorable market conditions. Results for similarly managed large university endowments reported at press time included Stanford's 22.4 percent investment return (and 19.5 percent endowment growth, to \$16.5 billion); Yale's 21.9

percent return (and 16.2 percent endowment growth, to \$19.4 billion); Princeton's 21.9 percent return (and 18.8 percent endowment growth, to \$17.1 billion, boosted by its capital campaign); and MIT's 17.9 percent return (and 16.5 percent endowment growth, to \$9.9 billion). The University of Virginia realized a 24.3 percent return, and apparently became the first school to recoup *all* of its losses from the 2008-2009 downturn—and then some.

The difference between the rate of investment return and the growth in the absolute value



of the endowment reflects the distribution of endowment funds to support University operations and for other purposes (perhaps \$1.4 billion in fiscal 2011, down from fiscal 2010's \$1.56 billion, fiscal 2009's \$1.66 billion, and fiscal 2008's \$1.63 billion), offset by endowment gifts received during the year (perhaps in line with the quarter-billion dollars received in fiscal 2010). Details will be disclosed in Harvard's annual financial report, published in October after this issue went to press (see [harvard-magazine.com](http://harvard-magazine.com) for details).

The fiscal 2011 investment return handily exceeded HMC's long-term goal of 8.25 percent annual gains. After distributions in support of University spending (the endowment now provides about one-third of operating revenues), this return, plus gifts, notably boosted the endowment. With inflation low, that 16 percent appreciation in the endowment represents vigorous real growth.

Is the endowment fully recovered? Hardly: its peak value was \$37.2 billion at the end of fiscal 2008. But it was "a successful year for HMC and the Harvard endowment," said president and chief executive officer Jane L. Mendillo in an interview. "The markets were good for most of the year and we were able to do well relative to the markets." As she wrote in HMC's annual report—citing the investment professionals' active management of the portfolio to satisfy growth, liquidity, and risk-management objectives—"We are pleased to report that our progress in fiscal year 2011 was significant along each of these dimensions."

With fiscal 2011 on the books, HMC's *annualized* investment return for the past five years rose to 5.5 percent from 4.7 percent last year, and for 10 years to 9.4 percent from the prior-year 7.0 percent. Part of the improvement reflects the strong fiscal 2011—and part the arithmetic of moving beyond fiscal 2001 (when investment returns were *negative* 2.7 percent, in the wake of the dot-com collapse). These rates of return look more like the long-term returns that HMC's investment strategy is designed to produce. The long-term performance shapes the Corporation's financial decisions as it determines a rate of distribution from the endowment to support University operations. For the current fis-

cal year, the Corporation authorized a 4 percent increase in the endowment distribution, following two years of declines. Its fiscal 2013 decision is not yet public.

ON A RELATIVE BASIS, HMC's 21.4 percent return (after all investment-management fees and HMC operating expenses) exceeded the 20.2 percent return calculated using market benchmarks for the assets in the "policy portfolio" (HMC's model for allocating assets among categories such as equities, bonds, real estate, and so on.) HMC also bested its benchmarks in fiscal 2010 (an 11.0 percent investment return versus 9.4 percent for the policy portfolio)—a welcome recovery from fiscal 2009, when HMC *trailed* its market benchmarks by 2.1 percentage points. In both 2010 and 2009, the University's portfolio fared less well than the median return of the Trust Universe Comparison Service, in part reflecting dissimilar asset allocations: TUCS funds are about half invested in public equities (versus one-third for HMC's policy portfolio), with only a few percent invested in real assets (typically almost one-quarter of HMC's allocation). Out-performing that metric for fiscal 2011 gives HMC at least public bragging rights:

Two overall observations: First, market returns were strong across the board during fiscal 2011. Second, for HMC, *all* asset classes produced positive returns—reflecting gains on real-estate assets, following punishing losses on commercial properties after the 2008-2009 financial crises.

In her letter, Mendillo highlighted the performance of certain segments. Investments in *domestic equities* yielded a 34.6 percent return—comfortably above market

indexes—but both *developed-market international equities* and *emerging-market equities* trailed their benchmarks, pulling down public-equity performance overall. (Each of these classes is assigned an 11 to 12 percent weight in the policy portfolio, summing to about one-third of typical endowment holdings.)

*Private-equity investments* now account for another 12 percent of the policy portfolio, and produced a 26.2 percent return, also behind the benchmark. Long term, HMC

### Harvard Management Company 2011 Investment Performance

Asset Class	HMC Return	Benchmark Return	Difference
Public equities	28.3%	30.4%	(2.1)%
Private equity	26.2	28.7	(2.5)
Absolute return*	11.6	11.3	0.3
Real assets**	17.7	15.9	1.8
Fixed income	9.1	6.9	2.2
Total endowment	21.4	20.2	1.2

\*Includes high-yield bonds

\*\*Includes real estate, commodities, and natural resources

has done very well in this asset class, but Mendillo last year signaled a more restrained view, given both increased competition in the market and the inherent liquidity risks; accordingly, the policy-portfolio weighting for private equity has been trimmed (see below).

Returns on the "*absolute return*" category, 16 percent of the policy portfolio (consisting of both *high-yield fixed-income investments* and *hedge funds*) were 11.6 percent, fractionally above benchmark results.

*Real assets* (23 percent of the policy portfolio, consisting of *real estate* and *natural resources*, such as timber and agricultural land—each about 9 percent of the endowment assets—plus publicly traded *commodities*) produced positive returns of 17.7 percent, 1.8 points better than the benchmark, with gains in each segment.

*Fixed-income* returns (11 percent of policy-portfolio assets, *excluding* high-yield



Jane L. Mendillo

STEPHANIE MITCHELL/HARVARD NEWS OFFICE

## I N T H I S I S S U E

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bonds, as noted) were led by results in the foreign-bond segment (up 21.7 percent).

IN CATEGORIZING THE YEAR, Mendillo cited HMC's confidence "that our portfolio...is well positioned to support Harvard's mission." That confidence follows changes in strategy, investments, and coordinated financial management with the administration that, as she wrote last year, "more closely aligned HMC with the University"—following the frightening period in late 2008 and early 2009 when long-term investments were out of sync with Harvard's urgent need for liquid resources.

"The much improved flexibility of the portfolio we are managing" that Mendillo cited last year shows up in symbolically significant tweaking of the policy portfolio. For fiscal 2012, it *increases* commitments to equities by 2 percentage points (to 48 percent of the assets), but does so with higher goals for public investments and a one-point *reduction* in private equities. The goals for absolute return, real assets, and fixed-income investments remain unchanged.

Meanwhile, the protective policy allocation to *cash* (2 percent in fiscal years 2009 and 2010, after HMC had for years boosted returns by *borrowing* up to 5 percent of its total holdings to invest more) has been eliminated. As Mendillo explained, "We've

made a lot of progress in risk management and...improved the liquidity of the portfolio enough" so that the specific cash allocation is no longer needed.

One sign of the portfolio's repositioning is that obligations to provide future funding to real-estate and private-equity investment managers (so-called capital commitments have been reduced further, to about \$5 billion (down from \$11 billion at the end of fiscal 2008). That level of future obligations to investors in illiquid asset classes (which also include the internally managed natural-resources holdings) appears to be comfortable as the asset managers put funds to work in the future. Mendillo noted, "We're about where we want them to be for the size of our portfolio."

Operationally, Mendillo highlighted some new skills on her staff: an in-house trader of Chinese equities; an in-house commodities-trading team; and a credit-markets group that pursues opportunities in publicly traded corporate debt (HMC has heretofore focused on U.S. Treasury and foreign govern-

### Harvard Management Company Weight in Policy Portfolio

Asset Class	Fiscal Years 2010-2011	Fiscal Year 2012
Public equities	33%	36%
Private equity	13	12
Absolute return*	18	18
Real assets**	23	23
Fixed income	11	11
Cash	2	0
Total endowment	100	100

\*Includes high-yield bonds

\*\*Includes real estate, commodities, and natural resources

ment securities).

Consistent with the direction since she took charge in mid 2008, HMC continues to bring fund management in-house, citing gains in performance where it

can build expert teams (as in the natural-resources portfolio); better control over assets and knowledge of market conditions; and lower operating expenses. From a 70-30 external-internal mix of assets under management when she arrived, the proportion has shifted to perhaps 65-35 today.

DESPITE THE STRONG recent results, Mendillo took unusual pains to point out how very unpromising the external environment turned in the months following the end of the reporting period. During the July-September quarter, various stock-market indexes declined from 14 to 24 percent. Lower economic growth means also lessened demand for commercial office space, lower commodity prices, and so on.

Accordingly, Mendillo noted—specifically in her language about the portfolio's favorable long-term position relative to Harvard's needs—that it was "impacted by adverse markets." She amplified the warning in her concluding paragraphs, citing "exceptionally volatile" markets, "driven by concern and uncertainty related to the debt ceiling debate, the fate of the euro zone, the S&P [Standard & Poor's ratings service] downgrade of the U.S. Treasury securities, and indications of slowing growth in economies at home and abroad."

As she stressed in conversation, "I wanted to signal that these are volatile times with significant downward moves in the markets." Of the endowment's value overall, she noted, "We're not back to where we were"—making it imperative that everyone understand the external and University fiscal realities. Thus, the administration will likely practice continued budget discipline—as it pursues a large, endowment-bolstering capital campaign.



Visit [harvardmag.com/endowment-2011](http://harvardmag.com/endowment-2011) for complete coverage of endowment results from Harvard and other schools.

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## Allston Agenda

THE CORPORATION has approved the recommendations of the Allston Work Team (released last June) for various Harvard development projects, and a schedule for pursuing near-term actions. The decisions were outlined in a September 19 letter to the community from executive vice president Katie Lapp:

- *Academic planning* for a life-and health-sciences center—what Harvard units would use it, and how—to be built on the foundation for the initial Allston science complex (where work was halted in late 2009), is to be completed by next June. Presumably, new *architectural and engineering* plans for the re-envisioned complex would follow. But the University indicated that construction will rely on funds raised in the forthcoming capital campaign.

- By next March, the University intends to issue requests for proposals to third-party developers who would create Harvard-affiliated rental housing and retail facilities at the intersection of Western Avenue and North Harvard Street, beyond Harvard Business School and the Stadium.

- Following the science and residential initiatives, Harvard will identify partners for the “enterprise business campus” and hotel-conference center envisioned for the 36-acre Allston Landing North site, near the Charles River. Successful planning for these two phases of work should enable Harvard to engage the Boston Redevelopment Authority by late 2012—the first step in creating an institutional master plan that will guide work in the area in coming years.

This roadmap—in scale with the complexity of the development envisioned, and the necessary financing and partnerships involved—probably gives the Allston community a more realistic vision for what might unfold, even if the schedule is slower than neighbors might hope. For details, see [harvardmag.com/allston-plan-endorsed](http://harvardmag.com/allston-plan-endorsed).

## Financial Aid Refigured

THE COLLEGE ANNOUNCED two significant changes to financial aid on September 1. As of September 2012, families with in-

## Yesterday's News

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

**1921** For the first time in 40 years, Harvard is planning a Chinese-language course, to be taught by philosophy instructor Yuen Ren Chao, Ph.D. '18.

**1931** A new rule on “the entertainment of women in Harvard Houses” requires written permission to be obtained from the House master or senior tutor 24 hours prior to the visit unless the guests are mothers or sisters.

**1941** University librarians have completed plans to evacuate 100,000 rare volumes to a secret location if necessary in time of war.

**1946** As part of a new experiment in General Education, President Conant delivers his first course lecture since taking office, speaking to undergraduates and the general public on the strategy and tactics of science and on the principles of chemistry.

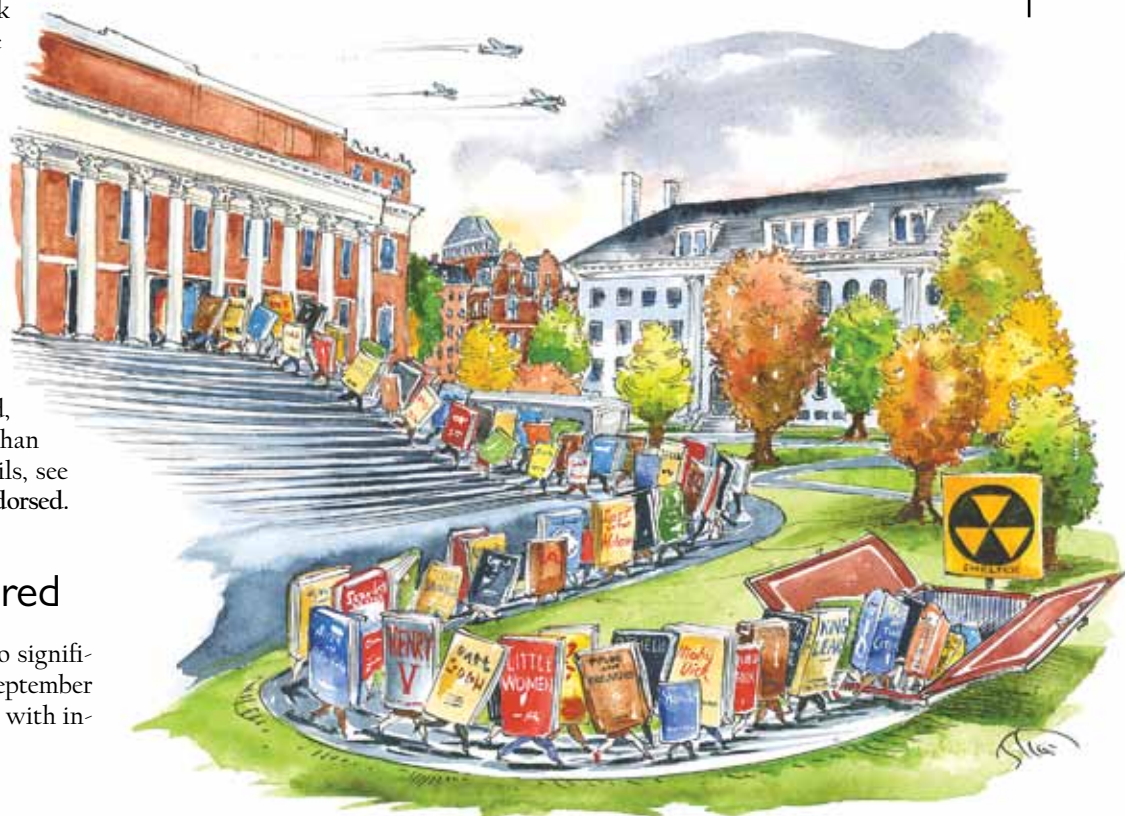
**1951** The presidents of Harvard, Yale, and Princeton issue a joint statement declaring that no athletic scholarships

are given out by their institutions. “The athletic program,” they assert, “exists for the contribution it can make to [a] healthy educational experience, not for the glorification of the individual or the prestige or profit of the college.”

**1956** Martha May Eliot resigns as chief of the U.S. Children's Bureau to join the School of Public Health as head of the department of maternal and child health, becoming Harvard's third female full professor.

**1981** Fifteen junior-faculty professorships have been created thanks to a \$7.5-million gift to the Harvard Campaign from John L. Loeb '24.

**1991** A special double issue of the conservative undergraduate magazine *Peninsula* focused on proving that “homosexuality is bad,” prompts a protest rally in response, during which Plummer professor of Christian morals Peter J. Gomes reveals, “I am a Christian who happens as well to be gay, and these realities which are unreconcilable to some are reconciled in me.”



## H A R V A R D P O R T R A I T



Rebecca Henderson

**Rebecca Henderson began** her career studying why large companies find it difficult to change. One part of the answer is the phenomenon of “overload”—essentially, the failure to spend time planning for the future because one is so focused on urgent needs of the present. This phenomenon, the subject of research by the newly minted McArthur University Professor, applies to individuals as well as companies. For example, even though we know that skimping on sleep and exercise can harm us, “we jeopardize long-term health for short-term results.” (Henderson herself recharges by kayaking and hiking with her 15-year-old son, Harry. Her late husband, John Huchra, was Doyle professor of cosmology in the astronomy department.) The dangers of such short-term thinking are also a theme of her current work as co-director of the Business and Environment Initiative at Harvard Business School. Predictions of the likely fallout from climate change are dire—erratic rainfall and drastically diminished crop yields, followed by famine and political unrest—yet environmental legislation failed in Washington again last year. “Are we really going to wait until these things are upon us to take action?” she asks. Yet she remains an optimist: even with government gridlock, she has faith in the power of the private sector. Saving the environment will be the next big wave in innovation and job creation, she believes, as steel, railways, plastics, and information technology were for previous generations. “We need clean energy. We need abundant clean water. We need safe and effective waste disposal,” she says. “Business can do that. That’s what business does.”

comes below \$65,000 will be able to send their children to Harvard at no parental cost, an increase from the current \$60,000 ceiling (established in 2006); this change applies to returning undergraduates and those matriculating with the class of 2016. (According to a chart on the financial-aid website, close to 1,200 scholarship students now in the College are from families with incomes of \$60,000 or less.)

At the same time, the expected parental contribution for newly enrolling students and their successors will grade up from 0 to 10 percent of income for families whose incomes fall between \$65,000 and \$150,000; the prior ceiling for this formula, introduced in late 2007, was \$180,000. Those families in the range of \$150,000 to \$180,000 will, according to the news release, “be asked to pay slightly more than 10 percent of income”—grading up to 16.5 percent, an increase of as much as \$11,700 in their annual bill compared to the prior formula. (According to the website, slightly fewer than 600 families of students now receiving scholarship aid have incomes from \$140,000 to \$180,000.)

The College’s financial-aid payout—\$166 million this year—will likely increase even with the new scholarship parameters, given that the term bill for tuition, room, and board (\$52,652 now) will continue to rise. Part of the aid, in turn, is funded by the unrestricted tuition funds the College collects. (For fuller details, including peer schools’ aid decisions, see [harvardmag.com/financial-aid-2011](http://harvardmag.com/financial-aid-2011).)

## Arts and Sciences Annual Report

DEAN MICHAEL D. SMITH discussed his draft annual message (available at [www.fas.harvard.edu/home/content/annual-report](http://www.fas.harvard.edu/home/content/annual-report)) with Faculty of Arts and Sciences (FAS) colleagues at their first meeting of the year on October 4. Among the notable points:

- FAS reduced its unrestricted core deficit from a projected \$35 million to an actual \$16 million during the fiscal year ended last June; Smith still expects to eliminate the structural deficit this year.

- With the size of the tenured and tenure-track faculty holding constant since 2008, the number of junior professors decreased by one-sixth, as promotions to tenure exceeded retirements. Since the in-



## Laureate Septet

Seven alumni have been honored with 2011 Nobel Prizes. Ralph M. Steinman, M.D. '68, of Rockefeller University, shared the prize in physiology or medicine, for fundamental work on the immune system; tragically, he succumbed to pancreatic cancer on September 30, three days before the award was announced. Three cosmologists shared the physics prize for discoveries concerning the accelerating expansion of the universe, based on measurements using supernovae (exploding stars): Saul Perlmutter '81, professor of physics at University of California, Berkeley; Brian P. Schmidt, Ph.D. '93, of the Australian National University; and Adam G. Riess, Ph.D. '96, professor of astronomy and physics at Johns Hopkins. Librarian president Ellen Johnson Sirleaf, M.P.A. '71, LL.D. '11, shared the peace prize for her advocacy of women's rights. And Thomas J. Sargent, Ph.D. '68, of the Hoover Institution and Berkley professor of economics and business at NYU, and doctoral classmate Christopher A. Sims '63, Ph.D. '68, Helm professor of economics and banking at Princeton, shared the prize in economics. For details, see [harvardmag.com/economics-nobel-prize](http://harvardmag.com/economics-nobel-prize).

## University Professors

President Drew Faust has appointed two University Professors, Harvard's highest faculty rank. Rebecca M. Henderson, who joined Harvard Business School in 2009 and examines businesses, energy, and the environment, becomes McArthur University Professor (see Harvard Portrait, opposite), succeeding Nobel laureate Robert C. Merton, who retired in 2010. Stem-cell pioneer Douglas Melton (he co-chairs the department of stem cell and regenerative biology, and co-directs the Harvard Stem Cell Institute), the master of Eliot House, is the first Xander University Professor. The identity of the new chair's donor has not been disclosed.

## Dumbarton Oaks Domiciles

Fulfilling a long-term programmatic ambition, Dumbarton Oaks Research

# Brevia



**DIVINITY DEAN'S DENOUEMENT.** Harvard Divinity School dean William A. Graham will step down at the end of this academic year, concluding a decade of service (he began serving as acting dean in January 2002). After a year's leave, he will resume teaching as a Distinguished Service Professor. Graham, a member of the Faculty of Arts and Sciences since 1973, has been director of the Center for Middle Eastern Studies, master of Currier House, and chair of both the department of Near Eastern languages and civilizations and the committee on the study of religion. His scholarly work focuses on early Islamic religious history and the history of world religion. More than half the school's current faculty members were appointed during Graham's deanship; he also oversaw revisions of the school's degree programs.

Library and Collection, in Washington, D.C., has purchased a building near its existing campus in which it will be able to house its scholarly fellows who are pursuing studies in Byzantine, Pre-Columbian, and garden and landscape studies (see "Home of the Humanities," May-June 2008, page 48). Porter professor of Medieval Latin Jan Ziolkowski, who directs the center, says that the Wisconsin

Avenue building will be renovated and expanded; the roughly \$21-million project will, consistent with the center's mission, incorporate green design elements including vegetated walls, terraces, and surroundings. When finished, it will

provide 25 apartments, plus social and exhibition spaces for the fellows—far better than the amenities now offered. Ziolkowski hopes the project will help enhance the fellowship programs, as well, reflecting new scholarly opportunities in all three areas of Dumbarton Oaks' expertise, at a time when support for research in such humanistic fields is increasingly scarce.

## Library Overseer

Mary Lee Kennedy, formerly executive director of knowledge and library services at Harvard Business School (HBS), is now senior associate provost for the Harvard Library, to oversee the libraries' transition to more coordinated operations, as recommended by the University Libraries task force last year (see "Unifying Harvard's Libraries," [harvardmag.com/library-structure-2010](http://harvardmag.com/library-structure-2010)). She is responsible for strategy and policy; Harvard Library executive director Helen Shenton will report to her. As part of the new structure, the libraries are being grouped into five affinity groups, each of which will share services; see [harvardmag.com/library-structure-2011](http://harvardmag.com/library-structure-2011).

## On Other Campuses

Carnegie Mellon University trustee William S. Dietrich II, past president and chairman of Dietrich Industries, has pledged a \$265-million gift to the school (effective upon his death)—about one-quarter of the current endowment. The funds, according to President Jared L. Conlon, enable discretionary spending that can be directed however the university thinks most important. Dietrich, a Princeton alumnus, earned his Ph.D. from the University of Pittsburgh, where he chaired the board of trustees—to which he subsequently pledged \$125 million....The University of Chicago and that city's mayor, Rahm Emanuel, in August signed a memorandum of under-

standing that will expedite public infrastructure investments in and regulatory approvals for university development in its Hyde Park neighborhood and environs; the agreement covers the university's \$1.7-billion capital plan for the next five years....Yale began the new academic year by completing renovation of Ezra Stiles, the last of its dozen undergraduate residential houses to be refurbished during a 13-year-long effort that required an investment of a half-billion dollars, adjusted for inflation, according to the *Yale Daily News*. Separately, Yale agreed in September to host an Air Force ROTC on campus, joining the Naval ROTC unit that it had earlier announced would be based there. And it unveiled a \$25-million gift to fund a multidisciplinary Energy Sciences Institute; the laboratory, and several new professors, will explore clean technologies and solar-based fuels.

### Nota Bene

**MIDDLE EASTERN STUDIES.** The department of Near Eastern languages and civilizations ([www.nelc.fas.harvard.edu](http://www.nelc.fas.harvard.edu)) has unveiled a secondary field in modern Middle Eastern studies, embracing humanities and social sciences, for undergraduates concentrating in other disciplines. It requires a gateway course, NEC 100, "Ap-

proaches to Middle Eastern Studies," and four other half-courses. It had previously been available to graduate students.

**BGLTQ STAFF AND OFFICE.** The College, adopting recommendations from a working group last spring, has appointed Lisa Forest as the first director of bisexual, gay, lesbian, transgender, and questioning (BGLTQ) student life. Forest had been in a similar position at Bridgewater State University. Emily J. Miller, a member of the working group who is pursuing a master's at the Divinity School, will be graduate assistant for BGLTQ student life. Offices and a lounge space for the group are being readied in Boylston Hall for early next semester.

**MACARTHUR FELLOWS.** Three faculty members and two alumnae have been awarded \$500,000, unrestricted MacArthur Foundation fellowships: Beren professor of economics Roland Fryer Jr., best known for work on school performance and reform; associate professor of physics Markus Greiner, who works with ultracold atoms; and professor of psychology Matthew Nock (whose work on suicide and self-injury was profiled in "A Tragedy and a Mystery," January-February 2011, page 32); Jeanne Gang, M.Arch. '93, founder of Studio Gang Architects, an acclaimed firm in Chicago; and University of Michigan historian Tiya Miles '92, who has



**Markus Greiner**



**Tiya Miles**

explored Afro-Indian communities in Colonial America.

**MISCELLANY.** James H. Waldo, McKay professor of the practice of computer science, has been named Harvard's chief technology officer; he will lead the creation of technology standards and practice and be responsible for the architecture and implementation of University systems. He was for many years distinguished engineer at Sun Microsystems and also worked at Apollo Computer and VMWare....Harvard School of Public Health (HSPH) received a five-year, \$10-million grant from the National Cancer Institute to explore the relationship between obesity and cancer; Penn, University of California, San Diego, and Washington University are undertaking similar work as part of the \$45-million initiative. Professor of nutrition and epidemiology Frank Hu is principal investigator for the Harvard research (see "The Deadliest Sin," March-April 2004, page 36, on his work on exercise and health). Separately, HSPH received a \$12-million, five-year grant from the Bill & Melinda Gates Foundation to improve maternal health in developing countries; professor of the practice of public health Ana Langer will direct the initiative....David P. Davidson, interim leader of dining operations on campus since the departure of Ted Mayer last summer, has been named his successor as managing director of University dining services....Acclaimed cellist Yo-Yo Ma '76, D.Mus. '91, the principal guest performer at Harvard's 375th anniversary celebration on October 14, has been named a 2011 Kennedy Center honoree. The ceremony is scheduled for December 4. Actress Meryl Streep, Ar.D. '10, will also be honored.

**TATA ON TRACK.** Harvard Business School's new executive-education building, **Tata Hall**—designed by William Rawn Associates and named for Ratan Tata, who attended the Advanced Management Program in 1975, and whose companies and philanthropic trusts made a \$50-million naming gift in the fall of 2010—has been approved by the Boston Redevelopment Authority. Located on the northeast corner of campus, by McArthur Hall and Soldiers Field Road, the \$100-million facility will contain classrooms and residential space. Groundbreaking is planned in December, with occupancy in 2013.





troduction of the faculty-retirement program, 51 tenured professors have signed agreements to phase out of their positions within a four-year period; 42 retirements are planned during the next four years, up from 27 during the past four years. The proportion of women in the faculty ranks has held at 25 to 26 percent since 2008.

- In the College, the dean of undergraduate education has commissioned a two-year study of academic integrity.

- The Graduate School of Arts and Sciences, where underrepresented American minorities have persistently made up less than 5 percent of the doctoral population, appointed an assistant dean for diversity and minority affairs; new recruiting strategies resulted in stronger admissions

and a 20-percentage-point increase in the yield of admitted minority applicants. Separately, the graduate students' Dudley House celebrates its twentieth anniversary on October 27.

- Following the 2010 introduction of its biomechanical engineering concentration for undergraduates in 2010, the School of Engineering and Applied Sciences plans concentrations in electrical engineering and materials and mechanical engineering.

- Continuing incremental investments in arts practice and performance, the division of arts and humanities created Arts@29 Garden, a space for arts-making collaborations among faculty members, students, and visiting practitioners.

- The division of science, emphasizing

collaborative research in a more constrained funding environment, has proposed a center for neurophysics and a center for the study of extrasolar Earths as candidates for National Science Foundation support. Separately, the Museum of Comparative Zoology is beginning to move its huge collections to modern work and storage spaces in the Northwest Building, ultimately freeing museum areas for academic reuse.

- And the division of continuing education reported that distance learning accounted for 42 percent of total course enrollments, as the Extension School offered 171 online courses.

For a more detailed account of the annual report, see [harvardmag.com/fas-report-2011](http://harvardmag.com/fas-report-2011).

## THE UNDERGRADUATE

# Far Away

by KATHERINE XUE '13

IT TOOK 15 minutes to walk to town. I went across the sand, out the school gates to a path through the tall, feathery savanna grass (Are there snakes? I'd asked a student once, and he said yes. Then, with glee—Are you afraid?). Next, the dusty, unpaved road through the dry

riverbed; another student showed me how to dig and find water just below the surface. On the other side was the one road through the town of Omaruru in central Namibia, and next to the municipal building was the supermarket, Spar.

Under the warm yellow lights among

the well-stocked shelves I found, on one occasion, cupcake tins and a grapefruit fork, and the presence of these objects struck me as peculiar, and stayed with me.

Other oddities, carefully catalogued and considered:

I sat halfway in the aisle of a crowded combi as it sped down wide, open roads to the coast. Outside, termite mounds and stunted trees interrupted kilometers of vast savanna and the perpetually cloudless sky; inside, Rihanna's "Rude Boy" blasted over the speakers.

In class, my students jabbered in three or four tribal languages, but they'd seen Rubik's Cubes and watched detective shows. A few friended me on Facebook via their (school-banned) cell phones.

My most bizarre finding: nightly on television, after the national news, came *India—A Love Story*, a soap opera with a cult following, its Brazilian-and-Indian plotline, originally broadcast in Portuguese, dubbed to English for its Namibian run. On Saturday they replayed all the week's episodes.

All this made me wonder how big the world really is, and what it would take to be far away.

I WAS SUPPOSED to be far away. In winter of my sophomore year I started feeling

BOTH OF THE NEW Ledecky Fellows had summer experiences illuminating their Harvard identities and College values, so we, atypically, publish a column by each in this issue. ~The Editors

The author with some of her grade eight math students





**Xue helping her class prepare for exams, and standing in front of the mural that she and her students painted together, an elaborate map of Namibia**



hemmed in, driven into a narrowing spiral of specialization and professionalization. I'd always told myself I wanted to be a scientist, but science shrank into biology and then systems biology, and I began to realize that being a systems biologist, or in fact "being" anything, might mean I'd be stuck there, caterpillar to unwilling butterfly. So when I felt the looming halfway point of college, when I realized I might be in lab for all my college summers and unfathomable years beyond, I sprinted cold-footed and unceremoniously in the opposite direction.

Namibia seemed far enough. I wanted to be out of the shadow of Harvard, because Harvard confused me. I felt the lingo on my tongue, the uneasy restlessness and anxiety, the feeling of always trying to race ahead, destination irrelevant. I wasn't sure anymore what was me and what was Harvard, and I hoped that by flinging myself to a faraway place I would start to find things out, what's left when familiarity and habit are stripped away, what is essential.

So when I heard about WorldTeach from a friend, I went for it. A summer teaching in Namibia—far enough away, a comfortable span of time. I'd never traveled abroad alone, but Namibia promised novelty and adventure, and I relished the idea of a challenge. I had no formal classroom experience, but teaching felt oddly compelling, because I wanted to return to what made me fall in love with science.

In the days before leaving, I played a game with myself, trying to imagine what I'd find. But I couldn't picture anything—little things, like the style of buildings or how people would dress; big things, like

the landscape and the size of a town of four thousand. I wasn't sure what I'd eat, or how well Namibians would speak English. I didn't know what subjects I'd be teaching, couldn't fathom how I would spend my day. And I found the blankness, the not-knowing, to be exhilarating.

And sometimes terrifying. I got shots and took malaria pills, registered with the embassy and grimly copied down emergency information, started to feel a gaping sense of distance. My parents thought I was crazy to go. Just before leaving, I started to agree.

MY FIRST DAY TEACHING, I played substitute. First period, I found out when they walked in, was grade eight agriculture, currently studying cash crops—cowpea harvest practices, soil conditions for wheat. I spotted a mercifully familiar poster on the classroom wall and invented a lesson plan on the spot. The cell-parts dance I'd learned in seventh grade garnered international approval.

Days and weeks later, I found myself teaching my grade eight math classes that King Henry Died By Drinking Chocolate Milk—grade nine physical sciences got an earful about metric prefixes, too, after I started grading their tests. When we learned about states of matter, I brought in oobleck—a suspension of cornstarch in water—the non-Newtonian fluid of choice back in elementary school. I reminded my math classes endlessly that Cartesian coordinates were over, then up, over, then up, walking *across* to the ladder and *then* climbing up, hearing echoes of my fifth-grade teacher all the while. Memories of classroom *Jeopardy* games and the arithmetic order of operations—Please Excuse My Dear Aunt Sally—surfaced from the

deep. Just when I'd thought I was taking on a new role, I became a chimera of every teacher I'd ever had.

And so I started to feel the weight of other places, and because of their nearness I wondered if I was truly in Africa. I was still in the grip of a Cantabrigian busyness, filling my free time with school websites and mural designs, excuses to never be still. When I walked through town, I heard calls of "China," and the first question my students asked was where I was really from.

I found I'd brought more than I knew. Packed alongside my clothes and books was a whole self neatly transplanted from America, a person with habits and expectations, familiar routines and stories and patterns of thought. For all the mystique I'd attached to the idea of *place*, to the power of difference and novelty and strangeness to provide a blank slate and a new start, it was I who'd never left.

IN AUGUST, when I went home, I kept waking up early. One morning I went out walking, and I couldn't stop noticing the hot, humid air and fluffy white clouds, the tiny, bright flowers by the curbs and the lush green of Tennessee summer, and for the first time I was hit with the full realization of its beauty. Then I knew I'd been away.

THE THINGS I realized, which in retrospect seem obvious:

Teaching is hard and exhausting. Teaching *well* even more so.

The world is big. Before this summer, Namibia was at best a vague concept in my mind, but it was my students' entire reality. Namibia has far more detail and complexity than I could've imagined, and when I left, I still felt like I knew nothing. The world is big, and in comparison, the everyday stresses of papers and problem sets and extracurriculars seem very, very small.

The feelings that drove me to flee Cambridge are still there. My uncertainty about the future didn't go away because I tried to go away. But nothing threatens to overwhelm me. I took a break, and it was okay. Africa was different from what I'd expected, and that was okay. I felt amazing after some classes and felt like crying after others, got sick and missed a week of school, climbed a mountain and sprained my ankle at the top, and through all of that



I was okay. Things will stay okay.

I LEFT CAMBRIDGE but I came back, and in between I learned about all the things I carried with me while I was gone—my past experiences, my pattern of thoughts, everything that has influenced me indirectly and unconsciously—so that some-

times I hardly knew who or where I was.

And in the end I took this, the fact that I will always carry things with me, to mean that even though I'll never have a pure self free of influence and circumstance, even though I'll never isolate some essential me, there's something I can hold onto in the face of everything, everything happening

around me, everything that directly or indirectly tries to affect me; some small space to scratch out and keep free. And somehow I found that to be enough. ▢

*Berta Greenwald Ledecky Undergraduate Fellow Katherine Xue '13 thinks it's time to climb another mountain.*

# At Camp, a Community

by ISABEL W. RUANE '14



**The 2011 Onaway counselors at the top of Mount Cardigan (the author is fourth from left); campers outside one of the two-person cabins they call home**

AS OUR CAR sped away from Logan Airport, into Boston and out along the Charles, my eyes widened as the cupolas of Harvard came into view. “Do I really go there?” I mused aloud. At that moment, I couldn’t have felt farther away from being a Harvard student: an independent college kid living in a city, studying and sailing, hanging out with other kids but operating on my own terms, only as connected to others as I chose to be. I was in a different mode altogether.

That day, my mum and I were just passing through Boston, dropping off one of my fellow camp counselors at the airport before heading home for the final week of summer. Soon I would be returning to Harvard for fall semester, but for now, I could reflect from afar. Venturing away from the quiet lakes region of New Hampshire for the first time in two months, everything ordinary struck me as foreign: highways, billboards, tall buildings, masses of people. But these outward differences seemed trivial as I began contrasting the atmosphere of my small summer camp with that of the

real world—and, more pressingly, with my memory of freshman year at Harvard.

I’VE SPENT nearly every summer of the past 10 years at Camp Onaway. From a gawky, quiet 10-year-old to a grown-up, goofy first-year counselor, Onaway has been my haven. Camp is fun, silly, care-free; active, outdoorsy, and nature-loving; above all, traditional. Think *The Parent Trap*, but more Hayley Mills than Lindsay Lohan. Each summer, 120 campers and counselors, aged 10 to 25, join our motherly director, Mrs. Conolly, for seven weeks of swimming, sailing, hiking, and simple living up in the woods. Uniform checked or striped shirts are tucked in at all times, cabins are inspected daily, songs are sung at every opportunity, and we gather for a nondenominational chapel service in our lakeside, birch-lined grove every Sunday evening. To most, we Onaway girls sound crazy! But that wouldn’t be giving camp a chance.

Our common camp refrain is: “You can’t get Onaway unless you spend a summer there.” It’s hard to understand that even

though camp requires you to change yourself to fit its mold, that change is, first, more about character than looks, and, second, inevitably positive. The Onaway girls arrive in June looking like standard twenty-first-century kids—individuals, of course, but all bearing the same objects of modern America. Once arrived, though, we relinquish cell phones, tuck away street clothes, say goodbye to the Internet, and, most importantly, leave behind the petty competitions over looks, possessions, and status that plague our real-world lives. In the resulting void we plant friendship, community, and frank discussion of honor, values, and character. Rejecting the trappings of modern life, at least for the summer, allows us to embrace a different ethos. And though this camp culture shows itself in awkward uniforms, ridiculous songs, and seemingly rigid rules, these traditions no more embody camp than red-brick edifices and leather book bindings embody Harvard. The traditions bring Onaway campers onto one plane so



**Ruane (top right) in her camper days; a mural designed by 2011 campers to celebrate Onaway's centennial summer by highlighting its many traditions**



that we can develop the intangible qualities of a strong community.

Camp is community; community is camp. Onaway takes girls from different backgrounds, with different attitudes, and assimilates them into a family in which trust, honor, and care for others are paramount. Though it may take years to understand the power of this type of community, once it clicks, you never forget it: you are never content to sit back, to do less than you can, to lie or cheat or shirk. And we *love* camp for this: in our diverse, doctrine-shy world, one hardly ever encounters a community in which everyone agrees, implicitly, about the right way to behave. Nowhere else I know has values that are so clearly defined, nowhere is there such agreement about the proper manner of treating other people. At camp we learn to sail, swim and knit, to build a birdhouse and paddle a canoe, but all the while we are learning how to *be*, and that's what's most important.

Returning from camp is always a shock. Though we are eager to reacquaint ourselves with electronics, indoor plumbing, and boys, we regain these missing pieces of normal life at a deep cost. We may have the modern world back, but we've left behind our Onaway community. I sensed this trade-off most acutely as I passed Harvard only hours after leaving New Hampshire. I

was excited to be returning soon to Cambridge—to my friends, my classes, my sailing team, and to life in the city—but I was more conscious of my sadness in leaving my summer community.

At camp, I'm now one of the grown-ups: the girls look up to "Miss Is" to guide them. At school, I'm still a kid: professors and advisers give assignments and directions to me as their student. At camp, I'm expected to help out, to work with others, to make sure life runs smoothly for everyone around me. At school, I'm expected to strive and achieve independently, to prioritize my success in some abstract quest to serve the world in the future. At camp, I show my worth through kind words, good advice, and uncomplaining aid. At school, I show my worth through well-tuned writing, well-reasoned exams, and thoughtful contributions to discussions. In short, both Harvard and Onaway have high expectations, but their focuses are different.

So *WHY*, I asked myself, did returning to college make me feel as though I was regressing? It just didn't seem right that I would soon be more focused on earning myself a good grade than on ensuring that my campers behaved kindly to each other. It seemed wrong that tutors might be scolding me for making too much noise or leaving inconsiderate messes, instead of my being responsible for teaching campers to respect rest hour and keep their cabins neat. All summer, camp reminded me to be considerate, kind, and generous, and I, in turn, reminded my campers to do so. Now I was returning to a place where these ideals were *never* talked about. Finally, I realized why my most recent drive through Cambridge felt so melancholy...

Never in my first two semesters at Harvard had I ever heard someone talking about *values*. Maybe individuals were thinking about right and wrong, honor and duty, but they never brought those ideas up. I never sensed that the members of Harvard's community shared a common idea about how to behave kindly and courteously to one another. And

the thing is—without this sort of discussion, a community forgets simple rules of behavior. When no one talks about responsibility, people leave trash in the hall for maintenance staff to deal with. When no one talks about consideration, people push through doors without looking to see if anyone's following. When no one talks about generosity, people forget that it is more important to help a friend than to finish a problem set. I'm not excusing myself from this sort of behavior (no one's perfect—certainly not I), but I know these breaches of consideration happen here, and I feel certain that, were values talked about, we would all behave better.

Apparently, others at Harvard have been thinking along the same lines. I returned to campus in September to news of a new Freshman Pledge, which all the members of the class of 2015 were asked to sign. The pledge reminds students that, at graduation, they will be expected to be ready to "advance knowledge, to promote understanding, and to serve society." It further asks that students agree to "act with integrity, respect, and industry, and to sustain a community characterized by inclusiveness and civility" throughout their years at Harvard. Surprisingly—at least to me—this initiative drew quite a bit of ire, particularly from members of the community who saw the public nature of the pledge (the signed pledges were to be posted in freshmen entryways) as infringing on students' freedom. (For more coverage, see [harvardmag.com/convocation-2015](http://harvardmag.com/convocation-2015).) But arguments about freedom and the idea of a public display aside, it seems an overwhelmingly positive move to re-open the discussion of values at Harvard.

I've come back from camp to college believing firmly in the power of a community that embraces virtue even as its members have fun and work toward common *and* individual goals. I hope the instigation of the Freshman Pledge encourages more voices to speak out about the importance of collaboration, respect, kindness, and humility here. If they do, we will find the Harvard community rallying around these values. Imagine if, instead of seeing ourselves as the *smartest* kids of America, we humbled ourselves as the *luckiest*; imagine if, instead of dreaming of personal success, we eagerly anticipated using our talents to serve the world; imagine if we went around



saying, “How can I help you?” and “What needs to be done around here?” instead of “These are my personal goals,” and “This is what I have to do.”

Our school is full of kind, generous, unselfish individuals. But what if we could make the spirit of these individuals uni-

versal? If we talk about how we want to behave, sooner or later, the community will embody that behavior. We should make the common image of a Harvard student not a smart, entitled self-promoter but rather a generous, humble leader. We are capable of creating community where

this standard is the norm. I know it. I’ve watched my Onaway girls figure it out, and I think my Harvard classmates can, too. ▽

*Berta Greenwald Ledecy Undergraduate Fellow  
Isabel Ruane ’14 loves Harvard almost as much as she loves camp.*

## SPORTS

# Hanging Tough

*A night of self-discovery at the Stadium*

LIKE HARVARD STADIUM’S Field-Turf surface, this year’s football team seems weatherproof. Unfazed by a rainstorm that intensified as the game progressed, the gridders gave Brown a 24-7 dunking in the teams’ Ivy League opener, a Friday-night game at the Stadium on September 23. Coach Tim Murphy, whose squads have defeated Brown in 10 of the last 12 encounters, saw this one as a moment of self-discovery. “I think tonight we developed an identity,” he said after the game. “We’re a tough, physical team.”

Tough, physical, and resourceful. With quarterback Collier Winters ’10 (’12) nursing a pulled hamstring, junior Colton Chapple got the start against Brown. He directed the offense with authority and passed adroitly, completing 15 of 26 throws for a career-high 207 yards and two touchdowns. Tailback Treavor Scales ’13 ran with bruising power, scoring the game’s first touchdown and finishing with 129 yards rushing. Despite the rain, the offensive unit and kicking teams finished the game without fumbling. On the other side of the ball, the defensive unit was implacable, forcing five turnovers and hammering the Bears’ former all-Ivy quarterback, Kyle Newhall-Caballero.

As a third-stringer a year ago, Chapple appeared in nine games and started three of them, but completed only 47 percent of his passes. It’s now evident that he has mastered Harvard’s complex offense, positioning him as the heir apparent to Winters, a fifth-year senior who is scheduled to graduate in January.

Chapple was best against Brown when the weather was worst. Midway through the final quarter, with rain falling in sheets, he uncorked a 56-yard scoring pass to receiver Adam Chrissis ’12, giving Harvard a commanding 21-7 lead.

Chapple had set up the Crimson’s first touchdown in the opening quarter, taking the snap on a fake field goal attempt at the Brown 6-yard line and running for a first down at the one. Scales scored on the next play. On Harvard’s following series, a 25-yard run by Scales put the team in Bruin territory once again; Chapple then lofted a 20-yard pass to tight end Cameron Brate ’14, who made a spectacular one-handed catch and toppled into the end zone.

Harvard’s 14-0 lead was imperiled when Brown advanced to the Harvard 9-yard line later in the period, but safety Dan Minamide ’12 ended the threat with an interception. The Bears’ only score came in the third quarter, on a 30-yard pass from Newhall-Caballero to flanker Tellef Lundevall. Newhall, who missed most of last season with a broken wrist, threw 52 passes and completed 28 for

269 yards. He was intercepted three times, twice in the final quarter.

Brown came within a yard of tying the game as the fourth period opened, but freshman defensive end Zach Hodges knocked the ball loose on a handoff to Bear back Mark Kachmer, and linebacker Alex Norman ’13 recovered.

Linebacker Josh Boyd ’13 led the defense with 11 tackles and a forced fumble, while fellow linebacker and captain Alex Gedeon ’12 had eight tackles.

A week earlier, in the team’s season-opening game at Worcester’s Fitton Field, defensive letdowns had allowed Holy Cross to score 27 consecutive points after falling behind, 14-3, at the start of the second quarter. But it was an offensive letdown that short-circuited a Crimson comeback in what ended as a 30-22 loss. Early in the final quarter, with Holy Cross leading 23-14, Harvard drove to the hosts’ 9-yard line, where Winters attempted a goal-line pass to the team’s ranking receiver, Chris Lordinich ’11 (’12). Cornerback Andrew Zitnik, the Crusaders’ rangiest defender, snared the



**Backup quarterback Colton Chapple ably directed the Crimson offense in a 24-7 victory over Brown, completing 15 passes for 207 yards and two touchdowns in a rainstorm.**

ball near the sideline and raced 97 yards for a game-changing touchdown.

WILL THIS BE SEEN as the “Year of the Quarterback in the Ivy League,” as a *New York Times* headline proclaimed last August? It noted that Pennsylvania, Columbia, and Brown would each have former all-Ivy quarterbacks at the helm; that Yale, Princeton, Dartmouth, and Harvard would field battle-tested seniors; and that Harvard’s Winters had outpassed a clutch of elite college quarterbacks in a summer-camp competition run by Archie, Peyton, and Eli Manning.

Coach Murphy was quoted as saying that the season might be “the most competitive in a long time. I don’t think you can look at a single team in our league that doesn’t have an all-Ivy-caliber quarterback back. That’s something I’ve never seen in my 18 years in the league.”

Yet only Yale, with former Nebraska backup Patrick Witt calling signals, was able to post a W in both of its first two outings. On the season’s first weekend, Penn, Columbia, Princeton, and Harvard lost to Patriot League opponents. A week later, Cornell lost to Yale, while Penn lost to Villanova, Columbia lost to Albany, Dartmouth lost to Sacred Heart, and Princeton lost—for the first time ever—to Bucknell. Not an auspicious prologue to the Ivy League wars.

In recent seasons, Penn and Harvard have customarily been the Ivy front-runners, with Brown and Yale a step or two behind and the four also-rans beating up on one another in the league’s second division. Penn, which normally fields the Ivies’ best defense, uncharacteristically yielded 67 points in its first two games, but the Quakers, Ivy champions in 2009 and 2010, still seemed likely to right themselves. Patrick Witt, on pace to break all Yale’s passing records, could keep the Blue in contention for its first Ivy title since the Eli shared it with Princeton in 2006. But if the injury-prone Collier Winters is good to go—and maybe even if he isn’t—Harvard should have something to say about that.

The most trenchant comment in the *Times* text came from Columbia coach Norries Wilson: “A guy slips in the shower and you’re looking at the second-team guy. I found last year that probably the most important person on the team is the backup quarterback.”

**TIDBITS:** After the Brown win, backup Colton Chapple said of starter Winters: “I hurt for Collier. No one loves to play the game of football like he does. You can see the intensity—that’s why he gets hurt all the time, he plays so hard. [He’s] a great leader. You can’t replace Collier.”...Winters missed the 2008 season because of a torn leg muscle, and sustained a similar injury in preseason practice a year ago. He played the last five games of the season while his leg was still mending, leading all Ivy quarterbacks with a 61 percent pass-completion rate.

New wrinkle: Harvard’s no-huddle offense now features a two-tight-end set, teaming six-foot-five sophomore Cameron Brate and the versatile Kyle Juszczyk ’13. “It’s a quarterback’s dream to have those two [tight ends],” said Chapple after the Brown game. “They’re big, they’re fast, they’ve got great hands.”...Brate, who did not see varsity action last year, caught 11 passes in the team’s first three games.

New faces: Freshman Seitu Smith III was a special-teams force in the Holy Cross opener, returning four kicks for a total of 124 yards, with a long of 42. Other promising freshmen include defensive lineman Zach Hodges, speedy tailback Zach Boden, and Will Whitman, a 6-6, 260-pound offensive tackle....Hodges, a fi-

ery competitor who also plays on the kick-off team, was credited with three tackles, three quarterback hurries, and a pass breakup against Brown.

Toughing it out: A crowd of 18,565 braved the Brown game deluge....Crimson teams are now 5-0 in night games at Harvard Stadium.

Resilience: Since 2007, Harvard is 9-0 in games following a loss.

Lagniappe: A 31-yard field goal by kicking specialist David Mothander ’14 gave Harvard its final points in the Brown game.

Leopards skinned: Tough defense enabled Harvard to shut down Lafayette, 31-3, in the season’s third game, but a new reserve quarterback, Michael Pruneau ’14, had to be mobilized when Chapple took a hard hit and was sidelined at halftime by stiffness in his back. Harvard scored its 31 points on a field goal by Mothander, a short run by Scales, a short pass from Chapple to Alex Sarkisian ’12, a short pass from Pruneau to Cameron Brate, and a 43-yard breakaway by Zach Boden, of whom more will likely be heard this season and in seasons to come. ~“CLEAT”



Visit [harvardmag.com/fitzpatrick-2011](http://harvardmag.com/fitzpatrick-2011) to read about Buffalo Bills quarterback Ryan Fitzpatrick ’05, who is having a banner year.

## Court Sparks

*Two basketball co-captains with a nose for the hoop*

### Brogan Berry

**THE POINT GUARD**—the #1 position—is the quarterback of a basketball team. She’s the floor leader, starting the attack and shouting defensive signals. Much of the team’s success or failure hinges on her performance—and luckily, the Harvard women’s squad is blessed with a quick dynamo of a point guard in Brogan Berry ’12, a woman with a high “court IQ” who knows how to make things happen. “She’s a great facilitator,” says Keith Wright ’12, men’s Ivy League Player of the Year (see opposite). “Brogan is very unselfish, always looking for everyone else. She’s one of those players, like Brandyn [Curry ’13, the men’s starting point guard], who can get wherever she wants to on the court.”

Dishing the ball off is atop Berry’s priority list: “I love passing and getting team-

mates easy shots,” she says. “My main goal is to get as many assists and as few turnovers as possible. That’s the first stat I look at after a game: the assist/turnover ratio.” She must often have smiled last year in the locker room, as her ratio of 2.25 led the Ivy League and was tenth in the nation. She also led the league in assists per game with 4.6. Berry talks less about her scoring, but in fact she topped the Crimson and was second in the Ivy League, averaging 13.9 points per game (with a .453 field-goal percentage in the Ivies, good for fifth in the league). During a game, she might mentally run a little offense/defense tally with her opponent: “My girl is not going to score more than me.”

The five-foot, eight-inch Berry (“In college, you spend less time in the paint, where there are a lot more trees [tall players]”) has played “thousands of games





**Brogan Berry**

with different players and coaches” since she took up the sport in third grade. She grew up the youngest of four children—her sister and two brothers were all athletes—in Beavercreek, Ohio. Her father, Rob Berry, was a former semipro baseball player who coached the basketball team at Carroll High School, where the squad made regional finals and Brogan collected MVP awards.

“Nobody liked playing the point guard position,” she recalls, “because it’s a lot of work starting the offense—a lot of responsibility. So I got to play a lot.” Furthermore, her dad’s close involvement taught Berry “to see basketball from a coach’s perspective, so I know the game very well. My brain never stops during play—even on the bench, I’m thinking.”

She’ll be thinking plenty of defense this season, along with her co-captain, Lindsay Louie ’12. Princeton has won the Ivies the last two years, with Harvard coming second both times. Last year the Tigers posted a 13-1 record to the Crimson’s 10-4; while Harvard led the Ivies in offense at 69.2 points per game, about one more than Princeton, the Crimson was seventh in defense, allowing 61.8 points per game, while the Tigers held opponents to a 46.4-point average.

Berry, who aspires to play professionally in Europe after college, has been prepping assiduously in the off-season for that first

tipoff. She enjoys friendly pickup games, for example, with football and baseball players. “Playing with guys is tremendous practice,” she explains. “They are faster and more athletic, and they make you work harder.” She smiles. “And it adds one more aspect to the satisfaction if you can beat the guys.”

## Keith Wright

LAST YEAR WAS HISTORIC: the Harvard men secured their first Ivy League basketball championship, tying Princeton for the conference’s best record at 12-2 by beating both the Tigers and Penn on the final weekend. It was a special year, too, for co-captain and power forward (#4 position) Keith Wright ’12, who was chosen Ivy League Player of the Year. “Keith put in a tremendous amount of work, from his conditioning to his skills, and he’s being rewarded for it,” says the women’s starting point guard, Brogan Berry ’12 (see left). “He is very quick for a big guy, and very powerful. To be chosen Ivy Player of the Year as a junior is a phenomenal achievement.”

Even with all this success, Wright remains hungry. “There was so much excitement on campus—students, professors, dining-hall staff,” he says, recollecting the past season. “Students were upset that they couldn’t get tickets to games. Last year was great, but it still leaves a bad taste—losing by one to Princeton at Yale [in a postseason playoff game to decide the Ivies’ entry to the NCAA tournament]. We feel we have so much more to accomplish.”

There is pressure to do so, because analysts have already declared that this is Harvard’s year to win it all outright. The Crimson graduated no one from last year’s varsity, and Wright returns to co-captain the team again with Oliver McNally ’12. Coach Tommy Amaker has brought some promising freshmen aboard. Yet as Wright declares, “The only people we can control are ourselves. We have to take care of what we need to do.”

The six-foot, eight-inch Wright did plenty on his way to an AP Honorable Mention All-America selection last year. He led Harvard in scoring (14.8 points per game) and rebounding (8.3 per game)—third and second in the Ivies, respectively. His 54 blocked shots were the second-highest total in Crimson history (“I have

long arms, so I could always block shots”). He was fifteenth in the nation with a field goal percentage of .584; though he has an outside shot, he does most of his damage down low.

Naturally enough, opponents double-team Wright: for him, one-on-one basketball is largely a thing of the past. The crowds he draws, however, obviously have not kept him from scoring, and what is more, “I get a lot of joy out of passing the ball out of a double-team. It’s a great pleasure to kick the ball out to somebody like Christian [Webster],” the junior guard who was second to Wright with a 13.0 points per game average last year.

Wright grew up in San Francisco and Virginia in a single-parent family after his mother and father divorced when he was in second grade. His mother, Sabrena Tabron, played basketball in high school and at San Francisco State College, and Wright wears her number, 44. As a young kid, he was “pretty much a nerd—I was mostly into reading and music,” he says. But the basketball coach at Princess Anne High School in Virginia Beach liked his size, and in his sophomore year pulled him out of class and into the gym. The next year Wright was a varsity starter, doing everything, including bringing the ball up the court and “shooting threes—something the fans at Harvard don’t see me do, ever,” he says, grinning. He transferred to Norfolk



**Keith Wright**

Collegiate and was player of the year in its independent-schools conference.

At Harvard, mononucleosis freshman year and an Achilles tendon injury the next season slowed Wright's start, but he did get to enjoy the memorable senior campaign of teammate Jeremy Lin '10 (see "Hoops Houdini," March-April 2009, page 54), whom Wright describes as "a spectacular player and a spectacular human being. Jeremy has a phenomenal work ethic, something I try to mirror." (Lin currently

plays for the NBA's Golden State Warriors.) That season Harvard made waves by posting its first win over a nationally ranked opponent, an 82-70 thrashing of Boston College. "Winning that game solidified us as a legitimate basketball team," Wright says.

After college, he would love to play professional ball; a psychology concentrator, he's also interested in sports psychology and relationship counseling. "I don't know what vibe I give off, but people want to

tell me about their relationships with their girlfriends or boyfriends," he says, smiling. He has also joined his friend Devin Saxon '12 of the football team to record some rap numbers that hoops teammate Andrew Van Nest '12 has featured on his music blog, Nesty's Eggs. A big Harry Potter fan, Wright was sad to see the Potter movie series come to an end this past summer. It's not surprising, though, that he could identify with Harry: on the court, he's something of a wizard himself. ~CRAIG LAMBERT

## ALUMNI

# "More As People Than Dating Objects"

*The class of 1971 reflects on the coeducational living experiment.*

"VIRGINITY and parietals were all falling apart," reports Helen Snively '71, "and no sweet dean from Fay House was going to prevent it." Such was the mood in the spring of 1970, when a group of Harvard and Radcliffe students volunteered for a radical (at least for Harvard College) social experiment: coeducational living—the product of tumultuous cultural and political change that was quickly altering the lives of undergraduates, and the core nature of the College.

Snively took part in that experiment and attended her fortieth reunion this September, where a lively, well-attended symposium was dedicated to "Coed Housing and the Gender Revolution." Freshman year was still like the 1950s, said Carol Sternhell '71, a symposium panelist, along with classmates (and fellow *Harvard Crimson* writers and edi-

tors) Tom Southwick and Deborah Johnson. "My memory was that boys were only allowed up in the rooms on Sundays—with the door open and three feet on the floor at all times," she added. "We had curfews: we had to sign out in the evenings...if we got in late we were in big trouble. Men still had to wear jackets and ties to dinner in the Freshman Union." By sophomore year, the class had entered the 1970s. Women were

living (unofficially) with their boyfriends, and by junior year, some of the dorms were coed. "All of this was in the wider context of the anti-war movement and then the women's movement," she explained. The cultural shifts were shockingly sudden: "a change of values and morality, of politics, of possibilities, and of our most fundamental beliefs about ourselves. Overnight!"



Top from left: Helen Snively, Tom Southwick, Carol Sternhell, and Deborah Johnson

THAT SPRING about 150 men from Adams, Lowell, and Winthrop Houses traded places with 150 women from South, East, and North Houses. The experiment was continued and expanded through the following academic year, and by 1972, co-residency had become an official option for undergraduates.

It was hardly the first move toward full coeducation at the Colleges. Talks about a Harvard-Radcliffe merger were under way among University leaders; males and females had been sharing classes for two decades and participating in most extracurricular activities together, including work on the *Crimson*. (Women first became "Radcliffe correspondents" in 1957, but were not allowed to vote or hold office until two years later;



Sternhell was only the paper's second female managing editor.) But living quarters were still segregated, as were dining halls, where "dates" could be signed in only by personal invitation. Other practical barriers also kept women at bay, as Marjorie Press Lindblom '71 recalls: "There were only about three ladies' rooms in The Yard!"

As a member of the Harvard-Radcliffe Policy Committee (HRPC), Lindblom was instrumental in pushing through the student-supported exchange by formally recommending it to College administrators in 1969. "The mission was about coeducation and the integration of women into Harvard University life," she explains. "It just seemed silly to us that girls were being separated from things."

About 80 percent of 'Cliffies and two-thirds of Harvard students were in favor of an exchange, according to the committee's report, as reprinted in the *Crimson*. "The present system of limited coeducational contacts is so detrimental in so many ways that it makes a change in the pattern and style of coeducational life at Harvard mandatory," the document continued. "Since, under Harvard's residential structure, the Houses are the center of social life, this change must take place within the House system." Furthermore, the experiment should lead to permanent coed living and dining because that would "provide informal contacts between men and women; it would enable men and women to view each other more as people than dating objects; it would have numerous educational advantages."

Masters at Adams and South Houses and elsewhere discussed the proposal, believing it would aid the nascent merger between Harvard and Radcliffe, and ultimately brokered it. Starch professor of psychology emeritus Jerome Kagan chaired the faculty subcommittee on the coeducational aspects of the merger. "There was not a lot of trepidation about this because the mores around sex had changed so much by 1969," he recalls. "Right around that time, students around the country were living in communal houses and having sexual partners." Given that sister universities with comparable student populations already allowed coeducational living, "The mood among the faculty was: it's time." He acknowledges that "among some students, there was a more macho attitude—'What do we want

women here for? We can always get women.' But that was the minority view."

In general, people were more concerned about the possibility of coed bathrooms than about sharing Houses: "People seemed more embarrassed about being seen in their bathrobes," Kagan remembers, adding, "If a boy or girl didn't want that, we thought they were entitled to that." Snively, who first exchanged to Winthrop House, where athletes tended to live, agrees. "The bathrooms were more taboo because there it wasn't a choice about whether you wanted to be intimate or not," she says. "In the bedroom, you had that choice."

THE COED LIVING EXPERIMENT may now seem like a minor, even quaint, event. Most current Harvard undergraduates live in "gender-neutral housing" and share not only dorms and Houses but sometimes rooms and suites. Allowances are also made for self-identified transgender students who request specific housing needs.

Younger generations find it hard to imagine how separated everything was not that long ago, notes Leverett professor of mathematics Benedict H. Gross '71, a former dean of Harvard College. At the time of the exchange, for example, the ratio of men to women was four to one, so Radcliffe students were widely outnumbered wherever they left the Quad. Gross recalls how, when a boy invited a girl to dinner at the all-male Freshman Union (now the Barker Center), the couple entered a cavernous room where hundreds of young men were eating. If they thought the woman was attractive they would clink their glasses with their forks. "We all thought it was hilarious at the time," Gross says. "It took me a while to realize that the purpose of the exercise was to make women feel as uncomfortable as possible. The Union was our male preserve."

The residential exchange represented a huge step toward gender equity. "The big difference was not suddenly having men around where you lived," says Sternhell, who moved from South House to Adams House with Johnson, her former roommate. "The big difference was that for the first time we were living the Harvard experience. It was pretty shocking how much better the conditions were for men." Sternhell moved from a cramped single with a communal, hallway bathroom to a two-bedroom suite with a separate living

room and private bath. "We were also so much closer now to everything a student might be doing—from our classes to work on the *Crimson*," she adds. "In the exchange, we moved from being on the periphery to the center."

Classmate and fellow panelist Tom Southwick, who relocated from Adams to South House, told the audience that the exchange opened his eyes to the subtle forms of discrimination against women. This realization hit "the first time I had to walk back to Radcliffe from the *Crimson* at 4 A.M. and it was four below and I had forgotten my gloves," he says. "I thought, 'Hey, this isn't fair!'" But the exchange did not play a central role in his undergraduate experience (in fact, he moved back to Harvard for senior year). He sees it as one small aspect of the changes and general "turmoil in our time at college. The University was twice shut down for final exams, there was the University Hall bust, a lot of ferment over the war, civil rights, and ROTC, and then women's rights," he summarizes. "Compared to having the police come into the Yard and start beating people with night sticks—and I was there for that—the idea of coming to live at Radcliffe was minor." For him, the rewarding working relationships formed with women at the *Crimson* did *much* more to engender the respect, knowledge, and understanding and bring the sexes together than any housing arrangement could.

In daily life, Southwick found the structure of the Quad dorms a hindrance to socializing and community building. The geographic isolation was also fairly demoralizing. (In a *Crimson* account at the time, he wrote: "You could die in your room at Radcliffe and, if the door were closed, no one would know about it until the stench from your decaying body became so unbearable that it offended people out in the hallway.")

"Radcliffe wasn't fun," he says now. "A lot of women weren't there much. They would be in the Square or at classes or with their boyfriends. Weekends were particularly dismal." Parties had to be organized and vetted in advance if a common room was required, and the small singles offered little space for impromptu gatherings—except on the bed. He and his friends often regretted the move: "'Why did we do this? We have to walk all the way back and these dorms are terrible.'

We all missed the opulence and convenience of living at Harvard.”

Benedict Gross did not. He moved to the Quad from Adams House in search “of a little peace and quiet.” He enjoyed the longer walks to classes, the fact that there were fewer people, and the smaller scale of the dorms. “There was a nice culture—if you didn’t go out on Saturday night, they served milk and cookies,” he adds. Initial fears about “students having nonstop sex day and night didn’t happen,” he reports. “Coed living did demystify the opposite gender for us, though. We got to meet and talk with women in the dining hall and that had been unheard of.”

“It put relationships in a whole different category,” agrees Lance Lindblom ’72. “Before, even though you might work on some projects with women, most of the time they were targets. People could work together *and* live together and be friends. It was kind of revolutionary at the time.”

Lindblom in fact met his wife of 40 years, Marjorie Press Lindblom, while

working together on the Harvard-Radcliffe Policy Committee. But they did not start dating until much later and never shared proximate living space as undergraduates. If they had, Marjorie, who did her exchange at Lowell House, is not sure he would have liked her in the morning in the dining hall. “Some of the men didn’t want women there at all,” she recalls, “but most were happy to have us and wanted to talk and be friendly, including at breakfast.” She, however, is “not that friendly at breakfast,” and sat in a far corner with her back turned, reading her newspaper while she ate. “Invariably some nice young man with a smile would come over and set his tray down and try to be nice to me,” she says now, with a laugh. “I feel badly that I often greeted them with grunts and groans.”

Negative experiences did occur. *The Women’s Guide to Harvard* includes an excerpt from remarks made by Katharine Park ’72 during a 2000 conference on “History and Memory: Gender at Harvard and

Radcliffe.” Park, now Zemurray Radcliffe professor of the history of science, moved from North House to Winthrop House, where, she reported, “the hostility was particularly palpable in my entry, where our mates used to urinate against our door.” Coeducational living the following year, back at North House, went a lot better, she reported, perhaps because it consisted of a cohort of men who had voluntarily elected to live with women, “who actually liked women—who enjoyed our company, appreciated our intelligence, and found us interesting and funny (which we were).”

Snively also exchanged at Winthrop House and found she “could not get past the exterior of the jocks.” But her exchange at Quincy House the following year was a stellar experience—largely because of a coed group of about a dozen people, various members of which had dinner

together every night. “We talked about politics or biology or dating. It was a mixed group with some very brilliant people,” she says. “I became comfortable with them and finally felt articulate. Being around men in that way somehow made me feel more confident and like I could take on more challenges....Being with that group was the first time I really felt I had a coed circle of friends.”

For better or worse, co-residency soon became the norm. Jerome Kagan still supports it, although he now wonders about the impact of that more constant intimacy, of the “loss of mystery” between the genders. “Romantic relationships are gratifying when each gets from the other what they do not have. It used to be that women got power from men and men got innocence and grace from women,” he says, but “we’ve destroyed the mystery of sexuality” as the social pendulum has swung too far in favor of transparency.

Sternhell, who says her feminist views, formed while in college, were utterly transformative, sees it differently. “There isn’t any evidence that people who lived in coed housing are less likely to have long-term heterosexual romantic relationships, either in college or afterwards,” she says. “That’s just a familiar argument against equality: ‘It kills romance—vive la différence!’ In fact, I think coed housing made genuine intima-



Do you remember the coed living experiment of 1970 and 1971? Share your memories at [harvardmag.com/extras](http://harvardmag.com/extras).

## Aloian Award Winners

**Each year**, the Harvard Alumni Association (HAA) selects two students as the David and Mimi Aloian Memorial Scholars. Recipients have demonstrated solid leadership in contributing to quality of life in the Houses, traits embodied by the Aloians, who led Quincy House from 1981 to 1986. David Aloian ’49 was also executive director of the HAA. This year’s scholars, Anne “Annie” Douglas ’12, of Adams House, and Marcel Moran ’11, of Eliot House, will be honored by the HAA on October 13.

Douglas, a psychology concentrator from Philadelphia, is the Adams student mental-health liaison and played a major role in helping people cope with the death

of a fellow student.

Moran, a human evolutionary biology concentrator from Cambridge, was trip director for the HAA/PBHA Alternative Spring Break trips from 2007 to 2011, leading groups of 25 students who helped rebuild and repair African-American churches destroyed by arson and hate crimes. In Boston, he has tutored in the Mission Hill After School Program.





cy more likely.” The meaning and impact of coed living for women were less about more open sexuality than about building the foundation for basic equality. Sternhell was among a group of women promoting what is now called gender-blind admis-

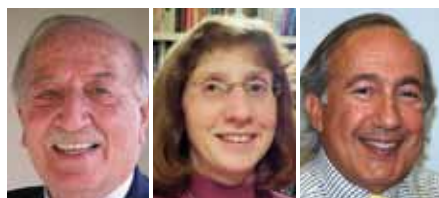
sions at Harvard; they all wore the traditional female symbol on the back of their Commencement robes—and she brought the original cloth to the reunion, holding it up at the panel discussion. “We all felt the possibility that everything was chang-

ing, and then things for women really did,” she explains. “The feminist revolution really did happen. I still feel it was the most amazing four years. It was a most incredible time to be young.”

~NELL PORTER BROWN

## Hiram Hunn Award Winners

SEVEN ALUMNI were to receive this year's Hunn Memorial Schools and Scholarships Awards, presented by the College's Office of Admissions and Financial Aid, at an October 14 ceremony. Hiram S. Hunn '21 recruited and interviewed prospective students for more than 55 years; this year's winners, collectively, have performed more than 250 years of service.



**Zaid al-Rifa'i**

**Barbara  
Fischbein  
Berenson**

**Stephen G.  
Hoffman**



**John Paul  
Kennedy**

**Paul G.  
O'Leary**

**Claire Stuart  
Roth**

Zaid al-Rifa'i '57, of Amman. The first Jordanian to graduate from Harvard, al-Rifa'i has raised scholarship funds and connected candidates with the admissions office. He is president of the Harvard Club of Jordan. His son, Samir '88, became Jordan's prime minister; his grandson, Zaid al-Rifa'i, is a sophomore.

Barbara Fischbein Berenson '80, J.D.-M.P.A. '84, of Waban, Massachusetts. Berenson has interviewed students from all over the world.

Stephen G. Hoffman '64, of Belmont, Massachusetts. Hoffman began interviewing prospective candidates in 1970 while working in the registrar's office.

John Paul Kennedy '63, of Salt Lake City. Kennedy has chaired his local schools and scholarships committee and been HAA appointed director for the Southwestern region.

Paul G. O'Leary '56, of Ridgewood, New Jersey. O'Leary has interviewed students since 1969 and been president, secretary, and schools and scholarships committee chair of his local club.

Claire Stuart Roth '74, of Las Vegas. Roth first volunteered in California, but has interviewed in and around Las Vegas since moving there in 1994.

Jody Cukier Siegler '79, of Los Angeles. After moving to California in 1986, Siegler found that interviewing gave her an opportunity to immerse herself in a new city where she knew no one.

## HAA Award Winners

THE Harvard Alumni Association Awards were established in 1990 to recognize outstanding service to the University through alumni activities. This year's award ceremony took place on October 13, during the HAA board of directors' fall meeting.

Michael A. Cooper '57, LL.B. '60, of New York City, is a member of the Overseers' visiting committee to the Law School, chaired the HLS Fund, and has been president of the Harvard Law School Association of New York City. He has been a leader on both his College and HLS fiftieth-reunion gift committees.

Judith A. Dollenmayer '63, of Washington, D.C., was the first woman president of the Harvard Club of Washington and has long been a schools and scholarships committee interviewer. A former HAA elected director, she is active in the Alumnae and Friends of Radcliffe College Shared Interest Group and secretary for her Radcliffe class.

Philip C. Haughey '57, of Newton, Massachusetts, has chaired the HAA's nominating committee, Harvard's Committee on Shareholder Responsibility, and his thirtieth reunion committee. A former



**Michael A.  
Cooper**

**Judith A.  
Dollenmayer**

**Philip C.  
Haughey**



**Thomas G.  
McKinley**

**Walter H.  
Morris Jr.**

**June Storey**

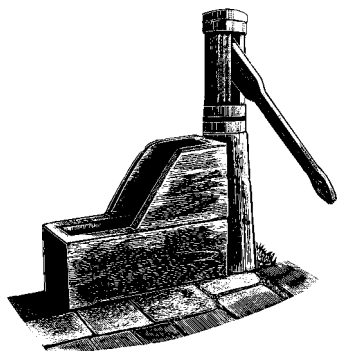
director of *Harvard Magazine* and president of the Harvard Club of Boston, he chairs Friends of Harvard Celtic Studies, is a member of the Real Estate Academic Initiative, and has dedicated countless hours to chairing the Friends of Harvard Football and Baseball, the Varsity Club, and the visiting committee on athletics.

Thomas G. McKinley '74, of San Francisco, a former elected director of the HAA, is a veteran class secretary, a director of the Harvard Club of San Francisco, and vice chair of his class gift committee since his twentieth reunion. He has supported projects ranging from women's volleyball to the Harvard College Innovation Challenge.

Walter H. Morris Jr. '73, M.B.A. '75, of Potomac, Maryland, was HAA president in 2008-2009, and earlier an HAA elected director. He is active in the Harvard Black Alumni Society and has been a member of numerous Harvard clubs.

June Storey, of North Reading, Massachusetts, has served Harvard for more than 30 years, rising from staff assistant in 1976 to director of events for alumni affairs and development in 1993. Under her watch, that department has become known for attention to detail, outstanding customer service, and the careful planning of many special events over many years.

# The Master Leads



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

IN THE FALL OF 1973, Robert J. Kiely '60, his wife, Jana, and their three young children moved into Adams House, and he began a 26-year tenure as master. Now Loker professor of English emeritus, Kiely was asked by the House to write recollections of those years, for posting on the Adams website available to students. He gave Primus a look.

"Early on I was informed that Adams House had traditions and what some thought of as anti-traditions, things that Adamsians did *not* do, such as lock entry-doors...or wear bathing suits in the swimming pool." Among the many traditions he recalls is the reading of a chapter from *Winnie the Pooh* at the Winter Feast. "Students and members of the Senior Common Room, solemn and unsmiling in formal dress, paraded into the Dining Hall, sat on stools, and gave a dramatic reading of 'Expotition to the North Pole' or 'Pooh Sticks.'"

Kiely cites a transformative event in his first decade that "changed (for

the better) life in the House for years to come." It "began one lunchtime when a small group of students I thought I knew well joined me. When others at the table left, they began a bit shyly to explain that they were gay and hoped to form a student organization that would be recognized by the College and could hold meetings in Adams House. When they asked me to be one of their faculty advisers, I was deeply touched by their trust. (We have to try to remember that in the Harvard of that time, homosexuality was not part of the public conversation. When mentioned, it was either on the sly or with embarrassment. I recall a dean telling me that he had heard there were gay students at Adams and wondered if I wanted him

to 'do something about it.' I told him that I never asked students about their sexual orientation and, in any case, I did not want anything to be 'done about it.') Over the next year or two, these students and their friends visited all the House masters and set up tables in all of the Houses inviting anyone who wanted to sit with them. It took courage. Some masters and students cooperated; others did not. One master told me that X House had no gays. It was 'an Adams House problem!' That spring I made a point to invite the newly formed organization to come with dates to the Waltz Evening, which they did, women with women, men with men. French Wall '83 and his date cut in on my wife and me. When I found myself waltzing with a tall handsome junior, I asked, 'Who should lead? I'll never forget his answer. 'You're the master!'"



**SELL SIGNAL:** When more than 30 percent of each year's newly minted M.B.A.s of the Harvard Business School take jobs related to the financial markets, the stock market is headed for a downturn, according to the Harvard M.B.A. Indicator, compiled for more than two decades by financial consultant Ray Soifer, M.B.A. '65, B '69, of Green Valley, Arizona. In September, *Barron's* reported, worryingly, that 37 to 38 percent of this year's class have taken market-sensitive jobs, rising from 31 to 32 percent last year. The magazine notes that "the indicator is still below the record 41 percent achieved in 2008, a very good year to have been short the stock market."

~PRIMUS V



**One of the earliest American football posters, done for Harper's in 1894 by Edward Penfield. This example, in B+ condition, sold at a Swann Galleries auction August 3 in New York City for \$1,320, including buyer's premium. In 1894 Yale beat Harvard 12-4.**

























































## THE LIVING DINOSAUR

(continued from page 35)

produce successfully in regions of the Northern Hemisphere that were undergoing dramatic cooling after a long period of stable warm conditions...*Ginkgo biloba's* temperature-sensitive embryo developmental-delay mechanism could well have been another climate-induced Cretaceous innovation—an evolutionarily primitive, but ecologically functional, form of seed dormancy.” Ginkgo seeds do not try to grow until the weather favors their survival. Between 1953 and 2000 in Japan, the temperature-sensitive *Ginkgo* adjusted to the warming climate by extending its growing period: four days earlier each spring and eight days longer in the fall.

Like “Chinese” Wilson, Peter Del Tredici loved botanizing in China, a place he has visited eight more times and calls “Horticultural Heaven.” He has worked with many Chinese colleagues, and said they have now taken the lead in researching ginkgo, a national symbol of their botanical heritage. Ginkgo DNA is three times larger than human DNA and is unlikely to be fully sequenced anytime soon, but by using smaller snippets for DNA testing in 2008, botanist Wei Gong and her colleagues confirmed Del Tredici’s 1989 find of wild ginkgo growing on the slopes of Tian Mu Mountain. The Chinese also confirmed that several other small wild ginkgo remnants displayed “a significantly higher degree of genetic diversity than populations in other parts of the country.” In some of these forests, growing near peoples with no history of gathering ginkgo fruits, there are young ginkgos growing. Although no one knows for sure where *Ginkgo* originated, it’s now clear that during the Ice Age, the southwest mountains of China served as refugia. Subsequent DNA studies have also shown that China is the ultimate source of *all* the world’s cultivated ginkgos.

Many of *Ginkgo's* mysteries are probably unsolvable. Did it once have a pollinator? We will never truly know, said Del Tredici,

“why *Ginkgo* is still around when all of its relatives have gone extinct...many of its life-history traits evolved under conditions that no longer exist, which makes reconstructing its ecological niche difficult to establish.” What, for instance, he continued, were “its original dispersal agents? What role did the medically active chemicals it produces play in its evolution? Were they feeding deterrents? I assume *Ginkgo* survived because it was somehow able to remain competitive with flowering plants, but in what ways was it different from species that went extinct? For all intents and purposes, *Ginkgo* has stopped evolving.”

For decades now, Del Tredici has been gathering ginkgo seeds and cuttings from historic and unusual trees, and he recently planted a large hillside in the arboretum with some of his more prized specimens, part of a larger grove of young trees that are all deciduous gymnosperms: larches, golden larches, dawn redwoods, and bald cypresses. He expects that when Harvard has to renegotiate the lease for the arboretum in 861 years, the ginkgos will be looking pretty magnificent.

Until then, when next you pass a ginkgo on a busy street, remember you are looking at a mysterious species that shared the earth with dinosaurs. “As remarkable as *Ginkgo's* evolutionary survival is,” said Del Tredici, “the fact that it grows vigorously in the modern urban environment is no less dramatic. Having survived the climatic vicissitudes of the past 120 million years, ginkgo is clearly well prepared—or, more precisely, preadapted—to handle the climatic uncertainties that seem to be looming in the not-too-distant future. Indeed, should the human race succeed in wiping itself out over the course of the next few centuries, we can take some comfort in the knowledge that the ginkgo tree will survive.” ▢

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Historian Jill Jonnes, author of *Eiffel's Tower*, *Conquering Gotham*, and *Empires of Light*, is a scholar this fall at the Woodrow Wilson International Center for Scholars, working on trees as green infrastructure.

## THE MEDIATRICIAN

(continued from page 52)

Rich has advised lawyers, media creators, and Congress; although he rarely doles out specific advice or proscriptions for controlling kids' media intake, he does steer parents when they press him for his opinions. In the 1990s, he was one of several pediatricians who helped draft the American Academy of Pediatrics' (AAP) policy statement discouraging parents from allowing television- and video-watching by children under the age of two. “We know from recent research in the field that there are three major elements that optimize early brain development in children,” he says: face-to-face interactions with a caretaker, interactions with the physical environment, and open-ended, creative, problem-solving play like molding clay or sitting in a sandbox. “We also know that screen media don't provide any of those things,” so parents who put infants down in front of the TV are *not* placing them down in an environment where they could be learning more. (In its most recent statement, the AAP cited seven studies from the last decade whose findings revealed that infants younger than 18 months who are exposed to TV may suffer from a delay in language development.)

As the father of two boys under the age of seven, Rich followed

his own advice and kept them away from screens until they reached the two-year mark. But he is also careful to point out, “This doesn't mean that if you didn't, you're a horrible parent. I have children from my first marriage who are in their twenties, and I sat them down in front of screens as infants. This is not about good or bad parenting—we aren't blaming 1950s parents for not putting their kids in seatbelts. This is about giving parents the best information, so they can apply it to their own individual kids' needs.”

The best advice, says Rich, is the same advice he'd have given any parent any time—even before the age of television: “Talk with your kids. Ask them about what they're doing, and join in when you can. And share with them *your* favorite media—books, music, movies, games, TV.” After all, he points out, children left to their own devices will eat nothing but cake and cookies. Influencing their media diet is as doable as guiding their food choices. And if he and his colleagues “do our jobs,” he declares, parents will have a much easier time deciphering the menu. ▢

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Writer and television associate producer Cara Feinberg previously profiled psychologist Ellen Langer in “The Mindfulness Chronicles,” published in this magazine's September-October 2010 issue.

# Envy in Hand

*Is this a dagger which I see before me...? Not primarily.*

**A**LTHOUGH its steel blade is sharp and pointed and capable of doing serious damage unsheathed, this 13½-inch dagger was not meant to be a weapon. It is French, of cast bronze with gilded silver and engraved steel, and was crafted by an unidentified artist working sometime in the 1840s. Ivan Gaskell, Winthrop curator in the Harvard Art Museums, acquired the piece for the Fogg Museum in 2003 from David and Constance Yates, New York City dealers who specialize in nineteenth-century French sculpture.

Of extremely high quality, the dagger is, says Gaskell, “a wonderful

product of the Troubadour movement in the arts in France in the years following the restoration of the monarchy: a Romantic fascination with medieval and Renaissance forms and myths. The movement was multimedia. Napoleon recognized the Middle Ages in the forms of his coronation. Ancient chivalric romances were published in adaptations by the Comte de Tressan and contributed to the rise of the troubadour style. In painting, the style showed up most often in realistic depictions of edifying historical events in smooth finishes and vibrant colors.” Think of some of Ingres’s paintings, Gaskell suggests, such as *The Death of Leonardo da Vinci* (1818) in the Louvre, in which the French king, Francis I, holding the dying Leonardo, “conspicuously wears a sword that might have accompanied the Fogg dagger.” Gaskell was

drawn to the dagger because “it fits in with the Fogg’s early nineteenth-century French paintings and drawings, by Ingres in particular.”

The dagger evokes a Romantic mythology of the Renaissance most melodramatically by personifying *Invidia*, or Envy, one of the seven deadly sins, her legs and hair intertwined with serpents, in a manner that goes back to Giotto’s depiction of Envy in a fresco in the Arena Chapel in Padua, says

Gaskell.

Dedicated in 1305, the private chapel was built at the direction of the wealthy moneylender Enrico Scrovegnia, perhaps in penitence for his father’s sins, perhaps for his own. Enrico’s father is the usurer encountered by Dante in the seventh circle of Hell.

Personifications of virtues and vices, such as this one of Envy, Gaskell adds, were further articulated by handbooks of depictions derived from classical models (Roman coins, for example), by sixteenth-century compilers such as Cesare Ripa. A cook and butler for Cardinal Anton Maria Salviati and an aesthete in his spare time, Ripa was later knighted for his influential emblem book, *Iconologia*, which gave allegorical substance to concepts and was quoted by painters, sculptors, poets, and orators for many years.

Gaskell mentions the French Romantic fascination with Shakespeare in general (“Think of Eugène Delacroix, who illustrated various of the poet’s works”). Here, *Macbeth* springs to mind: “Is this a dagger which I see before me, / The handle toward my hand? Come, let me clutch thee.” The dagger’s “self-referentiality—the personification plunges a dagger into herself—is,” says Gaskell, “a wonderful play on the susceptibility of a contemporary to imagine himself or herself taking on—horrifically—the attributes of Envy as he or she grasps the handle! It’s a pure artwork in that sense, not an embellished weapon, though it has the appearance of one.”

—C.R.





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