

Behavioral Economics: A Closer Look at Decision Making

LEARNING OBJECTIVES

- LO 8.1** Define time inconsistency, and explain how it accounts for procrastination and other problems with self-control.
 - LO 8.2** Explain why sunk costs should not be taken into account in deciding what to do next.
 - LO 8.3** Identify the types of opportunity cost that people often undervalue, and explain why undervaluing them distorts decision making.
 - LO 8.4** Define fungibility, and explain why it matters in financial decision making.
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WHEN IS \$20 NOT QUITE \$20?

Imagine yourself in the following situation: Earlier today, you bought a ticket for a concert this evening. The ticket cost \$20. You arrive at the concert venue, reach into your pocket for the ticket, and . . . it's not there. You must have dropped it somewhere on the way. How annoying! Tickets are still available at the door for \$20. Which of the following is your reaction?

#1: "Oh well, never mind. These things happen. I'll just buy another ticket."

#2: "No way I'm going to spend \$40 on this concert! I'd rather go do something else instead."

If you said #2, many are like you: 46 percent of people presented by researchers with a similar situation said they'd do something else with their evening. The others, 54 percent, said they'd swallow their annoyance enough to buy a replacement ticket.

Now imagine an alternative scenario. This time you arrive at the concert venue intending to buy your ticket at the door. You reach into your pocket for the money to pay, and . . . hold on, what's this? You definitely had five \$20 bills in your pocket this morning, but now you have only four. You must have lost one of them somewhere today. How annoying! Which of the following do you then say?

#1: "Oh well, never mind. These things happen. I'll get my ticket for the concert."

#2: "You know what? Forget the concert."

This time only 12 percent chose #2 and said they'd abandon their evening plans. Fully 88 percent of people said they'd buy the ticket anyway.

You may have noticed that these two situations are *exactly the same*. In both scenarios, you arrive at the venue intending to see a concert you had previously decided was worth \$20 to you, only to make the unwelcome discovery that you are \$20 less well off than you'd thought you were.

If you are very short of cash, it would make sense to skip the concert in *either* case. If you're not short of cash, it wouldn't make sense to do so in *either* case. What difference does it make if you lost the \$20 bill *before* or *after* you'd converted it into a concert ticket? Objectively, it doesn't matter at all. Emotionally, however, it does seem to matter. (Even if you'd have bought a ticket in both scenarios, wouldn't you have felt just a little bit more annoyed about losing the ticket?) To a significant minority of people, that emotional difference is so great it would make them abandon their plans if they'd lost the ticket, but *not* if they'd lost the \$20 bill.

This is not rational behavior. Other examples of apparently irrational behavior are common:

- Saying you want to lose weight, but ordering dessert.
- Being willing to pay more for something if you use a credit card than if you use cash.
- Stubbornly watching to the end of a movie you've decided you're not enjoying at all.

Rational (as defined in economics) people wouldn't behave in these ways, but many people do. Yet, haven't we said throughout this book that economists assume people behave rationally to maximize their utility? Yes, we have. So what's going on?

The assumption that people are rational utility maximizers gets us a long way. It's true enough often enough to be useful. But it's not true all the time, and how much the exceptions matter is a hotly debated question in economics right now. In the past few decades economists have been learning a lot from psychologists and biologists about how real people make everyday decisions that translate economic ideas into action. The resulting theories have developed into a branch of economics that expands our models of decision making. This field is called *behavioral economics*, the topic of this chapter.



Behavioral economists are not just advancing our academic knowledge of how people make decisions. They also have developed some practical, easy-to-use tools that can help people enact the choices they *say* they would like to make: save more money, get healthier, give more to charity. You may even be using some of these tools without realizing it.

Formally, **behavioral economics** is a field of economics that draws on insights from psychology to expand models of individual decision making. Behavioral economics is wide-ranging, and in this chapter we'll cover just three of its more interesting applications: time inconsistency, thinking irrationally about costs, and forgetting the fungibility of money.

behavioral economics a field of economics that draws on insights from psychology to expand models of individual decision making

Dealing with Temptation and Procrastination

We've already met an example of the kind of question that interests behavioral economists (in the discussion of utility in the "Consumer Behavior" chapter): You wake up one Saturday morning with great intentions to have a useful and productive day—work out, clean the apartment, study; later, you realize that, somehow, suddenly it's Saturday evening and you're still in your pajamas watching reruns of *Top Chef*. Huh. How did that happen?

As we have seen, one way to look at this common experience is to use the idea of *revealed preference*—that is, no matter what you *had thought* you wanted to do, your actions reveal that what you *actually* wanted to do was to spend the day watching TV. Another way to look at it is to consider that you simply weren't acting rationally.

Neither explanation seems very satisfying. Many of us have experienced feelings of conflict when we know we *want* to do one thing, but find ourselves constantly doing another. We want to study, but instead play games; we want to diet, but instead eat dessert; we want to save, but instead spend too much. Saying that our actions must reveal our true desires goes against our understanding of ourselves. On the other hand, explaining the conflict by just saying we are irrational feels like giving up, and also suggests that we have no ability to predict what decisions people will make.

There is a third way. We can improve our models a bit, to be more accurate in predicting how we deal with the struggles against procrastination and temptation. This can be done by using the ideas of time inconsistency, competing selves, and commitment.

Time inconsistency, competing selves, and commitment

LO 8.1 Define time inconsistency, and explain how it accounts for procrastination and other problems with self-control.

One theory of why we sometimes give in to temptation is based on the idea that people can hold two inconsistent sets of preferences:

- One set holds what we would *like to want* in the future—to study enough for exams, to lose weight, to build up a healthy savings account.
- One set holds what we *will want* in the future, when the future comes—to play games, to eat dessert, to go shopping.

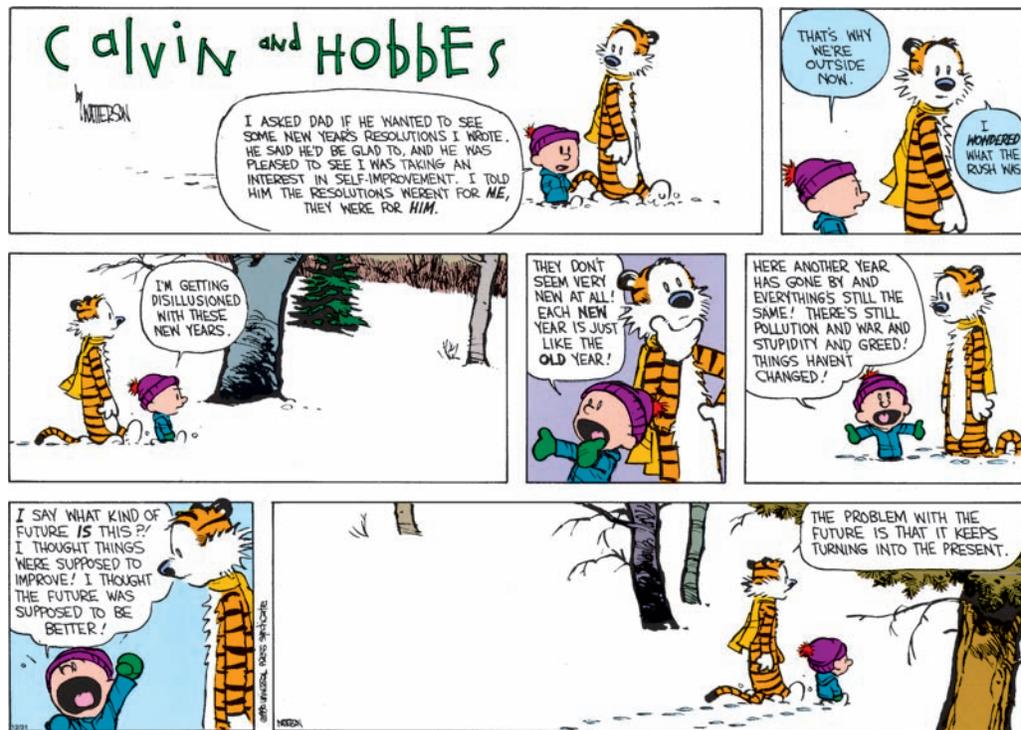
Behavioral economists use the term **time inconsistency** for when we change our minds about what we want simply because of the timing of the decision.

Consider this classic example of time inconsistency: We'd like to offer you a snack to thank you for taking part in our ongoing research project. After next week's session, would you like an apple or a piece of chocolate cake? When researchers asked this question, most people chose the apple. However, when the following week arrived and researchers asked participants whether they still wanted an apple, most participants instead switched to the chocolate cake. A person with time-consistent preferences would choose the same snack, regardless of whether the choice is being made ahead of time or in the moment. We are *time inconsistent* when we say that we'll prefer the apple next week, but then switch to chocolate cake when we get to consume it immediately.

Time inconsistency helps to explain behaviors like procrastination and lack of self-control. It is as if there are two selves inhabiting our thoughts—a "future-oriented

time inconsistency
when we change our minds about what we want simply because of the timing of the decision

Behavioral economics provides insights to explain time inconsistency and strategies for dealing with our future selves.



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self," with clear-sighted preferences to get things done, eat healthily, and so on, and a "present-oriented self," who backslides when faced with temptation in the here and now. Of course, as Calvin tells Hobbes, the cartoon tiger, "the problem with the future is that it keeps turning into the present." However wise the decisions your future-oriented self makes about the future, when that future becomes the present, your present-oriented self will be in charge again. If, at next week's session, the researcher says, "We brought you an apple—but you can still have a piece of chocolate cake if you'd prefer," our present-oriented self takes command and switches to the cake.

It makes sense to think of time inconsistency as a battle between these two selves. In other words, a time-inconsistent individual is being neither irrational nor rational. Rather, future-oriented and present-oriented selves within the individual are each rationally pursuing their own objectives.

People who are aware of their time-inconsistent preferences often seek out ways to remove temptation. If you eat too many potato chips at night, you can decide not to buy chips when at the store. If you waste too much time online, you can install a browser add-on such as Leechblock and define limits to the time you can spend on certain websites. Of course, none of these strategies are foolproof. You could always make a nighttime dash to the store, or uninstall Leechblock. But these actions at least put obstacles in the way of your weak-willed, present-oriented self. These are simple ways of making one's vices more expensive. By doing so, we're using economics and the law of demand (as prices go up, quantity demanded goes down!) to coax ourselves into consuming less of our vices.

For an example of how an organization can benefit by exploiting the dynamic between future- and present-oriented selves, see the Real Life box "Give more tomorrow."

REAL LIFE

Give more tomorrow

Do you ever intend to do something good, such as volunteering or donating money, but you keep putting it off? You're not alone. Charities know that even the best-intentioned supporters can be forgetful about sending a check. That's why so many charities encourage people to sign up for monthly contributions, to be deducted automatically from their credit cards or bank accounts.

We can view this as another example of time inconsistency. Your future-oriented self wants to give regularly to charity, but your present-oriented self never gets around to doing so. Signing up to make monthly contributions is a winning strategy for your future-oriented self; it turns that force of inertia into an advantage. Your present-oriented self could cancel the contribution at any time, but is usually too lazy to bother. It's not surprising that, on average, monthly donors give more to charity than irregular donors.

A recent collaboration between Swedish economist Anna Breman and the charity Diakonia has taken this idea one step further. Charities would, of course, like their existing monthly contributors to give more. Would it make a difference if they were asked to increase their contribution *in the future*? Breman and Diakonia conducted an experiment to find out. They split about a thousand monthly contributors into two groups. Those in the first group were asked to consider increasing their monthly donation, starting right away. Those in the second group were asked the same thing, except that the increase would take effect in two months.

The result? The second group increased their donations by one-third more than the first group. That's a big difference for a charity that relies on funding from individual donors. It seems that Diakonia's donors, like people who ask for cake today but an apple next week, are more willing to give more in two months' time than to give more now.

Of course, at any time, a donor's present-oriented self could cancel the increased monthly donation. But the force of inertia is a powerful one: Monthly donors tend to keep giving at their promised level for an average of seven years. Rather than simply asking donors to give more, then, it seems that charities wanting to improve their fundraising should consider asking them to give more tomorrow.

Source: Anna Breman, "Give more tomorrow," 2006, http://econpapers.repec.org/article/eeepubeco/v_3a95_3ay_3a2011_3ai_3a11_3ap_3a1349-1357.htm.

The problem of competing selves can be alleviated using what is called a **commitment device**. A commitment device is an arrangement entered into by an individual with the aim of helping fulfill a plan for future behavior that would otherwise be difficult. A classic example of a commitment device occurs in the ancient Greek epic poem *The Odyssey*. Odysseus and his crew know that their ship is about to pass through waters populated by sirens, sea nymphs whose beautiful magic song bewitches men, causing them to jump into the sea and descend to a watery grave. Odysseus wants to hear the sirens' song, but his future-oriented self is wise enough to know that he can't trust his present-oriented self to resist the sirens' call when the time comes. So Odysseus commands his men to tie him to the mast before they enter the sirens' waters. He creates a commitment device that literally binds his present-oriented self to his decision to listen but not jump.

A more everyday example of a commitment device is an arbitrary deadline. In one experiment, a professor told his business-school class they would have three assignments due for the semester and that they could set their own due dates. Failure to meet the due dates would result in a lower grade. Although students would not have been penalized for choosing the last day of the semester as a deadline for all three assignments, most did not take this option. They recognized that their present-oriented

commitment device an arrangement entered into by an individual with the aim of helping fulfill a plan for future behavior that would otherwise be difficult

selves would be likely to procrastinate, leave all the work to the last minute, and be unable to complete everything. Most chose to space the deadlines evenly throughout the semester. By committing themselves to meet these arbitrary deadlines, they gave themselves a powerful incentive not to spend the whole semester procrastinating.¹

For another example of a commitment device, see the Real Life box “Take out a contract on yourself.”

REAL LIFE

Take out a contract on yourself

In competitions between your present- and future-oriented selves, commitment strategies aren’t easy to pull off. You may “commit” to punish yourself by, say, doing 100 push-ups if you give in to the temptation to order dessert. But that doesn’t work, does it? By the time you get home from the restaurant, your present-oriented self is back in charge and decides that those push-ups aren’t necessary after all. You, like Odysseus, need some way of binding yourself.

The website stickK.com (founded and partly owned by one of the authors of this book) is one such way. Here’s how it works: You define some measurable objective—say, that on December 1 you will weigh no more than a certain weight. You nominate a trusted friend to act as your referee—someone you can rely on to dole out tough love if you fall short, instead of letting you off the hook. You define an amount of money you want to forfeit if you fail to reach your goal—and you enter your credit-card number, so there’s no backing out.

Here’s the extra twist: You then nominate an organization that you would *hate* to give money to. If you miss your target, stickK.com takes your forfeited money from your credit card and gives it to your “anti-charity.”

Giving up cigarettes and losing weight are two common personal goals, but stickK.com has also inspired some creative commitments:

- “Speak more slowly to foreigners in New York City.”
- “No more dating losers.” (The person’s best friend was assigned to judge the definition of “loser.”)
- “Conserve energy by turning off the lights and air conditioner when leaving home.”
- “Study more.”
- “Study less.”
- “No cutting my hair for two months.”

At the time of writing, over 140,000 people have signed such contracts, for a total of over \$9.3 million dollars.

Source: www.stickK.com.

✓ CONCEPT CHECK

- How can procrastination be explained by time inconsistency? [LO 8.1]
- What is a commitment strategy, and how can it help someone to overcome time inconsistency? [LO 8.1]

Thinking Irrationally about Costs

In Chapter 1, we talked about how people weigh the trade-off between costs and benefits to arrive at a decision. If the benefits of doing something are greater than the opportunity cost, we assume that rational people will choose to do it. If the benefits are smaller than the opportunity cost, they won’t choose to do it. In reality, it turns out that people don’t always weigh costs and benefits rationally. In this section we’ll look at two

common mistakes people make in thinking about costs: failing to ignore sunk costs, and undervaluing opportunity costs.

These mistakes result from examples of what psychologists call *cognitive biases*. These are systematic patterns in how we behave that lead to consistently erroneous decisions. Cognitive biases come up a lot in behavioral economics. So if you find yourself falling into the traps described below, don't be too hard on yourself—it seems that human brains simply aren't built to find it easy to think rationally in certain situations.

The sunk-cost fallacy

LO 8.2 Explain why sunk costs should not be taken into account in deciding what to do next.

Have you ever sat through to the end of a terrible movie just because you didn't want to "waste" the cost of the ticket? The logic is tempting, but it's flawed. This is an example of what economists call the *sunk-cost fallacy*. A **sunk cost** is a cost that has already been incurred and can't be refunded or recovered—such as the cost of a ticket, once you've begun watching the film. It makes no sense to consider sunk costs when weighing the trade-off between opportunity costs and benefits, but people do it all the time, because we find it hard to accept our losses.

To see why it's a fallacy to consider sunk costs in your decisions, consider the following choice: Would you like to spend the next 90 minutes watching a terrible movie that's free of charge, or doing something else? You'd probably want to do something else, right? Grab a coffee, hang out with a friend, maybe even pay to see a good movie. The option of watching a terrible movie, even if it's free, is not an attractive one. Yet when you have paid to see a movie that you quickly realize is terrible, this is the situation you face. The cost of the ticket is gone—you can't get it back—and you don't need to pay anything more to see the rest.

Why, then, do many people in this situation stubbornly sit through the rest of the movie? They are irrationally factoring sunk costs into their calculations. They have a sense that somehow the money they spent on the ticket will have been wasted *only if* they walk out, instead of making peace with the idea that the money is wasted *already* since they're not getting pleasure from watching the movie.

A similar psychological foible explains our chapter-opening example. Many people apparently consider that the cost of the lost ticket will be wasted *only if* they buy a replacement ticket. The rational approach is to accept that the cost of the lost ticket is wasted already, and ignore it in the considerations; the only question now is whether the *future* costs (\$20 for a ticket) will outweigh the *future* benefits (the enjoyment of the concert). This trade-off is exactly the same whether you lost the ticket or a \$20 bill.

Another common example of the sunk-cost fallacy is persevering with expensive repairs to a failing old car. You spend \$1,000 repairing your car, and the very next month it breaks down again and needs another \$2,000 worth of repairs. It seems likely to keep on needing more and more repairs, totaling much more than its resale value. If you considered only future costs against future benefits, you would decide to scrap the car and buy another one. But many people feel that scrapping the car would be "wasting" the \$1,000 they spent on it last month.

Once you've begun watching the film, the money you spent on the ticket is a sunk cost, whether you like the movie or not.



sunk cost a cost that has already been incurred and cannot be refunded or recovered

The sunk-cost fallacy doesn't apply only to money. Have you ever stayed in a bad relationship because you felt it would be a shame to “waste” the time and effort you'd put into it already?

Undervaluing opportunity costs

LO 8.3 Identify the types of opportunity cost that people often undervalue, and explain why undervaluing them distorts decision making.

Remember that choosing one opportunity means choosing *not* to take advantage of another opportunity. Everything has an opportunity cost. Sometimes the trade-off is clear. If you are choosing between two similarly priced dishes on a restaurant menu, the opportunity cost of ordering one dish is obvious: It's the enjoyment you would have gotten from eating the other dish instead.

In many other cases, however, the trade-off is less clear. Often the benefit part of a trade-off is obvious because it is right in front of you—say, if you are trying on a \$100 jacket in a store. But the opportunity cost is much harder to visualize: What else might you spend \$100 on? It may be that if you thought very hard about how else you might spend that \$100, you would come up with an alternative you prefer. But such alternatives seem abstract and distant, while the jacket is concrete and immediate. As a result, you may overvalue the benefit you would get from the jacket, and undervalue its opportunity cost.

People are especially prone to undervaluing opportunity costs when they are non-monetary, such as time. In sitting through a terrible movie all the way to the end, people not only fall prey to the sunk-cost fallacy; they also fail to recognize the opportunity cost of their time. Not only do they mistakenly put value on a nonretrievable monetary cost (the price of the ticket), they fail to consider the value of their nonmonetary opportunity cost (time). Staying to the end of a bad movie means you will lose any utility you could have gained by doing something else instead.

The *implicit cost of ownership* is another nonmonetary opportunity cost that is often overlooked. The term refers to a cognitive bias documented by behavioral economists, which leads people to value things more once they possess them. Everything you own has an opportunity cost, because you could always choose to sell it. By continuing to own an item, you incur an opportunity cost equal to what someone would be willing to pay you for it. Say you have a bicycle in your garage that you never use any more, and you could get \$200 for it on eBay. If you didn't own the bicycle, you certainly wouldn't pay \$200 to buy it. So why continue to own it? You are effectively “paying” \$200 to keep the bike; if you thought clearly about the opportunity cost, you would sell it.

As another example, suppose you win courtside tickets to a basketball game in a raffle, and you could sell them for \$400. You may well choose to use the tickets yourself, even though you would never have considered paying anything like \$400 for them if you hadn't won the raffle. It's easy to remember that you are paying when money leaves your wallet, but harder to remember that not adding money to your wallet is essentially the same thing.

Even seasoned investors often overlook the implicit cost of ownership, as they stubbornly hold onto badly performing stocks that they would never consider buying if they didn't already own them.

✓ CONCEPT CHECK

- What is a sunk cost? Why is it *not* part of the opportunity cost of a decision?

[LO 8.2]

- What is the implicit cost of ownership? [LO 8.3]

Forgetting about Fungibility

LO 8.4 Define fungibility, and explain why it matters in financial decision making.

If something is **fungible**, it is easily exchangeable or substitutable. Many commonly traded commodities are fungible. Any given ton of copper can be exchanged for a different ton of copper, or a barrel of oil for another barrel of oil. The cleanest example of a fungible object is money. A dollar is a dollar is a dollar, whether you received it as a gift, found it on the floor, or earned it by working. A dollar is also a dollar whether it's a dollar bill in your wallet, 20 nickels in a pot of loose change, or a number on the screen when you check your bank balance online. It all has the same value. Money is fungible.

This sounds like stating the obvious, but it isn't. Behavioral economists have found that people often forget money is fungible, and this leads to some odd and irrational decisions.

fungible easily exchangeable or substitutable

Creating mental categories for money

It can sometimes be a helpful self-discipline to create mental categories for money. For example, suppose you're saving up to go on vacation. You might decide to open a separate bank account for this money. By telling yourself that this account is "vacation money," you reduce your temptation to raid the account for everyday expenses. Some people even physically label money by putting it into envelopes or jars that say "rent" or "groceries." Of course, the money you put in the rent envelope could just as easily be spent on going out partying the night before the rent is due. But if you can "forget" that fact, it could save you from being evicted. In this way, separating money into mental categories may help you organize your expenditures and stay on budget.

However, in other cases, mentally labeling money as belonging to one category or another is less advantageous. Consider a college student who has amassed \$5,000 in savings by working a weekend job, and typically carries a \$2,000 balance of credit-card debt each month. The student may mentally label interest payments on his credit-card balance as regular "expenses" and pay them from his regular monthly paycheck, not wanting to draw down his savings account. However, if the credit-card debt bears a higher interest rate than the savings account earns—which it almost certainly does—then this student would be better off paying down his debt. If instead he had \$3,000 in his savings account and carried no credit-card debt, he could keep the extra money he was spending on interest. That money could go into savings, or get spent on more food or books or music, as he wishes. Yet many people refuse to spend their savings on paying down debt—a decision that makes them poorer in the long run.

At least one credit card company makes a point of enabling customers to mentally categorize debt, which may or may not be a good thing; see the What Do You Think? box "Credit-card categories: More realistic or more confusing?"

WHAT DO YOU THINK?

Credit-card categories: More realistic or more confusing?

In 2009, Chase Bank introduced a new credit-card product called Blueprint, designed with the help of an economist who specializes in behavioral finance. Blueprint helps customers to categorize their credit-card bills so they can choose which categories to pay off right away and which to carry over. They can then create payment plans for the expenses they choose not to pay off immediately.

A series of television commercials supporting Blueprint's launch showed people choosing to pay off regular expenses such as groceries, gas, and rent, while creating special payment plans for one-time expenses such as an engagement ring. The ads appeal to a common intuition: Many people don't mind paying interest on big-ticket items, but feel uncomfortable about getting into debt to cover their everyday living expenses. The insight behind Chase's Blueprint product is to work with the way many people really think about money. The product aims to help customers put order into their finances—in the same way that it can be helpful to set aside cash for "rent" in its own envelope.

Looked at a different way, however, the product works by downplaying the fact that money is fungible. The fungibility of money means that the categories people create are meaningless in financial terms. Economic logic tells us that if you have a \$500 credit-card bill and choose to pay only \$300, the interest due on the remaining \$200 will be identical, no matter whether you tell yourself you're paying off your monthly groceries bill or part of an engagement ring. The risk is that the product nurtures unclear thinking about finance by promoting a false distinction between categories of debt. Customers may be tempted to think that paying later is more acceptable for big-ticket purchases, and hence run up more high-interest credit-card debt on items that they could be better off saving up for instead.

What do you think?

1. Should banks design products around the way that people actually view their finances, even if the outcomes might seem irrational to outsiders?
2. Should banks design products that always push customers to make choices consistent with rational economic decision making?
3. Overall, would you expect customers who use a product like Blueprint to end up with more or less debt?

Source: <http://www.chaseblueprint.com/>.

Putting money into mental categories can cause people to take risks they wouldn't otherwise take. Behavioral economists have observed that people who have recently gained some money are more likely to spend it recklessly. In a casino, for example, you may hear a gambler who has just won a bet say that he is "playing with the house's money" and take bigger risks in his gambling than he would have done with the money he came in with. This is an irrational distinction, because once he had won, the money was no longer "the house's" but his own. This irrational behavior has also been documented in investment-fund managers who are entrusted with investing people's savings. They, too, seem prone to making a false mental distinction between amounts they started out with and amounts they have just gained in the market. As a result, they make more reckless investment decisions when they have recently made a profitable trade.

For a final example of a way in which people make irrational decisions by forgetting that money is fungible, read the Real Life box "The method-of-payment effect."

REAL LIFE

The method-of-payment effect

Is a \$50 bill different from 50 \$1 bills in any sense other than how well they fit into your wallet? Is spending \$50 in cash any different from spending \$50 on a credit card? In theory, the answer is obviously no. In reality, however, researchers have found that people make very different purchasing decisions depending on the method of payment. *To learn more, continue reading by scanning the QR code near the end of the chapter or by going online.*

✓ CONCEPT CHECK

- Why is money considered fungible? [LO 8.4]
- How can forgetting about money's fungibility lead to poor financial decisions? [LO 8.4]

Conclusion

While we can go a long way by assuming that people act rationally to maximize their utility, behavioral economics shows us that, in practice, we need a broader understanding of “maximizing utility” in order to build models that predict many of the quirky things people really do. Real people make economic decisions in complicated, unexpected, and sometimes nonoptimal ways. Understanding these human tendencies can help us to avoid common decision-making pitfalls. It can also help us to design products and policies that allow people to make better choices.

Although the behaviors explored in this chapter can be viewed as biases or mistakes, they are also the sort of mistakes that can be corrected. We've also discussed some strategies designed to help people reach their intended goals and make better choices. In a later chapter (“Public Policy and Choice Architecture”) we'll return to some of these issues as we think about public policies that help people make good choices and stick to their goals.



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Key Terms

behavioral economics, p. 180

time inconsistency, p. 181

commitment device, p. 183

sunk cost, p. 185

fungible, p. 187

Summary

LO 8.1 Define time inconsistency, and explain how it accounts for procrastination and other problems with self-control.

Time inconsistency occurs when we change our minds about what we want simply because of the timing of the decision. That often means wanting something now that is inconsistent with what you want for yourself in the future. Time inconsistency helps to explain behaviors like procrastination and giving in to temptation. People who are time inconsistent experience an internal battle between their “future-oriented selves,” which might have worthy goals such as being productive and eating healthily, and their “present-oriented selves,” which may be prone to slacking off and backsliding. Ideas such as *commitment devices* can help us understand this battle.

LO 8.2 Explain why sunk costs should not be taken into account in deciding what to do next.

Economists usually assume that people will do something if and only if the benefits of doing it are greater than the opportunity cost. But people have an irrational tendency to place value on *sunk costs*—costs that have already been incurred, and cannot be refunded or recovered. People would make better decisions if they did not consider sunk costs, instead weighing only those costs that are still to come.

LO 8.3 Identify the types of opportunity cost that people often undervalue, and explain why undervaluing them distorts decision making.

People frequently undervalue abstract or nonmonetary opportunity costs, such as the value of the time they spend on an activity or the implicit cost of owning an item. For example, people frequently turn down opportunities to sell an item they already own at a price higher than they would have been willing to pay to buy the item. Economically, turning down an opportunity to sell an item that you already own is equivalent to buying that item at the offered price.

LO 8.4 Define fungibility, and explain why it matters in financial decision making.

A good is considered *fungible* if it is easily exchangeable or substitutable. The foremost example of a fungible good is money. Even though money is fungible, this is often not reflected in people's behavior. Instead, they may put it into various mental categories. Although this approach can help people to save money or stick to a budget, it can also lead to poor financial decisions, as when people don't use their low-interest savings to pay down high-interest debts.

Review Questions

1. Describe a situation from your own experience in which you are time inconsistent. What have you done (or might you do) to accomplish the goals of your future-oriented self? **[LO 8.1]**
2. You have a friend who is always resolving to improve her grades, but who never seems to find time to study. Explain to her how time inconsistency might be affecting her choices, and suggest some steps she might take to meet her goal. **[LO 8.1]**
3. You've already paid to get into an all-you-can-eat buffet and have enjoyed several plates of food. You're not really hungry anymore, but feel you ought to eat more to get the full value from the buffet. Does this inclination make sense? Explain why or why not. **[LO 8.2]**
4. Alda is willing to pay \$2,000 to visit her favorite cousin over spring break. A month ago, she booked a trip costing \$1,200. Spring break has arrived, but Alda needs one day to finish an important paper before she goes. Alda could cancel her trip and get a refund of \$800. Or, she could pay an additional \$1,000 (on top of the \$1,200 she already paid) to rebook the trip for two days later. Explain what Alda should do. **[LO 8.2]**
5. Suppose your art history professor has a small personal art collection, including some works by a famous artist. She bought this artist's paintings at

a modest price, before he became well known. One of the paintings is now worth \$2 million. When you ask the professor whether she would buy it now for \$2 million, she says she wouldn't. Is the professor's decision making consistent? Why or why not? **[LO 8.3]**

6. Chandra received a gift certificate that covers three salsa dance lessons. After the first lesson, Chandra decided that she doesn't like salsa, yet she still plans to go the next lesson because it doesn't cost her anything. Evaluate Chandra's logic. **[LO 8.3]**
7. You have a friend who runs up a balance on his credit card by buying new furniture to replace the furniture he has. The interest rate on the balance is 15 percent per month. The furniture store offers a layaway plan with monthly payments equivalent to an interest rate of 10 percent per month. Explain to your friend how he could manage his finances more sensibly. **[LO 8.4]**
8. Dora and Vicki are bartenders. Dora prefers her tips in cash because she can have the money right away. Credit-card tips don't get paid to bar staff until the payments are processed, which can take a few days. Vicki still prefers for her customers to put her tip on their credit card. Why might Vicki have this preference? **[LO 8.4]**

Problems and Applications



1. In which of the following cases is time inconsistency likely to be at work? **[LO 8.1]**
 - a. A child plans to become a doctor when he grows up, but a month later reads a book about firefighters and decides to become a firefighter instead.
 - b. A student keeps intending to finish reading *War and Peace*—next week.
 - c. A parent plans to enroll his child in art class but enrolls her in dance class instead.
 - d. A beginning piano player plans to practice three times a week but frequently practices only once a week.
2. You would like to save more money. Which of the following strategies will help you overcome time inconsistency? **[LO 8.1]**
 - a. Deciding how much you need to save.
 - b. Setting up a savings account.
 - c. Putting reminders in your calendar to make deposits.

- d. Enrolling in an automatic-transfer program that will move a specified amount of money from your checking account to your savings account each month.
3. You're seated at a banquet that is beginning to become boring. Which of the following pieces of information are relevant to your decision to stay or go somewhere else? **[LO 8.2]**
- Another party is happening at the same time, and you've heard that it's fun.
 - The dinner you were served was only so-so.
 - You haven't eaten dessert yet, and it looks delicious.
 - You paid \$30 to attend the banquet.
 - The other party has a cover charge of \$10.
4. You just spent \$40 on a new movie for your collection. You would have preferred the director's cut but discovered when you got home that you bought the theatrical version. The store you bought the movie from has an "all sales final" policy, but you could resell the movie online for \$30. The director's cut sells for \$50. By how much would you need to value the director's cut over the theatrical version for it to make sense for you to sell the version you bought and buy the director's cut? **[LO 8.2]**
5. Suppose you're bowling with friends. You've already played one game and are trying to decide whether to play another. Each game costs \$6 per person, plus a one-time rental fee of \$5 for the bowling shoes. It would take another hour to play the next game, which would make you late to work. Missing an hour of work would mean that you would lose pay at a rate of \$12 per hour. Based on this information, how much would you have to enjoy the next bowling game, expressed in terms of dollars, to play another game? **[LO 8.3]**
6. During a holiday party at work, you pay \$2 to buy a raffle ticket for a 160-gigabyte iPod. You win the drawing. Based on a little research online, you discover that the going rate for a hardly used 160-gigabyte iPod is \$200. **[LO 8.3]**
- What was the opportunity cost of acquiring the iPod?
 - What is the opportunity cost of choosing to keep the iPod?
7. Jamie is saving for a trip to Europe. She has an existing savings account that earns 2 percent interest and has a current balance of \$4,500. Jamie doesn't want to use her current savings for vacation, so she decides to deposit the \$500 she got from selling her bike into a new savings account for the trip. Savings accounts with balances under \$1,000 earn 1 percent interest.
- If Jamie deposits the \$500 in a new savings account, how much interest will she earn in two months for the two accounts?
 - If Jamie deposits the \$500 in her existing savings account, how much interest will she earn in two months? **[LO 8.4]**
8. Suppose you have accumulated a credit-card balance of \$500, at a monthly interest rate of 10 percent. You are also planning to open a new savings account that accumulates interest at a monthly rate of 1 percent. You just got your paycheck and have \$200 that you can use either to pay down your debt or open your savings account. Recall that the formula for calculating the future value of a sum that collects interest is $V = X \times (1 + r)^n$, where X is the initial sum, r is the monthly interest rate, and n is the number of months. **[LO 8.4]**
- If you use the full \$200 to pay down your debt, what will your credit-card balance be in six months? Assume no additional credit-card payments during this time.
 - If you put the full \$200 into your savings account, what will be the balance in your savings account in six months? What will your credit-card balance be? Assume no additional payments or deposits during this time.
 - In six months, how much money will you have lost if you deposit the \$200 in your savings account compared to paying down your credit card?

Chapter Endnote

- <http://duke.edu/~dandan/Papers/PI/deadlines.pdf>.