

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

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

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

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

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

There are many arguments

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

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

SCIENCE & TECHNOLOGY

Scientist in Chief

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

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

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

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

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

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

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

SCIENCE & TECHNOLOGY

Brainpower and Bankruptcy

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

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

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

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

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

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

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

IQs and Finances

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

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

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

SCIENCE & TECHNOLOGY

The Undersea Frontier

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

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

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

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