

CHAPTER 31

BEHAVIORAL ECONOMICS

The economic model of consumer choice that we have studied is simple and elegant, and is a reasonable starting place for many sorts of analysis. However, it is most definitely not the whole story, and in many cases a deeper model of consumer behavior is necessary to accurately describe choice behavior.

The field of **behavioral economics** is devoted to studying how consumers actually make choices. It uses some of the insights from psychology to develop predictions about choices people will make and many of these predictions are at odds with the conventional economic model of “rational” consumers.

In this chapter we will look at some of the most important phenomena that have been identified by behavioral economists, and contrast the predictions of these behavioral theories with those presented earlier in this book.¹

¹ In writing this chapter, I have found Colin F. Camerer, George Loewenstein, and Matthew Rabin’s book *Advances in Behavioral Economics*, Princeton University Press, 2003, to be very useful, particularly the introductory survey by Camerer and Loewenstein. Other works will be noted as the relevant topics are discussed.

31.1 Framing Effects in Consumer Choice

In the basic model of consumer behavior, the choices were described in the abstract: red pencils or blue pencils, hamburgers and french fries, and so on. However, in real life, people are strongly affected by how choices are presented to them or **framed**.

A faded pair of jeans in a thrift shop may be perceived very differently than the same jeans sold in an exclusive store. The decision to buy a stock may feel quite different than the decision to sell a stock, even if both transactions end up with the same portfolio. A store might sell dozens of copies of a book priced at \$29.95, whereas the same book priced at \$29.00 would have substantially fewer sales.

These are all examples of **framing effects**, and they are clearly a powerful force in choice behavior. Indeed, much of marketing practice is based on understanding and utilizing such biases in consumer choice.

The Disease Dilemma

Framing effects are particularly common in choices involving uncertainty. For example, consider the following decision problem:²

A serious disease threatens 600 people. You are offered a choice between two treatments, A and B, which will yield the following outcomes.

Treatment A. Saving 200 lives for certain.

Treatment B. A $1/3$ chance of saving 600 lives and a $2/3$ chance of saving no one.

Which would you choose? Now consider the choices between these treatments.

Treatment C. Having 400 people die for certain.

Treatment D. A $2/3$ chance of 600 people dying and a $1/3$ chance of no one dying.

Now which treatment would you choose?

² A. Tversky and D. Kahneman, 1981, "The framing of decisions and the psychology of choice," *Science*, 211, 453–458.

In the **positive framing** comparison—which describes how many people will live—most individuals choose A over B, but in the **negative framing** comparison most people choose D over C even though the outcomes in A-C and B-D are exactly the same. Apparently, framing the question positively (in terms of lives saved) makes a treatment much more attractive than framing the choice negatively (in terms of lives lost).

Even expert decisions makers can fall into this trap. When psychologists tried this question on a group of physicians, 72 percent of them chose the safe treatment A over the risky treatment B. But when the question was framed negatively, only 22 percent chose the risky treatment C while 72 percent chose the safe treatment.

Though few of us are faced with life-or-death decisions, there are similar examples for more mundane choices, such as buying or selling stocks. A rational choice of an investment portfolio would, ideally, depend on an assessment of the possible outcomes of the investments rather than how one acquired those investments.

For example, suppose that you are given 100 shares of stock in ConcreteBlocks.com (whose slogan is “We give away the blocks, you pay for packing and shipping”). You might be reluctant to sell shares you received as a gift despite the fact that you would never consider buying them yourself.

People are often reluctant to sell losing stocks, thinking that they will “come back.” Maybe they will, maybe they won’t. But ultimately you shouldn’t let history determine your investment portfolio—the right question to ask is whether you have the portfolio choices today that you want.

Anchoring Effects

The hypothetical ConcreteBlocks.com example described above is related to the so-called **anchoring effect**. The idea here is that people’s choices can be influenced by completely spurious information. In a classic study the experimenter spun a wheel of fortune and pointed out the number that came up to a subject.³ The subject was then asked whether the number of African countries in the United Nations was greater or less than the number on the wheel of fortune.

After they responded, the subjects were asked for their best guess about how many African countries were in the United Nations. Even though the number shown on the wheel of fortune was obviously random, it exerted a significant influence on the subjects’ reported guesses.

In a similar experimental design, MBA students were given an expensive bottle of wine and then asked if they would pay an amount for that bottle equal to the last two digits of their Social Security number. For example,

³ D. Kahneman and A. Tversky, 1974, “Judgment under uncertainty: Heuristics and biases,” *Science*, 185: 1124–1131.

if the last two digits were 29, the question was “Would you pay \$29 for this bottle of wine?”

After answering that question, the students were asked what the maximum amount is that they *were* willing to pay for the wine. Their answers to this latter question were strongly influenced by the price determined by the last two digits of their Social Security number. For example, those with Social Security digits of 50 or under were willing to pay \$11.62 on average, while those with digits in the upper half of the distribution were willing to pay \$19.95 on average.

Again, these choices seem like mere laboratory games. However, there are very serious economic decisions that can also be influenced by minor variations in the way the choice is framed.

Consider, for example, choices of pension plans.⁴

Some economists looked at data from three employers that offered automatic enrollment in 401(k) plans. Employees could opt out, but they had to make an explicit choice to do so. The economists found that the participation rate in these programs with automatic enrollment was spectacularly high, with over 85 percent of workers accepting the default choice of enrolling in the 401(k) plans.

That’s the good news. The bad news is that almost all of these workers also chose the default investment, typically a money market fund with very low returns and a low monthly contribution. Presumably, the employers made the default investment highly conservative to eliminate downside risk and possible employee lawsuits.

In subsequent work, these economists examined the experience at a company where there was no default choice of pension plan: within a month of starting work, employees were required to choose either to enroll in the 401(k) plan or to postpone enrollment.

By eliminating the standard default choices of non-enrollment, and of enrollment in a fund that had low rates of return, this “active decision” approach raised participation rates from 35 percent to 70 percent for newly hired employees. Moreover, employees who enrolled in the 401(k) plan overwhelmingly chose high savings rates.

As this example illustrates, careful design of human resources benefits programs can make a striking difference in which programs are chosen, potentially having a large effect on consumer savings behavior.

Bracketing

People often have trouble understanding their own behavior, finding it too difficult to predict what they will actually choose in different circumstances.

⁴ James Choi, David Laibson, Brigitte Madrian, and Andrew Metrick, “For Better or for Worse: Default Effects and 401(k) Savings Behavior,” NBER working paper, W8651, 2001.

For example, a marketing professor gave students a choice of six different snacks that they could consume in each of three successive weeks during class.⁵ (You should be so lucky!) In one treatment, the students had to choose the snacks in advance; in the other treatment, they chose the snacks on each day then immediately consumed them.

When the students had to choose in advance, they chose a much more diverse set of snacks. In fact, 64 percent chose a different snack each week in this treatment compared to only 9 percent in the other group. When faced with making the choices all at once, people apparently preferred variety to exclusivity. But when it came down to actually choosing, they made the choice with which they were most comfortable. We are all creatures of habit, even in our choice of snacks.

Too Much Choice

Conventional theory argues that more choice is better. However, this claim ignores the costs of making choices. In affluent countries, consumers can easily become overwhelmed with choices, making it difficult for them to arrive at a decision.

In one experiment, two marketing researchers set up sampling booths for jam in a supermarket.⁶ One booth offered 24 flavors and one offered only 6. More people stopped at the larger display, but substantially more people actually bought jam at the smaller display. More choice seemed to be attractive to shoppers, but the profusion of choices in the larger display appeared to make it more difficult for the shoppers to reach a decision.

Two experts in behavioral finance wondered whether the same problem with “excessive choice” showed up in investor decisions. They found that people who designed their own retirement portfolios tended to be just as happy with the average portfolio chosen by their co-workers as they were with their own choice. Having the flexibility to construct their own retirement portfolios didn’t seem to make investors feel better off.⁷

Constructed Preferences

How are we to interpret these examples? Psychologists and behavioral economists argue that preferences are not a guide to choice; rather, preferences are “discovered” in part through the experiences of choice.

⁵ I. Simonson, 1990, “The effect of purchase quantity and timing on variety-seeking behavior,” *Journal of Marketing Research*, 17: 150–164.

⁶ Sheena S. Iyengar and Mark R. Lepper, “When choice is demotivating: can one desire too much of a good thing?” *Journal of Personality and Social Psychology*, 2000.

⁷ Shlomo Benartzi and Richard Thaler, “How Much Is Investor Autonomy Worth?” UCLA working paper, 2001.

Imagine watching someone in the supermarket picking up a tomato, putting it down, then picking it up again. Do they want it or not? Is the price-quality combination offered acceptable? When you watch such behavior, you are seeing someone who is “on the margin” in terms of making the choice. They are, in the psychologists’ interpretation, *discovering* their preferences.

Conventional theory treats preferences as preexisting. In this view, preferences *explain* behavior. Psychologists instead think of preferences as being constructed—people develop or create preferences through the act of choosing and consuming.

It seems likely that the psychological model is a better description of what actually happens. However, the two viewpoints are not entirely incompatible. As we have seen, once preferences have been discovered, albeit by some mysterious process, they tend to become built-in to choices. Choices, once made, tend to anchor decisions. If you tried to buy that tomato from that consumer once they have finally decided to choose it, you would likely have to pay more than it cost them.

31.2 Uncertainty

Ordinary choice is complicated enough, but choice under uncertainty tends to be particularly tricky. We’ve already seen that people’s decisions may depend on how choice alternatives are phrased. But there are many other biases in behavior in this domain.

Law of Small Numbers

If you have taken a course in statistics, you might be familiar with the Law of Large Numbers. This is a mathematical principle that says (roughly) that the average of a large sample from a population tends to be close to the mean of that population.

The Law of Small Numbers is a psychological statement that says that people tend to be overly influenced by small samples, particularly if they experience them themselves.⁸

Consider the following question:⁹

⁸ The term originated with A. Tversky and D. Kahneman, 1971, “Belief in the law of small numbers,” *Psychological Bulletin*, 76, 2: 105–110. Much of the following discussion is based on a working paper by Matthew Rabin of the University of California at Berkeley entitled “Inference by Believers in the Law of Small Numbers.”

⁹ A. Tversky and D. Kahneman, 1982, “Judgments of and by Representativeness,” in *Judgment under Uncertainty: Heuristics and Biases*, D. Kahneman, P. Slovic, and A. Tversky, Cambridge University Press, 84–98.

“A certain town is served by two hospitals. In the larger hospital about 45 babies are born each day, and in the smaller hospital about 15 babies are born each day. As you know, about 50 percent of all babies are boys. However, the exact percentage varies from day to day. Sometimes it may be higher than 50 percent, sometimes lower. For a period of 1 year, each hospital recorded the days on which more than 60 percent of the babies born were boys. Which hospital do you think recorded more such days?”

In a survey of college students, 22 percent of the subjects said that they thought that it was more likely that the larger hospital recorded more such days, while 56 percent said that they thought the number of days would be about the same. Only 22 percent correctly said that the smaller hospital would report more days.

If the correct account seems peculiar to you, suppose the smaller hospital recorded 2 births per day and the larger hospital 100 births per day. Roughly 25 percent of the time the smaller hospital would have 100 percent male births, while this would be very rare for the large hospital.

It appears that people expect samples to look like the distribution from which they are drawn. Or, saying this another way, people underestimate the actual magnitude of the fluctuations in a sample.

A related issue is that people find it difficult to recognize randomness. In one experiment, subjects were asked to write down a series of 150 “random” coin tosses. About 15 percent of the sequences they produced had heads or tails three times in a row, but this pattern would occur randomly about 25 percent of the time. Only 3 percent of the subjects’ sequences had 4 heads or 4 tails in a row, while probability theory says that this should occur about 12 percent of the time.

This has important implications for game theory, for example. We saw that in many cases people should try to randomize their strategy choices so as to keep their opponents guessing. But, as the psychological literature shows, people aren’t very good at randomizing. On the other hand, people aren’t very good at detecting non-random behavior either, at least without some training in statistics. The point of mixed strategy equilibria is not that choices are *mathematically* unpredictable, but rather that they should be unpredictable by the players in the game.

Some economic researchers studied final and semi-final tennis matches at Wimbledon.¹⁰ Ideally, tennis players should switch their serves from side to side so that their opponent can’t guess which side the serve is coming from. However, even very accomplished players can’t do this quite as well as one might expect. According to the authors:

“Our tests indicate that the tennis players are not quite playing ran-

¹⁰ M. Walker and J. Wooders, 1999, “Minimax Play at Wimbledon,” University of Arizona working paper.

domly: they switch their serves from left to right and vice versa somewhat too often to be consistent with random play. This is consistent with extensive experimental research in psychology and economics which indicates that people who are attempting to behave truly randomly tend to “switch too often.”

Asset Integration and Loss Aversion

In our study of expected utility we made an implicit assumption that what individuals cared about was the total amount of wealth that they ended up with in various outcomes. This is known as the **asset integration hypothesis**.

Even though most people would accept this as a reasonable thing to do, it is hard to put into practice (even for economists). In general, people tend to avoid too many small risks and accept too many large risks.

Suppose that you make \$100,000 a year and that you are offered a coin flip. If heads comes up you get \$14 and if tails comes up you lose \$10. This bet has an expected value of \$12 and has a minuscule effect on your total income in a given year. Unless you have moral scruples about gambling, this would be a very attractive bet and you should almost certainly take it. However, a surprisingly large number of people won't take such a bet.

This **excess risk aversion** shows up in insurance markets where people tend to over-insure themselves against various small events. For example, people buy insurance against losing their cell phone, even though they can often replace it at quite a low cost. People also buy auto insurance with deductibles that are much too low to make economic sense.

In general, when making insurance decisions you should look at the “house odds.” If cell phone insurance costs you \$3 a month, or \$36 a year, and a new cell phone costs \$180, then the house odds are 36/180, or 20 percent. The cell phone insurance would pay off in expected value only if you have more than a 20 percent chance of losing your phone or if it would be an extreme financial hardship to replace it.

It appears that people aren't really **risk averse** as much as they are **loss averse**. That is, people put seemingly excessive weight on the status quo—where they start—as opposed to where they end up.

In an experiment that has been replicated many times, two researchers gave half of the subjects in a group coffee mugs.¹¹ They asked this group to report the lowest price at which they would sell the mugs. Then they asked the group that didn't have mugs the highest price at which they would buy a mug. Since the groups were chosen randomly, the buying and selling prices should be about equal. However, in the experiment, the median

¹¹ D. Kahneman, J. L. Knetsch, and R. Thaler, 1990, “Experimental tests of the endowment effect and the Coase theorem,” *Journal of Political Economy*, 98, 1325–1348.

selling price was \$5.79 and the median buying price was \$2.25, a substantial difference. Apparently, the subjects with coffee mugs were more reluctant to part with them than subjects without mugs. Their preferences seemed to be influenced by their endowment, contrary to standard consumer theory.

A similar effect shows up in what is known as the **sunk cost fallacy**. Once you have bought something, the amount you paid is “sunk,” or no longer recoverable. So future behavior should not be influenced by sunk costs.

But, alas, real people tend to care about how much they paid for something. Researchers have found that the price at which owners listed condominiums in Boston was highly correlated with the buying price.¹² As pointed out earlier, owners of stock are very reluctant to realize losses, even when it would be advantageous for tax reasons.

The fact that ordinary people are subject to the sunk cost fallacy is interesting, but perhaps it is even more interesting that professionals are less susceptible to this problem. For example, the authors of the condominium example mentioned above found that individuals who bought condos for investment purposes were less likely to be influenced by sunk costs than individuals who lived in the condos.

Similarly, financial advisers are seldom reluctant to realize losses, particularly when there is a tax advantage to do so. It appears that one reason to hire professional advisers is to draw on their dispassionate analysis of decisions.

31.3 Time

Just as behavior involving uncertainty is subject to various forms of anomalous behavior, behavior involving time has its own set of anomalies.

Discounting

Consider, for example, time discounting. A standard model in economics, **exponential discounting**, posits that people discount the future at a constant fraction. If $u(c)$ is the utility of consumption today, then the utility of consumption t years in the future looks like $\delta^t u(c)$, where $\delta < 1$.

This is a mathematically convenient specification, but there are other forms of discounting that seem to fit the data better.

One economist auctioned off bonds that paid off at various times in the future and found that people valued payment at future times less than the

¹² David Genesove and Christopher Mayer, 2001, “Loss aversion and seller behavior: Evidence from the housing market,” *Quarterly Journal of Economics*, 116, 4, 1233–1260.

exponential discounting theory would predict. An alternative theory, called **hyperbolic discounting**, suggests that the discount factor does not take the form δ^t but rather takes the form $1/(1 + kt)$.

One particularly attractive feature of exponential discounting is that behavior is “time consistent.” Think about a person with a three-period planning horizon with utility function of the form

$$u(c_1) + \delta u(c_2) + \delta^2 u(c_3).$$

The marginal rate of substitution between periods 1 and 2 is

$$MRS_{12} = \frac{\delta MU(c_2)}{MU(c_1)},$$

while the MRS between periods 2 and 3 is

$$MRS_{23} = \frac{\delta^2 MU(c_3)}{\delta MU(c_2)} = \frac{\delta MU(c_3)}{MU(c_2)}.$$

This last expression shows that the rate at which the individual is willing to substitute consumption in period 2 for consumption in period 3 is the *same* whether viewed from the perspective of period 1 or of period 2. This is not true for hyperbolic discounting. An individual with hyperbolic discounting discounts the long-term future more heavily than he discounts the short-term future.

Such a person will exhibit **time inconsistency**: he may make a plan today about his future behavior, but when the future arrives he will want to do something different. Think of a couple who decide to spend \$5,000 on a trip to Europe rather than save their money. They rationalize their decision on the grounds that they will start saving *next* summer. But when next summer arrives, they decide to spend their money on a cruise.

Self-control

A closely related issue to the time consistency problem is the problem of **self-control**. Almost everyone faces this issue to some degree. We might vow to count our calories and eat less while standing on the bathroom scale, but our resolve can easily vanish when we sit down to a nice meal. Rational people are apparently slim and healthy, unlike the rest of us.

One important question is whether people are aware of their own difficulties with self-control. If I know that I have a tendency to procrastinate, perhaps I should realize that when an important task comes along I should do it right away. Or if I have a tendency to overcommit myself, perhaps I should learn to say no more often.

But there is the other possibility. If I know that I am likely to yield to the temptation to have another desert tomorrow, I may as well have another desert today. The flesh is weak, but the spirit may be weak too.

One way to deal with self-control is to find ways to commit yourself to future actions. That is, you can try to find a way to make it more costly to deviate from the desired action in the future. For example, people who make a public pronouncement about their future behavior might be less likely to deviate from their intended behavior. There are pills for alcoholics that make them violently sick if they drink alcohol. There are also **commitment devices** for dieters: someone who has his stomach stapled will be less likely to overeat.

Contracts between individuals are there to ensure that people carry out their future intentions—even when it might not be attractive for them to do so due to changed conditions. In a similar way, people can hire others to impose costs on them if they deviate from intended actions, making, in effect, a contract with themselves. Dieting spas, exercise instructors, and tutors are forms of “purchased self-control.”

EXAMPLE: Overconfidence

An interesting variation on self-control is the phenomenon of **overconfidence**. Two financial economists, Brad Barber and Terrance Odean, studied the performance of 66,465 households with discount brokerage accounts. During the period they studied, households that traded infrequently received an 18 percent return on their investments, while the return for the households that traded most actively was 11.3 percent.

One of the most important factors that apparently influenced this excessive trading was gender: the men traded a lot more than women. Psychologists commonly find that men tend to have excessive confidence in their own abilities, while women, for the most part, tend to be more realistic. Psychologists refer to men’s behavior as self-serving attribution bias. Basically, men (or at least some men) tend to think their successes are a result of their own skill, rather than dumb luck, and so become overconfident.

This overconfidence can have financial repercussions. In the sample of brokerage accounts, men traded 45 percent more than women. This excessive trading resulted in the average return to men that was a full percentage point lower than the return to women. As Barber and Odean put it, “trading can be hazardous to your wealth.”

31.4 Strategic Interaction and Social Norms

A particularly interesting set of psychological, or perhaps sociological, behaviors arise in strategic interaction. We have studied game theory, which

attempts to predict how rational players should interact. But there is also a subject known as **behavioral game theory** that examines how actual people interact. Indeed, there are systematic and strong deviations from the pure theory.

Ultimatum Game

Consider the **ultimatum game**, which was discussed briefly in the last chapter. As you will recall, this is a game with two players, the proposer and the responder. The proposer is given \$10 and asked to propose a division between himself and the responder. The responder is then shown the division and asked whether or not he wishes to accept it. If he accepts, the division is carried out; if he refuses the division, both people walk away with nothing.

Let's first think about how fully rational players might act. Once the responder sees the division, he has a dominant strategy: accept the money as long as he gets anything at all. After all, suppose I offer you the choice between 10 cents and nothing. Wouldn't you rather have 10 cents than nothing at all?

Given that a rational responder will choose any amount, the divider should choose the minimal amount to give him—say, a penny. So the outcome predicted by game theory is an extreme split: the divider will end up with almost everything.

This isn't the way things turn out when the game is actually played. In fact, responders tend to reject offers that they perceive as unfair. Offers that give the responder less than 30 percent of the amount to be divided are rejected more than 50 percent of the time.

Of course, if the divider recognizes that the responder will reject "unfair" offers, the divider will rationally want to make a division that is closer to equal. The average division tends to be about 45 percent to the responder and 55 percent to the divider, with about 16 percent of the offers being rejected.

There has been a considerable amount of literature examining how the characteristics of the players affect the outcome of the game. One example is gender differences: it appears that men tend to receive more favorable divisions, particularly when the divisions are made by women.

Cultural differences can also be important. It appears that some cultures value fairness more than others, inducing people to reject offers that are perceived as unfair.¹³ Interestingly enough, the offered amounts don't vary much from region to region and culture to culture, while there are

¹³ See Swee-Hoon Chuah, Robert Hoffman, Martin Jones, and Geoffrey Williams, "Do Cultures Clash? Evidence from Cross-National Ultimatum Game Experiments," Nottingham University Business School working paper.

systematic differences in the divisions that are acceptable. The size of the pie is also important. If the size of the pie is \$10, you might be reluctant to accept \$1. But if the size of the pie is \$1,000, would you be willing to reject \$100? Apparently, responders do find it difficult to turn down larger amounts of money.

Another variation is in the design of the game. In one variant, the so-called **strategy method**, the responders are asked to name the minimal division that they will accept *before* seeing the amount they are offered. The proposers are aware that the decision will be made in advance but, of course, don't know what the minimum acceptable division is. This experimental design tends to increase the amounts that the proposers offer; that is, it tends to make the divisions more equal.

Fairness

One effect at work in the ultimatum game seems to be a concern for fairness. Most people seem to have a natural bias towards equal (or at least not too unequal) division. This is not simply an individual phenomenon, but a social phenomenon. People will enforce **fairness norms** even when it is not directly in their interest to do so.

Consider, for example, **punishment games**, which are a generalization of ultimatum games with a third party who observes the choices made by the proposer/divider. The third party can choose, at some cost to himself, to deduct some of the proposer's profits.¹⁴

Experimenters have found that around 60 percent of these third-party observers will actually punish those who make unfair divisions. There seems to be something in the human makeup—whether innate or learned—that finds unfair behavior objectionable.

Indeed, there are differences across cultures with respect to social norms for fairness; individuals in some societies seem to value it highly, while in other societies fairness is less strongly valued. However, the urge to punish those who are unfair is widely felt. It has been suggested that a predilection towards “fair” outcomes is part of human nature, perhaps because individuals that behaved fairly towards each other had higher chances of surviving and reproducing.

31.5 Assessment of Behavioral Economics

Psychologists, marketers, and behavioral economists have amassed a variety of examples showing how the basic theory of economic choice is wrong, or, at least, incomplete.

¹⁴ See Ernst Fehr and Urs Fischbacher, 2004, “Third-party punishment and social norms,” *Evolution and Human Behavior*, 25, 63–87.

Some of these examples appear to be “optical illusions.” For example, the fact that framing a choice problem differently can affect decisions is similar to the fact that human judgment of sizes and distances can be affected by how figures are drawn. If people took the time to consider the choices carefully—applying a measuring stick of dispassionate reasoning—they would reach the right conclusion.

Though it is undoubtedly true that people don’t behave completely in accord with the simplest theories of economic behavior, one still might respond that no theory is 100 percent correct. Psychologists have also documented that people don’t really understand simple principles of physics. Example: If you tie a weight to the end of a rope, swing it around your head in a circle and then let go, which way will the weight fly?

Many people say that the weight will fly radially outward rather than the correct response that the weight will move tangentially to the circle.¹⁵ Of course, people have lived in the physical world their entire lives. If they occasionally misunderstand how it works, we shouldn’t be too surprised when people misunderstand the economic world.

Apparently our intuitive understanding of physics is good enough for everyday life, and even the demands of amateur and professional sports: a baseball player may not be able to describe how a ball will travel, despite the fact that he can throw it well. Similarly, one might argue that people tend to be pretty good at the sorts of day-to-day decisions they are forced to make, even if they aren’t very good at abstract reasoning about them.

Another reaction to behavioral anomalies is that markets tend to reward rational behavior, while punishing irrationality. Even if many participants do not behave rationally, those who *do* behave sensibly will have the biggest effect on prices and outcomes. There is likely some truth to this view as well. Recall the example that real estate investors seemed to be less influenced by sunk costs than ordinary individuals.

In addition, you can hire experts to help you make better decisions. Diet consultants and financial advisers can offer objective advice about how to eat and how to invest. If you are worried about being too fair, you can always hire a tough negotiator.

Returning to the optical illusion example, the reason that we use rulers and yardsticks is that we learn not to trust our own eyes. Similarly, in making important decisions it is prudent to consult the views of objective experts.

¹⁵ See M. McCloskey, 1983, “Intuitive Physics,” *Scientific American*, April, 114–123.

Summary

1. Behavioral economics is concerned with how consumers make choices in reality.
2. In many cases, actual consumer behavior is different from that predicted by the simple model of the rational consumer.
3. Consumers make different choices depending on how a problem is framed or presented.
4. The default matters a lot.
5. People find it difficult to predict their own choice behavior.
6. Too many choices may be overwhelming and make it difficult to make a decision.
7. Choice behavior can be particularly problematic in choices involving uncertainty.
8. People tend to exhibit excess risk aversion in experimental settings.
9. People may discount the future more heavily than conventional theory assumes.
10. Time inconsistency means that actual choices may end up being different than planned choices.
11. The ultimatum game involves one player proposing a division of some money and the other player either accepting that division or ending the game. Conventional game theory predicts very unfair divisions.
12. However, consumers seem to have a preference for “fair” divisions and will punish those who behave unfairly, even if it harms themselves.

REVIEW QUESTIONS

1. Subjects are allowed to buy tickets in a lottery. One group is told that they have a 55 percent chance of winning, the other group is told that they have a 45 percent chance of not winning. Which group is more likely to buy lottery tickets? What is the name for this effect?

2. Mary plans the entire week's meals for her family, while Fred shops each day. Which is likely to produce more varied meals? What is this effect called?
3. You are the human resources director for a medium-size company and are trying to decide how many mutual funds to offer in your employees' pension plan. Would it be better to offer 10 choices or 50 choices?
4. What is the probability that a fair coin will come up heads three times in a row when tossed?
5. John decides that he will save \$5 this week and \$10 next week. But when next week arrives, he decides to save only \$8. What is the term used to describe this sort of inconsistent behavior?