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SERIES COMPILATION

Cognitive Biases Series

BY MEIR STATMAN, Ph.D.

The following columns appeared as a six-part series in the Monitor *between September 2005 and August 2006.*

Part I: Availability Bias
Part II: Anchoring Bias
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COGNITIVE BIASES SERIES



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Part I: Availability Bias

n this and future issues of the *Monitor*, I will review a number of cognitive biases so investment consultants can educate their clients to overcome them. These cognitive biases include availability, hindsight, anchoring, overconfidence, and several more.

We are more intelligent than computers. Intelligence helps us navigate our cars in heavy traffic, a task that is still beyond the ability of computers with the best artificial intelligence. But our intelligence relies on mental shortcuts that sometimes mislead us into cognitive biases and poor choices. Scientific knowledge can help us overcome our cognitive biases.

Today almost all people believe that the earth revolves around the sun. That belief is testimony to the power of scientific knowledge. Our eves tell us that the sun revolves around the earth; we see sunrise in the east at dawn and sunset in the west at dusk. But scientific logic and evidence tell us that the mental shortcut of our eyes misleads us into a cognitive bias. Cognitive biases abound in our perceptions of investments as well, and scientific knowledge can help us overcome them. I begin this series with the cognitive bias of availability.

Availability is the term that psychologists Daniel Kahneman and Amos Tversky coined for the mental shortcut we use to judge the likelihood of outcomes by the availability of similar outcomes to our memory.¹ For example, we might conclude that the proportion of winning lottery players is higher than the true proportion because images of lottery players available to our memory from newspapers and television are skewed toward winners.

Consider an experiment done by Tversky and Kahneman that highlights the cognitive bias of availability.² Subjects listened to a list of names and were asked to judge if it included more men or more women. In fact, the list included more women than men, but the men on the list, such as Richard Nixon, were more available to memory because they were more famous than the women on the list, such as Lana Turner. Tversky and Kahneman found that, indeed, most subjects were fooled by the cognitive error of availability and concluded, in error, that the list included more men than women.

Now think about the cognitive bias of availability in the context of investments. We know from scientific studies that the proportion of mutual funds that trail their corresponding indexes is greater than the proportion that beat it. So why do so many investors believe that they can easily find mutual funds that beat their corresponding indexes? One answer lies with availability. Mutual fund companies advertise their fivestar funds, making winning mutual funds more available to memory.

Consider a mutual fund company. In early 2000, it advertised two "growth and income" funds, the Blue Chip 100 Fund with a return of 37 percent in the year ending March 2000 and the Growth and Income Fund with a return of 33.68 percent. It turns out that these funds were the best two of nine mutual funds in the growth and income category of the company.

In late 2002, when the stock market was at its low, the company advertised its U.S. Government Securities Fund with a 9.88-percent return for the year ending September 2002. Again, this advertised fund was the winning fund among the eight funds in its category. More recently, in October 2003, after the stock market recovered somewhat, the company advertised its Large Company Growth Fund. "Thinking about the stock market? Choose a fund that's #1." The fund was #1 of the period ending September 2003, but it was no longer #1 in October 2003 when the advertisement appeared.

Recognizing cognitive biases is the first step in overcoming them. Next, investors need access to scientific studies that are free of cognitive biases. For example, scientific studies about the performance of mutual funds must include all funds, thereby avoiding the cognitive bias of availability that occurs when only fivestar funds are available to memory.

Some investors can recognize cognitive biases and overcome them on their own. But most investors need you, their investment consultant, to serve as their teacher. In this series I hope to serve as your teacher and help you educate your clients.

Endnotes

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1. Daniel Kahneman won the Nobel Memorial Prize in Economics in 2002 in part for his work on cognitive biases. Unfortunately, Amos Tversky died in 1996 and therefore was not eligible for the prize.

2. Amos Tversky and Daniel Kahneman, "Availability: A heuristic for judging frequency and probability," *Cognitive Psychology* 5 (1973): 207-232.

Anchoring Bias

n the last issue of the Monitor, I introduced the **Cognitive Biases Series** and discussed the availability bias. Availability is the bias that leads us to conclude, for example, that the proportion of five-star mutual funds among all mutual funds is higher than the true proportion because mutual funds companies make images of five-star funds readily available to our memory through advertising while they hide their one-star funds. I argued that scientific knowledge can help us overcome cognitive biases and emphasized the role of investment consultants as educators. In this column, I will discuss the anchoring bias and begin with a question.

What is your quick five-second estimate of the product of 1x2x3x4x5x6x7x8? This is the question that Amos Tversky and Daniel Kahneman posed to their subjects. You probably started your way to an answer by multiplying 1 by 2 and getting 2, then multiplying 2 by 3 and getting 6, then multiplying 6 by 4 and getting 24. With your five seconds running out you jumped to a conclusion, perhaps 500, perhaps even 1,000. But you probably did not jump far enough to reach 40,320, which is the correct answer. It is as if you were anchored to the last number you got to in your multiplication, 24 or perhaps 120, by a short chain. Tversky and Kahneman found that the median estimate of their subjects was 512, and named the bias *anchoring bias*.

I had my own memorable experience with the anchoring bias when I studied the Dow Jones Industrial Average (DJIA). The DJIA was introduced in 1896 at a level of 41. By the end of October 2005 it was at 10,440. The DJIA, like the S&P 500 Index and almost all indexes, is a capital index; it does not include dividends and the compounding of reinvested dividends over time. Now think of a DIIA where dividends are reinvested and compounded over time. What is your five-second estimate of the level of that compounding DIIA at the end of October 2005? The correct answer is at the end of the article.1

When I saw a similar result in a spreadsheet for the first time, I was sure that I had made some mistake in my calculation. Doing the calculation in my head I started with the level of the DJIA at the time and multiplied it by a large number knowing that compounding works quite quickly and forcefully. But the number I chose, and probably the number you chose, was much too small.

We should know the bias of anchoring and take precautions against it. For example, we should know that we tend to be anchored to the long-term average return of stocks and expect stock returns in any year not to deviate much from it. But stock returns in any year are likely to deviate greatly from the long-term average. For example, the mean annual return of the S&P 500 Index during the 79 years from 1926 through 2004 was 12.4 percent. But in only 25 out of the 79 years did returns deviate from that mean by no more than 10 percentage points. So there is no need to despair after one, two, or three years of terrible returns, as happened in the early 2000s, and no reason to be euphoric after one, two, three, or even four years of fabulous returns, as happened in the 1990s.

We also should not be anchored to the current state of the economy. In the 1980s, we were anchored to an image of Japan as a giant looming over a weakling United States. We thought that the Japanese would buy up all U.S. assets. It did not happen. In the 1990s, we were anchored to an image of the United States as an invulnerable superpower, contrasted with a collapsed Soviet Union. We found out on September 11, 2001, that we are quite vulnerable. Today we are anchored to the war in Iraq, high energy prices, and outsourcing of some industries to India and China, but we fail to see the prospects of future industries. And we fail to see our own creativity and resilience in adjusting to new circumstances and solving difficult problems.

We also tend to be anchored to the rules of ethics and fairness that prevail in our families, professional groups, or countries. But other people's rules of fairness are different from our own. and we risk trouble if we fail to know them. For example, I found in a recent study that investment professionals in the United States consider selling a stock on inside information as very unfair but regard selling a defective car on inside information as acceptable. In contrast, investment professionals in Turkey are relatively lenient toward those who sell stocks on inside information but harsh on sellers of defective cars.

We can overcome the anchoring bias by the scientific method, replacing ignorance with knowledge and conjectures with facts. We might conjecture that annual stock returns do not deviate much from their long-term averages, but facts teach us otherwise. We might conjecture that other people's rules of fairness are like ours, but facts teach us otherwise about that, too.

Endnote

1. The level of the compounding DJIA at the end of October 2005 was greater than 890,000.

Additional References

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Part III: Confirmation Bias

dog believes that his barks make UPS trucks go away. He knows that his belief is true because UPS trucks always leave the driveway after he barks. We chuckle at the silly dog, but we are all a little bit like him. The dog suffers from confirmation bias, and so do we.

Psychologists describe confirmation bias as the bias that occurs when we look for evidence that confirms our beliefs but overlook evidence that disconfirms them. As physicist Robert Park said about the belief that high-voltage lines cause cancer despite strong evidence to the contrary: "It's often not deliberate fraud. ... People are awfully good at fooling themselves. They're so sure they know the answer that they don't want to confuse people with ugly-looking data."¹ We hear confirmation bias in the voices of money managers who crow victory when they beat the market one quarter and dismiss their lagging performance over one, three, and five years as merely an aberration. "You are comparing me to the wrong benchmark," they say. "Judge me over a full business cycle," they say. "I'm right and the market is wrong," they say. They'll accept anything but evidence that disconfirms their cherished belief that they can beat the market.

Science offers remedies to the confirmation bias with a structure that forces us to consider all the evidence, confirming and disconfirming alike, and guides us to tests that tell us whether our hypotheses are supported by the evidence or rejected by it. For example, investment consultants who want to test the hypothesis

that hedge funds beat the market must collect the returns of all hedge funds, not only the funds that proudly report terrific returns. And investment consultants must use prescribed tests to see whether any difference between the returns of hedge funds and the return of the benchmark is statistically and economically significant. Wise investment organizations create structures that highlight disconfirming evidence as brightly as confirming evidence. For example, wise investment organizations divide meetings about new investment ideas into two parts: one where all participants are encouraged to point out the strengths of the new idea and one where all are encouraged to point out its weaknesses.

Consider the belief that price-toearnings (P/E) ratios can be used to forecast stock returns and time the

TABLE 1 Testing the hypothesis that high P/E ratios forecast low stock returns and low P/E ratios forecast high returns

	LOW RETURN	HIGH RETURN	TOTAL
	(Return in the following quarter is below the median return)	(Return in the following quarter equals or the median return)	
HIGH P/E RATIO (P/E ratio at the end of a quarter exceeds or equals the median P/E ratio)	Cell #1 – Positive hit Confirming Evidence 73 quarters	Cell #2 – False positive Disconfirming Evidence 65 quarters	138 Quarters
LOW P/E RATIO (P/E ratio at the end of a quarter is lower than the median P/E ratio)	Cell #3 – False negative Disconfirming Evidence 64 quarters	Cell #4 – Negative hit Confirming Evidence 73 quarters	137 Quarters
TOTAL	137 Quarters	138 Quarters	275 Quarters

market. By now, the story of the great rise of stock prices in the late 1990s and their great fall in the early 2000s is well-known. In the late 1990s exuberant investors lifted P/E ratios to levels much higher than their historical average. True to form, stock prices fell in early 2000. And by now, the lesson seems equally clear. Sell stocks when P/E ratios are high. But is this belief true? A proper examination must consider both confirming and disconfirming evidence.

When people talk about P/E ratios being high, they rarely tell us what kind of P/E ratio they consider high. Imagine that we call the P/E ratio of the S&P Index high if it exceeds or equals the median P/E ratio at the end of each of the 275 quarters from the 4th quarter of 1936 through the 2nd quarter of 2005. That median P/E ratio was 15.01. We call the P/E ratio low if it falls below the median. Imagine also that we call a quarterly S&P 500 return in the following quarter high if it exceeds or equals the median quarterly return. That median return was 3.68 percent. We call the return low if it falls below the median. Table 1 presents the frequency of the 275 quarters in the four cells of a matrix.

The first cell contains observations where P/E ratios were high and returns during the following quarter were low. These are positive hits. For example, the P/E ratio at the end of the 4th quarter of 2004 was high, 20.70, and the return in the following quarter was low, -2.15 percent. The fourth cell contains observations where P/E ratios were low and returns during the following quarter were high. These are negative hits. For example, the P/E ratio at the end of the 3rd quarter of 1982 was low, 8.88, and the return in the following quarter was high, 18.14 percent. Positive hits and negative hits are confirming evidence, observations consistent with the belief that high P/E ratios forecast low returns and low P/E ratios forecast high returns.

The other two cells contain disconfirming evidence. The second cell contains false positives where P/E ratios were high but subsequent returns were high. For example, the P/E ratio at the end of the 3rd quarter of 2004 was high, 19.29, but the return in the following quarter was also high, 9.23 percent. The third cell contains false negatives, where P/E ratios were low but subsequent returns were low. For example, the P/E ratio at the end of the 4th quarter of 1981 was low, 7.98, but the return in the following quarter was low, -7.23 percent. Correct analysis of the hypothesis that high P/E ratios forecast low returns and low P/E ratios forecast high returns requires examination of all four cells. Those who examine only the positive and negative hits fall prey to confirmation bias.

There are 73 positive hits in the

first cell and 73 negative hits in the fourth. These are confirming evidence, consistent with the belief that high P/E ratios forecast low returns and low P/E ratios forecast high returns. The disconfirming evidence is a bit weaker than the confirming evidence. There are 65 false positives in the second cell and 64 false negatives in the third cell. The prescribed statistical test is the Chi-square test, and it tells us that the difference between the confirming evidence and the disconfirming evidence is too small to support the hypothesis that P/E ratios forecast future returns at a statistically significant level.

The dog that believes his bark makes UPS trucks go away can test his belief by looking for disconfirming evidence. How about not barking next time when the UPS truck is in the driveway? If the truck stays in the driveway, that would be confirming evidence, but if the truck leaves, that would be disconfirming evidence. The dog is not smart enough to overcome his confirmation bias, but we should be. We have many beliefs, some true and others false. We should not overlook disconfirming evidence if we care about distinguishing true beliefs from false ones. \mathbf{M}

Endnotes

1. See William J. Broad, "Data Tying Cancer to Electric Power Found to be False," *New York Times* (July 24, 1999): A1.

Part IV: Hindsight Bias

Don't gamble; take all your savings and buy some good stock and hold it till it goes up, then sell it. If it don't go up, don't buy it. —Will Rogers

physician came to ask for my advice in December 1994. He had worked hard and saved his money for many years and now, in his late forties, he no longer could continue at such a fast pace. All of his savings, \$1.5 million, were in Treasury bills, and he was considering shifting some to stocks. But he was apprehensive. "The stock market is so high," he said. "It's bound to crash."

I told the physician that I had not the slightest idea where the stock market was going over the next three, five, or even 10 years. But I relied on good evidence when I told him that stocks were likely to do better than Treasury bills over the long run. And a man in his late forties still has a long run.

I was feeling very smart in 1995 and kept feeling so through 1999, as if I could have seen with perfect foresight in December 1994 that the fabulous exuberance of the stock market was about to begin. But I kept reminding myself that I, like you and the rest of us, am subject to the mental trap that cognitive psychologists call "hindsight bias."

Baruch Fischhoff, a cognitive psychologist, described hindsight bias as the belief that whatever happened was bound to happen, as if uncertainty and chance were banished from the world. So, if an introverted man marries a shy woman, it must be because (as we have known all along) "birds of a feather flock together," and if he marries an outgoing woman, it must be because (as we have known all along) "opposites attract." Similarly, if stock prices decline after a prolonged rise, it must be (as we have known all along) that "trees don't grow to the sky," and if stock prices continue to rise, it must be (as we equally have known all along) that "the trend is your friend."

We can see hindsight bias in action when we observe the attitudes of investors, both individual and institutional, toward international investments and currencies. In the late 1970s investors nodded their heads when consultants explained the benefits of global diversification, but they bought international stocks as sure future winners, knowing in hindsight that they were past winners. As Middleton wrote in the New York Times in 2003, "Foreign investing became fashionable when U.S. markets were relatively weak, beginning in the late 1970s. Between 1976 and 1989, the Europe, Australian, Far East Index surged more than sixfold, while the S&P 500 did not even quadruple." But international stocks went out of fashion in the 1990s as investors learned, in hindsight, that their returns lagged those of U.S. stocks. "The sagging interest in Asian and European funds has sounded alarm bells among many financial experts whose mantra is diversification," Tam wrote in the Wall Street Journal in 1998. The alarm bells of the 1990s quieted in the 2000s as international stocks beat U.S. stocks once again, but the alarm bells we should hear are the bells of hindsight. We continue to believe that we have seen in foresight what we have seen only in hindsight.

Hindsight bias also rules decisions to hedge currencies or not to hedge them. Comparing hedged and unhedged global portfolios during 1988–2003, I found that they had approximately equal returns and equal risk. Yet investors, driven by hindsight, continue to jump from bets on hedged portfolios to bets on unhedged portfolios, forever believing that their foresight is as good as their hindsight.

In March 2005, Cohn and Reed wrote in Business Week about Jim O'Neill, the "rock star" head of global economic research at Goldman Sachs: "O'Neill has won respect for prescient calls such as the one that accurately forecast that the euro would rise from \$1.25 in February 2004, to \$1.30 a year later.... he continues to see weakness in the dollar to the tune of 8% decline against the euro over the next 12 months. That would put the dollar at \$1.40 to the euro by February, 2006." Was the dollar at \$1.40 to the euro by February 2006? I didn't know in foresight, but we all know in hindsight.

Clients affected by hindsight infuriate consultants. "Why did you advise me to diversify globally?" they asked in the late 1990s after international stocks trailed U.S. stocks. "Why didn't you advise me to hedge the currency exposure of my international stocks?" they ask after watching the appreciation of the dollar against the euro and the yen in 2005. One tool for educating clients about the universal reach of hindsight bias is stories about our own susceptibility to the bias, as I just did in my story about the physician. A consultant shared with me another tool. At the first meeting of each year she presents clients with a long list of questions and asks them to make forecasts.

- Will U.S. stocks do better than international stocks this year?
- What will happen with the bond market?
- Will Donald Trump get divorced?
- Will Martha Stewart get married?

At the end of the year clients might be tempted by hindsight to remember the forecasts that came true. She takes the list out of the folder and reviews all the forecasts. She and her clients talk about hindsight bias and share a chuckle rather than a grudge. And she reminds her clients about the benefits of diversification. Those who truly have perfect foresight should invest only in the asset that would do best next year, international stocks, U.S. stocks, bonds, or hedge funds. But those, like us, who only are fooled by hindsight bias into thinking that our foresight is perfect should diversify among all assets.

We all make choices in an uncertain world and know, in hindsight, that some turn out to be horrendous mistakes. We cannot avoid choices and we cannot banish uncertainty. But we can learn to make wise choices and we can learn, grudgingly, to live with the consequences.

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Part V: Mental Accounting Bias

hink about the following choice: If you could increase your chances of having a more comfortable retirement by taking more risk in your portfolio, would you:

be willing to take a LOT more risk with SOME of your money? or

be willing to take a LITTLE more risk with ALL of your money?

I've presented this choice to many investors and investment consultants, and if you are like the vast majority of them, you chose A. The overwhelming preference of A over B is puzzling when viewed from the perspective of Markowitz's meanvariance portfolio theory. This theory prescribes that investors focus on the risk of the *overall* portfolio rather than on the risk of individual *mental accounts* within the portfolio. But normal investors do not behave according to the mean-variance portfolio prescription. The mental accounting cognitive bias leads normal investors to ignore correlations between assets in different mental accounts and, therefore, choose portfolios that are not on the meanvariance efficient frontier.

Figure 1 shows that the increase in the risk of the overall portfolio is approximately the same whether you choose A or B. When you take a LOT more risk with SOME of your money you add about the same risk as taking a LITTLE more risk with ALL of your money. The overwhelming preference for A over B when each adds approximately the same amount of risk to the overall portfolio is inconsistent with meanvariance portfolio theory, which states that investors should be indifferent regarding A and B. But while the preference for A over B is inconsistent with mean-variance portfolio theory, it is consistent with behavioral portfolio theory.¹

A central feature in behavioral portfolio theory is the observation that investors view their portfolios not as a whole, as prescribed by mean-variance portfolio theory, but as distinct mental-account layers in a portfolio pyramid, as depicted in figure 2, where the layers are associated with particular goals and attitudes toward risk vary among layers. One layer might be a "core" layer, designed to protect the investor from being poor. Another might be a "satellite" layer, designed to give the investor a chance at being rich. Investors might behave as if they hate risk in the core downside protection layer and behave as if they love risk in the satellite upside potential layer. In behavioral portfolio theory, investors apply "risk budgeting" to their portfolios and allocate the risk budget to the satellite layer. This is what investors do when they choose to take a LOT more risk with SOME of their money, namely the money in the satellite layer, rather than take a LIT-TLE more risk with ALL their money, namely the overall money in both the core and satellite layers.

Behavioral portfolio theory is a goal-based theory. In the simple version of the theory, investors divide their money into two layers of a portfolio pyramid, a downside protection layer and an upside potential layer. Investors in the complete version of the theory divide their money into many layers corresponding to many goals such as secure retirement, college education, or having the means to hop on a cruise ship whenever they please.

The road to behavioral portfolio theory originated almost 60 years ago, when Milton Friedman and Leonard Savage noted that hope for riches and protection from poverty share roles in our behavior; people who buy lottery tickets buy insurance policies as well. People who buy lottery tickets often are described as risk-seeking while people who buy insurance policies are described as risk-averse, but it is aspirations that animate people, not attitudes toward risk. In 2002, New York Times writer Mylene Mangalindan told the story of David Callisch, a man who bet on one stock. When Mr. Callisch joined Altheon WebSystems, Inc., in 1997, he asked his wife "to give him four years and they would score big," and his "bet seemed to pay off when Altheon went public." By 2000, Mr. Callisch's Altheon shares were worth \$10 million. "He remembers making plans to retire, to go back to school, to spend more time with his three sons. His relatives, his colleagues, his broker all told him to diversify his





holdings. He didn't." Unfortunately, Mr. Callish's lottery ticket ended up a loser. Nortel bought Altheon, and by the time he dumped his Nortel stock, his portfolio had dwindled to about \$400,000.

Mr. Callisch's aspirations are common, shared by the many who gamble on individual stocks and lottery tickets. Most lose, but some win. Reuven and Gabrielle Brenner quote a New York City subway clerk who won the lottery: "I was able to retire from my job after 31 years. My wife was able to quit her job and stay home to raise our daughter. We are able to travel whenever we want to. We were able to buy a co-op, which before we could not afford." Investors such as Mr. Callisch and lottery buyers such as the New York subway clerk aspire to retire, buy houses, travel, and spend time with their children. They buy bonds in the hope of protection

from poverty, stock mutual funds in the hope of moderate riches, and individual stocks and lottery tickets in the hope of great riches.

Investors want downside protection but they also want upside potential. What should investment consultants prescribe as the right balance between the two? Should investment consultants let investors concentrate their portfolios in company stock? Should they let investors exclude bonds or cash from their portfolios?

Kate Zernike wrote in the Wall Street Journal about the havoc that the early 2000s stock slide was playing with older Americans' dreams. She described the undiversified portfolio of Gena and John Lovett, people in their late 50s. "Our retirement is one-half of what it was a year ago," said Mrs. Lovett. "And because John works for GE we have mostly GE stock. I suppose we should have diversified, but GE stock was supposed to be wonderful. John's simply not looking at retirement. We simply told our kids that we're spending their inheritance."

Postponing retirement beyond the late 50s and spending the kids' inheritance are sad but not disastrous breaches of the downside protection layer. Mr. and Mrs. Lovett are no longer rich, but neither are they poor. But sad consequences easily can turn disastrous if GE is replaced by Enron and if no downside protection layer underlies the upside potential one. Investment consultants must guide investors to portfolios with the right balance between downside protection and upside potential, so investors who aim for riches do not plunge into poverty.

Endnote

1. See Hersh Shefrin and Meir Statman, "Behavioral Portfolio Theory," *Journal of Financial and Quantitative Analysis* 35, no. 2 (June 2000): 127–151; and Meir Statman, "The Diversification Puzzle," *Financial Analysts Journal* 60, no. 4 (2004): 44–53.

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Part VI: Fairness Bias

66 have a million dollars in my portfolio," thinks a client. "I don't mind paying a fee for the management of stocks. Stocks are complicated and I cannot manage them on my own. But the management of bonds is easy and cash needs no management at all. Why am I paying you a fee for these?"

Financial advisers want clients to leave their periodic meetings not only with an accurate assessment of their wealth but also with a feeling of well-being, a sense that they are in the good hands of capable and caring advisers who enhance their lives. Clients want advisers who teach and inspire, advisers who promote hope and banish fear. Advisers hope that at the end of each meeting clients will understand the value of their services and the fairness of their fees. But while fees are mentioned somewhere in the documents that clients take with them at the end of a meeting, they rarely are discussed during the meeting.

Fees are difficult to discuss because they pit the self-interest of advisers against the self-interest of clients. Clients want to pay less while advisers want to be paid more. Both advisers and clients care about fairness, but all suffer the fairness bias that tilts their perception of fairness toward their own self-interest. As Linda Babcock and George Loewenstein write, teachers negotiating for salary increases compare their salaries to those of teachers in better-paying districts and conclude that the salaries offered by their own boards of education are unfair. Boards compare the salaries of their teachers to those in lower-paying districts and conclude that the salaries they offer are generous, not only fair. Differences in perceptions of fairness between teachers and boards lead teachers to strike. Differences in perceptions of fairness between advisers and clients lead clients to seek new advisers.

People often walk away from profitable deals that seem unfair. Consider the ultimatum game. Imagine that I am holding \$1,000 in cash, facing you, Michael, and you, Jane. I say to Jane: "Make an offer for the division of the \$1,000 between Michael and you. But the offer is an ultimatum, not open to negotiation. You, Michael, can either accept it, in which case I will divide the money between you and Jane, as you agreed, or you can reject it, in which case I will keep the money and neither of you will get anything."

Suppose that Jane offers a split of \$980 for her and \$20 for you. If you accept, you will be \$20 richer. Do you accept? Many Michaels reject the deal. They say, "I would rather see my \$20 burn than submit to such an unfair deal."

Value, fees, and fairness all matter. Investors expect more than good value for their fees; they expect fair fees. Advisers must frame well both the value of their services and their fees if they want investors to accept the exchange of value for fees as fair.

Imagine that you are seeing a physician because your stomach hurts. The physician asks many questions, examines your body, provides a diagnosis, and concludes with education and advice. The examination, diagnosis, and education are free, says the physician. All you have to pay is the price of the pill you received. That would be \$200, please.

Financial advisers regularly act as the physician in this story. Financial advisers frame themselves as *investment* managers, providers of "beat-themarket" pills, when their equally important role is that of *investor* managers, professionals who examine the financial resources and goals of invest-

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ors, diagnose deficiencies, and educate investors about financial health.

Financial advisers are not capricious as they frame themselves as managers of investments and downplay their role as managers of investors. They know that investors find it fairer to pay for the former than the latter. While we have moved from a manufacturing economy to a service economy and now to an information economy, people still think that charging for manufacturing is fairer than charging for services and that charging for services is fairer than charging for information.

Financial advisers can choose one of two frames. They can frame themselves as managers of investments, telling investors that they can beat the market through judicious choice of stocks, bonds, mutual funds, or money managers. "What do you care if I charge you 2 percent," they say, "when I promise to beat the market by 8 percent?" Or they can frame themselves as managers of both investments and investors, who are paid to examine the financial situations and goals of investors, diagnose deficiencies, and educate them about their financial health.

Investors are not averse to fees that they perceive as fair. Patients know that physicians who charge \$200 for office visits take most of it as income. They also know that good physicians have high incomes. Yet most patients are not angry when they pay for office visits. Indeed, they are not angry even when physicians tell them that all is well and no prescriptions are needed. Why? Because they know that the real value they get from physicians goes beyond a prescription. It is expert diagnosis, expert education, and expert care.

Financial advisers take care of the entire financial health of their

investors and that financial health involves the entire portfolio, stocks as well as bonds. People who care about fairness do not treat others unfairly. It is unfair to ask the staff of a computer store for a thorough education on computers and then buy the computer at a discount store. Similarly, it is unfair to ask financial advisers for education on the overall portfolio and then buy the bond portion at another place. The value that financial advisers provide is proportional to the size of the overall portfolio, and it is only fair that their fees are proportional to the size of the overall portfolio.

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