

# Rethinking

## Economics and Human Nature

When it comes to many of our economic decisions, are we predictably irrational? Can a nudge in the right direction help?

By James Guszcza

**IN HIS RECENT BOOK**, *Predictably Irrational: The Hidden Forces That Shape Our Decisions*, the behavioral economist Dan Ariely describes an ad for *The Economist* that offered the following three subscription options:

1. Internet-only access: \$59
2. Printed edition: \$125
3. Printed edition plus Internet access: \$125

This seems strange. Why would the marketing “boffins” at *The Economist* offer an option that clearly offers fewer benefits for the same price? Wouldn’t offering Options 1 and 3 achieve the same results?

Not necessarily. Ariely had a theory about this that he put to the test. He offered 100 of his students at the Massachusetts Institute of Technology the choice between Options 1, 2, and 3 and found that most were inclined to take Option 3:

- Option 1-16 students
- Option 2-0 students
- Option 3-84 students.

Of course, nobody chose Option 2. Next, Ariely dropped Option 2 and offered the students the choice between Options 1 and 3. Removing the obviously inferior Option 2 should have had no effect on the students’ choices. But Ariely’s result was striking:

- Option 1-68 students
- Option 2—
- Option 3-32 students

Even though Option 2 was a decoy that no one would select, its mere presence apparently had the powerful effect of “nudging” buyers to opt for the more expensive Option 3. Option 2 provided a basis for comparison against which Option 3 looked good; but no such basis for comparison was provided for Option 1.

Surprising? The burgeoning field of behavioral economics has a number of such surprises in store for us, many of which are particularly relevant to decisions involving insurance.



RICHARD THOMPSON

# Rationality

## Ecce Homo

To start, a bit of economic history is in order. Until quite recently, much of the economic theory underpinning regulatory science and business practice has paid little heed to such anomalies as Ariely's *Economist* example. Indeed a central concept of classical economics is *Homo economicus*, the idea that economic actors are perfectly rational beings. They possess both the ability to consistently put a price tag on each of their desires and the judgment and self-control needed to achieve their goals. In *The Economic Approach to Human Behavior*, University of Chicago Nobel laureate Gary Becker states the matter in an admirably clear way:

The combined assumptions of maximizing behavior, market equilibrium, and stable preferences, used relentlessly and unflinchingly, form the heart of the economic approach as I see it.... All human behavior can be viewed as involving participants who maximize their utility from a stable set of preferences and accumulate an optimal amount of information and other inputs in a variety of markets.

In their recent book *Nudge: Improving Decisions About Health, Wealth, and Happiness*, University of Chicago behavioral economist Richard Thaler and Harvard University law professor Cass Sunstein paint a much different portrait of economic actors:

Whether or not they have ever studied economics, many people seem at least implicitly committed to the idea of *Homo economicus*, or economic man—the notion that each of us thinks and chooses unflinchingly well, and thus fits within the textbook picture of human beings offered by economists ... If you look at economics textbooks, you will learn that *Homo economicus* can think like Albert Einstein, store as much memory as IBM's Big Blue, and exercise the willpower of Mahatma Gandhi. Really. But the



folks that we know are not like that. Real people have trouble with long division if they don't have a calculator, sometimes forget their spouse's birthday, and have a hangover on New Year's Day. They are not *Homo economicus*; they are *Homo sapiens*.

According to Thaler and Sunstein, *Homo economicus* is a myth that is too far removed from reality to be a reliable basis for economic reasoning. Indeed, they turn to modern mythology to illustrate the concept. The dependably logical and well-informed Mr. Spock from *Star Trek* is their exemplar of *Homo economicus*. Tellingly, Mr. Spock is not fully human. Their illustration of *Homo sapiens*, on the other hand, is all too human: Homer from *The Simpsons*. While their discussion is playful, their point is serious and of fundamental importance. Thaler and Sunstein make the case that because real-world economic agents are more Homeric than Spock-like, economic theory and practice should dispense with the assumption of perfect rationality in favor of a more psychologically informed picture of human behavior.

In the 1960s, Herbert Simon foreshadowed this point with his concept of "bounded rationality." Simon was a polymath who eventually won the Nobel Memorial Prize in Economic Sciences in 1978. Like Thaler and Sunstein, Simon pointed out the obvious: When drawing inferences or making decisions, people have neither the luxury of complete information nor a limitless ability to process information. Boundedly rational people inevitably draw a line under rational deliberation at a certain point and rely on mental shortcuts. For anyone other than Mr. Spock, finding the optimal solution is not realistic. Therefore, Simon held that rather than maximize, we "satisfice." That is, we find a solution that gives up less utility than is gained by avoiding excess deliberation.

Fair enough, but this perhaps is not enough to subvert the dominant paradigm of economics. Satisficing is, after all, a potentially rational way of maximizing utility once the cost of deliberation is taken into account. Of course, classical economics does not maintain that actual people are omniscient or infallible. It posits only that their guesses diverge from the truth in random ways that average out to zero. James Surowiecki recounted a famous illustration of this in his recent book *The Wisdom of Crowds*. Francis Galton, the half-cousin of Charles Darwin and inventor of regression analysis, came across a contest in which people guessed the weight of an ox that was on display at a country fair. While each of the 787 individual guesses was wrong, their average came remarkably close to the mark—the ox weighed 1,198 pounds and the average of the guesses was 1,197. The contestants' guesses were presumably the product of bounded rationality, but they were still rational.

Subsequent work, done in the 1970s by the Israeli-American psychologists Daniel Kahneman and the late Amos Tversky, eventually blossomed into the subject known as behavioral eco-

nomics. Tversky died in 1996, and Kahneman, now a professor at Princeton, was awarded the Nobel Memorial Prize in Economic Sciences in 2002. Like Simon, Kahneman and Tversky found that people rely on mental shortcuts, which they called "heuristics," when making decisions. But their work went further. Kahneman and Tversky found that many of these heuristics lead to systematic biases in human cognition and decision-making. In particular, Kahneman and Tversky repeatedly found that people's actions are often heavily influenced by context in ways that violate the standards of rationality.

Today, Kahneman and Thaler are widely regarded as the founders of behavioral economics, the field that applies our newfound knowledge of cognitive heuristics and biases to better understand how people make economic decisions. Ariely's book is an engaging popular introduction to the field. Thaler and Sunstein's book explores the implications of behavioral economics for law and regulation. Subsequent to the publication of *Nudge*, Sunstein was chosen by the Obama administration to head the Office of Information and Regulatory Affairs.

### Irrational Expectations

Ariely's phrase "predictably irrational" is a memorable way of expressing the idea that while our behavior regularly deviates from the *Homo economicus* ideal, it does so in ways that aren't purely capricious "white-noise" deviations from the rational ideal. Rather, we are irrational in systematic ways. Even if there is not always a method to our madness, there are at least repeatable patterns that can be studied scientifically. Much of *Predictably Irrational* is devoted to describing Ariely's own experiments in the realm of human irrationality. Four well-known biases are:

- Anchoring
- Loss aversion
- The endowment effect
- The availability heuristic.

To illustrate the phenomenon of anchoring, Ariely asked a group of his MIT students to write the last two digits of their Social Security numbers on a piece of paper. The students were then instructed to record whether they were willing to pay that many dollars for items such as a bottle of wine, a book, and a box of chocolates. Next, they were instructed to write down how much they would be willing to spend for each of the items. Ariely found that there was a significant correlation (roughly 30 percent to 40 percent) between their Social Security number digits and the price they were willing to pay for the wine, chocolates, and books!

This is an extreme example of "anchoring and adjustment": When estimating an unknown quantity, people often begin with a number they know—an anchor—and adjust it in the appropriate direction. For example, when guessing the population of Green

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Bay, Wis., a citizen of Madison, Wis., might adjust the (known) population of Madison upward and a citizen of Chicago might adjust that city's population downward. But people tend not to adjust far enough—Madisonians' guesses will be on average too low, and Chicagoans' guesses will be on average too high.

Ariely's experiment demonstrates the surprising fact that people's judgments and decisions can be anchored even by purely arbitrary numbers. Thaler and Sunstein give another example. They asked their students to add 200 to the last three digits of their phone number and guess the year that Attila the Hun invaded Europe (411). Consistent with Ariely, Thaler and Sunstein found that students with high anchors guessed hundreds of years later than students with low anchors. The phenomenon is surprising and of fundamental importance yet easily repeatable in a classroom setting.

Another interesting aspect of Ariely's experiment is the finding of "arbitrary coherence." Despite their susceptibility to completely arbitrary anchors, the students' preferences were consistent in the sense that each student was willing (for example) to pay more for the bottle of wine than for the box of chocolates. However, the strength of the anchoring effect was such that students with the highest anchors were willing to pay more for the chocolates than students with the lowest anchors were willing to pay for the wine! Such findings give the expression *caveat emptor* an added meaning.

It is not hard to imagine how anchoring is relevant to the buying and selling of insurance. On the one hand, underwriters use rules of thumb and are susceptible to anchoring effects when setting prices for complex risks. On the other, renewing policyholders' expectations of their future premium are firmly anchored in their previous term's premium, regardless of whether their risk profile has changed. It is interesting to speculate on the degree to which even arbitrary anchors might influence the amount people are willing to pay for products like extended-warranty insurance or travel insurance.

Another well-known bias is "loss aversion": The pleasure (utility) of gaining an item is less intense than the pain (disutility) of giving it up. A particularly interesting manifestation of loss aversion is a phenomenon that Kahneman and Thaler named the "endowment effect"—people often demand more to part with an object than they would be willing to pay to acquire it. To illustrate the endowment effect, Ariely studied a group of basketball fans, some of whom had won tickets to a big Duke Blue Devils basketball game in a lottery. Ariely found that the

winners were willing to part with their tickets for an average of \$2,400, while the losers were willing to pay an average of only \$175. Not a single ticket changed hands. Apparently, the mere fact of owning an item—even if that item had been won in a purely random lottery—has a powerful effect on the owner's sense of its value. Loss aversion and the endowment effect are often invoked to explain why homeowners fail to set realistic prices on their homes in a soft housing market. It might also partially explain why insurers are sometimes reluctant to part with unprofitable segments of their books of business.

The "availability heuristic" is particularly relevant to understanding people's insurance-buying behavior. Thaler and Sunstein describe it thus: People "assess the likelihood of risks by asking how readily examples come to mind." For example, homicides are more "cognitively available" than suicides, so

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# Suitable for Framing: A Sampling of Cognitive and

**ANCHORING**—The tendency to rely too heavily on a (possibly arbitrary) reference point when estimating a quantity or making a decision. For example, people’s estimates of a little-known date in history are affected if they are first told to add 200 to the last three digits of their phone numbers.

**FRAMING**—People’s decisions and actions are influenced by the way relevant information is presented to them.

**AVAILABILITY HEURISTIC**—One’s judgment of the probability of an event is influenced by how readily an example comes to mind. Likely influential in people’s assessment of the probabilities of such risks as hurricanes, earthquakes, and terrorist attacks.

**LOSS AVERSION**—The pleasure (utility) of gaining an item is less than the pain (disutility) of giving it up. Related to the endowment effect.

**ENDOWMENT EFFECT**—People often demand more to part with an object than they would be willing to pay to acquire it. This may partially explain the stalled real estate market.

**STATUS QUO BIAS**—Named by William Samuelson and Richard Zeckhauser, it is the tendency to stick with one’s current situation. For example, students tend to sit at the same desks every day. It is associated with one of the greatest marketing failures in history. In blind taste tests, people preferred New Coke to the original classic Coca-Cola. Yet when confronted with the choice between new and old versions in the stores, people continued to buy old Coke.

**HALO EFFECT**—When a person is considered talented or effective in one area, others tend to attribute comparable talents to him or her in other, unrelated areas.

**OPTIMISM BIAS** (aka the Lake Wobegon Effect)—The tendency to be overly optimistic about one’s abilities and the outcomes of one’s own actions.

**AVAILABILITY CASCADES**—A chain reaction process by which a novel idea, or “meme,” gains currency in a social network or society. An example is Hurricane Katrina sparking a cascading concern about climate change. (Note that questioning the evidential significance of Katrina does not suggest that climate change is not a real threat.)

many people believe (incorrectly) that more people die from homicide. The availability heuristic implies that people’s risk judgments can be manipulated in much the same way as their purchasing behavior. This has important implications for insurance-buying behavior. For example, the demand for earthquake insurance rises sharply immediately after an earthquake and then gradually diminishes as memories of the disaster recede. Similarly, psychological experiments have shown that people’s risk perception and demand for flood insurance can be experimentally manipulated by showing subjects photographs of flooded houses. Thaler and Sunstein report that people with acquaintances who have suffered flooding are more likely to buy flood insurance of their own, regardless of the flood risk that they actually face.

In short, the availability heuristic affects people’s risk perception, which in turn affects their propensity to buy various types of insurance. This even can lead to logical inconsisten-

cies in people’s behavior. A simple illustration of the availability heuristic is that people tend to believe that words ending in “ing” are more common than words having “n” as their second-to-last letter. Of course this is illogical, but the belief arises because words ending in “ing” more readily come to mind. They are more cognitively available than words whose penultimate letter is “n.” Analogously, a 1993 study by a group of Wharton professors reported that participants of a study were willing to pay a higher premium for a \$100,000 terrorism-insurance policy than for a policy that paid the same amount for death owing to any reason (including terrorism).

## You’ve Been Framed

Phenomena such as anchoring, loss aversion, the endowment effect, and the availability heuristic are only the beginning of a long list of cognitive and behavioral biases documented by Kahneman and Tversky and their followers (see Page 32 for further

# Behavioral Biases

**HERD BEHAVIOR**—The tendency to be influenced by social effects and follow the crowd. Explained both by peer pressure and by the tendency to assume that others have information that you don't have. Herd behavior and availability cascades may partially explain the regular appearance of bubbles in financial markets.



examples). But even these few examples suffice to illustrate how fundamentally and systematically actual human behavior diverges from the Homo economicus ideal articulated by Gary Becker. Recall that Becker posited that economic actors have a “stable set of preferences.” This seems doubtful in light of the large body of evidence amassed over the past 30 years that people’s decisions are powerfully affected by arbitrary anchors, defaults, reference points, and even the semantic connotations of the ways their choices have been framed.

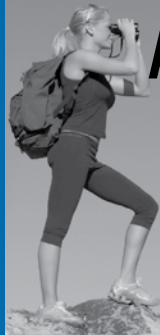
For example, Ariely’s *Economist* subscriptions story flies in the face of the assumption that people have stable, well-ordered preferences. If magazine readers had stable preferences, the presence of the decoy Option 2 would not affect their purchasing behavior. Yet it does. It appears that when we make decisions, we do not merely consider an abiding set of well-ordered preferences. Ariely comments, “We look at our decisions in a relative way and compare them locally to the available alternative.”

Similarly, classical microeconomic theory assumes that the demand for a good is objective and independent of the supply of that good. But as Ariely’s wine and chocolate experiment shows, the anchoring effect calls this into question. The demand side can be manipulated by fairly arbitrary supply-side anchors such as the manufacturer’s suggested retail price or the most expensive item on a menu or wine list. Therefore, Ariely says that contrary to the axioms of microeconomics, “demand is not a separate force from supply.”

People’s beliefs and decisions are also affected by the way the relevant options are framed. Thaler and Sunstein give the example of an energy conservation campaign. The following two campaigns convey precisely the same information:


- If you use energy conservation methods, you will save \$350 per year.
- If you do not use energy conservation methods, you will lose \$350 per year.

It turns out that the latter is the more effective campaign. Similarly, telling people that performing a self-examination for



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skin cancer reduces their risk of cancer is less effective than warning them of the increased risk that results from failing to self-examine. Insurers engage in a type of framing all the time. For example, offering a good-student discount for auto insurance is logically equivalent to surcharging policyholders who don't fall into the good-student category. But few insurers would adopt the latter option.

As if all of this weren't enough, there is an entirely different class of ways in which people regularly diverge from the rational ideal—they succumb to social influences even at the cost of ignoring information from their own senses. So-called conformity effects have been studied since the 1930s and appear to be fairly ubiquitous. They (at least partially) account for phenomena as disparate as vicissitudes in fashion, the success of anti-littering and anti-graffiti campaigns, and even the decision-making of federal judges. Other well-known conformity effects, documented in research from Harvard, the University of California, San Diego, and other sources, include the fact that obesity is contagious (controlling for other risk factors, people with overweight friends are more likely to be overweight themselves) and the fact that teenage girls who see their peers having children are more likely (again, all else being equal) to become pregnant themselves.

A disconcerting finding is that even core beliefs appear to be subject to social influences. For example, Thaler and Sunstein report a study in which people were asked whether they agreed or disagreed with the statement, "Free speech being a privilege rather than a right, it is proper for a society to suspend free speech when it feels threatened." When this question was posed individually to people in a control group, only 19 percent agreed with it. However, when another group was told that four other people agreed with the statement, 58 percent agreed.

For a more mundane example, think back to Francis Galton's ox contest. Galton's contestants were "rational" because they made their guesses independently of one another. However, had the first contestant uttered an inaccurate guess out loud, it very likely would have anchored others' guesses, resulting in the average of the crowd's guesses being biased. Even worse, if the guesses had been made both aloud and in sequence, an "information cascade" might have arisen, resulting in the group's collective estimate being highly sensitive to the guesses of the first few members. Consider this the next time you are in a group discussing a job candidate or an employee's year-end review.

Finally, people regularly diverge from the rational ideal of *Homo economicus* in demonstrating a lack of self-control. People have trouble staying on diets, don't get around to properly organizing their retirement saving plans, and continue to smoke in spite of the dire and well-publicized risks involved. Thaler and Sunstein report an amusing experiment that drives

the point home. Two groups of people in a movie theater were given free bags of tasteless, stale, squeaky popcorn. One group received big bags, the other smaller bags. The recipients of the bigger bags ate 53 percent more popcorn, even though none of them liked it! One is reminded of a joke from Woody Allen's *Annie Hall*, "Two elderly women are at a Catskill mountain resort, and one of 'em says, 'Boy, the food at this place is really terrible.' The other one says, 'Yeah, I know; and such small portions.'"

### **Anchors Away**

All of this might be interesting, but, other than the incidental connections made above, how does it relate to insurance? At least three types of connections are worth considering.

- Classical economics forms part of the theoretical background of actuarial science, insurance management theory, and regulatory work. Fundamental changes in economics will probably have ripple effects on academic and applied actuarial work.
- Perhaps the most notable development in actuarial science in the past decade has been the profession's embrace of modern predictive analytics. Some of the success of predictive modeling in insurance is related to bounded rationality and the heuristics and biases discovered by Kahneman and Tversky and their followers.
- Thaler and Sunstein point out that an improved understanding of people's cognitive and behavioral biases can be used—through what they call "choice architecture"—to help people make better decisions. Their point is especially relevant to insurance-purchasing decisions.

Let us consider each of these themes in turn.

**A paradigm shift for economics**—If behavioral economics continues its rapid growth in stature, its importance to insurance, as well as medicine, law, regulation, and many other areas of business, is likely to be substantial and wide-ranging. This is precisely because behavioral economics strikes at the very heart of classical economic theory.

An analogy might be useful. In a sense, the doctrine of rational expectations is reminiscent of the ancient astronomers' central tenet that planets move in perfectly circular orbits. This notion seemed axiomatic at the time because of the astronomers' prior commitment to the philosophical doctrine that circular motion is the most "perfect" motion and therefore uniquely suited to "heavenly" bodies. From a modern perspective, it is the reasoning that seems circular. Physics ultimately dropped this philosophically motivated axiom in favor of the more accurate premise that planets move in elliptical orbits. The Newtonian revolution in physics would have been impossible, and

physics would have remained metaphysical, had scientists clung to the doctrine of perfect circular motion.

Analogously, Kahneman, Tversky, Thaler, Sunstein, and Ariely urge economists to dispense with the unrealistic and philosophically motivated doctrine of rational expectations in favor of the messy but empirical regularities of behavioral science. If, as Thaler hopes, the word “economics” eventually comes to mean what we today call “behavioral economics,” it is possible that the relevance of economics to other fields will be magnified considerably.

For insurers, this has potential relevance to any point at which economic theory impinges on insurance research, marketing, or actuarial work. For example, much of the existing academic literature on the underwriting cycle has been written from the point of view of rational expectations and efficient markets. This might leave potentially valuable explanations of the underwriting cycle on the table. An early suggestion along these lines came in a 1993 presentation by David Skurnick on potential explanations for the underwriting cycle. He ended his list with a prescient observation about psychology. He commented:

Insurance managements are human beings. We don't always make rational decisions. We're unduly influenced by recent events, even when we're making long-term plans based on long-term odds.

In other words, we rely on the availability heuristic when assessing risks and are vulnerable to the resulting biases. Skurnick also suggests conformity effects and herd behavior as further influences on insurance management decisions. Such comments are rare in academic literature on the underwriting cycle but might hold the key to an improved understanding with significant management implications.

A second example is on the consumer side of the equation. Recall the implication of Ariely's *Economist* example and related anchoring experiments—contrary to classical economics, consumers' demand functions are neither stable nor independent of supply and other contextual factors. This is relevant knowledge when analyzing policyholders' retention behavior and sensitivity to price changes.

**Analyzing Analytics**—As I argued in these pages last year (“Analyzing Analytics,” July/August 2008), a major reason why predictive models have become ubiquitous in disparate realms of business, medicine, sports, entertainment, government, and education is that they compensate for the “predictable irrationality” of their users. Just as eyeglasses help us see better, predictive models help us make better decisions.

Michael Lewis' book *Moneyball* vividly recounts how statistical analysis was able to outperform the professional judg-



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**If employees are automatically enrolled in (and given the option to opt out of) a 401(k)-type savings plan, they will set aside more money than if the plan defaults to a zero contribution and requires active enrollment. Merely changing the plan's default nudges people to save more for retirement.**

ment of traditional baseball scouts at selecting top players. In baseball, the market for talent had been inefficient in large part because it was dominated by intuition-based decision-making. Similarly, my experience and that of my colleagues in helping insurers build and implement predictive models have demonstrated that the often subjective methods used by underwriters to select and price risks can be improved through the judicious use of predictive models. That these predictive models provide improved accuracy, consistency, and segmentation power is—in retrospect—unsurprising given that underwriters are, like the rest of us, *Homo sapiens*, not *Homo economicus*.

Using predictive models to improve insurance underwriting decisions is therefore, like *Moneyball*, a case study in behavioral economics.

**Fraught Choices and Better Choice Architecture**—*Nudge* is more than a popularization of behavioral economics. Discussions of behavioral economics often dwell on the ways in which people make suboptimal or irrational decisions. Thaler and Sunstein take the conversation to the next level—they suggest that the findings of behavioral science can be strategically employed to prompt people to make better decisions. Put simply, if we know that people tend to select the default when presented with a long list of confusing options, then let us set the default with their best interest in mind.

A motivating example is the line at a cafeteria. People tend to stock up on items at the beginning of the line and select fewer items at the end of the line because their trays are already full. So a cafeteria manager who wants to promote public health would take care to put more healthful items at the beginning of the line and less healthful items at the end. Thaler and Sunstein call their idea “libertarian paternalism”—it is libertarian because people remain “free to choose” (to borrow Milton Friedman’s famous phrase) whatever items they want, regardless of how they are presented. But it is simultaneously paternalistic in the sense that the cafeteria manager uses good choice architecture. He or she strategically uses knowledge of people’s behavior to present the choices in a way that promotes sound decisions.

The idea of choice architecture is particularly relevant to insurance. Good choice architecture is especially needed in domains where people must make complex, infrequent choices that

have long-term implications. To illustrate, it is easy to walk into an ice cream store and quickly choose a flavor from dozens of alternatives. The choice is not complex, you’ve done it many times before, and the feedback from your choice (does it taste good?) is always immediate and unambiguous. In contrast, consider the decisions involved in choosing among financial products like mutual funds, annuities, stock/bond allocations, various types of mortgages, and menus of employee-benefit options.

Purchasing insurance and other long-term financial decisions are examples of what Thaler and Sunstein call “fraught choices.” They have the opposite character of the ice cream purchase. Fraught choices are complex decisions that often require specialist knowledge, are made infrequently, and whose good or bad effects are felt only in the (distant) future. Here especially would people benefit from careful choice architecture that nudges them toward better decisions.

Thaler and Sunstein cite the recent Medicare Part D prescription drug benefit program as a notorious example of poor choice architecture. Seniors were given a large menu of choices with no guidance to help them make a sensible decision. For some, the default option was non-enrollment, and for others, the default was randomly assigned! The result was mass confusion. To borrow another of Thaler and Sunstein’s culinary analogies, this presented seniors (and their equally confused doctors) with a decision problem similar to that of studying an extensive menu in a foreign country. Just as a set tourist menu would help at the restaurant, judiciously selected Medicare Part D defaults, perhaps tailored to the individual using relevant data, would have helped the seniors avoid decision paralysis or random guessing.

Their most famous example of successful choice architecture involves retirement savings plans. It has been demonstrated that if employees are automatically enrolled in (and given the option to opt out of) a 401(k)-type savings plan, they will set aside more money than if the plan defaults to a zero contribution and requires active enrollment. People are given the same choices either way. But merely changing the plan’s default nudges them to save more for retirement. Another example is Thaler’s “Save more tomorrow” idea in which employees in advance can elect to allocate a portion of future pay increases to savings. When this has been implemented, it has resulted in significant increases in savings rates.

## Free to Muse

Just as a more realistic understanding of human nature has enriched economic theory, so is it likely to benefit applied fields like actuarial science. At the most general level, discoveries on heuristics and biases by the Kahneman and Tversky school provide a useful alternate perspective to the classical doctrines of Homo economicus, rational expectations, and efficient markets. These latter doctrines are certainly useful frameworks for specific types of economic theorizing, but the discoveries of behavioral economics—to say nothing of recent economic events—suggest that they are not the last word on which to base practical business, regulatory, and strategic decisions.

Second, being mindful of the fact that insurance agents, managers, underwriters, and policyholders are Homo sapiens rather than Homo economicus lends a useful perspective on actuarial predictive models as corrective tools (eyeglasses for myopic and boundedly rational minds) that can help rationalize inefficient markets.

Finally, Thaler and Sunstein's concept of libertarian paternalistic nudges suggests a new role for actuaries and other financial professionals as data-driven choice architects. Current events suggest that this could be a socially beneficial development. Selecting a mortgage, for instance, is an example of a fraught choice where people can be led astray through both simple confusion and cognitive effects like availability cascades. The ongoing mortgage crisis suggests that it is in everyone's interest for financial services companies to do more than simply offer a plethora of optimally priced products from which a consumer can choose. When designing new products and benefit plans, participating in marketing and customer-relationship initiatives, and helping design distribution strategies, actuaries can make choice architecture part of their job. □

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