

THE WALL STREET JOURNAL

# SmartMoney

## THE HIGH COST OF LIVING...

Women outlive men by 5 years. Got life insurance?

### ...A LONG, LONG TIME

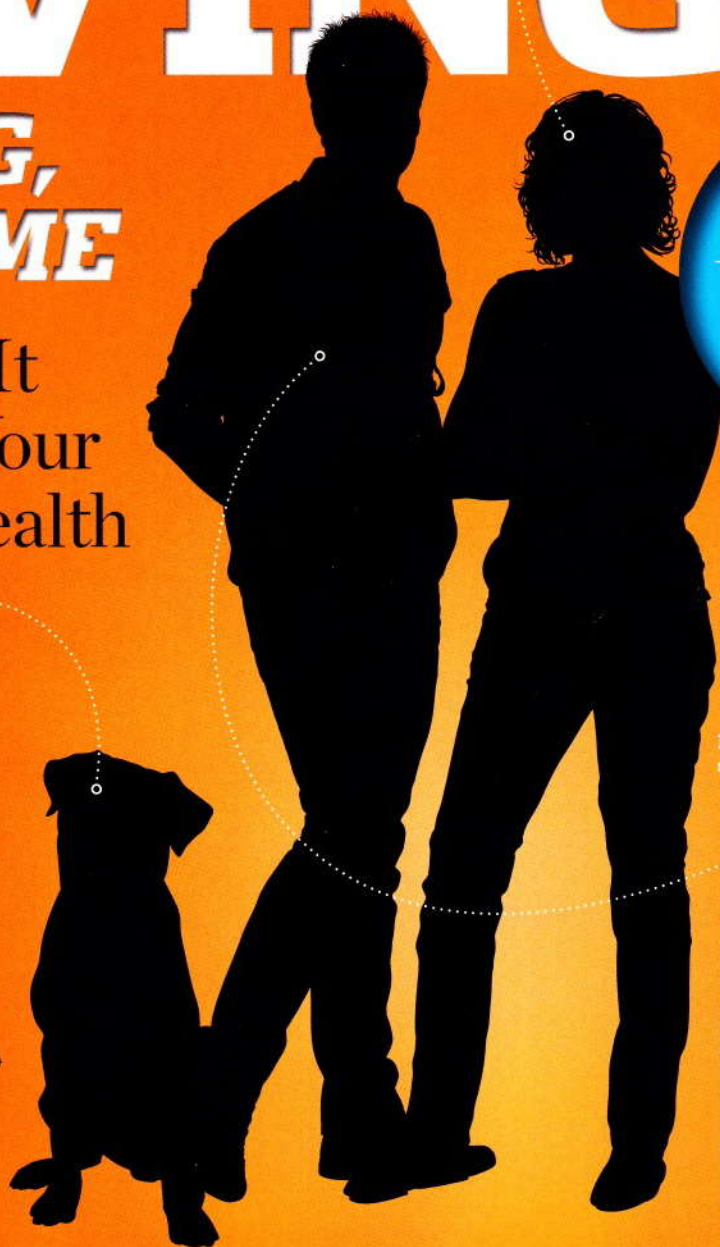
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Call it the death calculus. An odd assortment of number crunchers is dead set on solving the biggest mystery there is:

**HOW LONG YOU WILL LIVE.**

For those saving for retirement, it's the \$27 trillion question.

# OUTLIVING EXPECTATIONS

BY CHARLES PASSY



## A 78-YEAR-OLD WOMAN WALKS INTO AN AGENT'S OFFICE TO BUY LIFE INSURANCE.

*"Have you ever had cancer?" asks the agent. "Oh, yes, dear," says the woman. "Breast cancer."*

*"Do you have a family history of heart disease?" "Oh, yes, dear," the woman says, nodding. "My father died of a massive heart attack in his 60s."*

*"Do you have any history of mental illness?" prods the insurance man. "Oh, yes, dear," she says. "I've been on bipolar meds for years!"*

*"Uh, okay. So how big a policy did you say you wanted?" he asks. "Twenty million dollars."*

*"In that case," says the agent, "yes, dear!"*

If actuaries were the sorts of people to tell bar jokes, this might be one of them. But in truth, the 78-year-old woman happens to be flesh and blood. (We'll call her Martha.) And equally real, for that matter, is her \$20 million, newly minted life insurance policy—which was approved in late 2010 by The Hartford.

But that, remarkably, is not the surprise of this story. The surprise here is how easy it was for the company's underwriting team, based in Maple Grove, Minn., to make the call—top executives signed off on the paperwork in a mere 30 minutes. For starters, explains Assistant Vice President David Redpath, Martha's bout with cancer happened when she was in her late 50s—according to The Hartford's latest guidelines, there is little likelihood of a return now. Her father's early death from heart disease? No worry there—the woman, having made it so far into her late 70s, has already "outlived the danger marker," says Redpath. Indeed, by The Hartford's calculation, Martha will live an additional 14.5 years—to the ripe old age of 92½—which is about







four years longer than what the U.S. Census Bureau's life-expectancy table predicts for a woman her age. And at a premium pegged to \$1 million a year, Redpath figures, The Hartford ought to be able to turn a tidy profit on the deal, after investments.

On first blush, such a business decision may seem to be merely a bold poker play—the insurance equivalent of going for an inside flush. (A \$20 million policy, after all, is a big deal; the average face amount for a Hartford policy, by comparison, is a mere \$500,000.) But look a little deeper and you'll see something at work beyond risk-taking; you'll see a revolution in the making, experts say. Ever so quietly, insurance-industry number crunchers are tossing aside the old statistical models and life tables. They're recasting tired stereotypes about the "fatal" diseases of yesteryear. They're rethinking that most ancient of questions: How long will we live? And they're coming up with what many would say is a radical answer.

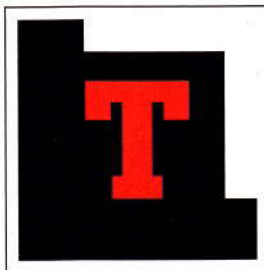
Call it the new death calculus: the 21st-century equation for determining human longevity. Or call it misguided guesswork, as some critics have. Either way, it's hard to imagine a math problem that has flummoxed humanity for longer. (Actuaries, in fact, have been fumbling for an answer since 1583, when the first life insurance policy was issued.) And it's even harder to conceive of one with more at stake in the outcome.

The dollar figure affected is so staggeringly enormous that it takes a while just to write out all the zeros. Start with \$1.6 trillion, which is the amount currently invested in life insurance annuities—products typically tied to the longevity of the owner. Add another \$6.5 trillion. That's the amount in private and government pension plans, according to the Investment Company Institute. (Were the average U.S. life span to increase by just one year over current government projections, the country's private pension systems—already struggling to keep pace after the recent market upheavals—would take a roughly \$115 billion hit, based on data from Swiss Re, a prominent reinsurance firm, and ICI.) Now throw in another \$4.3 trillion (what Americans have in 401(k)s and other defined-contribution plans), plus \$4.6 trillion (what we've saved in IRAs), plus \$10.5 trillion (the face value of individual life insurance policies in force in the U.S.) and you begin to get a sense of the ante. Leaving aside the matter of Social Security—a 14-digit-dollar question of its own—the pool of money tied to the death calculus is somewhere on the order of \$27 trillion.

But don't let the astronomical scale fool you. This particular bit of math is not merely a challenge for big governments and big business to solve. It's one doozy of a personal challenge as well. As the expectations of human longevity morph and shift, so of course should people's retirement plans—and with them, perhaps, answers to everything from the big-picture decisions

(How much must you sock away for later years?) to the nitty-gritty (Can you afford to maintain two homes? Does it make sense to kick in for your granddaughter's wedding?). After all, to prepare for four additional years of life span over current projections, someone who's 50 years old now would need close to \$160,000 beyond his or her current retirement savings to maintain a modest lifestyle, experts say. And increasing a nest egg by that much, assuming historical rates of return and inflation, could mean squirreling away an additional \$2,500 a year. Scary, you say? Well, factor in the current jitteriness of the stock market and the millions of baby boomers fast approaching retirement and the solution to the death calculus is arguably more pressing than ever.

As for Americans whose retirement strategies won't be affected, Stephen C. Goss, chief actuary of the Social Security Administration, can think of only one off the top of his head: "Bill Gates," he says. For the rest of us, though, the answer matters deeply. Which is why a growing number of academic soothsayers—from actuaries and other mathematical modelers to biodemographers, medical sociologists and futurologists—are hard at work trying to solve the \$27 trillion question.



**TO UNDERSTAND THE** latest thinking at The Hartford on this question, one has to travel a thousand miles from the company's suburban Minneapolis headquarters to the rolling hills of Asheville, N.C. In the early-morning hours, if you loiter on the right mountain trail, you're likely to

see a sprightly, white-haired streak of a man jogging by. Dr. Robert Pokorski sets his alarm for 5 a.m. each day—but the alarm never goes off. "I'm always up by then," he says, reading medical and other journals before he heads off for a run. It is this man, a 59-year-old physician-philosopher, M.B.A. and practicing Buddhist—working from a home office deep in the Carolina woods—who is steadily transforming The Hartford's underwriting manual.

That tome, which provides guidance on virtually every new blood test, diagnosis and medication—essentially defining each variable in the insurance company's death calculus—is now more than 2,000 pages long, having quadrupled in size over the past three decades. Pokorski, who was named chief medical strategist for the company's life insurance division in 2010, is hardly responsible for all of those changes, but his impact on the manual at large has been enormous, says Brian Murphy, an executive vice president at the company. Summoning research and data from throughout the medical literature, Pokorski, along with other physicians, made the case that heart disease and several forms of cancer are no longer the "death markers" they once were. As recently as 1995, for instance, a man with advanced coronary disease was flatly uninsurable. Now it's ex-

*IT'S HARD TO IMAGINE A MATH PROBLEM THAT HAS FLUMMOXED HUMANITY FOR LONGER, SAY MANY FINANCIAL ADVISERS—AND EVEN HARDER TO CONCEIVE OF ONE WHERE THERE'S MORE AT STAKE IN THE ANSWER.*



THE JOGGING BUDDHIST

**ROBERT POKORSKI, 59**

CHIEF MEDICAL STRATEGIST, THE HARTFORD

*The trend of living longer should continue, thanks to advances in medicine, he says: "America's population of centenarians is likely to at least double by 2020."*





## THE GAME OF LIFE (AND ITS COSTS)


*The average American who manages to live to the age of 100 will spend \$3.5 million in his or her adult lifetime. Below, where much of it goes.*

pected that an arterial blockage can be repaired relatively simply and new plaque buildups can often be controlled with medication, so that life expectancy is only modestly affected.

The changes, in The Hartford's case, have been immediate—with hundreds of formerly uninsurable applicants now getting coverage (or better classes of coverage) each year. But the driver here has not been altruism so much as it has been a financial hip replacement of sorts for the firm. The Hartford, which two decades ago was the No. 6 life insurance company by revenues, is now ranked at No. 17. Its share price, meanwhile, has plummeted a jaw-dropping 78 percent over the past four years, compared with the 40 percent fall for the Life and Health Insurance benchmark index. The economy has been brutal on the company. But The Hartford's new death calculus, in an odd way, is likely to give it a slight edge on the competition, Pokorski believes. "I think we take risks some large companies may have overlooked," he says. The sales numbers, in fact, back that up in part. The Hartford increased year-over-year sales by 15 percent in the first half of 2011, compared with an industry average of 4 percent.

Rivals aren't exactly giving ground. MassMutual, the No. 5 life insurer, boasts that it, too, takes a very progressive approach when it comes to evaluating, say, breast cancer survivors. "I would say we're on the leading edge," says Melissa Millan, a senior vice president with the insurer. Representatives for top-ranked MetLife and Prudential also say their underwriting manuals are changing by the month, as medical marvels reinvent treatment paradigms. They say they have an eye to the future as well.

Pokorski, for his part, grins widely, his wireless eyeglass lenses popping up on his cheekbones. He says cheerfully that one doesn't need to look to the future for guidance as much as to the past. Average life expectancy has risen from 47.3 years in 1900 to 78.3 today. While much of that early—and most dramatic—gain came from lowering infant and childhood deaths, the experience



*By the time you're 50, you'll have racked up quite a spending bill in adulthood.*

**TOTAL EXPENDITURES**  
**\$1,564,740**

**\$**

Housing (mortgage, utilities and decor):	\$155,500
Furnishings and appliances:	\$15,000
Entertainment and eating out:	\$46,700
Transportation:	\$71,000

**60'S**

*In this decade of transitioning into retirement, 60-somethings spend more than older age groups on everything from housing to clothes.*



in more recent decades is particularly telling, Pokorski says, pointing to reduced mortality rates at older ages. Since 1940, American men have gained about a year of life expectancy—and American women, 1.1 years—with every five-year period. If we merely hold to the same pattern, he says, average life expectancy at birth by the end of this century will be close to the century mark. Just count the number of centenarians. There are now about 53,000 Americans who are age 100 or older, compared with just 2,300 in 1950—a 2,200 percent increase. The general population, meanwhile, has merely doubled in that span of time.

**THE IDEA THAT HUMANKIND** is on the threshold of the most meaningful bull run-up of them all—the longevity rally—may be an exciting prospect. But tell it to researcher S. Jay Olshansky and he is sure to laugh in your face. (In a nice way.) Olshansky, 57, who teaches at the University of Illinois at Chicago, is the sort who posts videos online of his nonagenarian father dancing and telling bawdy jokes. And the most outrageous joke Olshansky (the younger) can think of, it seems, is that human life spans are heading for Methuselah territory.

A skeptic at heart, Olshansky holds a central belief that the traditional actuarial tables used by the entire end-of-life industry (insurance firms and all) are flawed in their inherent design. The reason, he says: They're based on a presumption that past longevity patterns will hold for the future. But as those canned warn-

**90'S**

Nursing home (private room):	\$87,200
Out-of-pocket long-term care:	\$14,000
Assisted living:	\$89,000
Adult day services:	\$36,400

America's 1.9 million nonagenarians depend heavily on Social Security and pensions. Health costs grow exponentially from one's 50s to one's mid-90s.

Make it to 100 and you'll need...  
**AN ADDITIONAL \$630,580**

If you live an extra 9 years, you'll need...  
**AN ADDITIONAL \$315,290**

If you live an extra 4 years, you'll need...  
**AN ADDITIONAL \$157,650**

**80'S**

Health insurance:	\$30,300
Entertainment and eating out:	\$26,000
Groceries:	\$26,400
Gasoline:	\$9,800

Eighty-somethings spend 57 percent more on health insurance—but half as much on entertainment—compared with folks in their 50s.

The average 50-year-old today can expect to live until 81. Here is what you will need for those 31 years:  
**\$1,432,980**

**70'S**

Total health care costs:	\$48,400
Prescription drugs:	\$8,100
Household repairs:	\$16,400
Utilities:	\$33,900

Aging's challenges come with bigger price tags. When people hit their 70s, health care costs begin to spike.

SOURCES: GENWORTH FINANCIAL; METLIFE; U.S. BUREAU OF LABOR STATISTICS; U.S. CENSUS BUREAU





**THE SKEPTIC**

**S. JAY OLSHANSKY, 57**

PROFESSOR, UNIVERSITY OF ILLINOIS AT CHICAGO

*Humankind hits a wall at 85, he says.  
"Even a total cure of heart disease  
and cancer would add no more than  
three years to this limit."*



ings on mutual fund prospectuses say, past performance is no guarantee of future returns. He dismisses the Pokorski model of thinking as “closing your eyes” to the obvious realities around us. (Pokorski responds that what’s obvious is that “life expectancy keeps increasing over time.”)

As for Olshansky’s death calculus—yes, he’s got one too—it’s far less optimistic. A dozen significant societal and lifestyle factors could easily offset whatever gains we get from medical marvels. The current obesity epidemic, for example, is one of the biggest life span limiters of all. In 2008, more than a third of the U.S. population was obese, double the rate in 1962. It’s impossible, says Olshansky, to continue the gains of the past century with a population that’s so much heavier and thus more vulnerable to a host of serious health conditions, from diabetes to heart disease. “The canary in the coal mine has already died,” he says.

It’s an argument that Olshansky, who trained as a demographer before turning his academic sights to biology, has been making in one form or another since 1984, six years before he and two colleagues published a landmark study in *Science* magazine. In that article, he demonstrated that even finding a cure for cancer wouldn’t add the years that others were projecting. “When I first did the calculation, I didn’t believe the results, so I did it again and again,” he recalls. Olshansky concluded that no matter what cures doctors discovered, humanity would hit a longevity wall—with men and women, on average, reaching age 85 for the foreseeable future. (Even if, somehow, we were to find cures for cancer, heart disease “and just about everything that kills us, short of infectious diseases,” he says, we’d still only arrive at an average human life span of 90.) To go beyond that, he said, medical scientists would have to come up with a way to slow the biological processes of aging itself.

Alan Glickstein, a pension actuary with benefits consultants Towers Watson, makes the analogous point that all things in the natural world are destined to stop growing sooner or later: “I look outside my window and I don’t see trees that are 500 feet tall,” he says. But such observations haven’t stopped others from poking holes in Olshansky’s theory. James Vaupel, an American scientist who’s director of the Max Planck Institute for Demographic Research in Germany, is Olshansky’s most dedicated rival. Vaupel and like-minded optimists say medical and other advancements are coming in ways we can neither predict nor articulate—just as people two centuries ago could never have predicted the atomic or computer age, let alone Twitter.

**IF SUCH TALK SEEMS** too theoretical, there’s yet another way to approach the death calculus: namely, to treat it as a complex, multivariate computation, which is, after all, what *calculus* is. Death, in other words, is just a math problem. That’s how James Guszczka sees it. A top actuary with financial-advisory firm Deloitte Consulting, Guszczka has the sort of boyish looks and nerdish enthusiasm that conjure the image of Doogie Howser. When you realize he’s 44—and not 24—it’s a bit of a shock. Don’t worry about the macro factors in health care, says Guszczka, but rather a million little things. Throw data point after data point into a giant algorithm and the longevity answer will be spit out.

Photograph by Tim Klein for SmartMoney

## INSURING OLD AGE

*Can you really guard against outliving your money? Financial companies say yes—and, no surprise, they’re pushing the products to do it.*

### TRADITIONAL DISTRIBUTION STRATEGY

*Save money through an IRA or other vehicle, then withdraw a fixed annual sum once you’re retired.*

**EXAMPLE:** Almost any financial adviser can help you put this together, setting your goal amount for retirement and preparing a distribution plan.

**PROS:** You can take full advantage of market upswings (provided you keep some money in the market), and you have principal you can tap in an emergency.

**CONS:** It has long been the standard approach to retirement planning. But live too long—or through one too many market drops—and the strategy could backfire.

### IMMEDIATE INCOME ANNUITY

*For a single up-front payment, it provides monthly payments for the long haul, starting immediately.*

**EXAMPLE:** Prudential Immediate Annuity, in which payouts vary according to market conditions. A \$100,000 investment by a 65-year-old male currently yields a monthly payout of \$548.

**PROS:** The income stream is guaranteed. “It’s the closest thing we have to an old-fashioned pension plan,” says Philadelphia wealth manager Adam T. Sherman.

**CONS:** With today’s low interest rates, the payouts aren’t as high as they once were. And you often can’t access the money you put in—even in an emergency.

### DEFERRED INCOME ANNUITY

*With such “longevity insurance,” holders set aside cash but can’t tap it until they’re well into old age.*

**EXAMPLE:** MetLife’s Longevity Income Guarantee. At current rates, a \$100,000 up-front payment for a 65-year-old male would yield an annual stipend of \$58,130, beginning at age 85.

**PROS:** Survive into your later years and you’ll have steady monthly income. And the payout is typically higher than that of an immediate annuity.

**CONS:** Die too soon and you may lose your money, depending on the terms. “That’s why it’s referred to as insurance,” says retirement expert David Littell.

### LONGEVITY RIDER

*It’s a way to take advantage of the death benefit in an insurance policy while you’re in your later years.*

**EXAMPLE:** The Hartford’s Longevity Access Rider, purchased as an add-on to a life policy, begins paying out at age 90. Typically boosts annual insurance premium by 5 to 15 percent.

**PROS:** While such riders don’t have the typically large up-front expense of an annuity, they do provide you with income in the event that you live to a ripe old age.

**CONS:** If you don’t make it to 90, you’ve paid for a product you didn’t use. But if life spans begin to increase dramatically, such options may grow in popularity.

SOURCES: INDIVIDUAL COMPANIES





**JUST COUNT THE NUMBER OF CENTENARIANS. THERE ARE NOW 53,000 AMERICANS AGE 100 OR OLDER, COMPARED WITH 2,300 IN 1950—A 2,200 PERCENT INCREASE. THE GENERAL POPULATION HAS MERELY DOUBLED.**

Such a science has a name: predictive analytics. (Think of it as life insurance meets *Moneyball*.) The Deloitte actuary, who got his start working in the property and casualty side of the insurance industry, believes that information of all kinds—what you buy, how you spend your free time—can be tapped to create the ultimate death calculus. “Individuals who order a deluxe cable package and simultaneously pursue few sporting or exercise activities are more likely to live sedentary lifestyles and ultimately suffer a higher incidence of various lifestyle-based diseases,” Guszczka offers by way of hypothetical example in an academic paper he wrote with three Deloitte colleagues. Medical markers can have their place in the equation too—TV viewing habits, he says, ought to be weighed alongside blood cholesterol levels—but the idea remains the same: to refine mortality estimates with an ever-increasing pool of data.

The strategy is the same as that used by the credit card industry to prevent fraudulent charges and by national security snoops to identify would-be terror threats; data dumps are the stuff of the brave new world, and it’s a controversial world at that. While predictive analytics remains in something of a beta phase as a model for gauging life span (insurance companies are considering it but not committing to it), some veteran longevity modelers haven’t quite bought into the idea. As one person literally shouted out during a recent Society of Actuaries meeting on the subject, “There’s too much noise!”

“It’s not like throwing a lot of data into an algorithm, pressing a button and saying this will work,” says Guszczka, a little defensively. So what is the idea? Well, come to think of it, that is sort of what it is: throwing a lot of data into an algorithm and pressing a button.



**SO, WHOSE CALCULUS** is getting closest to the mark? For now, it isn’t clear. And yet, what does get more transparent every day is what happens if we get the longevity calculation wrong. One has

to look no further than what’s occurring with state pension and savings funds—which now face a \$660 billion funding gap. Thirty-one states “have less than 80 percent of their obligations funded,” according to a 2010 study from the Pew Center on the States.

Of course, financial experts say, the problem faced by state worker funds, corporate pensions and Social Security is the very same as that facing many individual investors today: determining how great the risk is that we’ll outlive our money. In short, which is the smarter financial choice? Risk running the coffers dry at 90 and living on fumes for another decade, or embrace the more sober view that the longevity boom has a natural limit and figure on a shorter, if more luxe, retirement? A less dramatic jump in

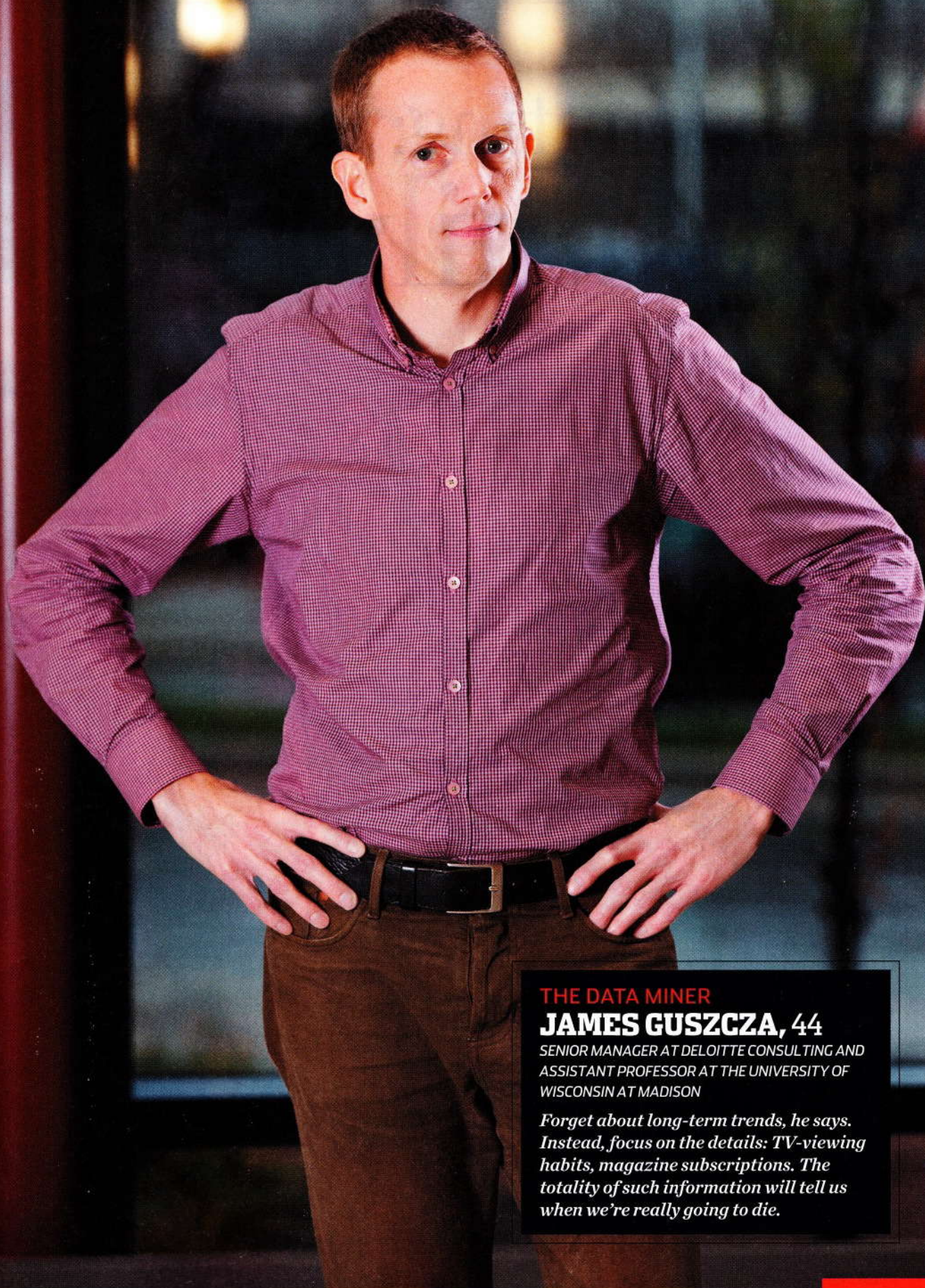
life span might even be a relief to some, if it means not having to pour so much into annuities right now. Here, financial advisers are in much closer agreement than are the leading death calculators: Regardless of where average life spans end up, they say, nearly to a person, prepare for *la vida larga*. Even Olshansky—the scientist who takes the most pessimistic view of longevity—is himself expecting to live to the high end of his projections. (He comes from a line of nonagenarians.) At the very least, say pros, it’s essential to plan financially at least through age 95—and if you have a history of longevity in your family, figure on surviving to the century mark. “I went to my father’s 100th birthday party a few weeks ago, so I take this seriously,” says David Littell, codirector of the New York Life Center for Retirement Income at the American College, a leading school for financial research.

Guarding against the risk of outliving one’s assets, however, is becoming a more strategic matter than just padding one’s nest egg. Insurance products such as annuities are now playing a larger role in financial planning. (Annuity reserves have grown from \$1 trillion in 2000 to the current \$1.6 trillion, according to the Investment Company Institute.) And firms continue to find more products to bring to what might be dubbed the Longevity Inc. marketplace: At The Hartford, policyholders can now purchase a so-called LongevityAccess Rider that offers “eight years or more of income” to individuals once they reach age 90. A Hartford spokesperson says the product is “appealing to a significant number of people below the age of 60.” MetLife, meanwhile, has just introduced a deferred income annuity (dubbed the Longevity Income Guarantee), which offers a bigger bang for the buck if the policyholder waits until age 85 to start collecting payments. (For more, see “Insuring Old Age,” on page 61.)

Of course, you don’t need to explain the importance of end-of-life planning to Pokorski, the man who oversees much of the medical research at The Hartford. On the surface, he seems to be as good a candidate as any to make it to a ripe old age. He counts himself among the 4 percent of Americans with something of a “perfect score” healthwise (he exercises, maintains a proper diet, doesn’t smoke and has no history of either high blood pressure or high cholesterol). And when his employer recently ran him through the company’s death calculus—Pokorski had applied for some additional life insurance—he rated in the “preferred-plus category,” which means The Hartford expects him to live into his late 80s.

Ironically, the doctor isn’t fully buying into the prediction his research helped shape. And no, it’s not because of those hungry bears he occasionally stumbles upon in his morning jogs through the countryside. Rather, it’s because both his father and grandfather died before they reached the age of 65—and Pokorski knows that, in the case of human longevity, genetics too often plays the role of spoiler. “I’m a realist,” he says. “I can’t outpace my genes.” ☺





**THE DATA MINER**

**JAMES GUSZCZA, 44**

SENIOR MANAGER AT DELOITTE CONSULTING AND  
ASSISTANT PROFESSOR AT THE UNIVERSITY OF  
WISCONSIN AT MADISON

*Forget about long-term trends, he says. Instead, focus on the details: TV-viewing habits, magazine subscriptions. The totality of such information will tell us when we're really going to die.*