The Marketplace of Perceptions

Behavioral economics explains why we procrastinate, buy, borrow, and grab chocolate on the spur of the moment.

by Craig Lambert

Portraits by Stu Rosner

Like all revolutions in thought, this one began with anomalies, strange facts, odd observations that the prevailing wisdom could not explain. Casino gamblers, for instance, are willing to keep betting even while expecting to lose. People say they want to save for retirement, eat better, start exercising, quit smoking—and they *mean* it—but they do no such things. Victims who feel they've been treated poorly exact their revenge, though doing so hurts their own interests.

Such perverse facts are a direct affront to the standard model of the human actor—Economic Man—that classical and neoclassical economics have used as a foundation for decades, if not centuries. Economic Man makes logical, rational, self-interested decisions that weigh costs against benefits and maximize value and profit to himself. Economic Man is an intelligent, analytic, selfish creature who has perfect self-regulation in pursuit of his future goals and is unswayed by bodily states and feelings. And Economic Man is a marvelously convenient pawn for building academic theories. But Economic Man has one fatal flaw: he does not exist.

When we turn to actual human beings, we find, instead of robot-like logic, all manner of irrational, self-sabotaging, and even altruistic behavior. This is such a routine observation that it has been made for centuries; indeed, Adam Smith "saw psychology as a part of decision-making," says assistant professor of business administration Nava Ashraf. "He saw a conflict between the passions and the impartial spectator."

Nonetheless, neoclassical economics sidelined such psychological insights. As recently as 15 years ago, the sub-discipline called behavioral economics—the study of how real people actually make choices, which draws on insights from both psychology and economics—was a marginal, exotic endeavor. Today, behavioral economics is a young, robust, burgeoning sector in mainstream economics, and can claim a Nobel Prize, a critical mass of empirical research, and a history of upending the neoclassical theories that dominated the discipline for so long.

Although behavioral economists teach at Stanford, Berkeley, Chicago, Princeton, MIT, and elsewhere, the subfield's greatest concentration of scholars is at Harvard. "Harvard's approach to economics has traditionally been somewhat more worldly and empirical than that of other universities," says President Lawrence H. Summers, who earned his own economics doctor-

ate at Harvard and identifies himself as a behavioral economist. "And if you are worldly and empirical, you are drawn to behavioral approaches."

Framing a New Field

Two non-economists have won Nobel Prizes in economics. As early as the 1940s, Herbert Simon of Carnegie Mellon University put forward the concept of "bounded rationality," arguing that rational thought alone did not explain human decision-making. Traditional economists disliked or ignored Simon's research, and when he won the Nobel in 1978, many in the field were very unhappy about it.

Then, in 1979, psychologists Daniel Kahneman, LL.D. '04, of Princeton and Amos Tversky of Stanford published "Prospect Theory: An Analysis of Decision under Risk," a breakthrough paper on how people handle uncertain rewards and risks. In the ensuing decades, it became one of the most widely cited papers in economics. The authors argued that the ways in which alternatives are *framed*—not simply their relative value—heavily influence the decisions people make. This was a seminal paper in behavioral economics; its rigorous equations pierced a core assumption of the standard model—that the actual value of alternatives was all that mattered, not the mode of their presentation ("framing").

Framing alternatives differently can, for example, change people's preferences regarding risk. In a 1981 *Science* paper, "The Framing of Decisions and the Psychology of Choice," Tversky and Kahneman presented an example. "Imagine that the U.S. is preparing for the outbreak of an unusual Asian disease which is expected to kill 600 people," they wrote. "Two alternative programs to combat the disease have been proposed." Choose Program A, and a projected 200 people will be saved. Choose Program B, and there is a one-third probability that 600 people will be saved, and a two-thirds probability that no one will be saved. The authors reported that 72 percent of respondents chose Program A, although the actual outcomes of the two programs are identical. Most subjects were risk averse, preferring the certain saving of 200 lives. The researchers then restated the problem: this time, with Program C, "400 people will die," whereas with Program D, "there is a one-third probability that no one will die, and a two-thirds probability that 600 people will die."

Professor of economics David Laibson, whose research explores the fundamental tension between "seizing available rewards in the present, and being patient for rewards in the future"

This time, 78 percent chose Program D—again, despite identical outcomes. Respondents now preferred the risk-taking option. The difference was simply that the first problem phrased its options in terms of lives saved, and the second one as lives lost; people are more willing, apparently, to take risks to prevent lives being "lost" than to "save" lives.

"Kahneman and Tversky started this revolution in economics," says Straus professor of business administration Max Bazerman, who studies decision-making and negotiation at Harvard Business School. "That 1979 paper was written on the turf of economics, in the style of economists, and published in the toughest economic journal, *Econometrica*. The major points of prospect theory aren't hard to state in words. The math was added for acceptance, and that was important." In 2002, Kahneman received the Nobel Prize in economics along with Vernon Smith, Ph.D. '55, of George Mason University, who was honored for work in experimental economics. (Tversky, Kahneman's longtime collaborator, had died in 1996.)

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>
> —David Laibson

In the 1980s, Richard Thaler (then at Cornell, now of the University of Chicago Graduate School of Business) began importing such psychological insights into economics, writing a regular feature called "Anomalies" in the *Journal of Economic Perspectives* (later collected in his 1994 book, *The Winner's Curse*). "Dick Thaler lived in an intellectual wilderness in the 1980s," says professor of economics David Laibson, one of Harvard's most prominent behavioral economists. "He championed these ideas that economists were deriding. But he stuck to it. Behavioral approaches were anathema in the 1980s, became popular in the 1990s, and now we're a fad, with lots of grad students coming on board. It's no longer an isolated band of beleaguered researchers fighting against the mainstream."

As with most movements, there were early adopters. "In the 1980s the best economists in the world were seeing the evidence and adopting it [behavioral economics]," Bazerman says. "Mediocre economists follow slowly—they continued to ignore it so they could continue doing their work undisturbed."

To be fair, the naysayers would have agreed that the rational model only *approximates* human cognition—"just as Newtonian physics is an approximation to Einstein's physics," Laibson explains. "Although there are differences, when walking along the surface of this planet, you'll never encounter them. If I want to build a bridge, pass a car, or hit a baseball, Newtonian physics will suffice. But the psychologists said, 'No, it's *not* sufficient, we're *not* just playing around at the margins, making small change. There are *big* behavioral regularities that include things like imperfect self-control and social preferences, as opposed to pure selfishness. We care about people outside our families and give up resources to help them—those affected by Hurricane Katrina, for example."

Much of the early work in behavioral economics was in finance, with many significant papers written by Jones professor of economics Andrei Shleifer. In financial markets, "The usual arguments in conventional economics are, 'This [behavioral irrationality] can't be true, because even if there are stupid, irrational people around, they are met in the marketplace by smart, rational people, and trading by these arbitrageurs corrects prices to rational levels,'" Shleifer explains. "For example, if people get unduly pessimistic about General Motors and dump GM shares on the market, these smart people will sweep in and buy them up as undervalued, and not much will happen to the price of GM shares."

But a 1990 paper Shleifer wrote with Summers, "The Noise Trader Approach to Finance," argues against this "efficient market" model by noting that certain risk-related factors limit this arbitrage. At that time, for example, shares of Royal Dutch were selling at a different price in Amsterdam than shares of Shell in London, even though they were shares of the same company, Royal Dutch/Shell. Closed-end mutual funds (those with a fixed number of shares that trade on exchanges) sell at different prices than the value of their portfolios. "When the same thing sells at two different prices in different markets, forces of arbitrage and rationality are necessarily limited," Shleifer says. "The forces of irrationality are likely to have a big impact on prices, even on a long-term basis. This is a theoretical attack on the central conventional premise."

STU ROSNER

Meanwhile, the Russell Sage Foundation, which devotes itself to research in the social sciences, consistently supported behavioral economics, even when it was in the intellectual wilderness. Current Sage president Eric Wanner, Ph.D. '69, whose doctorate is in social psychology, was running a program in cognitive science at the Alfred P. Sloan Foundation in 1984 when Sloan started a behavioral economics program as an application of cognitive science to the study of economic decision-making. ("The field is misnamed—it should have been called *cognitive economics*," says Wanner. "We weren't brave enough.") After Wanner became president of Rus-

sell Sage in 1986, the two institutions worked jointly to foster the new subfield. In the last 20 years, Sage has made well over 100 grants to behavioral economists; it also organizes a biennial summer institute that has drawn younger scholars like Laibson and professor of economics Sendhil Mullainathan. Princeton University Press and Russell Sage also co-publish a series of books in the field.

Behavioral economics, then, is the hybrid offspring of economics and psychology. "We don't have much to tell psychologists about how individuals make decisions or process information, but we have a lot to learn from them," says Glimp professor of economics Edward Glaeser. "We do have a lot to say about how individuals come together in aggregations—markets, firms, political parties."

The Seductive Now-Moment

A NATIONAL CHAIN of hamburger restaurants takes its name from Wimpy, Popeye's portly friend with a voracious appetite but small exchequer, who made famous the line, "I'll gladly pay you Tuesday for a hamburger today." Wimpy nicely exemplifies the problems of "intertemporal choice" that intrigue behavioral economists like David Laibson. "There's a fundamental tension, in humans and other animals, between seizing available rewards in the present, and being patient for rewards in the future," he says. "It's radically important. People very robustly want instant gratification right now, and want to be patient in the future. If you ask people, 'Which do you want right now, fruit or chocolate?' they say, 'Chocolate!' But if you ask, 'Which one a week from now?' they will say, 'Fruit.' *Now* we want chocolate, cigarettes, and a trashy movie. In the *future*, we want to eat fruit, to quit smoking, and to watch Bergman films."

Laibson can sketch a formal model that describes this dynamic. Consider a project like starting an exercise program, which entails, say, an immediate cost of six units of value, but will produce a delayed benefit of eight units. That's a net gain of two units, "but it ignores the human tendency to devalue the future," Laibson says. If future events have perhaps half the value of present ones, then the eight units become only four, and starting an exercise program today means a net *loss* of two units (six minus four). So we don't want to start exercising *today*. On the other hand, starting *tomorrow* devalues both the cost *and* the

Assistant professor of business administration Nava Ashraf helped adapt a home-grown savings technique she saw in West Africa to the Philippines, where the "cute" SEED ("Save, Earn, Enjoy Deposits") bank (opposite) helped ordinary citizens save money.

benefit by half (to three and four units, respectively), resulting in a net *gain* of one unit from exercising. Hence, everyone is enthusiastic about going to the gym *tomorrow.*

Broadly speaking, "People act irrationally in that they overly discount the future," says Bazerman. "We do worse in life because we spend too much for what we want now at the expense of goodies we want in the future. People buy things they can't afford on a credit card, and as a result they get to buy less over the course of their lifetimes." Such problems should not arise, according to standard economic theory, which holds that "there shouldn't be any disconnect between what I'm doing and what I want to be doing," says Nava Ashraf.

Luckily, Odysseus also confronts the problem posed by Wimpy—and Homer's hero solves the dilemma. The goddess Circe informs Odysseus that his ship will pass the island of the Sirens, whose irresistible singing can lure sailors to steer toward them and onto rocks. The Sirens are a marvelous metaphor for human appetite, both in its seductions and its pitfalls. Circe advises Odysseus to prepare for temptations to come: he must order his crew to stopper their ears with wax, so they cannot hear the Sirens' songs, but *he* may hear the Sirens' beautiful voices without risk if he has his sailors lash him to a mast, and commands them to ignore his pleas for release until they have passed beyond danger. "Odysseus pre-commits himself by doing this," Laibson explains. "Binding himself to the mast prevents his future self from countermanding the decision made by his present self."

Pre-commitments of this sort are one way of getting around not only the lure of temptation, but our tendency to procrastinate on matters that have an immediate cost but a future payoff, like dieting, exercise, and cleaning your office. Take 401(k) retirement plans, which not only let workers save and invest for retirement on a tax-deferred basis, but in many cases amount to a bonanza of free money: the equivalent of finding "$100 Bills on the Sidewalk" (the title of one of Laibson's papers, with James Choi and Brigitte Madrian). That's because many firms will match employees' contributions to such plans, so one dollar becomes two dollars. "It's a *lot* of free money," says Laibson, who has published many papers on 401(k)s and may be the world's foremost authority on enrollment in such plans. "Someone making $50,000 a year who has a company that matches up to 6 percent

Neuroeconomics

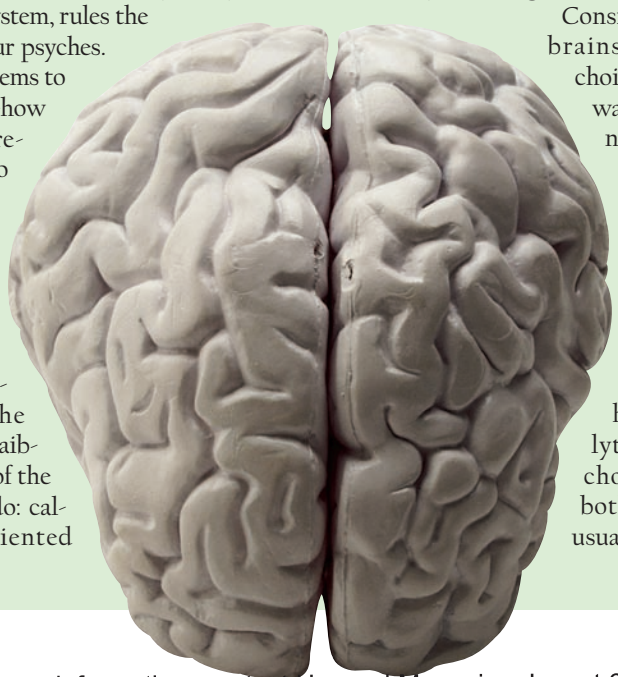
Certain patterns of response to rewards seem to be biologically embedded in the human brain. A branch of behavioral economics called *neuroeconomics* looks inside the brain with scanning tools like magnetic resonance imaging (MRI) to investigate patterns of motivation. Neuroeconomics is controversial, as the link between cerebral blood flow and decision-making is less straightforward than, say, playing slot machines and losing money. Yet it is one of the most fascinating and provocative aspects of the young field.

"Economists specialize in taking really complex things and boiling them down to simple principles," says David Laibson. "So, rather than treat the brain as billions of neurons, or trillions of neurotransmitters, we want to ask, what is the right level of analysis? It turns out that the brain has two key subsystems. One, the limbic and paralimbic system, rules the intuitive and affective parts of our psyches. It's shared by all mammals and seems to do a lot of emotional cognition—how we feel emotionally, how we respond to other humans, or to being treated unfairly. This system seems to function unconsciously; we don't have access to it and maybe can't even control it. It's experiential and rapid in function.

"Contrast that with the analytic system, centered in the frontal and parietal cortexes," Laibson continues. "It controls a lot of the thought processes we learn to do: calculated, conscious, future-oriented thinking. It's not based on past experience; you could have the rules of a brand-new game explained and the analytic system would be able to figure out how to play."

Brain researchers have shown that an interaction of the limbic and analytic systems governs human decision-making. The limbic system seems to radically discount the future. While the analytic system's role remains constant from the present moment onward, the limbic system assumes overriding importance in the present moment, but rapidly recedes as rewards move into the future and the emotional brain reduces its activation. This explains impulsiveness: the slice of pizza that's available *right now* trumps the dietary plan that the analytic brain has formulated. Seizing available rewards now might be a response pattern with evolutionary advantages, as future benefits are always uncertain.

Consider an experiment that scans the brains of research subjects offered a choice between present and future rewards: $20 now, or $23 a month from now. Both limbic and analytic systems show activity. Then change the offer to two future prospects: $20 two weeks from now, or $23 in a month. In this case, the limbic system pretty much drops out. The analytic system, in contrast, shows the same activation patterns regardless of the delay, be it hours or months. When the analytic system is more active, people choose the "patient" reward; when both systems are active, temptation usually trumps prudence.



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of his contributions could receive an additional $3,000 per year."

The rational model unequivocally predicts that people will certainly snap up such an opportunity. But they don't—not even workers aged 59½ or older, who can withdraw sums from their 401(k) plans without penalty. (Younger people are even more unlikely to contribute, but they face a penalty for early withdrawal.) "It turns out that about half of U.S. workers in this [above 59½] age group, who have this good deal available, are not contributing," says Laibson. "There's no downside and a huge upside. Still, individuals are procrastinating—they *plan* to enroll soon, year after year, but don't do it." In a typical American firm, it takes a new employee a median time of two to three *years* to enroll. But because Americans change jobs frequently—say, every five years—that delay could mean losing half of one's career opportunity for these retirement savings.

Laibson has run educational interventions with employees at companies, walking them through the calculations, showing them what they are doing wrong. "Almost all of them *still* don't invest," Laibson says. "People find these kinds of financial transactions unpleasant and confusing, and they are happier with the idea of doing it tomorrow. It demonstrates how poorly the standard rational-actor model predicts behavior."

It's not that we are utterly helpless against procrastination. Laibson worked with a firm that forced its employees to make *active decisions* about 401(k) plans, insisting on a yes or no answer within 30 days. This is far different from giving people a toll-free phone number to call whenever they decide to enroll. During the 30-day period, the company also sent frequent e-mail reminders, pressuring the staff to make their decisions. Under the active-decision plan, enrollment jumped from 40 to 70 percent. "People want to be prudent, they just don't want to do it right now," Laibson says. "You've got to compel action. Or enroll people automatically."

When he was U.S. Treasury Secretary, Lawrence Summers applied this insight. "We pushed very hard for companies to choose opt-out [automatic enrollment] 401(k)s rather than opt-in [self-enrollment] 401(k)s," he says. "In classical economics, it doesn't matter. But large amounts of empirical evidence show that defaults *do* matter, that people are inertial, and whatever the baseline settings are, they tend to persist."

Associate professor of public policy Iris Bohnet, who has played games that measure "aversion to betrayal" with subjects from Brazil to Switzerland to Kuwait

Marketing Prudence

These insights can also be writ large. Laibson's former student Nava Ashraf, who has worked extensively with non-governmental organizations, is now applying behavioral economics to interventions in developing countries. She lived for a year in Ivory Coast and Cameroon, where she "noticed that farmers and small-business owners were often not doing the things that a development policymaker or economist thinks they should do," she says. "They wouldn't take up technologies that would increase agricultural yield, for example. They wouldn't get vaccines, even though they were free! They also had a lot of trouble saving. In January they had a lot of money and would spend it on feasts and special clothes, but in June their children would be starving."

Still, some found ways to offset their less-than-prudent tendencies. One woman had a cashbox in her home, where she saved money regularly—and gave her neighbor the only key. Another timed the planting of her sweet-potato crop so that the harvest would come in when school fees were due. Her farm became an underground bank account that allowed withdrawal only at the proper moment.

Ashraf worked with a bank in the Philippines to design a savings plan that took off from the African woman's cashbox. The bank created a savings account, called SEED ("Save, Earn, Enjoy Deposits"), with two features: a locked box (for which the bank had the key) and a contractual agreement that clients could not withdraw money before reaching a certain date or sum. The clients determined the goal, but relied on the bank to enforce the commitment. The bank marketed the SEED product to literate workers and micro-entrepreneurs: teachers, taxi drivers, people with pushcart businesses.

The SEED box, designed to appeal to the bank's clients ("In the Philippines, they like 'cute' stuff," Ashraf explains), helped mobilize deposits. "It's similar to automatic payroll deduction, but not enough of the customers had direct deposit to make that work," she says. To further encourage deposits, Ashraf worked with the bank on an additional program of deposit collectors who, for a nominal fee, would go to the customer's home on a designated day and collect the savings from the SEED box. The withdrawal restrictions on the account helped clients avoid the temptation of spending their savings. The SEED savings account made a designed choice available in the marketplace that, so far, has helped a growing number of microfinance clients in the Philippines reach their savings goals.

Ashraf is now working with Population Services Interna-

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tional—a nonprofit organization that seeks to focus private-sector resources on the health problems of developing nations—on a project in Zambia to motivate people to use a water purification solution known as Clorin. "We can use what marketing people have known all along," Ashraf says. "There are ways of manipulating people's psychological frameworks to get them to buy things. How do you use this knowledge to get them to adopt socially useful products or services? It's so practical, and very important in development, for anybody who wants to help people reach their goals."

Carefully designed programs like the SEED bank are examples of what Richard Thaler called "prescriptive economics," which aims not only to describe the world but to change it. "Behavioral economics really shines when you talk about the specifics of what the policy should *look like*," says Sendhil Mullainathan, who received a MacArthur Fellowship in 2002. "The difference in impact between two broad policies may not be as great as differences in how each policy is framed—its deadlines, implementation, and the design of its physical appearance.

"For example, in Social Security privatization," Mullainathan continues, "the difference between private accounts and the status quo may be less than that between two different ways of implementing private accounts. What is the default option? Are you allowed to make changes? What's the deadline for making changes? How are the monthly statements presented—just your returns, or are the market returns printed alongside your own? In terms of impact, the devil really is in the details of how the program is designed. We know that people have a tough time making these choices. So how are the choices framed? What metrics do they focus on?"

"We tend to think people are driven by purposeful choices," he explains. "We think big things drive big behaviors: if people don't go to school, we think they don't like school. Instead, most behaviors are driven by the moment. They aren't purposeful, thought-out choices. That's an illusion we have about others. Policymakers think that if they get the abstractions right, that will drive behavior in the desired direction. But the world happens in real time. We can talk abstractions of risk and return, but when the person is physically checking off the box on that investment form, all the things going on at that moment will disproportionately influence the decision they make. That's the temptation element—in real time, the moment can be very tempting. The main thing is to define what is in your mind at the moment of choice. Suppose a company wants to sell more soap. Traditional economists would advise things like making a soap that people like more, or charging less for a bar of soap. A behavioral economist might suggest convincing supermarkets to display your soap at eye level—people will see your brand first and grab it."

Mullainathan worked with a bank in South Africa that wanted to make more loans. A neoclassical economist would have offered simple counsel: lower the interest rate, and people will borrow more. Instead, the bank chose to investigate some contextual factors in the process of making its offer. It mailed letters to 70,000 previous borrowers saying, "Congratulations! You're eligible for a special interest rate on a new loan." But the interest rate was randomized on the letters: some got a low rate, others a high one. "It was done like a randomized clinical trial of a drug," Mullainathan explains.

The bank also randomized several aspects of the letter. In one corner there was a photo—varied by gender and race—of a bank employee. Different types of tables, some simple, others complex, showed examples of loans. Some letters offered a chance to win a cell phone in a lottery if the customer came in to inquire about a loan. Some had deadlines. Randomizing these elements allowed Mullainathan to evaluate the effect of psychological factors as opposed to the things that economists care about—i.e., interest rates—and to quantify their effect on response in basis points.

"What we found stunned me," he says. "We found that any one of these things had an effect equal to one to five percentage points of interest! A woman's photo instead of a man's increased demand among men by as much as dropping the interest rate five points! These things are not small. And this is very much an economic problem. We are talking about big loans here; customers would end up with monthly loan payments of around 10 percent of their annual income. You'd think that if you really needed the money enough to pay this interest rate, you're not going to be affected by a photo. The photo, cell phone lottery, simple or complicated table, and deadline all had effects on loan applications comparable to interest. Interest rate may not even be the *third* most important factor. As an economist, even when you think psychology is important, you don't think it's *this* important. And changing interest rates is expensive, but these psychological elements cost nothing."

"An economist would say, 'With $50,000 at stake, the forms *can't* be the obstacle.' But they can."

—Sendhil Mullainathan

Mullainathan is helping design programs in developing countries, doing things like getting farmers to adopt better feed for cows to increase their milk production by as much as 50 percent. Back in the United States, behavioral economics might be able to raise compliance rates of diabetes patients, who don't always take prescribed drugs, he says. Poor families are often deterred from applying to colleges for financial aid because the forms are too complicated. "An economist would say, 'With $50,000 at stake, the forms *can't* be the obstacle,'" he says. "But they can." (A traditional explanation would say that the payoff clearly outweighs the cost in time and effort, so people won't be deterred by complex forms.)

Economists and others who engage in policy debates like to wrangle about big issues on the macroscopic level. The nitty-gritty details of execution—what do the forms look like? what is in the brochures? how is it communicated?—are left to the support staff. "But that work is central," Mullainathan explains. "There should be as much intellectual energy devoted to these design choices as to the choice of a policy in the first place. Behavioral economics can help us design these choices in sensible ways. This is a big hole that needs to be filled, both in policy and in science."

The Supply of Hatred

While some try to surmount or cope with irrationality, others feed upon it. In the wake of *(please turn to page 93)*

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the 9/11 attacks, Edward Glaeser began using behavioral economic approaches to research the causes of group hatred that could motivate murderous acts of that type. "An economist's definition of hatred," he says, "is the willingness to pay a price to inflict harm on others." In laboratory settings, social scientists have observed subjects playing the "ultimatum game," in which, say, with a total kitty of $10, Player A offers to split the cash with player B. If B accepts A's offer, they divide the money accordingly, but if B rejects A's offer, both players get nothing. "In thousands of trials around the world, with different stakes, people reject offers of 30 percent [$3 in our example] or less," says Glaeser. "So typically, people offer 40 or 50 percent. But a conventional economic model would say that B should accept a split of even one cent versus $9.99, since you are still better off with a penny than nothing." (If a computer, rather than a human, does the initial split, player B is much more likely to accept an unfair split—a confirmation of research conducted by professors at the Kennedy School of Government; see "Games of Trust and Betrayal," page 94.)

Clearly, the B player is willing to suffer financial loss in order to take revenge on an A player who is acting unfairly. "You don't poke around in the dark recesses of human behavior and not find vengeance," Glaeser says. "It's pretty hard to find a case of murder and not find vengeance at the root of it."

"You have to investigate the *supply* of hatred. Who has the incentive and ability to induce group hatred? Politicians or anyone else will supply hatred when hatred complements their policies."

—Edward Glaeser

The psychological literature, he found, defines hatred as an emotional response we have to threats to our survival or reproduction. "It's related to the belief that the object of hatred has been guilty of atrocities in the past and will be guilty of them in the future," he says. "Economists have nothing to tell psychologists about why individuals hate. But group-level hatred has its own logic that always involves stories about atrocities. These stories are frequently false. As [Nazi propagandist Joseph] Goebbels said, hatred requires repetition, not truth, to be effective.

"You have to investigate the *supply* of hatred," Glaeser continues. "Who has the incentive and the ability to induce group hatred? This pushes us toward the crux of the model: politicians or anyone else will supply hatred when hatred is a complement to their policies." Glaeser searched back issues of the *Atlanta Constitution* from 1875 to 1925, counting stories that contained the keywords "Negro + rape" or "Negro + murder." He found a time-series that closely matched that for lynchings described by historian C. Vann Woodward: rising from 1875 until 1890, reaching a plateau from 1890 until 1910, then declining after 1910.

In the 1880s and 1890s, Glaeser explains, the southern Populist Party favored large-scale redistribution of wealth from the rich to the poor, and got substantial support from African Americans. "Wealthier Southern conservatives struck back, using race hatred" and spreading untrue stories about atrocities perpetrated by blacks, Glaeser says. "'Populists are friends of blacks, and blacks are dangerous and hateful,' was the message—instead of being supported, [blacks] should be sequestered and have their resources reduced. [Rich whites] sold this to poor white voters, winning votes and elections. Eventually the Populists gave in and decided they were better off switching their appeal to poor, racist whites. They felt it was better to switch policies than try to change voters' opinions. The stories—all about rape and murder—were coming from suppliers who were external to poor whites."

Glaeser applies this model to anti-American hatred, which, in degree, "is not particularly correlated with places that the United States has helped or done harm to," he says. "France hates America more than Vietnam does." Instead, he explains, it has much to do with "political entrepreneurs who spread stories about past and future American crimes. Some place may have a leader who has a working relationship with the United States. Enemies of the leader offer an alternative policy: completely break with the United States and Israel, and attack them. We saw it in the religious enemies of the shah [of Iran]. The ayatollah sought to discredit the secular modernists through the use of anti-American hatred."

For Glaeser, behavioral economics can take "something we have from psychology—hatred as a hormonal response to threats—and put this in a market setting. What are the incentives that will increase the supply of hatred in a specific setting?" Economists, he feels, can take human tendencies rooted in hormones, evolution, and the stable features of social psychology, and analyze how they will play out in large collectivities. "Much of psychology shows the enormous sensitivity of humans to social influence," Glaeser says. "The Milgram and Zimbardo experiments [on obedience to authority and adaptation to the role of prison guard] show that humans can behave brutally. But that doesn't explain why Nazism happened in Germany and not England."

Zero-Sum Persuasion

Andrei Shleifer has already made path-breaking contributions to the literatures of behavioral finance (as noted above), political economy, and law and economics. His latest obsession is persuasion—"How people absorb information and how they are manipulated," he says. At the American Economic Association meetings in January, Shleifer described "cognitive persuasion," exploring how advertisers, politicians, and others attach their messages to pre-existing maps of associations in order to move the public in a desired direction.

The Marlboro Man, for example, sold filtered cigarettes by mobilizing the public's associations of cowboys and the West with masculinity, independence, and the great outdoors. "There is a 'confirmation bias,'" Shleifer explained, which favors persuasive messages that confirm beliefs and connections already in the audience's mind (see "The Market for News," January-February, page 11, on work by Shleifer and Mullainathan that applies a sim-

ilar analysis to the news media). For example, George W. Bush wearing a $3,000 cowboy hat was not a problem, because it matched his image, but John Kerry riding a $6,000 bicycle *was* a problem—that luxury item appeared hypocritical for a candidate claiming to side with the downtrodden.

Citing Republican pollster and communications consultant Frank Luntz, Shleifer noted how the estate tax was renamed the "death tax" (although there is no tax on death) in order to successfully sell its repeal. The relabeling linked the tax to the unpleasant associations of the word "death," and the campaign asked questions like, "How can you burden people even *more* at this most difficult time in their lives?" "Messages, not hard attributes, shape competition," Shleifer said; he noted that the fear of terrorism is a bigger issue in probable non-target states like Wyoming, Utah, and Nevada than in New York and New Jersey.

Because successful persuasive messages are consistent with prevailing worldviews, one corollary of Shleifer's analysis is that persuasion is definitely *not* education, which involves adding new information or correcting previous perceptions. "Don't tell people, 'You are stupid, and here is what to think,'" Shleifer said. During presidential debates, he asserted, voters tune out or forget things that are inconsistent with their beliefs. "Educational messages may be doomed," he added. "They do not resonate." In economic and political markets, he said, there is no tendency toward a median taste; divergence, not convergence, is the trend. Therefore, the successful persuader will find a niche and pander to it.

When making choices in the marketplace, "People are not responding to the *actual objects* they are choosing between," says Eric Wanner of the Russell Sage Foundation. "There is no direct rela-

Games of Trust and Betrayal

"People care not only about outcomes, but about how outcomes came to be," says associate professor of public policy Iris Bohnet of the Kennedy School of Government. "That doesn't strike anyone but an economist—like me—as a surprise." Game theory, as conceptualized by conventional economics, suggests that players care only about substantive results. With Ramsey professor of political economy Richard Zeckhauser, Bohnet developed a concept of "betrayal aversion," building on the well-established psychological principle of risk aversion—by and large, humans simply don't like to take risks.

It turns out they don't like to trust, either, because trust is a form of risk that makes one vulnerable to betrayal. To buy an item on eBay, one must trust the seller. We also trust attorneys, doctors, and politicians to tell us the truth and to represent our interests. "These are principal-agent relationships," Bohnet says. "An agent does something on your behalf. But principals' and agents' incentives are not always completely aligned, and there's asymmetric information."

Traditionally, academics have linked trust to risk tolerance, since it involves taking a risk. Instead, "We're saying that risk-taking when the agent of uncertainty is *nature* is very different from when the agent is another *person*," Bohnet asserts. A farmer, for example, faces natural risks like weather and soil conditions. But there are also social risks—speculative bubbles, HIV infection, terrorism—where other people produce the uncertainty.

Bohnet and Zeckhauser have been running two games, now with about a thousand subjects around the world, playing in groups of 30 at a time. They are two-person games, a variant of the classic Prisoner's Dilemma. In the first game, Player A can choose a "safe" alternative or choose to trust Player B, who can in turn choose an option that rewards both of them more than the safe alternative, or a second option that brings even greater winnings for B—but less than the "safe" option would have given A. In other words, the "good" (i.e., trustworthy) B player will take the win-win alternative, while the "selfish" B will maximize his own outcome at A's expense. When the researchers ask subjects playing A, "What percentage of good people would there have to be in the room [of 15 potential B players] before you would be willing to trust this stranger [the B player]?" the answer has consistently been 50 to 80 percent.

The second game has the same rules as the first, except that an urn containing 100 blue and green marbles takes the role of Player B. The urn is a proxy for an impersonal force, such as nature. If a blue ball is randomly chosen, B selects the "trustworthy" win-win alternative; if a green ball, the "selfish" one. The researchers then asked A players, "What percentage of blue balls would the urn have to contain for you to be willing to take this risk?" A rational money-maximizing person—one who cares only about outcomes—would give the same answer to this question as to the analogous one in the first game. But when playing with "nature," respondents generally peg the figure at 30 to 40 percent, far lower than in the first game. "People are less willing to take risks when confronted with another person than when confronted by nature," Bohnet explains. "Trust is not only about willingness to take risks, but about the willingness to be betrayed."

By comparing the difference between "Minimal Acceptable Probabilities" in the first and second games, the researchers have been able to distinguish risk aversion from betrayal aversion. The "nature" game establishes a baseline level of risk aversion, but the game with a human Player B introduces the additional possibility of betrayal. Thus, the gap between percentages on the two games gives a rough index of betrayal aversion. In the United States, Switzerland, and Brazil, the betrayal aversion differential is 10 to 20 percent. Zeckhauser and Bohnet have also played the games in the Persian Gulf region, with subjects in Kuwait, Oman, and the United Arab Emirates. (They are the first social scientists to run economic experi-

GETTY IMAGES

tion of stimulus and response. Neoclassical economics posits a direct relationship between the object and the choice made. But in behavioral economics, the choice depends on *how the decision-maker describes the objects to himself.* Any psychologist knows this, but it is revolutionary when imported into economics.

"Educational messages may be doomed. They do not resonate." Voters tune out or forget things that are inconsistent with their beliefs.

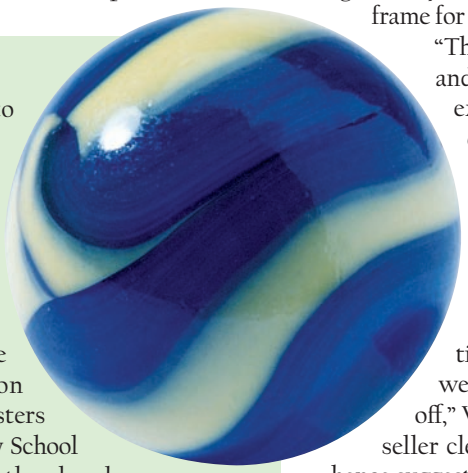
—Andrei Shleifer

"We are vulnerable to how choices are described," Wanner explains. "Advertising is a business that tries to shape how people think about their choices. Neoclassical economics can explain ads only as providing information. But if the seller can invest in advertising that *frames* the choice, that frame will skew the buyer's decision. The older economic theories depend on the idea that the successful seller will produce a better product, the market will price the product correctly, and the buyer will buy it at a price that maximizes everyone's interest—the market is simply where the buyer and seller come together. But once you introduce framing, you can argue that the buyer may no longer be acting entirely in his own self-interest if the seller has invented a frame for the buyer, skewing the choice in favor of the seller. "Then, the model of the market is not simply buyers and sellers coming together for mutually beneficial exchange," Wanner continues. "Instead, the exchange between buyers and sellers has aspects of a zero-sum game. The seller can do even better if he sells you something you *don't* need, or gets you to buy *more* than you need, and pay a higher price for it." The classical welfare theorem of Vilfredo Pareto was that markets will make everyone as well off as they can be, that the market distribution will be an efficient distribution that maximizes welfare. "But once you introduce framing, all bets are off," Wanner says. A zero-sum game between buyer and seller clearly does not maximize everyone's welfare, and hence suggests a different model of the marketplace.

There are many political implications. We have had 30 years of deregulation in the United States, freeing up markets to work their magic. "Is that generally welfare-enhancing, or not?" Wanner asks. "Framing can call that into question. Everyone agrees that there's informational asymmetry—so we have laws that ensure drugs are tested, and truth-in-advertising laws. Still, there are subtle things about framing choices that are deceptive, though not inaccurate. We have the power of markets, but they are places where naive participants lose money. How do we manage markets so that the framing problem can be acknowledged and controlled? It's an essential question in a time of rising inequality, when the well-educated are doing better and the poorly educated doing worse."

It's a question that behavioral economics raises, and, with luck, may also be able to address. The eclipse of hyper-rational Economic Man opens the way for a richer and more realistic model of the human being in the marketplace, where the brain, with all its ancient instincts and vulnerabilities, can be both predator and prey. Our irrationalities, our emotional hot-buttons, are likely to persist, but knowing what they are may allow us to account for them and even, like Odysseus, outwit temptation. The models of behavioral economics could help design a society with more compassion for creatures whose strengths and weaknesses evolved in much simpler conditions. After all, "The world we live in," Laibson says, "is an institutional response to our biology."

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



ments in the Gulf region, and will go to Saudi Arabia in March.) In these countries, betrayal aversion is markedly higher, with a differential in the 30 to 40 percent range. "Many in this area say they are willing to trust only if 100 percent of the people are trustworthy," Bohnet reports.

She had an enlightening experience when teaching negotiation and decision analysis to a group of government ministers from the Persian Gulf region in a Kennedy School executive-education program. "I started the class by asking them to recall a time when they lost trust in someone," Bohnet recalls. "One minister said, 'Trust is not an issue for us. We never trust.' What a beginning! It opened up a very interesting discussion. A minister said, 'We cannot dare to trust because we may lose face. I would never come to a meeting and put something on the table that other people could decline.' The meeting-before-the-meeting is absolutely critical in the Gulf, because being let down is terribly humiliating."

Trust has other policy implications. Social capital, per capita income, economic growth, and political stability all have positive correlations with trust in a society. "Trust is a generally good thing," says Bohnet. And nations deal with breakdowns of trust in different ways. "In the Western world, especially the United States, contract law builds on the notion of damages or efficient breach," Bohnet says, "meaning that someone who breaches a contract must compensate their counterpart. But if people are really betrayal averse, damages won't satisfy them, because what they are concerned with is the *fact* of betrayal. U.S. contract law focuses on decreasing the material cost of betrayal, but what betrayal aversion asks for is to decrease the *likelihood* of betrayal, which causes emotional hurt. In Islamic law, which seems to encourage building trust by personal relationships rather than legal means, damages play a much smaller role than in the West. In addition to differences in law, there obviously are other contributing factors. For example, group-based social organization, typical in the Gulf but not in Western countries, is based on long-standing relationships. This substantially reduces the likelihood of betrayal and thus, the social uncertainty involved in trust."