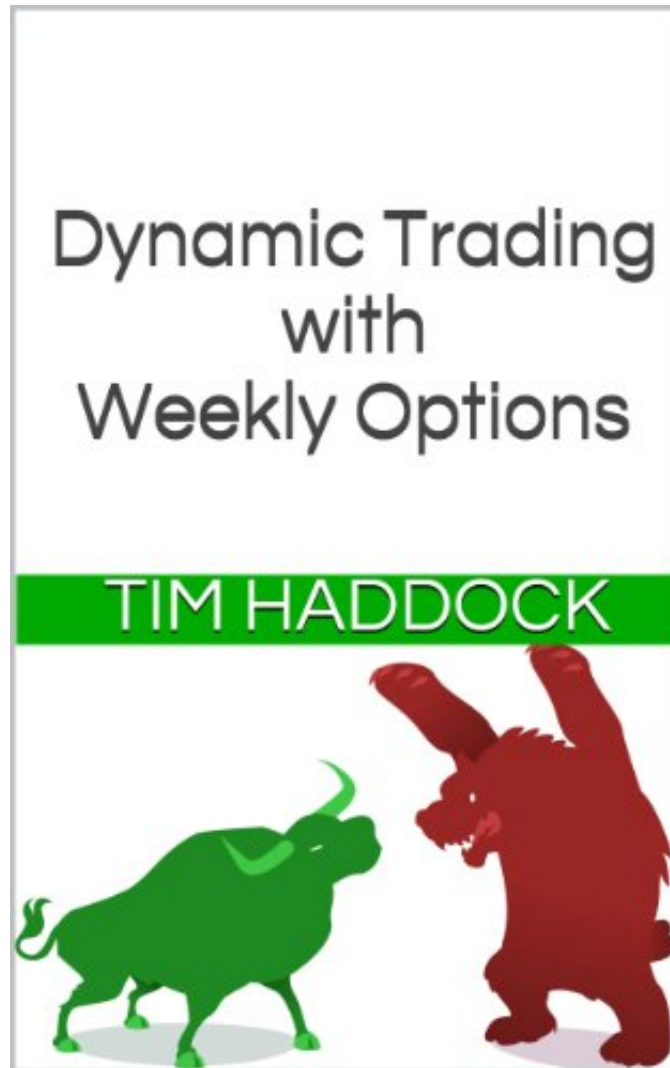


# Irrational Exuberance 3rd Edition

*by*

Charlotte Cotton



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## Synopsis

More than a year in the top 10! If the charts come out too small on your device just email me and I will send a link to download all illustrations, no cost, no spam. Weekly options are getting more and more popular and are available for a wide range of stocks and ETFs. No wonder, since you have the chance to play this sector with limited capital and great returns. You have to be careful, though. Most of the expensive coaches and webinars just teach you a number of strategies but fall short in telling you how to properly apply them. Simply establishing spreads and iron condors based on the Greeks and statistics could be detrimental to your financial health. If you ever struggled to avoid the maximum loss on an iron condor you know what we mean. We will show you with practical examples and many illustrations how to approach this market in a dynamic way. Our strategies do not require a lot of capital, keep risk under tight control and are suitable even for small and medium sized accounts. The strategies are suitable for day trading as well as swing trading. We just tell what we do and that goes beyond the mere description of some strategies as you will find elsewhere. We will teach you also the proper way to use stop loss orders which will save you a ton of money. There will be no invitations to costly webinars nor any sales pitch to indicators or other material. Should your device not display the charts and illustrations correctly, just shoot us an email and we will provide you with a different access, of course without charge or spam.

## Sort review

"We often hear, and have come to believe, that models beat experts. Kelly offers the individual investor a simple, mechanical model that instills discipline, removes a lot of self-sabotaging emotion, and has a good track record. Will it continue to outperform? Actually, it just might."—Brenda Jubin, "Reading The Markets" book review at Investing.com and ValueWalk

From the Author

Two New Terms from the Book

3Sig: Shorthand for "The 3% Signal," both the book's title and the technique it describes.

Z-val: Shorthand introduced in The 3% Signal for "zero-validity forecasters" and "zero-validity environment." The latter phrase was coined by Nobel Prize winner Daniel Kahneman in his book *Thinking, Fast and Slow*, where he wrote that "stock pickers and political scientists who make long-term forecasts operate in a zero-validity environment. Their failures reflect the basic unpredictability of the events that they try to forecast." This is why stock market forecasters are proven to sport an accuracy rate of about 50 percent, same as a coin toss ... yet they continue forecasting.

Quote from the Book

"You'll discover how to check in quarterly to see whether the stock fund's growth is below target, on target, or above target, then move money in the appropriate direction between the stock fund and the bond fund. This action, using the unperturbed clarity of prices alone, automates the investment masterstroke of buying low and selling high -- with no z-val interference of any kind."

Reader Review Highlights

3Sig is, in my opinion, a move to improve upon dollar-cost averaging and indexing. While I am

oversimplifying 3Sig by saying that, and there is more to it, I think that vaguely explains the idea to the uninitiated reader. By and large, I do believe that Kelly has mostly succeeded in this improvement." -- Scott W. McMurray II "In Kelly's model, prices tell you exactly how to adjust things so that you do buy low and sell high at given intervals -- and without deluding yourself that you can predict what the market will do." -- David G. Deutsch "I trade options for a living (my own account). After reading the book I am now using his strategy on a portion of my portfolio. Overall, the strategy is good for the passive investor or full time trader. If anyone is skeptical, you may like to know that I have backtested Kelly's 3% strategy versus many other strategies (Covered Calls, Selling Puts, etc) and his strategy constantly outperforms over the long run." -- John Wilson "This is the one and only book I recommend relative to equities because, frankly, it's perfect. You quit listening, and start managing. Systematically. Four times per year. Meanwhile, you spend your newfound time on the rest of your life and leave your money stress behind." -- Lovelee "I finally feel that I have near mechanical answers to philosophical questions that have confounded me, such as: If you want to buy low and sell high, how do you know when to sell? (The answer comes primarily from running a simple calculation once every quarter, with notable exceptions that dictate when you should just sit on your hands and wait.) No need to be concerned about whether we're headed for a bull or a bear market; all that matters is what happened this past quarter. Just rebalance your accounts, and move on. ... As I followed his reasoning behind each piece of the plan, he presciently anticipated and squashed almost every objection as they occurred to me." -- Jamie Low "I'm currently running the plan in my 401(k) and IRA accounts. Having just finished my first quarterly rebalance of the plan in both accounts I must say that, for the first time in my investing life, I felt in control of my retirement savings!" -- Rick George

From the Back Cover "What the experts don't want you to know ... is that prices are all that matter. Ideas count for nothing; opinions are distractions. The only thing that matters is the price of an investment and whether it's below a level indicating a good time to buy or above a level indicating a good time to sell. We can know that level." -- JASON KELLY, *The 3% Signal*

About the Author JASON KELLY is the author of nine books, including *The Neatest Little Guide to Mutual Fund Investing*, *The Neatest Little Guide to Stock Market Investing*, and *The Neatest Little Guide to Personal Finance*. *The Neatest Little Guide to Stock Market Investing*, now in its fifth edition, is a *BusinessWeek* best seller. He conducts seminars on money management and can be seen as a frequent guest on CNN's financial network. He lives in Japan.

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ACKNOWLEDGMENTS I'm surrounded by fabulous people. I can't imagine life without Doris Michaels, the only agent I've ever had. I was one of her first clients, and I'll be one of her last. It's a joy to still work together after all these years, and to see her and her incomparable husband, Charlie, on every trip to New York. My editor at Plume, Kate Napolitano, worked with me on *The Neatest Little Guide to Stock Market Investing*. At lunch one December day just before the fifth edition debuted, she listened to my impassioned speech about a game-changing new way for people to invest using just two index funds and what I called "the 3 percent signal"—and here we are. She was there when it began and walked every

step of the way with me. Many researchers contributed to the body of work that helped me create the plan, but in this limited space I'll mention just three. Behavioral psychologist Daniel Kahneman showed me why stock market success eludes people, and the value of following a formula. In the formula department, I'm indebted to Michael Edleson's value-averaging concept of rebalancing to a fixed performance goal. John Bogle at Vanguard has been a tireless champion of index fund investing for the past four decades, and such low-cost funds are all that the 3 percent signal needs. Thank you, gentlemen. I wish there were more like you on Wall Street. A special thank-you to Roger Crandell, whom I first met when he subscribed to The Kelly Letter but who later became a friend and research collaborator. His expert coding provided many of the historical plan results presented in this book, and his software double-checked output from my spreadsheets. You would be amazed at the volume of data crunching necessary to present what appear to be simple conclusions. Roger made this task easier for me. Finally, thanks to Fidelity, the Investment Company Institute, Morningstar, Standard & Poor's, Vanguard, and Yahoo! Finance for supplying me with information.

#### A NOTE ON PERFORMANCE CALCULATIONS

Historical stock and fund prices change over time due to splits and dividends. This book shows values adjusted through autumn 2013. If you check historical prices of the investments you see in this book, many will have changed. Rest assured that this does not affect historical performance. Something that grew 20 percent back in 2005 still did so whether calculated using prices in 2005, 2013, or a future year. In the performance calculations not shown in the text, I used unadjusted prices with dividend payments to better reflect the change in balances that investors experienced at the time. For this reason, some of the prices discussed in Chapter 7, "The Life of the Plan," are different from those shown in adjusted price tables elsewhere in the book. This book's primary time period is the fifty calendar quarters from the beginning of 2001 to the middle of 2013. To begin the period, the closing prices from December 2000 are used for the initial buys, and I usually refer to the period as the fifty quarters from December 2000 to June 2013. This sometimes confuses people, as they wonder if the time period includes 2000. No, it just uses December 2000 closing prices as the starting point for a clean look at the period from the first quarter of 2001 through the end of the second quarter of 2013, a fifty-quarter, or 12.5-year, time frame. Except for the Medifast tables in Chapter 4 (where the December 2000 closing price plays a critical role in the example), price tables begin with the first quarter of 2001 to display exactly fifty prices for the time period. Finally, the 3 percent signal plan produces trading guidance for buying and selling two funds at the same time. In real life, the trades won't happen at exactly the same time, but they can get pretty close these days due to fast order execution. I calculated past performance with all trades using the closing prices of the period in question. While real-world performance will vary based on slightly different order execution prices, it shouldn't vary by much. Follow the plan, and it will basically do for you what it's shown doing here.

#### INTRODUCTION

##### Financial Floundering

One day long ago, I found my mother sitting befuddled behind a stack of stock market ideas. She pushed one of the reports my way and said, "I can't make heads or tails of this. What do you think?" Heads or tails. That

was an appropriate way to put it, I later discovered, because stock market advice is wrong half the time. My mother couldn't make heads or tails of the ideas in front of her—and neither could the people who'd written about them. They were all just guessing. So I embarked on a two-decade quest in search of a better way for ordinary people to tap the profit potential of the stock market. I wanted to free them from the unreliable advice of market pundits, steer them away from investment mistakes that cause stress in their personal lives, and show them how to avoid overpaying for underperformance. I spoke with widely praised professional money managers, read every book on the subject, subscribed to newsletters, wrote my own books and newsletter, and appeared in media. My research revealed that parts of the investment industry are connected in a clever system designed to tease money from investor accounts and into the accounts of firms and advisers. It goes like this: Entice people onto the treacherous trail of stock picking and market timing, knowing they'll fail; present alternatives that look more sophisticated than going it alone; then overcharge for those alternatives that actually perform worse than the unmanaged market itself. What the experts don't want you to know—but what you'll never forget after reading this book—is that prices are all that matter. Ideas count for nothing; opinions are distractions. The only thing that matters is the price of an investment and whether it's below a level indicating a good time to buy or above a level indicating a good time to sell. We can know that level and monitor prices on our own, no experts required, and react appropriately to what prices and the level tell us. Even better, we can automate the reaction because it's purely mathematical. This is the essence of the 3 percent signal. We set it as a constant performance line to return to each quarter, and then we either buy our way up to it or sell our way down to it. Used with common market indexes, this simple plan beats the stock market. Because most supposed pros lose to the market, the plan greatly outperforms them as well. This may seem too good to be true, and the pros want you to think so, but it's not, and this book will prove it to you. The performance advantage of the 3 percent signal can be yours after just four fifteen-minute calculations per year, without a single moment of your life wasted on meritless market chatter. Unlike most automated plans, this one acknowledges your emotional side, which sees news and wants to take action. To appease this impulse, the plan will show you the right action to take at a pace that's perfect. You won't jump in too often and create disorder; nor will you stay away too long and feel you've abandoned your investments. You'll show up just frequently enough to keep your finances on track and yourself assured that everything is fine. This plan is all about getting the most out of the market for you in a way that satisfies your emotional needs as well as your portfolio needs. We'll begin with a look at how our instincts lead us astray in the stock market, and how so-called experts prey on these vulnerabilities. You'll learn that the stock market is a zero-validity environment, and begin referring to pundits offering opinions on its future direction as "z-vals." Next, we'll outline this book's superior approach, the 3 percent signal. It requires only a stock fund, a bond fund, and a signal line. You'll discover how to check in quarterly to see whether the stock fund's growth is below target, on target, or above target, and then move money in the appropriate direction between the stock fund and the bond fund. This

action, using the unperturbed clarity of prices alone, automates the investment masterstroke of buying low and selling high—with no z-val interference of any kind. From there, we'll explore the parts of the plan in more detail so you know what types of funds are ideal, why a quarterly schedule works best, how to manage cash contributions to the plan and occasional imbalances between its two funds, and when to implement a special "stick around" rule that keeps the plan fully invested for recovery after a market crash. You'll see that the plan works in any account, even a 401(k). Finally, you'll watch it alongside other investment approaches in a real-life scenario that brings together everything you've learned. Are you ready? Come with me on a journey to a better way to invest.

### CHAPTER ONE Why Markets Baffle Us

There you are managing your career with a few financial goals in mind, following the basics of spending less than you earn and saving the rest, when one day you're told that putting your savings into the stock market will make it grow over time. "Grow?" you think. "That sounds good." You bet, the experts assure, by about 10 percent a year on average over time. That means your savings will double every seven years! If you pay attention and are a little smarter than other people—and we know you are, wink—you could do even better. So it begins. Things go well for a few years after you move your savings into the stock market (probably in mutual funds and probably in a retirement account at work), and then the market goes down. Headlines announce a recession. Unemployment is rising. You read about the Federal Reserve, which you never thought about before, and aren't sure what to make of the minutes from its latest open-market committee meeting. The experts now say it was obvious a recession was on the way. "Just look at history," one opines wisely on TV. "The smart money is on the sidelines." You're supposed to be the smart money, but you are most assuredly not on the sidelines. You're in the game and losing by the day. You follow your gut, which tells you to follow the experts, and get to the sidelines ASAP. Everything is moved to cash, and you feel good at lunch that day, just to not be losing anymore. "Whew! Let all those other suckers not smart enough to read about the Federal Reserve"—or just "the Fed," as you like to call it now—"stay in and get hammered day after day. I'm out. I'll buy back in when prices are lower later." You figure 20 percent wasn't too terrible a loss in the grand scheme of things. You'll make it back. The news stays bad. Every article you read profiles a company laying people off. The Fed is taking all kinds of steps you've never heard of, and economists are worried. The bad news makes you happy to be on the sidelines, but the prices of the mutual funds and stocks you were hoping to buy again keep going up. By the time the economy seemingly stabilizes, they've recovered to prices higher than they were before the trouble began. Not only did you miss out on recovering your lost 20 percent, but you now have to decide whether to buy back in at higher prices. You refuse to do so at first, just because it kills you. Who wants to pay a high price to buy back something he sold at a lower price before? Three months go by, then six, then nine, and prices are much higher than when you decided not to buy back in. "Stocks are rising because there's nothing worrisome on the horizon," observe the experts on TV. "The smart money is all in." What? You are the smart money, but you are decisively out of the market and missing gains. The experts say it's not too late. The lows are

behind, but this is a long trend and it's still early. One talking head says it's like a baseball game, and the market's only in the third inning. Makes sense, you think, and so you buy back into the investments you sold at a 20 percent loss. You know what happens next, I'll bet. The news stays good and prices rise for a while longer, but then they start falling, even as the news remains good. When the news turns bad again, they fall even faster. Before you know it, you're down another 20 percent in the middle of another recession filled with bad news and hearing from the same experts that getting out was obvious to the smart money, whoever they are. (I'll spare you the research: They don't exist. They're a fiction of the financial media, irrelevant for planning purposes.) You might conclude from this brief junket to buy when news is bad and sell when it's good. The idea is great on paper and sensible in spirit, but try it. Begin by asking yourself what constitutes enough bad news. Is it the first frightening headline, or the tenth? One week of coverage? A month? A year? Sure, buying cheap prices that accompany bad news makes sense, but nobody knows what depth of bad news will deliver optimum buy prices. "Buy the lows," people chirp offhandedly as if it's that simple, to which a battered veteran of wiggling price lines should reply, "Which lows?" This is to say nothing of the same difficulty in knowing what constitutes enough good news for selling. The market is equally tricky at bottoms and tops, and each new tricky moment provides investors with a fresh chance to blow it. Reading the predicament spelled out in these pages in compact form without real emotions makes it plain to see, and tempting to mock. You know what, though? This path is trod by countless investors, but the financial industry lures them back time and again. The destructive cycle looks obvious in retrospect, but is not at all obvious when it's happening. There's no end to the slipperiness of the stock market. We are very vulnerable when it comes to money, experiencing depression when we lose it and euphoria when we gain it, and we're awful at timing. This combination makes financial markets a poisonous prescription for most people, yet millions are forced to participate as the only way they'll ever be able to buy a bigger home, send a child to college, or retire one day. In this book, we're going to construct a plan that puts your savings on a reliable growth path without the need to time the market. Before we get there, however, it's important for you to understand why you shouldn't bother trying to time the market. The majority of investors learn this lesson the expensive way. You won't. You'll learn in this chapter the myth of the perfect timer, a fictional character who buys bottoms and sells tops without fail. We're going to call him Peter Perfect. His influence over the investment industry has cost innocent people their fortunes. Why? Because they've been told that anything less than Peter Perfect can achieve is a failure and that they should strive to emulate him, even though he doesn't exist. They chase unrealistically high gains and end up losing, just as a person trying to copy Tinker Bell might leap off a cliff, expecting to fly. The Tinker Bell copycat loses her life. The Peter Perfect copycat loses his fortune. Our journey to a plan that boosts your savings through thick and thin begins by looking at what doesn't work. Doing so will force us to examine unpleasant truths about our nature, which is hard for successful people to do. Generally, investors are smart and used to succeeding in life. They assume that what works elsewhere (hard work, studying, standing apart from the crowd)

will work in the market, too. Yet it doesn't because the market lacks the regularities needed to improve intuition with experience. Succeeding in stocks comes down to accepting that nobody can know the future, and then adopting an investment system that wins by reacting rather than predicting. We'll get to the winning system soon enough, but first we're going to take a sober look in the mirror to see why we need it.

### The Zero-Validity Environment

Have you ever wondered why experts get financial markets wrong, and why you make mistakes, too? The experts are not stupid; neither are you. Why is it that human beings can invent electricity, design airplanes, cure diseases, write literature, and craft cabinetry, but don't have the foggiest clue where stock prices are heading? There's a simple answer, actually. Notice that all of these examples of human accomplishment follow set patterns and laws. The lessons we learn when researching electricity and other parts of the physical universe are applicable for all time. The reason an airplane flies is the same now as it was a hundred years ago. Medical research builds on past discoveries within a framework of unchanging rules. The kinds of stories people like are surprisingly fixed, which is why we still appreciate the works of Shakespeare four hundred years after he died. A master carpenter learns how to work with a certain grain of wood, and every time he sees that grain of wood again he knows what to do, because the wood behaves the same way each time. In these areas of human endeavor, pattern recognition pays off. What we learn from past experience can help us in future experiences. This is not so in the stock market, where fluctuations follow no patterns precisely, despite what you might have heard. The lessons you learned in the last crash won't necessarily help you in this one. Same with the last rally. Experience in the stock market doesn't accumulate to create disciplinary wisdom the way it does in other walks of life. In fact, the very lessons we learn from past markets can lead us astray in future markets.

### The Way We're Wired

The study of how our minds and emotions work in the realm of money is called "behavioral economics" or "behavioral finance." Among other things, it's taught us that we hate losing money more than we love gaining it, and that we're so averse to losing it that we'll inadvertently lose more by taking too much risk to try recouping what we lost.

### Three leading contributors to behavioral economics are Daniel Kahneman, Richard Thaler, and Amos Tversky.

Kahneman, a psychologist who won the 2002 Nobel Prize in Economics, summarizes the findings of his life's work in collaboration with Thaler, Tversky, and others in his 2011 book, *Thinking, Fast and Slow*. The book offers insight into several areas of decision making given our emotional vulnerabilities and our tendency to draw hasty conclusions from limited sets of evidence, which Kahneman refers to as *What You See Is All There Is (WYSIATI)*. He presents two ways that our minds process the world. System 1 thinking is fast, instinctive, automated, and emotional. System 2 thinking is slow, logical, deliberate, and rational. System 1 is easy and requires little effort; hence we use it most of the time in daily life. System 2 is hard and requires much more effort; hence we're reluctant to switch over to it unless we absolutely must.

### We Believe What We've Experienced

Kahneman's work proved that our minds are not good at considering base rates and sample sizes when making decisions. A base rate is the frequency with which something occurs. If 3 percent of people have an eye twitch while 97 percent do not, then the



base rate of eye twitching is 3 percent. You will forget this, however, when asked if you think the guy sitting by the window has an eye twitch. He's a stranger to you. You'll size him up from a distance and ask yourself if he seems like an eye twitcher. You'll run through your mental inventory of all the eye twitchers you've ever known. The way he sits reminds you of an eye twitcher you used to sit next to on the school bus. He sure looks like an eye twitcher, you conclude, and answer in the affirmative: he's definitely an eye twitcher. Yet you actually know nothing about the man by the window. With such a low base rate of eye twitchers, the only reasonable guess for you to make is that he's not an eye twitcher, but you made an unreasonable guess that he is one based on your limited personal experience. All of us are vulnerable to this kind of hasty, sloppy decision making.

A sample size is the number of units studied. The larger a sample size, the more units we study and the more accurate our results become. We know this instinctively but forget it in practice. You would not take a medicine that boasted a 100 percent cure rate with no side effects if you knew it had been tried on just five people. If all five were cured with no side effects, then the statistics are right, but the problem is the sample size. We get it. What we don't get as easily is that when we tap into our personal experience, the most vivid collection of life data at our disposal, we're relying on a similarly small sample size to draw conclusions. In the stock market, we remember that last year we lost money after the Fed's June meeting, so we're cautious going into future June meetings. We overlook the Junes that did not portend trouble because they didn't personally affect us. We're quick to form an opinion based on the limited part of life we've experienced firsthand, and we lose perspective on the thimble of ocean water these personal lessons represent. Kahneman reminds us that large samples are more precise than small samples, and that small samples yield extreme results more often than large samples do. Thus our thimble of experience is going to expose us to extreme results, and we're going to draw conclusions based on them in full confidence because they're all we know firsthand. We'll frequently proceed with certainty in the wrong direction based on what's been right in our limited past. In the stock market, this becomes even worse because there's an extra layer of uncertainty. Not only is our experience just a tiny slice of market history, even what has been true in market history is not necessarily going to be true again. This inconvenient fact spawned a favorite saying among traders: "It works until it doesn't."

Our minds create plausible stories from limited data sets. In the market, this happens daily. At the end of each day, pundits report confidently why the market rose or fell. Even they know, however, that the reason proffered is usually arbitrary. I once appeared on a financial television program that invited two people to be on call for that day's market wrap. One guest was the guy prepared to explain why the market had gone up; the other was the guy prepared to explain why the market had gone down. They were, respectively, the bull and the bear. Since nobody knows where the market will go on a given day, the station covered its bases by inviting a person who could say something convincing no matter what happened. Telling, isn't it? Kahneman writes that it's natural for our System 1 thinking (the fast, instinctive, automated, emotional type) to "generate overconfident judgments, because confidence, as we have seen, is

determined by the coherence of the best story you can tell from the evidence at hand. Be warned: your intuitions will deliver predictions that are too extreme and you will be inclined to put far too much faith in them.”

**We Think We Knew It All Along** Even more discouraging, when we’re proven wrong and change our minds, we can’t recall very well what led us to the wrong conclusions to begin with. We rationalize them away, sometimes convincing ourselves in cases related to stocks that we weren’t wrong, the market was wrong. It should have gone down, or it should have gone up; if only it were more rational and understood the evidence as well as we understood it. Eventually, we decide that not only were we not wrong in our incorrect belief, but it wasn’t even our belief. No, we actually believed—knew, rather—that the market would go down. It’s so obvious, looking back. So, the next time we’re convinced by the evidence, we proceed as confidently as we did the last time we got it wrong, believing that our track record is better than it actually is and that what we know this time is bankable. This mistaken belief that we knew it all along is called “hindsight bias.” We use it to improve ourselves in retrospect, believing we knew in the past things we didn’t actually know at the time but that we know now only with the help of hindsight. We compound the problems of this tendency by thinking that if we got it right last time, we’ll probably get it right this time, even though we didn’t get it right last time and have no business thinking we’ll get it right this time. Can you imagine a creature less suited for rational market analysis? We’re just smart enough to get ourselves into a heap of trouble, all too often with money that matters.

About our hindsight bias, Kahneman writes that the human mind suffers an imperfect ability to recall past levels of knowledge and previous beliefs that have changed. When we arrive at new conclusions, we lose our grasp of previous conclusions and settle into thinking we’ve always believed what we believe now. This minimizes in our memory the extent to which past developments caught us off guard, and creates the illusion that we understood the past as it unfolded. Then, we think that if we navigated the past pretty well we’ll probably be able to predict the outcome of current events, too. We take comfort in this illusion that we understood the past and can forecast the future. It’s more reassuring than admitting that we actually have no idea why things went the way they did, or what’s going to happen next.

**We Mistake Luck for Skill** To really have some fun, toss a person a few random successes in the market. Witness their confidence rise, their pride swell. More important, tabulate the increasing amount of money they allocate to their next ideas. “It worked last time,” they think. “Too bad my idea that gained thirty percent did so with only ten thousand dollars. What if I used fifty thousand next time?” What if, indeed. On top of not understanding that winning streaks in the market happen randomly, on top of not seeing that two-thirds of professional money managers lose to the market, on top of not realizing that a few recent successes do not override a mountain of forecasting folly, we don’t recognize the ability of a single mistake with too much money to erase all the gains we accumulated in the past. You can get it right four times in a row, but if you get it wrong badly enough the fifth time, you’ll return to square one with nothing but a tax write-off to show for all your painstaking work and stress. Even though randomness says successes are bound to happen now and again among even the least skillful participants, we apply our successes

toward a personal skill assessment upgrade. We're not lucky; we're good. This could be fine if we downgraded our skill assessment with each failure, but we don't. When we're right, we're smart. When we're wrong, it's not our fault—we explain our failures away. Our assessment of ourselves rises toward "master" designation, ratcheting up with each success but only pausing its ascent with each failure. Here's how Kahneman summarizes what is probably the most willfully ignored conclusion of behavioral finance studies: "There is general agreement among researchers that nearly all stock pickers, whether they know it or not—and few of them do—are playing a game of chance. The subjective experience of traders is that they are making sensible educated guesses in a situation of great uncertainty. In highly efficient markets, however, educated guesses are no more accurate than blind guesses." Why? Because everybody competing is in possession of the same information, so there's no edge to be found. Newcomers to the market think they're breaking new ground by reading balance sheets, dissecting management discussions, meeting with competitors, and so on. What they miss is that everybody else is doing the same things. Understanding a company's prospects or the market's prospects is not enough to make a wise decision on the future direction of prices. Whatever is known by us is known by others, too, reducing the stock picker's job to speculating on what fickle humans will do with the information they possess. Nobody knows, so our decisions are reduced along with everybody else's to meaninglessly educated guesses. We'll win some, we'll lose some, just like others in the crowd, but we'll somehow conclude we're more skillful than most—even as we achieve average results. Illusions of skill can be convincing, though. Say you made the top 3.1 percent of investment managers, joining a group of just 313 out of 10,000 who earned money five years in a row. You'd be proud of yourself—rightfully so, most people would grant. Nassim Nicholas Taleb would disagree. He shows in his 2001 book, *Fooled by Randomness*, that the outcome could be ascribed to chance. "No," you object, but work through a simple experiment offered by Taleb. Imagine a fair contest in which managers have a 50 percent chance of turning a profit each year and a 50 percent chance of posting a loss. After a manager loses, we remove him from the contest. Toss a coin for each manager the first year—heads means profit, tails means loss—and 5,000 of them will lose and drop out. Do this again in each subsequent year. The group of 5,000 remaining at the end of the first year will be reduced by half at the end of the second year, to leave us with 2,500. At the end of year three we'll have 1,250; year four, 625; and year five, 313. Taleb concluded the experiment: "We have now, simply in a fair game, 313 managers who made money for five years in a row. Out of pure luck." They won't be called lucky, though. They'll be called brilliant and will probably appear on magazine covers. They'll become the subjects of articles purporting to reveal the secrets of stock market success, which will contain contradictory advice such as "buy more of what's working" but "average down into winners on sale." The articles will exhibit survivorship bias, the mistake of focusing on traits of people and companies who made the cut without comparing them to the ones that didn't. It's how we hear that a runner won a race because he practiced for hours before sunrise every day, ignoring that the loser did the same thing. It's how a reporter tells us with great fanfare that

winning investment managers talked with presidents of companies in their portfolios, ignoring that the losers did the same thing. These investing winners will be celebrated and sought out. Not one of them will discuss the many moments of uncertainty they faced along the way, the countless items over which they had no control but that went their way by mere chance. Kahneman writes that “the admission that one is merely guessing is especially unacceptable when the stakes are high. Acting on pretended knowledge is often the preferred solution.” Pretended knowledge and luck are better known in the stock market as skill.

### Limits of Pattern Recognition

We have evolved to recognize patterns. Once we recognize them, we learn the best way to react to them so we’re ready the next time they appear. Wet roads are slippery, so we learn to drive more carefully on them. Stoves can be hot, so we approach them cautiously. Even if a wet road is not especially slippery, it doesn’t hurt to drive carefully. Caution around stoves is never a bad idea. Why, then, does pattern recognition fail us in the stock market? Because we think we see patterns in randomness where none actually exist, and even the market patterns that do exist fail to repeat reliably. Just as wildly different days share a basic structure of morning, daytime, and night, so do wildly different market trajectories share similar features. These catch the attention of our pattern recognition instincts, which tell us we’re in familiar territory and know what to do, but then the course of current events branches to a different path.

### Confirmation Bias

Science writer Michael Shermer explains this pattern recognition tendency in the November 25, 2008, issue of *Scientific American*. He calls our brains “belief engines” and “pattern-recognition machines” that assign meaning to the patterns we think we see in nature. Sometimes different events are connected, sometimes not. Where relationships exist, such as stoves being hot and therefore deserving caution, we’ve gained something valuable in noticing them and can adjust our behavior in ways that aid our survival and ability to perpetuate the species. We are descendants of the most successful pattern detectors. This association learning is a trait we share with other animal survivors. It’s a core part of who we are. Because our pattern recognition capability has helped us survive, no wonder we turn to it in just about every situation. We’re not good at seeing its limits, though, and use it even when the environment is not conducive to creating reliable patterns. The stock market is one such environment. Our pattern detector is so sensitive that it can even find meaningful patterns in meaningless noise. Shermer calls this tendency “patternicity.” In his 2011 book, *The Believing Brain*, he argues that people often concoct beliefs first and then find evidence to support them. Our belief engines sift through sensory inputs in search of patterns, pick them out, and create a narrative around them to support our interpretation. If a belief is strong enough, it sprouts from our head as invisible antennae tuned to a frequency for corroborating evidence. It misses contrary evidence, which is on a different frequency, and gradually builds an ever stronger case for the initial belief. This stronger case makes the belief more believable, which enlarges the antennae, which gather more evidence, which strengthens the case, and so on, in a feedback loop that transmogrifies the belief into a permanent fixture of a person’s psyche, in some cases. What we’re discussing is called “confirmation bias,” the selective interpretation of

information to match a preconceived belief. If you were burned by stocks last summer, you're apt to be cautious in the market this summer. You believe stocks are going to fall again, and will tune your antennae to hear bearish commentary and focus on bad economic data to reinforce your belief. You're biased toward confirming what you've already decided, rather than taking the more useful approach of assigning equal weight to all available information.

**Z-Val** Consider the high potential for damage this tendency poses in the stock market. We see patterns in random data, construct beliefs based on these meaningless patterns, and then set about gathering information to confirm our beliefs. When our pattern detector collides with stock market randomness, we tell ourselves convincing stories for why stocks will rise, equally convincing ones for why they'll fall, with the result balancing out to average performance not at all worth the effort.

Kahneman writes that there are "two basic conditions for acquiring a skill: an environment that is sufficiently regular to be predictable; an opportunity to learn these regularities through prolonged practice. When both these conditions are satisfied, intuitions are likely to be skilled." The stock market doesn't qualify, because "stock pickers and political scientists who make long-term forecasts operate in a zero-validity environment. Their failures reflect the basic unpredictability of the events that they try to forecast."

Let that term sink in: zero-validity environment. This sounds ominous, as it should. You can almost hear a Wall Street carnival barker crying, "Ladies and gentlemen, welcome to the zero-validity environment! Rev up your guessing engines! Good luck planning a future!" Financial hilarity ensues, at least for bystanders. For those in the experiment with their futures on the line, there's nothing funny about it.

The zero validity of the stock market is a key concept I'll mention repeatedly throughout the book. Let's shorthand it to z-val, a handy epithet for referring to both the market itself and the pundits offering zero-validity stock advice subject to a 50 percent failure rate, which you'll read about in the next section.

Kahneman advises that intuition is reliable only when an environment is sufficiently regular and a participant has had a chance to learn the regularities. You can trust a person's intuition if these conditions are met. They are not met in the stock market, which means you can't trust anybody's intuition regarding the market's future—including your own.

**Coin Toss Forecasting** Everything you've read so far explains a most inconvenient number related to stock market investing: fifty, as in 50 percent. It's hard to get more average than that, and nearly every study of stock market participants of both the professional and part-time variety concludes that they're right only 50 percent of the time. It's the same percentage chance you get for heads or tails in a coin toss, which is why you frequently encounter the coin toss metaphor in reference to stock market participation. This is a major point that you should commit to memory because it's a foundational flaw of human behavior in the stock market. We're wrong half the time. It's important to incorporate this reality into your view of the stock market as a way of sensing the risk in every forecast or idea you encounter, no matter how believable it seems.

Experts are always impressive. They are professors of finance, managers of large sums of money, longtime market seers with successful calls in their selectively edited biographies, and presidents of organizations with authoritative names. They are never introduced as "somebody somewhere

who said something,” though their track records indicate they should be. An investment research firm called CXO Advisory tracked nearly 6,600 forecasts of the American stock market made by 68 experts employing multiple disciplines from 2005 to 2012. I was one of the experts in the study. Some of the forecasts came from archives and some of the most recent ones in the study extended beyond 2012. The oldest one tracked in the sample was made at the end of 1998, and the final grading happened in 2013, so the study provided a good look at typical performance in different environments using various methods. What did it find? An average accuracy of just 47 percent, even worse than coin tossing. We’ll give humans the benefit of the doubt, however, and grant average accuracy to be the coin toss 50 percent. Funny things happen in a coin tossing environment, one of which you read about earlier when it produced a convincing subset of market winners at the end of five years. This can’t be random, we think, but we’re wrong. Randomness doesn’t look random to us. It often appears more orderly than we believe it should, with trends that are assigned stories to explain why the market keeps going up or down. In a series of coin tosses, for example, streaks of heads (H) and tails (t) are common. (I show tails in lowercase to make changes in sequence easier to spot.) Most people think a sequence such as HHHHHtttt is less random than HtHtHtHt, but statistically each is equally likely. To see the illusion of predictability that this kind of randomness produces in the stock market, consider the following chart I created with a spreadsheet and coin tosses using a quarter. I began with a balance of \$10,000. I tossed the coin fifty times. Heads meant a 5 percent increase in my balance, tails a 5 percent decrease. Here’s a chart of the change in balance over the course of fifty tosses: Change in \$10,000 balance by coin toss. Doesn’t this look like something you might see in the stock market? It does to me, and I can just hear the experts saying when the balance falls below \$9,000 that “the trend is clearly down” and suggesting that you follow what the smart money did back when the balance was above \$11,000 by getting to the sidelines. When the trend “bases” along the \$8,000 line, television networks will have a ball pitting bulls and bears against one another in the “battle over \$8,000” as the former argue that the market is basing for a recovery while the latter say it’s pausing before further downside because “the fundamentals just aren’t there.” When it recovers back above \$9,000, the bulls will say they told us so, while the bears will say the market is on borrowed time. We would get all this drama from a sequence of coin tosses. Here’s the sequence that happened in my office: HHH tt H t HH t H ttt H tttt HH ttt HH t H t HH t H t H ttt HHHHHH t H t HH Notice how many streaks happened. In just fifty tosses, I produced six streaks of three or more identical results in a row. Remember from your earlier reading that streaks of success will go to our heads, tricking us into thinking we’re better at this than we actually are. Random sequences provide false evidence of skill.

**A Random Walk**

The most famous look at randomness in stocks is Burton G. Malkiel’s *A Random Walk Down Wall Street*, first published in 1973 and updated numerous times. In what should be an uncontroversial view to you by now, Malkiel contends that the market is efficient to the point where everybody knows everything at the same time, erasing all advantages to be had, so that an investor will perform better in the long run simply by owning an index fund through ups and

downs. An index fund is an unmanaged collection of stocks that enables an investor to buy the market without picking and choosing which companies will do well. Malkiel writes in the tenth edition of his book, published in 2012, that “the market prices stocks so efficiently that a blindfolded chimpanzee throwing darts at the stock listings can select a portfolio that performs as well as those managed by the experts. Through the past forty years, that thesis has held up remarkably well. More than two-thirds of professional portfolio managers have been outperformed by the unmanaged S&P 500 Index.” His “random walk” metaphor refers to what you saw earlier when I charted the result of fifty coin tosses. Each move is independent of the last one, and the one before that, and all that came before. Every tick is random, and thus unworthy of our forecasting energies. There’s no need to pay for predictive services, ponder earnings projections, or study complicated charts, because they’re all useless. Precise Imprecision You’ll never hear this in the stock business, though. No analyst sits down at a table and forewarns you that he’s susceptible to several biases and fallacies when it comes to thinking about stocks, and that he has underperformed a blindfolded chimpanzee throwing darts. Instead, he’ll present you with a convincing overview of industry growth rates, a company’s earnings history, management’s bold new plans, and projections based on what he believes are reasonable assumptions. Asinine Assumptions The problems lurk in the assumptions. A college professor of mine used to say, “Do not assume, gentlemen! It makes an ass of u and me.” Yet, absent certainties, what else is an analyst to do? Investment prospectuses are required to point out that future performance cannot be guaranteed, usually with statements such as “Past performance is not indicative of future results.” Fine, but pray tell how to analyze the future since it hasn’t happened yet. All we have is the past. Because the past provides no guarantee, there are no guarantees in this line of work. Analysts must assume, project, and assign values to variables. It’s all they can do, and it’s inherently imprecise. The result, however, offers the illusion of precision by delivering firm answers at the end of sometimes complicated formulas. The formulas, unfortunately, compute exact relationships between variables that offer no predictive power. Computer programmers call this “garbage in, garbage out.” If we can’t trust the predictive power of the values put into a formula, then we can’t trust the predictive power of the result churned out by the formula. If this is so, what’s the point of the formula? This reminds me of an old joke about economists. A mathematician, an accountant, and an economist apply for the same job. The interviewer asks the mathematician, “What does two plus two equal?” The mathematician replies, “Four.” The interviewer calls in the accountant and asks the same question, “What does two plus two equal?” The accountant says, “About four, give or take a few percent, but generally four.” Finally, the interviewer calls in the economist and presents the same question, “What does two plus two equal?” The economist stands up, locks the door, draws the blinds, sits close to the interviewer, and whispers, “What do you want it to equal?” Replace the economist with a stock analyst calculating a company’s fair value or future stock market earnings, and the joke still works. There’s plenty of reason to doubt somebody’s guess at the future value of a stock given the many variables they can’t know, but the ultimate wild card is what the market thinks and how

it reacts to whatever general news and company-specific news appear in the future. Even if somebody perfectly calls the fair value of a stock by getting every variable correct in a discounted cash flow analysis, the market might never move the stock's price to the fair value. The company might deliver revenue and expenses precisely on target but still see its stock price drift away from what the on-target variables determined to be fair value. Who's to say what's fair? Only the market, that most manic-depressive of all entities. This is a hard concept to accept because the meticulous work that goes into calculating stock valuations and market forecasts is convincing. People in suits in expensive offices really do work days and nights on this stuff, after studying the methods for years. That it could all be for naught strikes us as preposterous. That an entire industry could float in a mist of illusion and false confidence is depressing but true, and better to learn earlier than later. Formula Follies Read more

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## **Book Information**

Language: English

Paperback: 336 pages

Item Weight: 8 ounces

Dimensions: 5.3 x 0.73 x 7.96 inches

Hardcover: 200 pages

Grade level: Preschool and up

File size: 1758 KB

Text-to-Speech: Enabled

Enhanced typesetting: Enabled

X-Ray: Not Enabled

Word Wise: Enabled

Sticky notes: On Kindle Scribe

Print length: 83 pages

Screen Reader: Supported

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