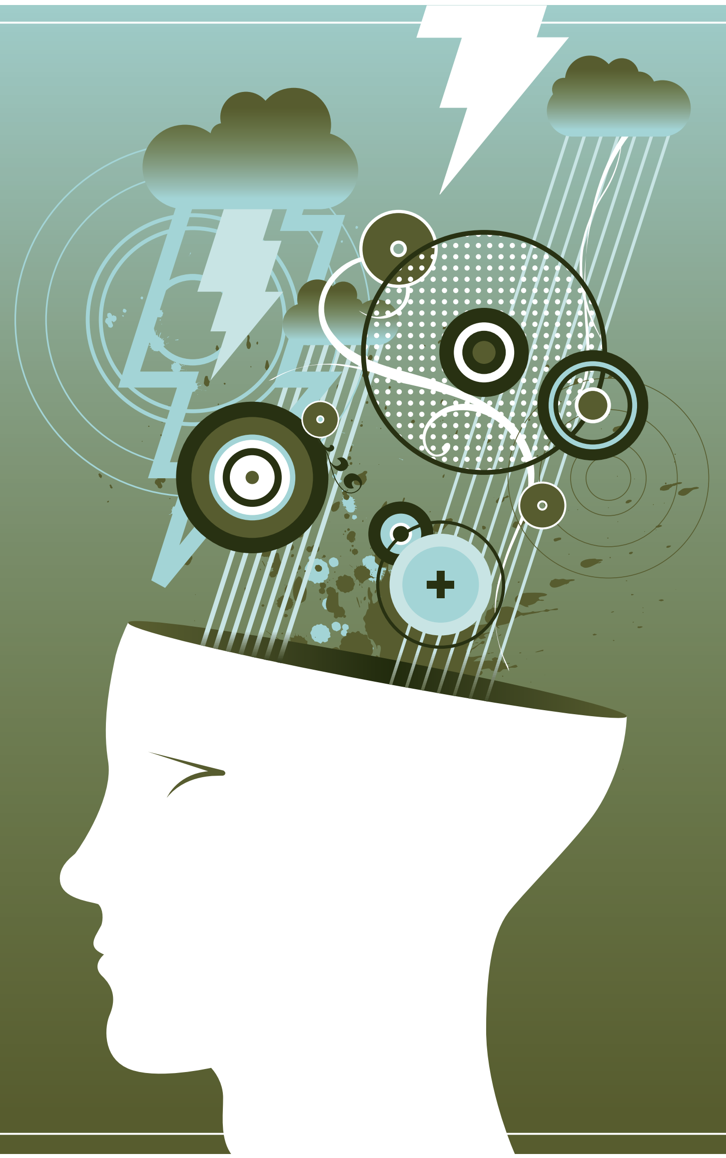
ValueInvestor INSIGHT
The Leading Authority on Value Investing

# Of Sound *Mind*



Human nature often conspires against informed, rational decision-making, a state of affairs the best investors take quite seriously. *Value Investor Insight* takes it seriously as well, regularly exploring the many biases and influences that can derail thoughtful decisions and offering concrete insight on how to avoid them.

From our archives, here is a selection of articles that offer timeless wisdom for facing the never-ending challenges to the investing mind.

Sincerely,

Whitney Tilson and John Heins
Co-Editors, *Value Investor Insight*

# Anything's Possible

*Most investors know that investing is an exercise in probability. But knowing it and actually living by it can be two separate things.*

"Games of chance must be distinguished from games in which skill makes a difference," writes Peter Bernstein in *Against the Gods*, his historic review of risk taking. "With one group the outcome is determined by fate, with the other group, choice comes into play. There are card players and racetrack bettors who are genuine professionals, but no one makes a successful profession out of shooting craps."

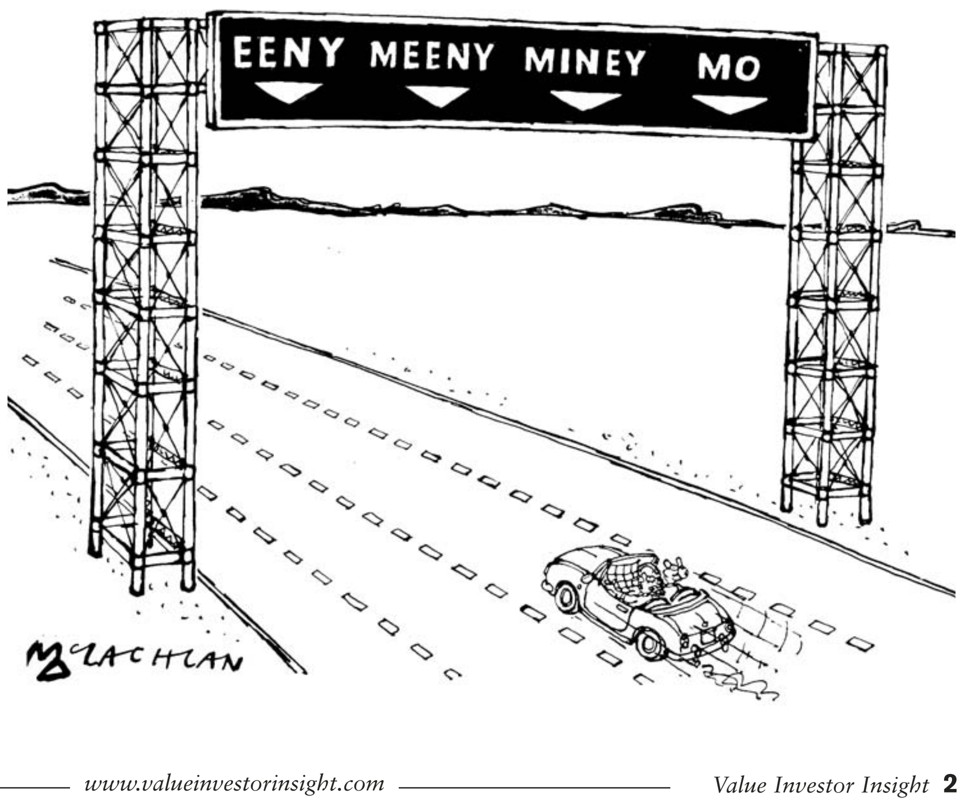
Like playing poker and betting on horses, investing is a game of skill similarly focused on assessing the odds of uncertain future events. "At the end of the day, investing is inherently a probability exercise," says Legg Mason strategist Michael Mauboussin. "Most investors acknowledge this point but very few live by it."

Why is it difficult for investors to think in terms of probabilities when assessing a company's future performance and stock price? "It isn't human nature to view the future in terms of a wide range of possibilities," says Abingdon Capital's Bryan Jacoboski, who was featured last summer in *Value Investor Insight* (August 29, 2005). "We naturally think in terms of what is most likely to occur and implicitly assess the probability of that scenario occurring at 100%. That may sound reckless, but it's what most people do and isn't a bad way to think as long as less likely, but still plausible, scenarios don't have vastly different outcomes. In the investment world, however, they often do, so making decisions solely on the most likely outcome can cause severe damage."

Anchoring on the most likely outcome is a natural attempt to reduce the complexity involved in making investment decisions, but also can reflect the dangerous overconfidence with which many investors ply their trade. Former Treasury Secretary and Goldman Sachs Co-Chairman Robert Rubin, who made his name on Wall Street as an arbitrage trader, warns against this "excessive certainty" in his book *In an Uncertain World*: "[It] seems to me to misunderstand the very nature of reality – its complexity and ambiguity – and thereby provides a rather poor basis for working through decisions in a way that is likely to lead to the best results."

The first basic step in incorporating probabilities into investment decisions is to explicitly consider several potential outcomes. Abingdon Capital's Jacoboski looks at each of his holding's business fundamentals under four to six distinct scenarios, calculating an intrinsic value under each scenario and applying a subjective probability to each. The final estimate of intrinsic value is the intrinsic value of each scenario weighted by its probability of occurring. "A key is to capture low-probability but high-impact scenarios, primarily to see where the vulnerabilities are," he says. He decided not to short Amazon.com a couple years ago, for example, after taking into consideration what he considered to be the unlikely event that Amazon's scale would start translating into the profitability gains the market was expecting. In fact, that is the scenario that began to play out, and the stock rose 180% in the following year.

An added benefit to thinking in terms of probabilities is that it helps make explicit the actual risks under consideration. If given the choice between purchasing a $350 non-refundable plane ticket to attend a future event that could possibly be cancelled vs. waiting to buy a last-minute ticket for $1,200, many people would choose to wait. Nobody wants to blow $350. But in pure expected-value terms, it pays to buy the ticket now unless you believe the risk of cancellation is above 71%. Framing the question in this way may not change the decision, but can increase the chances that a more informed decision is made.



In studying the common traits of those most successful at games of skill – across disciplines – researchers have found a clear tendency to focus more on process than individual outcomes. Poker legend Amarillo Slim has described it this way: "The result of one particular game doesn't mean a damn thing, and that's why one of my mantras has always been 'Decisions, not results.' Do the right thing enough times and the results will take care of themselves in the long run." Adds Legg Mason's Mauboussin: "By definition, poor decisions will periodically result in good outcomes and good decisions will lead to poor outcomes. The best in their class focus on establishing a superior process, with the understanding that outcomes will follow over time."

That's not to say that process can't be improved. Making explicit – and writing down – the probabilities used in making investment decisions can provide valuable learning. After all, if you judge an event to have had a 60% chance of occurring – and it doesn't occur – you don't know if you were right or wrong. The only true way to know is by tracking the same or similar events to see if they, over time, happen 60% of the time. Weather forecasters and bookmakers keep track of such things to refine their ability to judge probabilities. Investors should do the same – even if it's with much less precision – to calibrate their probability-setting skills.

While necessary, skillfully assessing the probabilities of various outcomes for a company is not sufficient to making a sound investment. Stock prices have future expectations already built in – the trick is to find the gaps between those expectations and your own.

"Perhaps the single greatest error in the investment business is a failure to distinguish between knowledge of a company's fundamentals and the expectations implied by the stock price," says Mauboussin. Driving home this point is Steven Crist, chairman of the *Daily Racing Form*: "The issue is not which horse in the race is the most likely winner, but which horse or horses are offering odds that exceed their actual chances of victory. There is no such thing as "liking" a horse to win a race, only an attractive discrepancy between his chances and his price."

Even with a framework to assess ambiguity, the right decision in the face of great uncertainty is often just to pass. Warren Buffett refers to it as placing something in the "too-hard pile." Writes Peter Bernstein: "Once we act, we forfeit the option of waiting until new information comes along. As a result, not acting has value. The more uncertain the outcome, the greater may be the value of procrastination." VII

# The Long and Short of It

*Trumpeting your long-term perspective as an investor can sound like an excuse when markets are as bad as they have been. Have the rules of the game changed so much that a long-term approach is now passé?*

It's not surprising that stock investing with a long-term perspective, as a concept, has been taking it squarely on the chin. In a scathing assessment of his investment-industry brethren, investment advisor John Mauldin recently wrote that platitudes about investing for the long run "are often brought up as reasons to leave your money with a current management that has just incurred large losses." One successful hedge fund manager recently questioned (anonymously) his own long-term approach in an interview with *Vanity Fair*: "We have great confidence in our analytical ability, and when the world is panicking, we stand up," he says. "In retrospect, we should have panicked."

It's too easy, of course, to criticize any investing approach that wasn't moving aggressively to cash or taking a big short position starting in late 2007. But it's perfectly fair to take a fresh look at the fundamental value-investing principle of placing bets based on company's development over time, particularly in light of the market's recent turmoil. Have the rules of the game changed enough that a long-term strategy is passé?

Jumping to the punch line, our conclusion is no. The fundamental principles supporting a long-term investing approach – based on expectations more than a year in the future, say – are sound. But as with any broad strategy, the devil is in the details. A simplistic application of any long-term strategy is likely to be doomed to failure.

One key belief of most long-term investors is that trying to time the market is futile and exceedingly difficult, so the better approach is to invest with the expectation of a thesis playing out over time. As Thomas Gayner of Markel Gayner Asset Management puts it: "I have a ready answer when people ask me why I'm such a long-term investor, which is because I failed miserably as a short-term investor. I'm not against making money in the short term, I just don't know how to do it."

Value investors in particular also tend to take a long-term approach because in order to see an eventual payoff, they have to. Perceived undervaluations typically result from market neglect, temporary operating troubles or an out-of-favor industry – all of which are more likely to persist for an inconveniently long time than to go away quickly. In such cases, as long as one ends up being right about the eventual turn of events, patience is clearly a virtue.

The most compelling justification for disregarding the immediate future in making investment choices is that it works. Contrarians love that a long-term approach is turning into somewhat of a lost art. While the average holding period 30 years ago for a stock on the New York Stock Exchange was five years, today it's down to six months. "The obsession with the short term creates an opportunity," says Société Générale equity strategist James Montier. "If everyone else is dashing around pricing assets on the basis of the next three months, then they are likely to misprice assets for the longer term. So an opportunity for time arbitrage arises for the investor with a longer horizon."

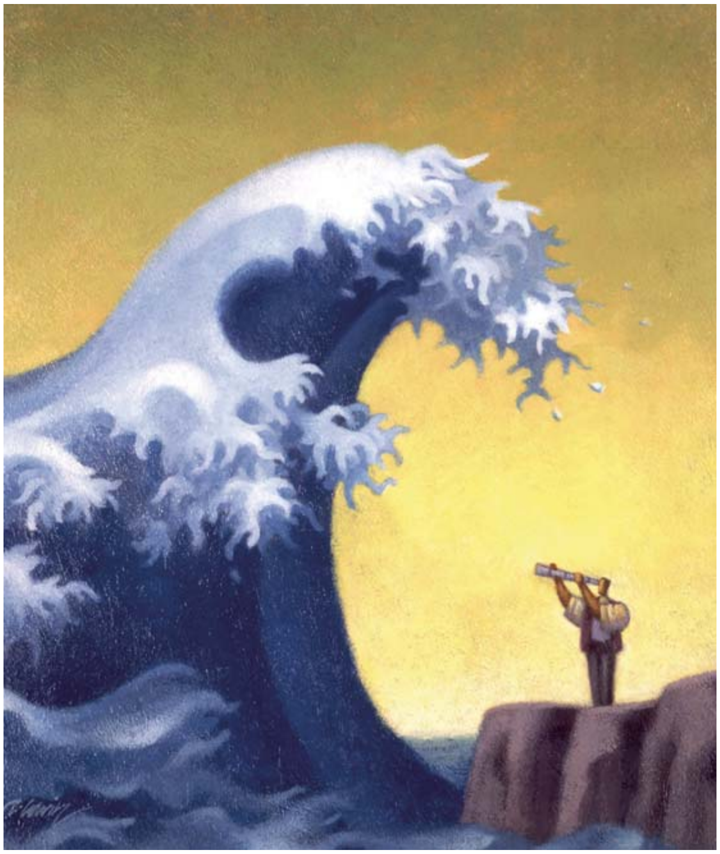
There's every reason to expect this trend toward relative hyperactivity on the part of investors to persist. Declining trading costs make it easier to trade, for example, and the short-term incentives of both corporate management and professional investors make it likely they'll continue to act with near-term prospects at the top of their minds.

At the same time, the explosion in the quantity and availability – if not the quality – of investing-related information is also likely to increase the already pervasive tendency for investment decisions to reflect "recency bias," the human tendency to estimate future probabilities not on the basis of long-term historical experience, but rather on a handful of the latest outcomes. Michael Mauboussin, Chief Investment Strategist of Legg Mason, considers recency bias "one of the most reliable sources of inefficiency in the market," offering a key explanation for why research consistently shows that doing the opposite of what easily swayed individual investors are doing proves to be a hard-to-beat investing strategy.

While a patient investing approach is by no means outdated, any notion that patience should beget inaction has become increasingly suspect. The latest market downdraft, for example, has made very clear how cycles – in the economy, in credit, in sentiment – are ignored by investors at their peril. As Oaktree Capital CEO Howard Marks put it recently in a letter to his investors:

In my opinion, there are two key concepts that investors must master: value and cycles. For each asset you're considering, you must have a strongly held view of its intrinsic value. When its price is below that value, it's generally a buy. When its price is higher, it's a sell. In a nutshell, that's value investing.

But values aren't fixed; they move in response to changes in the economy. Thus, cyclical considerations influence an asset's current value. Value depends on earnings, for example, and earnings are shaped by the economic cycle and the price being charged for liquidity.



Changing intrinsic values highlight another key aspect of enlightened long-term investing: the need for disciplined review processes for positions moving up as well as down. Share-price declines of a given magnitude often trigger a clean-slate look at a company's business and prospects. Share-price increases often result in automatic sales as a stock approaches or reaches estimated intrinsic value. "Value investors should completely exit a security by the time it reaches full value," wrote Seth Klarman in his preface to the latest edition of Graham & Dodd's *Security Analysis*. "Owning overvalued securities is the realm of speculators." Two or three years ago it was common to hear investors describe how they were relaxing their selling disciplines as stocks hit fair value, as a result of having too frequently sold stocks that kept going up. It's a safe bet that we won't be hearing again about such relaxed selling disciplines for that reason anytime soon.

Other relevant lessons hit home by the growling bear market: Investors who aspire to ride out near-term market fluctuations should assiduously avoid leverage. At the same time, long-term investors should regularly re-read Ben Graham's discussion in *The Intelligent Investor* about margin of safety, which he described as being "available for absorbing the effect of miscalculations or worse than average luck" – both of which have been in ample supply. VII

# The Value of Not Being Sure

*In these excerpts from his latest annual letter, Seth Klarman describes the biggest challenge in investing today, how he's responding to the market's turmoil and why he considers fear of the unknown such a great motivator.*

***Editors' Note:*** *With the possible exception of Warren Buffett, no investor plying the trade today commands more respect than Baupost Group's Seth Klarman. Since founding his investment partnership in 1983, Klarman has not only produced peerless returns, but he has also from time to time offered wise and timeless commentary on markets and the craft of investing. With his permission, we reproduce here various excerpts from his latest annual letter, published late last month.*

## Erratic Mr. Market

It is easy for the volatility of one's thinking to match the volatility of prevailing conditions. Time horizons have shortened even more than usual, to the point where the market's 4:00 p.m. close seems to many like a long-term commitment. To maintain a truly long-term view, investors must be willing to experience significant short-term losses; without the possibility of near-term pain, there can be no long-term gain. The ability to remain an investor (and not become a day-trader or a bystander) confers an almost unprecedented advantage in this environment. The investor's problem is that this perspective will seem a curse rather than a blessing until the selloff ends and some semblance of stability is restored.

The greatest challenge of investing in this environment is neither the punishing price declines nor the extraordinary volatility. Rather, it is the sharply declining economy, which makes analysis of company fundamentals extremely difficult. When securities decline, it is crucial to distinguish, as possible causes, legitimate reaction to fundamental developments from extreme overreaction. At Baupost, we are always on the lookout for such overreactions, whether due to the disappointing earnings of a failed growth stock, a ratings downgrade of a bond, the deletion of a stock from an index or its delisting from an exchange, or the forced sale resulting from a margin call. Usually, fearful overreaction equals opportunity.

In today's market, however, where almost everything is down sharply, distinguishing legitimate reaction from emotional overreaction is much more difficult. This is because there is a vicious circle in effect (the reverse of the taken-for-granted virtuous circle that buoyed the markets and economy in good times). This vicious circle results from the feedback effects on the economy of lower securities and home prices and a severe credit contraction, and, in turn, effects of a plunging economy on credit availability and securities and home prices.

With residential and commercial real estate prices collapsing and global stock markets down 40%, 50%, and more this year alone, tremendous damage has been done to individual and institutional wealth. Suddenly, new corporate, university, and hospital facilities are on hold, and big ticket items like automobiles, consumer electronics, and luxury goods are going unsold. The worsening economy and rising unemployment portend a possibly protracted period of falling sales volumes, with industry overcapacity leading to pricing pressures, and thus sharply lower earnings and cash flows. Consumer spending declines could be more secular than cyclical; consumption patterns may have changed in semi-permanent ways. Some of the lost demand simply may not come back. Municipal governments face a severe crunch as tax receipts fall while entitlement spending rises. Ultimately, this vicious cycle will be broken and neither securities prices nor the economy will go to zero, just as they did not go to infinity when the virtuous cycle was in place. But throughout 2008, prudent investors sifting through the rubble for opportunity were repeatedly surprised by the magnitude of the selling pressure, and, in many cases, by the extent to which the deterioration in business fundamentals has come to justify the lower market prices. Many forced sellers, through their early exits, inadvertently achieved better outcomes than the value-oriented bargain hunters who bought from them.

Warren Buffett has said – and others have endlessly repeated – that you can't tell who is swimming naked until after the tide goes out. This turns out to be only partially true. The tide has receded, and most portfolios are down. But not all declines are equal. Some investors have lost money and locked in those losses by going to cash. Some have made investments in failed or failing banks, brokers, and homebuilders, or toxic subprime mortgage securities; these losses are largely permanent and irreversible. But the investment baby has been thrown out with the bathwater, and some who invested wisely aren't naked, it just seems that way. Buying early on the way down looks a great deal like being wrong, but it isn't. It turns out you won't be able to accurately tell who's been swimming naked until after the tide comes back in.

As Benjamin Graham and David Dodd taught us, financial markets are manic and best thought of as an erratic counterparty with whom to transact, rather than as an arbiter of the accuracy of one's investment judgments. There are days when the market will overpay for what you own, and other days when it will offer you securities at a great discount from underlying value. If you look to "Mr. Market" for advice, or if you imbue him with wisdom, you are destined to fail. But if you look to Mr. Market for opportunity, if you attempt to take advantage of the emotional extremes, then you are very likely to succeed over time. If you see stocks as blips on a ticker tape, you will be led astray. But if you regard stocks as fractional interests in businesses, you will maintain proper perspective. This necessary clarity of thought is particularly important in times of extreme market fluctuations.

### Age-Old Showdown

There have been days recently where fear has completely dominated greed. While business fundamentals remain awful, the moment will arrive when some of the cash on the sidelines will creep back into the markets, rejecting infinitesimal yields and seeking better returns. The contrast between the exceptionally attractive yield and low purchase price for "risky" corporate debt or mortgage securities, and the extremely low yields and very full price for "safe" U.S. Government bonds, is yet another demonstration of Mr. Market's manic behavior. When economic recovery is anticipated, when investors decide to take a bit more risk, "safe" government bonds will fall significantly in price and frightened investors who overpaid for safety will be tallying their losses. As 2009 gets under way, we expect a steady diet of bear market rallies and financial market volatility, as economic woes and continued deleveraging vie with government intervention and bargain-hunting in a continuation of the age-old showdown between greed and fear.

### Timing the Market

Baupost built numerous new positions as the markets fell in 2008. While it is always tempting to try to time the market and wait for the bottom to be reached (as if it would be obvious when it arrived), such a strategy has proven over the years to be deeply flawed. Historically, little volume transacts at the bottom or on the way back up and competition from other buyers will be much greater when the markets settle down and the economy begins to recover. Moreover, the price recovery from a bottom can be very swift. Therefore, an investor should put money to work amidst the throes of a bear market, appreciating that things will likely get worse before they get better.

### Process, Not Outcome

Especially in today's difficult environment, money managers must keep firmly in mind that the only things they really can control are their investment philosophy, investment process, and the nature of their client base. Controlling your process is absolutely crucial to long-term investment success in any market environment. James Montier, Société Générale's market strategist, recently pointed out that when athletes were asked what went through their minds just before competing in the Beijing Olympics, the consistent response was a focus on process, not outcome. The same ought to be true for investors.

It is so easy for one's investment process to break down. When an investment manager focuses on what a client will think rather than what they themselves think, the process is bad. When an investment manager worries about their firm's viability, about possible redemptions, about avoiding loss to the exclusion of finding legitimate opportunities, the process fails. When the manager's time horizon becomes overly short-term, the process is compromised. When tempers flare, recriminations abound, and second guessing proliferates, the process cannot work properly. When investment managers worry about maximizing the value of their firm – or, if publicly traded, its share price – rather than the long-term best interest of clients, the process is corrupted. Investing is hard enough. Success virtually requires that a process be in place that enables intellectual honesty, rigor, creativity, and integrity.

### In Defense of Uncertainty

Successful investing requires resolve. When taking a contrary approach, one has to be able to stand one's ground, be unwavering when others vacillate, and take advantage of others' fear and panic to pick up bargains. But successful investing also requires flexibility and open-mindedness. Investments are typically a buy at one price, a hold at a higher price, and a sale at a still higher price. You can never be sure if the economy will grow or shrink, whether the markets will rise or sink, or whether a particular investment will meet your expectations. Amidst such uncertainty, people who are too resolute are hell-bent on destruction. Successful investors must temper the arrogance of taking a stand with a large dose of humility, accepting that despite their efforts and care, they may in fact be wrong.

Robert Rubin once observed that some people are more certain of everything than he is of anything. We feel the same way. One can see the investment universe as full of certainties, or one can see it as replete with probabilities. Those who reflect and hesitate make far less in a bull market, but those who never question themselves get obliterated when the bear market comes. In investing, certainty can be a serious problem, because it causes one not to reassess flawed conclusions. Nobody can know all the facts. Instead, one must rely on shreds of evidence, kernels of truth, and what one suspects to be true but cannot prove. One must also balance one's own perception of the truth with one's best assessment of what others believe. In investing, other people's perception of reality influences price more than any underlying truth; your own assessment, even if correct, is valueless if it is already reflected in the market price.

It is much harder psychologically to be unsure than to be sure; certainty builds confidence, and confidence reinforces certainty. Yet being overly certain in an uncertain, protean, and ultimately unknowable world is hazardous for investors. To be sure, uncertainty breeds doubt, which can be paralyzing. But uncertainty also motivates diligence, as one pursues the unattainable goal of eliminating all doubt. Unlike premature or false certainty, which induces flawed analysis and failed judgments, a healthy uncertainty drives the quest for justifiable conviction.

Always remembering that we might be wrong, we must contemplate alternatives, concoct hedges, and search vigilantly for validation of our assessments. We always sell when a security's price begins to reflect full value, because we are never sure that our thesis will be precisely correct. While we typically concentrate our investments in the most compelling situations measured by reward compared to risk, we know that we can never be fully certain, so we diversify. And, in the end, our uncertainty prods us to work harder and to be endlessly vigilant. VII

# Coveting Thy Neighbor's [Fill in the Blank]

*There are many reasons why, as Warren Buffett says, "It is not greed that drives the world, but envy." The ramifications of that range from the mildly beneficial to – as the current crisis attests – the downright calamitous.*

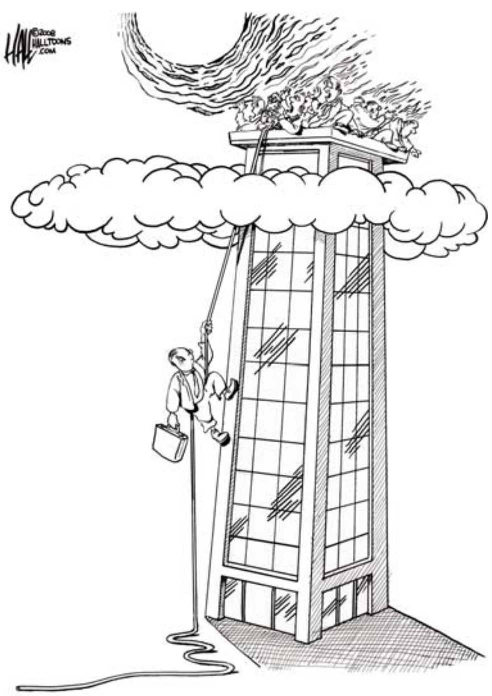
One of the more infamous pronouncements from a financial executive as the credit crisis has unfolded – and there have been many – was former Citigroup chairman Charles Prince's explanation for why the banking giant continued to lend aggressively as trouble loomed last year: "As long as the music is playing, you've got to get up and dance."

While Prince's sentiment, in retrospect, sounds ridiculous, it's obvious that "doing it because everyone else is" was a core rationale behind any number of corporate and individual actions that have brought the global financial system to its knees. It's an oversimplification to blame everything on reaching for the bigger car, the bigger house and the bigger bonus that "everyone" else has, but it most certainly played a key role. "Humans have a strong desire to be part of a group, which makes us susceptible to fads, fashions and idea contagions," writes Legg Mason equity strategist Michael Mauboussin in a research paper dissecting investor decision-making. "People also have a preference for being an accepted part of a majority over being part of the correct minority. Numerous market bubbles demonstrate this point."

Given the central role they play in the development of market bubbles (and a variety of other ills), it's worth asking how envy and social comparison have come to so drive human behavior. As with most aspects of human nature, the roots go way back, as financial journalist Jason Zweig describes in his latest book, *Your Money and Your Brain:* "In a hunter-gatherer society, dominant individuals dominated precisely because they were better at getting and keeping scarce resources. Social comparison probably served early man well; by observing those who had more, our ancestors learned how to get more themselves."

This highlights what can be the positive aspect of being motivated by comparing ourselves with others. Writes Zweig: "Suffering a mild case of 'comparison complex' can be beneficial: it motivates you to work hard, gives you hope for the future, keeps you from being a total miser, and prompts you to clean up the house before visitors arrive."

Research into the brain's function indicates that our instinct to compare and conform also has a physiological basis. Gregory Berns of Emory University asked research subjects to answer questions both before and after seeing how "peers" (who were part of the research team) had answered the same questions. When subjects went against the judgment of their peers, and knew it, brain scans found intense activity in the same area of the brain that becomes active in response to physical pain. In other words, it actually hurts to not go along with crowd. This would help explain why researchers have also found that the desire to conform increases in the presence of puzzlement or stress – already uncomfortable states that would only be amplified by going against the grain.



Apart from the financial damage that can be done when "winning" becomes more of a relative concept than an absolute one, the psychological damage can be keen as well. Berkshire Hathaway's Charlie Munger, a student of history who has written and spoken often on the subjects of envy and jealously, described the impact that a life of constant comparison had on Wolfgang Amadeus Mozart: "Mozart's was an example of a life ruined by nuttiness. He was consumed with envy and jealousy of other people who were treated better than he felt they deserved and he was filled with self-pity. Nothing could be stupider. Envy, huge self-pity, extreme ideology, intense loyalty to a particular identity – you've just taken your brain and started to pound on it with a hammer."

In his essay, "The Psychology of Human Misjudgment" – published in *Poor Charlie's Almanack* – Munger laments how infrequently envy is publicly or privately identified as a driver of behavior. "When did any of you last engage in any large group discussion of some issue wherein adult envy/jealously was identified as the cause of someone's argument?" The reason, he writes, is that "calling a position 'envy-driven' is perceived as the equivalent of describing its holder as a childish mental basket case." While the taboo against doing that is understandable, Munger says, it helps perpetuate envy's hold on the collective psyche.

Sadly, there's no twelve-step process for eradicating envy from your life. The best advice for investors is probably Sir John Templeton's admonition: "It is impossible to produce superior performance unless you do something different from the majority." On a more personal level, we'll leave the last word to Charlie Munger: "Learn how to ignore the examples from others when they are wrong, because few skills are more worth having." VII

# Chasing the Big Score

*It's human nature to metaphorically swing for the fences when making investment decisions. But like many aspects of human nature, this trait is one that smart investors should try to keep firmly in check.*

In *Roughing It*, his description of six years living and traveling in the 19th-century American West, Mark Twain described feeling "as if an electric battery had been applied to me" when he and a partner thought they'd struck a huge lode of silver in Nevada in 1862. Though the claim was denied within days, Twain referred often to such euphoria in his later writings and appears to have sought to reclaim it in chasing unsuccessful get-rich-quick schemes over the rest of his life.

Neuroscientists have found that the "high" Twain felt at the prospect of sudden wealth has a biological origin. As Jason Zweig describes in his new book, *Your Money and Your Brain*, the expectation of making money causes dopamine to be released and to "fire up" the emotional circuitry located in the lower front region of the brain. This response is similar to what happens when one anticipates basic pleasures like food, drink and sex.

The big downside for investors of this natural response is that the fired-up parts of the brain that anticipate a reward – namely, a rapidly increasing stock price – are much more sensitive to the size of the potential gain than the probability of it actually occurring. "The magnitude of a long-shot reward is going to drive your behavior far more than the probabilities, which are likely miniscule," says Stanford neuroeconomist Brian Knutson.

This phenomenon goes a long way toward explaining the collective irrationality that can grip investors during inflating market bubbles. Alan Greenspan described it well in testimony before Congress in 1999:

> "What lottery managers have known for centuries is that you could get somebody to pay, for a one-in-a-million shot, more than the value of that chance. In other words, people pay more for a claim on a very big payoff. That's where the profits from lotteries have always come from. That means that when you are dealing with certain stocks – the possibilities of which are it's either going to be valued at zero or some huge number – you can get a premium in stock prices, which is exactly the price-evaluation process that goes on in a lottery. The more volatile the potential outlook, [the higher the potential] lottery premium in the stock."

This lottery premium doesn't just reveal itself during market bubbles. After analyzing 1.3 million stock returns over a 36-year sample period, researchers Thomas Downs and Quan Wen in a 2001 study published in the *Journal of Portfolio Management* concluded: "The lottery premium, (which) we define as the sacrifice in average return that investors pay for a chance to earn a huge, although remote, return, is persistent and significant. It is greater in up markets than in down markets, and it is higher in the recent past than in the remote past."

While smart investors would be well-served to avoid the pervasive temptation to pay lottery premiums, that's not to say that aspiring to hit the occasional home-run is not a worthwhile goal. Ralph Wanger, the retired highly-successful manager of what is now the Columbia Acorn Fund, described it this way in a 2007 *Money* interview: "Investing, especially in small companies, is a home-run-hitter's game. The point is, 99% of what you do in life I classify as laundry – it's stuff that has to be done, but you don't do it better than anybody else, and it's not worth much. Once in a while, though, you do something that changes your life dramatically. You decide to get married, you have a baby – or, if you're an investor, you buy a stock that goes up twenty-fold." If that sound reckless and flip, Wanger's style was anything but, based on rigorous research to identify long-term trends and disciplined analysis to identify attractively priced companies positioned to benefit from those trends.

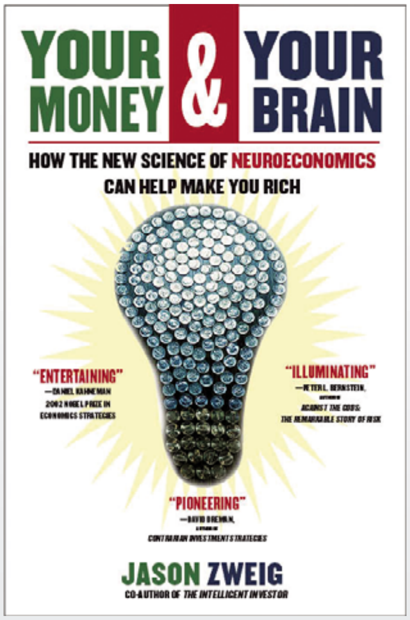
**"If I knew how to get rich quick, would I be sitting on a mountain-top all day?"**

How can investors counteract the negative ramifications of being wired to chase the big score? Never make snap investment decisions, instead putting all potential investment ideas through a similar process checklist. Be wary of "story" stocks and of situations that are reminiscent of previous big investment successes, both of which can lead to costly analytical shortcuts. Focus on being what James Montier of Societe Generale calls an "empirical skeptic" – rather than accepting that earnings can grow 30% annually for ten years or a given level of return on capital can persist, look at the distribution of outcomes from a large historical sample to see how reasonable such estimates are. Finally, as Steven Romick describes in his interview in this issue, spend as much time defining what the downside can be as the upside, and look to make highly asymmetrical bets.

"The game of professional investment is intolerably boring and over-exacting to anyone who is entirely exempt from the gambling instinct; whilst he who has it must pay to this propensity the appropriate toll," wrote John Maynard Keynes. Keeping that toll as low as possible is a prerequisite to sound investing. VII

# Mind Over Money

*"The 100 billion neurons that are packed into that three-pound clump of tissue between your ears can generate an emotional tornado when you think about money," says author Jason Zweig. His new book offers advice on how to best ride out such storms.*




Killing time between flights a few years ago, Jason Zweig bought an issue of *Scientific American* and was quickly drawn to an article describing how people who had had the right and left halves of their brains severed as a radical treatment for epilepsy began to calculate probabilities differently than they had before. As a long-time investing columnist and author (he wrote the commentary for the 2003 revised edition of Ben Graham's *The Intelligent Investor*), he says, "I knew immediately that this was something I had to learn more about."

The result of Zweig's curiosity is the recently published *Your Money and Your Brain*, an in-depth look at what the emerging science of neuroeconomics – a hybrid of neuroscience, economics and psychology – is uncovering about how the brain's hard-wiring drives investing behavior. "The more you can learn about the circuitry," he says, "the better you can understand the outcomes."

For perfectly logical evolutionary reasons, the human brain constantly triggers immediate physical and emotional responses to external events. While these may work beautifully for choosing a mate or avoiding danger, they can also form the basis for behavioral biases that get investors into trouble – helping to explain, for example, why we're often more likely to sell when we should be buying or why we're unjustifiably prone to overconfidence. As Zweig writes in his introductory chapter: "To counteract impulses from cells that originally developed tens of millions of years ago, your brain has only a thin veneer of relatively modern analytical circuits that are often no match for the blunt emotional power of the most ancient parts of your mind."

Is all hope lost, then? Happily, no, says Zweig, who argues that nurture can help trump nature when it counts. "Training and discipline and repetition and practice – that's nurture – can help counter some of the problems caused by nature," he says. "Many of the practical lessons from this research are about setting up policies and procedures as checks against the insidious natural biases that investors have."

This is not to say, however, that investors should be dispassionate automatons. "There's an unfortunate belief that great investing is about being rational like Star Trek's Mr. Spock, where you feel nothing and are just an evaluation machine," he says. "I think that's wrong. Investors like Warren Buffett and Charlie Munger are very attuned to the emotions rippling through markets and I'd argue that one of the things that sets them apart is that they're 'inversely' emotional. When they sense pain and fear in the market, they likely feel pleasure at the value being created. They're essentially taking the other side of the trade on other people's emotions."

In the excerpt below from *Your Money and Your Brain*, Zweig explores how the brain responds to actual and perceived risks posed by falling stock prices, and gives practical advice for avoiding those "what-was-I-thinking" regrets. "Most of us believe we can counter our weaknesses with willpower," he says. "In times of stress, willpower alone is not enough."

### *The Brain's Hot Button*

Deep in your brain, level with the top of your ears, lies a small, almond-shaped knob of tissue called the amygdala. When you confront a potential risk, this part of your reflexive brain acts as an alarm system – generating hot, fast emotions like fear and anger that it shoots up to the reflective brain like warning flares. (There are actually two amygdalae, one on the left side of your brain and one on the right, just as office elevators often have one panic button on either side of the door.)

The amygdala helps focus your attention, in a flash, on anything that's new, out of place, changing fast, or just plain scary. That helps explain why we overreact to rare but vivid risks. After all, in the presence of danger, he who hesitates is lost; a fraction of a second can make the difference between life and death. Step near a snake, spot a spider, see a sharp object flying toward your face, and your amygdala will jolt you into jumping, ducking, or taking whatever evasive action should get you out of trouble in the least amount of time.

This same fear reaction is triggered by losing money – or believing that you might. However, when a potential threat is financial instead of physical, reflexive fear will put you in danger more often than it will get you out of it. A moment of panic can wreak havoc on your investing strategy. Because the amygdala is so attuned to big changes, a sudden drop in the market tends to be more upsetting than a longer, slower – or even a much bigger – decline. On October 19, 1987, the U.S. stock market plunged 23% – a deeper one-day drop than the Crash of 1929. Big, sudden, and inexplicable, the Crash of 1987 was exactly the kind of event that sparks the amygdala into flashing fear throughout every investor's brain and body. The memory was hard to erase: In 1988, U.S. investors sold $15 billion more shares in stock mutual funds than they bought, and their net purchases of stock funds did not recover to pre-crash levels until 1991. The "experts" were just as shell-shocked: The managers of stock funds kept at least 10% of their total assets in the safety of cash almost every month through the end of 1990, while the value of seats on the New York Stock Exchange did not regain their pre-crash level until 1994. A single drop in the stock market on one Monday in autumn disrupted the investing behavior of millions of people for at least the next three years.

The philosopher William James wrote that "an impression may be so exciting emotionally as almost to leave a scar upon the cerebral tissues." The amygdala seems to act like a branding iron that burns the memory of financial loss into your brain. That may help explain why a market crash, which makes stocks cheaper, also makes investors less willing to buy them for a long time to come.

### *Fighting Your Fears*

When you confront risk, your reflexive brain, led by the amygdala, functions much like a gas pedal, revving up your emotions. Fortunately, your reflective brain, with the prefrontal cortex in charge, can act like a brake pedal, slowing you down until you are calm enough to make a more objective decision. The best investors make a habit of putting procedures in place, in advance, that help inhibit the hot reactions of the emotional brain. Here are some techniques that can help you keep your investing cool in the face of fear:

**Get it off your mind.** You'll never find the presence of mind to figure out what to do about a risk gone bad unless you step back and relax. Joe Montana, the great quarterback for the San Francisco 49ers, understood this perfectly. In the 1989 Super Bowl, the 49ers trailed the Cincinnati Bengals by three points with only three minutes left and 92 yards – almost the whole length of the field – to go. Offensive tackle Harris Barton felt "wild" with worry. But then Montana said to Barton, "Hey, check it out – there in the stands, standing near the exit ramp, there's John Candy." The players all turned to look at the comedian, a distraction that allowed their minds to tune out the stress and win the game in the nick of time. When you feel overwhelmed by a risk, create a John Candy moment. To break your anxiety, go for a walk, hit the gym, call a friend, play with your kids.

**Use your words.** While vivid sights and sounds fire up the emotions in your reflexive brain, the more complex cues of language activate the prefrontal cortex and other areas of your reflective brain. By using words to counteract the stream of images the markets throw at you, you can put the hottest risks in cooler perspective.

In the 1960s, Berkeley psychologist Richard Lazarus found that showing a film of a ritual circumcision triggered instant revulsion in most viewers, but that this disgust could be "short-circuited" by introducing the footage with an announcement that the procedure was not as painful as it looked. Viewers exposed to the verbal commentary had lower heart rates, sweated less, and reported less anxiety than those who watched the film without a soundtrack. (The commentary wasn't true, by the way – but it worked.)

More recently, disgusting film clips – featuring burn victims being treated and close-ups of an arm being amputated – have been shown to viewers by the aptly named psychologist James Gross. (Although I do not recommend watching it on a full stomach, you can view the amputation clip at http://psychology.stanford.edu/~psyphy/movs/surgery.mov.) He has found that viewers feel much less disgusted if they are given written instructions, in advance, to adopt a "detached and unemotional" attitude.

If you view a photograph of a scary face your amygdala will flare up, setting your heart racing, your breath quickening, your palms sweating. But if you view the same photo of a scary face accompanied by words like *angry* or *afraid*, activation in the amygdala is stifled and your body's alarm responses are reined in. As the prefrontal cortex goes to work trying to decide how accurately the word describes the situation, it overrides your original reflex of fear.

These discoveries show that verbal information can act as a wet blanket flung over the amygdala's fiery reactions to sensory input. That's why using words to think about an investing decision becomes so important whenever bad news hits. To be sure, formerly great investments can go to zero in no time; once Enron and WorldCom started to drop, it didn't pay to think analytically about them. But for every stock that goes into a total meltdown, there are thousands of other investments that suffer only temporary setbacks – and selling too soon is often the worst thing you can do. To prevent your feelings from overwhelming the facts, use your words and ask questions like these:

- Other than the price, what else has changed?
- Are my original reasons to invest still valid?
- If I liked this investment enough to buy it at a much higher price, shouldn't I like it even more now that the price is lower?
- What other evidence do I need to evaluate in order to tell whether this is really bad news?
- Has this investment gone down this much before? If so, would I have done better if I had sold out – or if I had bought more?

**Track your feelings.** In Chapter Five, we learned the importance of keeping an investing diary. You should include what neuroscientist Antoine Bechara calls an "emotional registry," tracking the ups and downs of your moods alongside the ups and downs of your money. During the market's biggest peaks and valleys, go back and read your old entries from similar periods in the past. Chances are, your own emotional record will show you that you tend to become overenthusiastic when prices (and risk) are rising, and to sink into despair when prices (and risk) go down. So you need to train yourself to turn your investing emotions upside down. Many of the world's best investors have mastered the art of treating their own feelings as reverse indicators: Excitement becomes a cue that it's time to consider selling, while fear tells them that it may be time to buy. I once asked Brian Posner, a renowned fund manager at Fidelity and Legg Mason, how he sensed whether a stock would be a moneymaker. "If it makes me feel like I want to throw up," he answered, "I can be pretty sure it's a great investment." Likewise, Christopher Davis of the Davis Funds has learned to invest when he feels "scared to death." He explains, "A higher perception of risk can lower the actual risk by driving prices down. We like the prices that pessimism produces."

**Get away from the herd.** In the 1960s, psychologist Stanley Milgram carried out a series of astounding experiments. Let's imagine you are in his lab. You are offered $4 (about $27 in today's money) per hour to act as a "teacher" who will help guide a "learner" by penalizing him for wrong answers on a simple memory test. You sit in front of a machine with thirty toggle switches that are marked with escalating labels from "slight shock" at 15 volts, up to "DANGER: SEVERE SHOCK" at 375 volts, and beyond to 450 volts (marked ominously with "XXX"). The learner sits where you can hear but not see him. Each time the learner gets an answer wrong, the lab supervisor instructs you to flip the next switch, giving a higher shock. If you hesitate to increase the voltage, the lab supervisor politely but firmly instructs you to continue. The first few shocks are harmless. But at 75 volts, the learner grunts. "At 120 volts," Milgram wrote, "he complains verbally; at 150 he demands to be released from the experiment. His protests continue as the shocks escalate, growing increasingly vehement and emotional . . . At 180 volts the victim cries out, 'I can't stand the pain' . . . At 285 volts his response can only be described as an agonized scream."

What would you do if you were one of Milgram's "teachers"? He surveyed more than 100 people outside his lab, describing the experiment and asking them at what point they thought they would stop administering the shocks. On average, they said they would quit between 120 and 135 volts. Not one predicted continuing beyond 300 volts.

However, inside Milgram's lab, 100% of the "teachers" willingly delivered shocks of up to 135 volts, regardless of the grunts of the learner; 80% administered shocks as high as 285 volts, despite the learner's agonized screams; and 62% went all the way up to the maximum ("XXX") shock of 450 volts. With money at stake, fearful of bucking the authority figure in the room, people did as they were told "with numbing regularity," wrote Milgram sadly. (By the way, the "learner" was a trained actor who was only pretending to be shocked by electric current; Milgram's machine was a harmless fake.)

Milgram found two ways to shatter the chains of conformity. One is "peer rebellion." Milgram paid two people to join the experiment as extra "teachers" – and to refuse to give any shocks beyond 210 volts. Seeing these peers stop, most people were emboldened to quit, too. Milgram's other solution was "disagreement between authorities." When he added a second supervisor who told the first that escalating the voltage was no longer necessary, nearly everyone stopped administering the shocks immediately.

Milgram's discoveries suggest how you can resist the pull of the herd:

- Before entering an Internet chat room or a meeting with your colleagues, write down your views about the investment you are considering: why it is good or bad, what it is worth, and your reasons for those views. Be as specific as possible – and share your conclusions with someone you respect who is not part of the group. (That way, you know someone else will keep track of whether you change your opinions to conform with the crowd.)
- Run the consensus of the herd past the person you respect the most who is not part of the group. Ask at least three questions: Do these people sound reasonable? Do their arguments seem sensible? If you were in my shoes, what else would you want to know before making this kind of decision?
- If you are part of an investment organization, appoint an internal sniper. Base your analysts' bonus pay partly on how many times they can shoot down an idea that everyone else likes. (Rotate this role from meeting to meeting to prevent any single sniper from becoming universally disliked.)
- Alfred P. Sloan Jr., the legendary chairman of General Motors, once abruptly adjourned a meeting this way: "Gentlemen, I take it we are all in complete agreement on the decision here. Then I propose we postpone further discussion of this matter until our next meeting to give ourselves time to develop disagreement and perhaps gain some understanding of what the decision is all about." Peer pressure can leave you with what psychologist Irving Janis called "vague forebodings" that you are afraid to express. Meeting with the same group over drinks in everyone's favorite bar may loosen some of your inhibitions and enable you to dissent more confidently. Appoint one person as the "designated thinker," whose role is to track the flow of opinions set free as other people drink. According to the Roman historian Tacitus, the ancient Germans believed that drinking wine helped them "to disclose the most secret motions and purposes of their hearts," so they evaluated their important decisions twice: first when they were drunk and again when they were sober. VII

# Expert Opinion?

*Is specialized industry, product or other knowledge overrated as an input to investing success? Let's hear what the … ahem … experts have to say.*

One of the more talked about books among investment theorists in recent years has been University of California at Berkeley professor Philip Tetlock's *Expert Political Judgment: How Good Is It? How Can We Know?* Based on detailed long-term research, Tetlock scrupulously explains exactly how bad experts are at making political and macroeconomic predictions. Not only are experts no better than non-experts in predicting future events, they're worse on average than even crude computer algorithms that extrapolate the past.

Given that investing is all about making accurate predictions – for example, about financial performance, companies' strategic choices and industry dynamics – is this indictment of expertise relevant to the investment process? Is the quest for ever more specialized knowledge, at best, not really worth it and, at worst, counterproductive?

Common practice – and, to a certain extent, common sense – would indicate otherwise. Most investment firms organize analyst functions by specialty, out of the belief that a media expert has a better chance to accurately handicap News Corp.'s business prospects than someone who knows the banking business inside and out. Expert energy consultants are doing a land-office business counseling professional investors these days, as are firms like Gerson Lehrman Group, which serves its largely finance-industry clientele with a network of "150,000 subject-matter experts" across a wide variety of industries. Lee Ainslie of Maverick Capital addressed the current state of affairs in a recent interview (*VII*, December 22, 2006): "With the specialization of the people we're competing against today, I think it's very difficult to have a meaningful edge without significant depth and expertise. We should know more about every one of the companies in which we invest than any other non-insider."

As important as specialized knowledge is for investors, it brings with it several potential impediments to sound decision making that should be avoided. While the average person is typically overconfident in his or her ability, experts have been shown to be even more overconfident, a dangerous trait for an investor. Overconfidence not only promotes recklessness, it can also limit learning. "Expertise may not translate into predictive accuracy, but it does translate into an ability to generate explanations for predictions that experts themselves find so compelling that the result is massive overconfidence," writes Tetlock. It's hard to learn much from mistakes if you don't think you're ever wrong.

Cognitive studies have also shown that specialization can hinder one's ability to detect change. This is a classic can't-see-the-forest-from-the-trees problem and explains why industry experts in newspapers, film photography and music retailing were by and large not the first to fully understand the dramatic changes roiling their industries. Wedded to their in-depth knowledge, experts can find it difficult to think about issues in new ways. As historian Daniel Boorstin once said, "The greatest obstacle to discovery is not ignorance – it is the illusion of knowledge."


A final danger of an over-reliance on specialized knowledge: more information doesn't always mean better decisions. One classic academic study asked M.B.A. students in an advanced financial statement analysis course to make individual-company earnings forecasts using three different sets of information: 1) "baseline" data, consisting of the past three quarters' net sales, share price and earnings per share; 2) the same baseline data, plus redundant or irrelevant additional information, and 3) the baseline data, plus non-redundant information that should have improved forecasting ability.

The result? Forecasting errors were equally and significantly higher when additional information above the baseline was provided, whether redundant or relevant. At the same time, confidence levels in the forecasts rose significantly with any additional information.

"Usually two to three variables control most of the [investment] outcome," says two-time Value Investing Congress speaker Mohnish Pabrai in a recent interview with The Motley Fool. "The rest is noise. If you can handicap how those key variables are approximately likely to play out, then you have a basis to do something." VII

# Confidence Game

*It's far better to remind yourself to avoid the pitfalls of investor overconfidence than to have the market do it for you.*

There's no question that confidence in one's investing abilities is a prerequisite to successful investing. To commit your own and others' hard-earned capital requires conviction, and conviction requires confidence. But as with fine scotch or pepperoni pizza, too much of a good thing can cause problems.

Social scientists have confirmed time and again that people generally overestimate their abilities and knowledge. More than 80% of drivers think they're among the safest 30% of those driving. More than 85% of the Harvard Business School class of 1994 say they are better looking than their average classmate. When asked at conferences to write down how much money they thought they would have at retirement vs. the amount the average person in the room would have, money managers and business executives consistently judge that they'll have about twice the average – also an impossibility, of course.

Healthy self-confidence is generally positive, as it can lead to great achievement and certainly contributes to a happier life. But when it comes to managing money, a consistent dose of humility is an invaluable asset. The market can be unforgiving when overconfidence results in too much trading, sloppy analysis, lack of follow-through and excessive risk-taking.

Brad Barber and Terrance Odean of the University of California, Davis, in extensive studies of individual trading behavior, found that investors generally overestimate both the precision of their knowledge about a security's value, as well as the probability their assessment is more accurate than the assessments of others. The result, they say, is more active trading – "I've got to act on the advantage I have" – but not better performance. In fact, "those who trade the most realize, by far, the worst performance," Barber and Odean conclude.

Overconfidence can also lead to analytical short-cuts. A recent study by Lin Peng of Baruch College and Wei Xiong of Princeton University found that overconfident, time-pressed investors put too much weight on market- or sector-level information and not enough on firm-specific data. The authors argue that this was a key contributor to the Internet-stock bubble, as investors ignored company specifics and made judgments almost solely on the industry as a whole – much to their eventual chagrin.

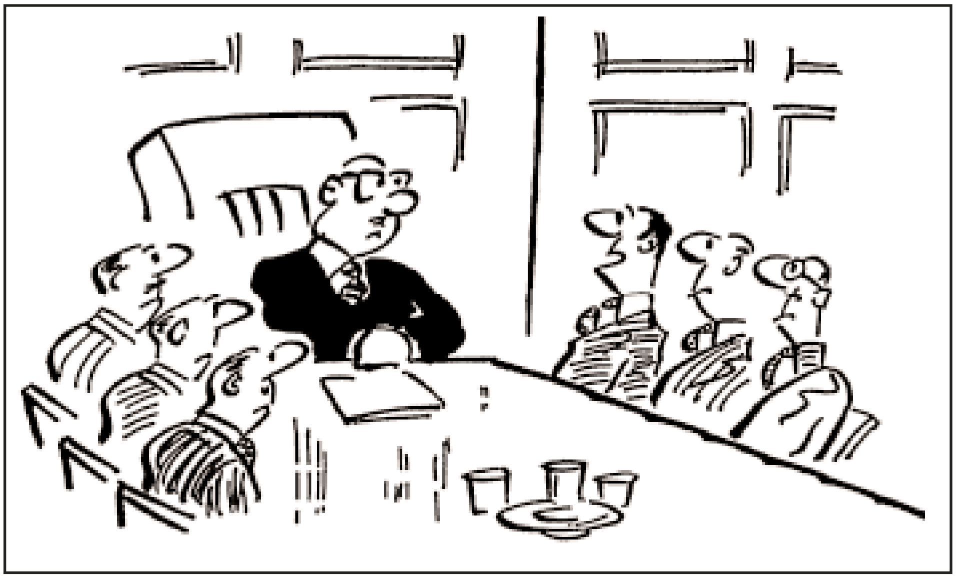
Complacency about existing holdings is another risk. It's natural, of course, to become more certain about any given idea's soundness as the investment thesis plays out. But if this certainty results in less-diligent ongoing analysis and monitoring of your holdings, you can be left unprepared when circumstances change. "I've learned not to fall in love with either the idea or my seeming brilliance," says MLF Investments' Matt Feshbach *(see interview, page 1)*. "I've done that in a few instances at great cost."

The best guards against investor hubris? Benjamin Graham's discipline of investing with a significant "margin of safety" is a great start. The consequences of overestimating a company and your ability to analyze it are greatly diminished when you're paying a lot less for it than your analysis shows it's worth.

Second opinions are also critical, so test your thinking out on as many informed and dispassionate listeners as possible. In addition to the obvious benefits of hearing alternative viewpoints or questions you didn't think of, the simple act of articulating an idea is a powerful check on the thoroughness of your analysis.

Make sure to have a disciplined investing approach and stick with it. Many great investors have a written checklist they go through in analyzing ideas: Is this within my circle of competence? Is this a good business? Do I give management high marks? Is the stock really cheap? If you're already in a stock, don't waver in your approach as the price moves up or down. "I try to keep a neutral attitude and stay rational whether the stock is going up or down," advises Matt Feshbach. "I'm constantly assessing risks in the business model … [and] whether it's [right now] an opportunity or a mistake."

Above all, counsels Amit Wadhwaney of Third Avenue Management *(see interview, page 1)*, stay within yourself: "Just avoid what you can't totally get your mind around," he says. "It's just not worth it. There will be plenty of other things to invest in – keep the cash for then." VII



**"When I said none of us were infallible, I didn't mean you sir."**

# Whose bread I eat, his song I sing

*A heightened sensitivity to the biases inherent in pursuing self-interest – one's own and others' – is a valuable trait of successful investors.*

"I think I've been in the top five percent of my age cohort almost all my adult life in understanding the power of incentives," says Berkshire Hathaway's Charlie Munger in the recently published Poor Charlie's Almanack, "and yet I've always underestimated that power."

The power of self-interest in business and economics is, of course, well established. "It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner," wrote Adam Smith in The Wealth of Nations, "but from their regard to their own interest." Michael Douglas, as corporate raider Gordon Gekko in the movie Wall Street, opined somewhat more coarsely: "Greed is good. Greed works. Greed clarifies, cuts through and captures the essence of the evolutionary spirit. It's all about bucks. The rest is conversation."

As established as the concept is that incentives motivate behavior, investors are frequently blind to the excesses that can develop. How else to explain the deafening silence from invest ors as companies awarded ever more extravagant perks and stock-option packages to managers and employees during the 1990s? How else to explain the widespread basing of investment decisions on the opinions of ever more compromised Wall Street analysts during the Internet boom? More recently, how else to explain the explosive growth of interestonly, little-or-no-money-down mortgage loans pushed by mortgage lenders to buy residential real estate at ever-inflated prices? When prices are rising, sensitivity to conflicts of interest falls – with often unfortunate results.

**"This is no time to be thinking about ourselves, Matthews. So, I'll see you at the meeting on Monday?"**

Successful investors tend to be wellattuned to the power, and biases, of selfinterested behavior. In his interview in this issue (see p. 1), Legg Mason's Bill Miller recounts how early in his career a potential client rejected one of his investment ideas because Miller couldn't explain why the stock would outperform the S&P 500 over the following nine months. The prospective client explained: "There's a lot of performance pressure in this business, and performing three to five years down the road doesn't cut it. You won't be in business then. Clients expect you to perform right now." To profit from this bias to perform in the short-term that persists today, Miller focuses his attention on bets that are expected to fully play out more than a year hence. "The market is less efficient beyond the next 12 months," he says.

This is not to say that money-managers' fixation on short-term performance is irrational or not in their selfinterest. In fact, funds with the greatest net new asset growth at any given time tend to be those with top 12-month records. But this only reinforces the mispricing that can result from a short-term bias, creating other opportunities to find value.

For example, investors with shorter time horizons are more likely to react to bad news by selling than are long-term investors. Resulting less-than-rational price declines can provide buying opportunities – as Warren Buffett counsels, "be greedy when others are fearful."

Equally important for investors is a clear understanding of the incentives of managers in their portfolio companies. "It's almost impossible to understate the importance of having the right incentives in business," says Mark Sellers of Sellers Capital LLC (see interview, p.1). "The wrong incentives can cripple a business." Though not always readily available, the more knowledgeable investors are about the incentives of those running the companies in which they own a stake, the more informed the investment decision they make. What percentage of top management's total compensation is salary vs. bonus vs. equity? What is the relative focus on short-term vs. longterm in determining pay? How closely tied is incentive compensation to metrics over which managers truly have control? What accounting policies and controls are in place to promote and monitor specific corporate behaviors?

While change is slow in coming, progressive companies are instituting incentives that better align with the long-term creation of shareholder wealth. Berkshire Hathaway avoids all incentives based on short-term targets. Restricted-stock programs at Microsoft and Amazon.com limit the threats of misbehavior fostered by wildly lucrative stock-option plans. White Mountains Insurance awards stock options with strike prices that continue to increase a set percentage every year. Morningstar pays bonuses based on divisional returns on capital in excess of the cost of capital.

No system can do away with the inevitable excesses that occur from advisors, investors and managers acting in their self-interest. Forewarned, however, is forearmed. VII

# The Whole Story

*It's perfectly natural to create "stories" to facilitate investment decision-making. The problem comes when the story-telling gets in the way of relevant facts.*

Value investors, rightly so, have an aversion to what are colloquially called "story stocks." These are investments predicated far more on generalities and hype – think Internet stocks in the late 1990s – than on facts and substance. That the Internet was "changing the world" wasn't necessarily wrong, just an insufficient premise upon which to base sound investment decisions.

Stories, however, do play a central role in how we make decisions, investment or otherwise. Social psychologists call it "explanation-based decision making," which involves summarizing disparate and often jumbled facts into story form – a coherent, logical sequence, with inferred causal linkages as the "glue" holding the story together. The story then becomes the basis for making the final decision, rather than the original raw evidence.

Given our natural tendency to explain things in terms of stories, it's not surprising that they can be powerful decision motivators. In one landmark study, participants acting as jurors were asked to deliver a guilty or not-guilty verdict in a murder trial, based on a 100-sentence summary of the trial. Half the 100 statements were made in support of the prosecution and half for the defense.

Each jury in the study heard all 100 statements of evidence, the only difference being whether the statements were presented in logical story order or in the order in which witnesses were called. When the prosecution evidence was presented in story order and the defense evidence in witness order, 78% of jurors returned a guilty verdict. When the presentation style was reversed – again, with the exact same evidence – only 31% of jurors voted guilty!

In an investment context, the reliance on building stories can fuel one of the more pervasive behavioral biases that disrupts rational decision making: the tendency to seek out and rely on only information that confirms pre-existing opinions or decisions. (Caltech social scientist Leeat Yariv calls it the "I'll see it when I believe it" phenomenon.) The earlier a story is constructed to fit the facts, the greater the risk contradictory evidence will be ignored or explained away.

Cornell marketing professor J. Edward Russo showed the insidiousness of the confirmatory bias in a study in which he offered students a choice between two restaurants. The first group of students heard a complete description of each restaurant, crafted intentionally so that roughly equal numbers of students would prefer each one. The second group of students was presented the exact same information, but the equivalent features of the two restaurants were given one pair at a time. After each piece of information (for example, that one is a seafood restaurant and the other is a steakhouse), the students were asked to list their preference. In this group, the students showed much more distinct differences of opinion, with the decisive factor being how they rated each restaurant on the very first comparison given – overall preferences matched the preference on the first pair of features 84% of the time. In even the smallest decisions, people anchor on their earliest conclusions and are loathe to budge.

**"Don't bother me with facts. Tell me what I want to hear."**

How to benefit from a well constructed investment "story," without the downside? Here are a few recommendations:

*Avoid plot gaps.* The best investors often employ checklists for each idea, to ensure that no data-gathering shortcuts are made. General impressions also should not be mistaken for facts – "As the saying goes," says Legg Mason's Michael Mauboussin, "the plural of anecdote is not evidence."

*Pursue alternative story lines.* The simple act of reframing the investment question from "Why should I buy this stock?" to "Why should I not buy this stock?" can be a helpful device to insure more complete analysis. Looking just for reasons to buy often leads to an emphasis on positives over negatives – a potential recipe for investment disaster.

*Don't forget the epilogue.* Investors, to their detriment, often ignore second- and third-order consequences. An investment thesis is not complete without an understanding of how a consequent change of behavior by competitors, regulators or even employees could impact future events.

*Don't rush to a happy ending.* Speed in arriving at conclusions is not necessarily a virtue. As Benjamin Graham put it in *The Intelligent Investor*: "While enthusiasm may be necessary for great accomplishments elsewhere, on Wall Street it almost invariably leads to disaster." VII

# Inspiration or Perspiration?

*Successful investing is as much a creative process as it is a disciplined, analytical one – even if some investors don't want to admit it.*

Thomas Edison's famous quote that "Genius is 1% inspiration and 99% perspiration" is a sentiment shared by many when it comes to investing. As keys to success, investors tend to credit discipline, focus and analytic rigor over creativity. "Investing is a simple business and every time we try to overcomplicate it we have lower returns," says one of the best money managers we know, off the record. "Being creative just to be creative can waste research time, liquidity and resources."

Is investing a creative process? Hard-charging money managers resist defining what they do in terms usually reserved for artists. But if one defines a creative person – as does the *American Heritage* dictionary – as "one who displays productive originality," there's little doubt that successful investors and many others fit the mold. "Clearly, creativity is not limited to artists," writes business historian Maury Klein in his book on the greatest entrepreneurs in history, *The Change Makers*. "The scientist displays it in connecting ideas or observations and transforming them into insights or actions; so do inventors, philosophers, mathematicians, businessmen and athletes."

Charlie Munger's use of "multiple mental models" to draw investing insight from the acquired wisdom in many disciplines is an example of such creativity at work. As Munger has described it: "You have to realize the truth of biologist Julian Huxley's idea that, 'Life is just one damn relatedness after another.' So you must have the models and you must see the relatedness and the effects from the relatedness."

Legg Mason's Bill Miller is another strong proponent of using more than just analytical firepower to drive investment success. That's why he is fascinated by things like the adaptive learning of bees, or what the fossil record explains about how organisms evolve. As he explained in our interview with him earlier this year, "If you just do what other people do, you get the results that other people get."

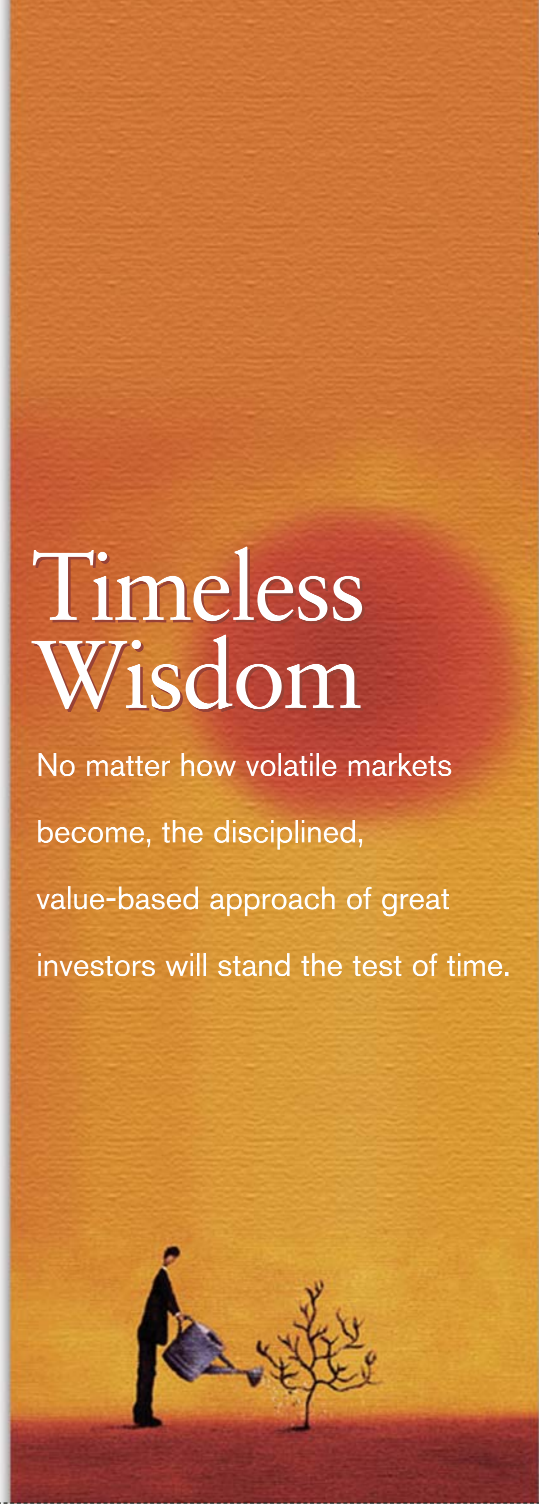
Fostering creativity requires effort, of course. Because the ability to discover useful patterns typically improves with the number of observations made, the first step is to devote time to diverse lines of inquiry. As equity strategist Michael Mauboussin of Legg Mason has said: "There is strong evidence that the leading thinkers in many fields – not just investing – benefit from input diversity." Investors should allocate specific time to exploring new ideas, he says, "even at the risk of wasting time on intellectual cul-de-sacs." Charlie Munger counsels reading everything you can: "In my whole life, I have known no wise people who didn't read all the time – none, zero."

Keeping an open mind about new observations is key. Humans naturally organize experiences and the relationships among them as efficiently as possible, to minimize the energy used in processing, storing and recalling information. Writes applied psychologist Edward de Bono in his pioneering book on developing individual and collective creativity, *Six Thinking Hats*: "From the past we create standard situations. We judge into which 'standard situation box' a new situation falls. Once we have made this judgment, our course of action is clear. Such a system works very well in a stable world [but] in a changing world the standard situations may no longer apply. We need to be thinking about 'what can be,' not just 'what is.'"


Processing novel ideas that require breaking down the "standard situation boxes" we've constructed isn't particularly easy or natural, which is why many ideas get dismissed out of hand – short-circuiting the process of creative thought. "Creativity starts with some problem or need and moves in various ways through a series of stages, consisting of information gathering, digestion of the material, incubation, sudden inspiration, and, finally, implementation," writes Stanford Business School professor Michael Ray in his book *Creativity in Business*. Without plenty of ideas "incubating," breakthrough thinking is much less likely.

Business innovators often cite an additional requirement for creativity, which, for lack of a better description, is "quiet time." Albert Einstein often mused about his getting his best ideas in the morning while shaving. In fact, researchers have found that the presence of a calm mind – uncluttered by the constant processing required by daily life – is far more likely to produce "eureka" moments of inspiration than a busy one.

And what of Edison's quote about genius? To be sure, creativity isn't possible without perseverance, effort and, of course, the right attitude. Edison went through more than 9,000 experiments in his quest to create the incandescent light bulb. When derided by colleagues for what they perceived to be the foolish quest, he responded: "I haven't even failed once; 9,000 times I've learned what doesn't work." VII

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In our recent interview with him, Yale economist Robert Shiller had this sage advice for investors: "One key lesson is to acknowledge the complexity of the world and resist the impression that you easily understand it. People are too quick to accept conventional wisdom, because it sounds basically true and it tends to be reinforced by both their peers and opinion leaders, many of whom have never looked at whether the facts support the received wisdom."

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Sincerely,

Whitney Tilson John Heins

Whitney Tilson and John Heins
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